1000

QL
593
SGP4
v. 12
pt. 1
ENT

John Rudwell

TRANSACTIONS

OF THE

SOUTH AFRICAN PHILOSOPHICAL SOCIETY.

VOLUME XII.

1901-1902.

WITH TWELVE PLATES.

SMITHSONIAN INSTITUTION
WASHINGTON 25, D.C.

CAPE TOWN:
PUBLISHED BY THE SOCIETY

1902.

CONTENTS.

	PAGE
DESCRIPTIVE CATALOGUE OF THE COLEOPTERA OF SOUTH AFRICA (<i>Lucanidae</i> and <i>Scarabæidae</i>). By L. PÉRINGUEY, F.E.S., F.Z.S., &c., <i>Assistant Director South African Museum</i>	1-920

QL
596
L8P44
1902c
V.1
ENT

PA 1-563 8 plates
XXXI-XXXV
April 19, 1901

TRANSACTIONS

OF THE

SOUTH AFRICAN PHILOSOPHICAL SOCIETY.

VOL. XII.

DESCRIPTIVE CATALOGUE OF THE COLEOPTERA OF SOUTH AFRICA (LUCANIDÆ AND SCARABÆIDÆ).

By L. PÉRINGUEY, F.E.S., F.Z.S., &c.,

Assistant Director South African Museum.

FAMILY LUCANIDÆ.

MAXILLÆ with two lobes, the inner one seldom distinct; labrum fused with the clypeus; ligula not always bi-lobate, ciliate, situated in the inner part of the mentum, the latter closing the greater part of the buccal cavity; mandibles strongly developed; antennæ inserted before the eyes, ten-jointed, geniculate in the South African species, the club formed by three immovable joints strongly pectinate inwardly and mostly always pubescent; the eyes are large, partly or entirely divided; scutellum moderately small or very small; elytra more or less oblong, or sub-cylindrical, completely covering the pygidium; the abdomen has five ventral segments; the legs are usually slender, the anterior tibiæ being sometimes dilated towards the apex; the intermediate and posterior tibiæ have two apical, strong spurs; the tarsi are long and have very robust claws and a median onychium.

In spite of the different facies, the insects included in this family are very closely connected with the *Scarabæidæ*. The three apical joints of their antennæ forming the club are, however, pectinate inwardly, and not mobile, whereas in the *Scarabæidæ* they can always be folded, and are not pectinate inwardly.

The representatives of this family live in rotten logs or tree-trunks, and are therefore mostly dependent on forests, which are rare in South Africa, where only five genera and six species are recorded. Three of these genera are peculiar to the South African fauna. In one genus (*Colophon*) the broadly dilated fore tibiæ imply perhaps terricolous habits.

Key to the Genera.

Sub-Family LUCANINÆ.

- A². Ligula not bi-lobate; maxillæ not hooked; body short;
mandibles short, arcuate in both sexes *Colophon*. 2
- Ligula bi-lobate; body oblong, smooth; mandibles greatly
developed in the male *Cladognathus* 4
- A⁴. Ligula bi-lobate; maxillæ with an inner hook; body oblong,
squamosæ; mandibles short in the male *Oonotus*. 6

Sub-Family FIGULINÆ.

- Eyes incompletely divided; mandibles sub-horizontal, long,
bifid at tip *Xiphodontus*. 7
- Eyes completely divided; mandibles short and bearing at
the base a vertical horn incurved at tip *Nigidius*. 9

GEN. COLOPHON, Gray,

Griffith's Animal Kingd., 1832, i., p. 533.

Mentum articulate, slightly attenuate laterally, and hiding the maxillæ and the ligula; the latter is long and slender, not bi-lobate, a little ampliate laterally towards the tip and deeply emarginate triangularly and broadly at tip; the palpigers are swollen and contiguous, the labial palpi are somewhat long, the apical joint is in the shape of an elongate, slightly incurved club; maxillæ ending in a long pencil of hairs, maxillary palpi not long, second joint longer than the apical which is only slightly longer than the third; mandibles as long as the head in the male, a little shorter in the female, roundly arcuate; eyes not very deeply divided; the four apical joints of the antennæ are pectinate, but only the last three are pubescent; prothorax broad, ampliate and rounded laterally, diagonally attenuate towards the base; elytra short, convex, sub-ovate; anterior tibiæ

broadly dilated at tip, quadri-dentate outwardly, intermediate and posterior ones with two and one spine respectively, and briefly digitate at apex; the basal abdominal segment is produced between the hind coxae into a long cuneiform process slightly impressed transversely and representing probably an absorbed sixth ventral segment; prosternal intercoxal process very declivous but sharp at tip.

This genus seems to be found in South Africa only, and includes one species, the two sexes of which seem, however, to have been described as two different species.

COLOPHON WESTWOODI, Gray,

Plate XXXI., fig. 1.

Griffith's Animal Kingd. Insect., i., p. 533, pl. xlv., fig. 5.

Westw., Annal. Scienc. Natur. 2 Ser., i., p. 113, pl. vii., fig. 5.

Transact. Entom. Soc. n. Ser., iii., 1855, p. 197, pl. x., fig. 1.

C. thunbergi, Westw., Trans. Entom. Soc., 1855, p. 198, pl. x.
fig. 2.

Male: Black, opaque, glabrous; head transverse, straight laterally and also in the anterior part, where there is a median, moderately sharp tubercle and another one on each side of it; above the eye but in a line with it, there is a slightly arcuate longitudinal ridge, the intervening space is bi-impressed, and there is a transverse, basal, shallow impression; the surface has numerous deep but moderately round punctures; mandibles short, very robust, strongly bi-dentate inwardly, convex and with a distinct prominence on the upper part; prothorax finely and closely punctulate, the punctures are deeper and more numerous in the anterior part, the anterior outer angles are rounded, the lateral part is ampliate and moderately rounded, very obliquely attenuate towards the base with the outer basal angles very sharp; it is distinctly marginate all round, not very convex, the base is only slightly emarginate in the centre, and there is a slight, median, longitudinal furrow in the posterior part only; scutellum not punctate at apex; elytra not broader at the base than the base of the prothorax, oblongo-ovate, a little longer than the prothorax, convex, outer margins costate, almost reflexed for two-thirds of the length, not striate, but having somewhat regular but faint series of shallow punctures; abdominal segments feebly punctured except the apical one; sternum and femora a little punctate; intercoxal prosternal process sharply aculeate; anterior tibiae strongly quadri-dentate, the two apical teeth broad, triangular, the two basal ones a little smaller; above the digitation there is a blunt, feebly

indicated tooth; intermediate tibiae with two spines on the upper side, posterior tibiae with one only.

Female: Similar in colour to the male; the mandibles are shorter, not so robust, carinate outwardly, not convex above, bi-sinuate inwardly, bluntly dentate at middle, and with the labrum projecting in a sharp triangle; head bi-impressed, the impression divided by a longitudinal not sharp carina and edged on each side by a similar but more oblique costa; it is much more foveolato-punctate than the male's; the prothorax is a little more ampliate and also more closely and more distinctly punctured; the elytra are broader than the base of the prothorax, and the series of punctures on the elytra are more distinct; the fifth apical joint of the antennae is also slightly pectinate.

I am under the impression that Westwood mistook the female of this species for a male.

Length (exclusive of mandibles), $19\frac{1}{2}$ -22 mm.; width $9\frac{1}{2}$ -12 mm.

Hab. Cape Colony (? Knysna, Cape Town).

This species seems to be very rare in collections. I have only seen four examples, two of each sex.

GEN. CLADOGNATHUS, Burm.,

Handb. d. Entom., v., 1847, p. 364.

Mentum three times as broad as long, moderately arcuate in front from side to side with the angles quite rounded; ligula bi-lobate, the lobes quite separate, slender, narrow, corneous and with a fairly broad fringe of dense hairs; apical joint of labial palpi nearly as long as the two preceding, obliquely attenuate at base, sub-parallel but slightly ampliate towards the apex where it is obliquely truncate inwardly with the truncate part hollowed; maxillary palpi long, deeply grooved inwardly with the exception of the basal one, apical one longer than the second, slender, flagelliform; mandibles as long as the head or longer; head as broad as the prothorax, or only slightly smaller in the male; eyes divided in front and behind; basal joint of antennae as long as all the other joints; club tri-jointed, pubescent, but with the seventh joint produced into an aculeate inward process; prothorax transverse, obliquely truncate laterally behind; elytra slightly convex, oblong; prosternum with an intercoxal, well-developed process; suture of mesosternum and metasternum hardly distinct; metathorax wide, a little broader than long; anterior tibiae irregularly spinose outwardly but with two and sometimes three more developed spines at tip, tibiae feebly digitate at apex; tarsi long, the four basal

ones with a small fringe or brush of fulvous hairs on each side of the apical part.

The genus seems to be represented all over the globe, except in America.

CLADOGNATHUS (PROSOPOCOELUS) NATALENSIS, Parry,

Transact. Entom. Soc. Lond., vol. ii., 3rd ser., 1864, p. 36.

Dark chestnut-brown on the head and prothorax, much lighter chestnut-brown on the elytra, the suture of which, however, is dark.

Male: Mandibles as long as the head, curved laterally for a third of the length, produced slightly obliquely from there, sub-falcate at tip, strongly and equally dentate in the lower inner margin which is deeply emarginate at base and leaves a moderately broad open space, and with an inner basal tooth and two round, knobby ones at the base of the upper margin; head transverse, a little broader in the anterior than in the posterior part; the former is sinuate or slightly incised near the outer angle, the posterior angle is somewhat obtuse, or not very sharp; the eye is not much divided behind; prothorax broader than the head, sub-parallel laterally, or very slightly attenuate from the anterior angle which is somewhat rounded, to the posterior which is very sharp at tip and obliquely attenuate; it is covered like the head with a fine aciculation forming a very finely shagreened surface; scutellum punctulate; elytra very finely and closely punctate, but only finely aciculate in the large development and having only a faint trace of a supra-marginal stria; under side glabrous, finely aciculate, a little darker than the upper side but always with a redder or lighter transverse patch on each side of the metasternum; posterior tibiæ without spine.

Female: Very much smaller than the male; mandibles short, bi-carinate on the upper side; head deeply foveolato-punctate, genæ dividing the eye for two-thirds of the length and projecting much; prothorax gradually ampliate laterally from the anterior angle to the posterior and very obliquely truncate towards the base, deeply and roughly foveate laterally and with only a few scattered punctures in the centre of the disk; elytra deeply and closely punctured in the dorsal part and foveolato-punctate on the sides and in the posterior part; posterior tibiæ with one spine; the elytra, in spite of being much more deeply punctured than in the male, are more shining.

Length (exclusive of mandibles), 20–36 mm.; width $9\frac{1}{2}$ –15 mm.

Hab. Natal (Durban), Transvaal (Lydenburg), Southern Rhodesia (Manica).

This species is found also in German East Africa.

GEN. OONOTUS, Parry,

Trans. Entom. Soc., 3rd Ser., ii., 1864, p. 62.

Mentum mobile, twice as broad as long, much rounded laterally, slightly sinuate at middle at apex, ciliate there, broadly and closely foveate in its outer face; ligula bi-lobate, the ciliate part of the lobe projecting beyond the mentum; maxillæ ending in a sharp hook in the male and very densely penicillate above the hook; palpi as in *Colophon*; mandibles short, robust, arcuate, not as long as the head, bluntly bifid at tip with the upper tooth reflexed in the male; head transverse in front but with the genæ projecting from near the anterior angle almost in a line with it, eyes deeply divided by the genæ which project much beyond it; the head is somewhat deeply set in the prothorax and has two small tubercles, one on each side; labrum very small and arcuate; club of the antennæ formed of three long pectinate joints, and as long as all the intervening joints except the basal one which is as long as all the other joints put together; prothorax a little rounded laterally and slightly wider at base than at apex; scutellum very rounded at tip; elytra closely punctate, not striate; anterior tibiæ spinose from elbow to apex, the two apical spines stronger than the others, intermediate and posterior ones pluri-serrate; tarsi a little shorter than the tibiæ; prosternal intercoxal process rounded, not projecting; upper side clothed with squamose hairs, denuded here and there so as to form somewhat regular designs.

I do not know the female.

This genus seems to be restricted to the eastern part of South Africa, but it will most likely prove to occur north of that limit.

OONOTUS ADPERSUS, Bohem.,

Insect. Caffrar., ii., p. 384.

Westw., Trans. Ent. Soc., 3rd Ser., i., 1863, p. 455, pl. xvi., fig. 6.

Black, opaque, and covered on the upper side with slightly flavescent squamæ, denuded here and there in rubbed examples, scutellum

entirely clothed with the scales; head covered with deep round punctures, mandibles a little more reflexed in the male, and the tooth on the upper part is less apical and more conspicuous; genæ produced into a very distinct lobe nearly in line at apex with the anterior angle, projecting much, rounded in front, oblique laterally truncate at base; and having above the eye on each side a short tuberculate ridge; prothorax a little convex, rounded and slightly ampliate on the sides; it has, in the centre of the anterior part three small tubercles arranged in a triangle, the sides are not obliquely attenuate behind and the basal angle is sharp; scutellum much rounded at tip; elytra convex, rounded behind, oblong, not broader at base than the base of the prothorax, very closely and deeply punctured; under side deeply foveolato-punctate; from each puncture springs a short, greyish hair; anterior tibiæ irregularly serrate but having two stronger teeth at apex; intermediate ones also pluri-serrate, posterior ones with only a spine beyond the middle.

I do not think that the female is yet known. Westwood thought that the example he figured was a female, owing to the maxillæ being hooked—a constant feature of the female, I believe, in the genus *Dorcus*, to which this species was at one time supposed to belong—but I have ascertained that this character is also found in the male, the only sex known to me.

The vestiture of this insect varies very much. In some examples there are on the prothorax four more or less rounded patches of scales on each side, each patch set in a very shallow depression, but there is always a more or less distinct squamose band along the margins; on the elytra the suture is generally denuded for the greatest part of the length, and they have on each side two parallel, median patches with an elongate one under the two, or five or six ill-defined ones on each side.

Length 10–11 mm.; width $4\frac{1}{2}$ – $4\frac{3}{4}$ mm.

Hab. Natal (Durban).

GEN. XIPHODONTUS, Westw.,

Entom. Magaz., v., 1838, p. 259.

Mentum twice as broad as long, hardly concave, rounded laterally, straight in front, apical joint of labial palpi longer than the other two put together, deeply scooped beneath, last joint of maxillary palpi one-third longer than the penultimate one and sub-cylindrical;

upper lobe of maxillæ very narrow and fasciculate; mandibles parallel, long or short according to the sexes, obliquely raised, eyes incised by the canthus for about four-fifths of the length; basal joint of antennæ shorter than all the others, the two penultimate ones are straight and form the club the apical joint of which is swollen and rounded inwardly and at tip; prothorax sub-parallel or slightly attenuate in front laterally; scutellum short, rounded at apex; elytra cylindrical; legs moderately short; anterior tibiæ denticulate from the elbow to the apex, posterior ones bi-spinose outwardly, tri-digitate at apex and with the tarsi hardly shorter than the tibiæ; prosternum with a sharp triangular intercoxal projection; suture of the mesosternum and metasternum quite obliterated between the intermediate coxæ.

This genus is represented in South Africa only.

XIPHODONTUS ANTILOPE, Westw.,

Plate XXXI., fig. 4.

Entom. Magaz., v. p. 260.

X. capensis, Sturm., Catal., p. 347, pl. iv., fig. 3.

X. reichei, Cast., Hist. Natur., ii., p. 175, pl. xvii., figs. 1-8.

Black, moderately shining, and with the palpi and tarsi piceous red.

Male: Head deeply excavate in the centre; mandibles three times the length of the head, rising sub-obliquely, parallel, compressed, a little concave inwardly and deeply incised at tip, the incision forming two unequal teeth the upper of which is longer and rounded; at the base of the mandibles there is also a small marginal inner tooth; prothorax one-third longer than broad, sub-parallel, deeply excavate in front and with the median part produced into a sub-horizontal lobe tri-dentate at tip, the median tooth being a little below the line of the other two and projecting above the anterior declivity; it is slightly impressed on the discoidal part; on each side of the median lobe there is a deep and broad longitudinal furrow reaching from the base to not far from the apex of the lobe, and also a small supra-basal shallow elongate impression on each side of the median groove; the whole surface is covered with round, deep, equally distant punctures; elytra covered from apex to base with sharp narrow costæ made sinuose by being fossulate, partly laterally, partly in the middle; intervals very narrow, rugulose, opaque while the costæ are shiny; abdomen covered with foveolate punctures; meta-

sternum covered with round not closely-set punctures but having only a few punctures on the median part which is distinctly shiny, mesosternum and metasternum with deep, round punctures.

Female: Differs from the male in the shape of the mandibles which are shorter or not longer than the head, bi-dentate at tip, the upper tooth being rounded and the inferior one longer and more acuminate; the head is not excavate; the prothorax is more attenuate and rounded laterally in front, and the three tubercles in the anterior part are not set in a transverse line, the median one standing behind the other two.

Length (exclusive of mandibles), 8-13 mm.; width 4-5 mm.

Hab. Cape Colony (Knysna, Swellendam, ? Kowie).

GEN. NIGIDIUS, McLeay,

Hor. Entomol., i., 1819, p. 108.

Mentum one-third broader than long, rounded and ampliate laterally from the median to the apical part, deeply and somewhat broadly emarginate at tip and somewhat broadly concave in the inner anterior face; ligula bi-lobate, very slender, membranaceous, fringed with long, dense hairs; labial palpi short; upper lobe of maxillæ broad, sub-oblong and fringed with very long, dense hairs; apical joint of maxillary palpi flagellate, a little longer than the two preceding put together; mandibles shorter than the head, curved and moderately sharp at tip, bluntly bi-dentate inwardly, and bearing on each side of the base a vertical horn curving inwardly; head as broad as long and with the canthus of the genæ lobate and projecting much beyond the eyes which it divides entirely; antennæ moderately long, basal joint not quite as long as all the others, club glabrous and consisting of the two penultimate joints which are conical inwardly, and of the apical one which is rounded at tip; prothorax nearly parallel laterally for two-thirds of the length and slightly obliquely attenuate from there towards the base which is slightly sinuate while the apical part is straight; scutellum elongate, somewhat sharp at tip; elytra sub-cylindrical; suture of the metasternum and mesosternum not quite obliterated; intercoxal prosternal process not aculeate at tip; anterior tibiæ serrate from the elbow to the apex where the two terminal serrate teeth are set close together, posterior ones pluri-dentate on the outer side, tri-digitate at apex; tarsi shorter than the tibiæ.

The genus is represented in the Philippine Islands, Formosa and

Malacca, and in Africa (Senegal, Guinea, Gaboon, Somaliland, and Nyassaland).

Key to the Species.

Lobe of the genæ rounded laterally in front; median part of prothorax with a broad longitudinal groove enclosing a distinct carina *delegorguei*.

Lobe of the genæ diagonal, not rounded in front and very deeply excavate; median part of prothorax with a shallow, punctate median groove *validus*.

NIGIDIUS DELEGORGUEI, Thoms.,

Plate XXXI., fig. 2.

Annal. Soc. Entom. d. Franc., 1862, p. 430.

Male: Black, shining; head not excavate, covered with round, very closely set foveæ, but the outer part of the horns on the mandibles is smooth; the apical angle of the head is very sharp and dentate, under this angle there is also a sharp angular projection, and the lobe of the genæ which projects very much outside the eyes is rounded in the anterior part; prothorax nearly straight in front, slightly emarginate in the anterior angle, sub-parallel for two-thirds of the length and obliquely attenuate from there to the basal part, and with the posterior angles much rounded; it is narrowly impressed transversely along the anterior margin, and has in the centre of the disk a deep sulcus stopping a little short of both apex and base and enclosing a longitudinal, very distinct carina nearly as long as the sulcus; the walls of the furrow are smooth and the whole disk is covered with deep, closely set foveate punctures which are closer and more rugose laterally, and the smooth walls of which in the discoidal part form a few smooth areolets; scutellum with a few punctures; elytra cylindrical with the humeral angle projecting sharply, very sharply carinate and with the intervals moderately wide, deep and filled with a row of broad but shallow foveate punctures, and having another row of narrower and deeper punctures set against the side of the intervening carinate costæ; costæ, abdomen, and sternum deeply and closely foveolato-punctate, outer face of anterior and posterior femora only slightly punctate, while that of the intermediate ones is closely foveolate.

Female: The female is a little smaller than the male and similar

in shape; the vertical horn on the base of the mandibles is occasionally smaller.

Length 13-19 mm.; width 5-6 mm.

Hab. Natal (Durban), Transvaal (Rustenburg).

Burrows in dead wood.

NIGIDIUS VALIDUS, n. spec.

Plate XXXI., fig. 3.

Black, shining; base of mandibles with a vertical horn, bent at a moderately sharp angle inwardly at tip and very rugose inwardly; head very rugose, deeply excavate in front and having two transverse smooth areolets in front and a transverse smooth space in the basal part; it is obliquely angular on each side of the anterior part, the genæ are bluntly angular at the apex a little below the angular part of the anterior margin, very deeply excavated in front of the eyes which are entirely imbedded in the canthus at some distance from the outer margin, and strongly directed outwards and backwards, quite truncate at the base and projecting nearly as far as the anterior angle of the prothorax which is sub-parallel laterally, emarginate for a very short distance from the anterior angle which is a little sloping, obliquely attenuate behind, impressed transversely in front, having there a median, sharp carina; it is moderately plane on the disk which has a median, shallow, deeply punctate furrow; the anterior bi-sinuate impressed transverse part is very rugose; the sides of the prothorax are deeply, closely, and somewhat irregularly punctured, and the median part of the disk is smooth, or feebly aciculate; on each side of the anterior part there is a distinct supra-lateral fossa, and a rounded, very shallow impression behind at a short distance from the base and equi-distant from the outer margin and the median furrow; in the marginal furrow there is also a median longitudinal carina very much shorter than the anterior one which reaches from the anterior margin to nearly the apex of the dorsal furrow; scutellum punctate; elytra very sharply carinate, with the carinate part smooth and shining but having on each side of the hollow intervals a distinct series of punctures, smaller, however, than the transverse ones filling the bottom of the intervals; under side with the exception of the median part of the metasternum closely foveolato-punctate; prosternum very briefly and sparsely pubescent; legs as in *N. delegorguei*.

Length 23 mm.; width 9 mm.

This species is evidently closely allied to *N. divergens*, Waterh., but, judging from the description only, it is distinguished by the

deeply hollowed genæ, which not only divide the eye into two, but are produced very much beyond, the eye itself being quite imbedded in the lateral part of the head.

Hab. Mozambique (Rikatla).

DESCRIPTIVE CATALOGUE OF THE COLEOPTERA OF SOUTH AFRICA.

By L. PÉRINGUEY, F.E.S., F.Z.S., &c.

Assistant Director South African Museum.

FAMILY SCARABÆIDÆ.

MAXILLÆ bi-lobate, but with the inner lobe often indistinct or wanting and always immovable, ligula bifid and membranaceous, or horny and soldered with the mentum; antennæ inserted in front, near the eyes, under a ledge, varying in the number of joints but with the ultimate ones mobile, compressed, lamellate and forming a club; abdomen with five or six ventral, and eight dorsal segments; prosternum small, owing to the contiguity of the anterior coxæ; tarsi usually five-jointed, apical joint with a distinct onychium between the claws.

The sole distinctive character of this extremely numerous and very variable family is the shape of the antennal club, the lamellate joints of which are mobile. All the other characteristics vary much, owing to the great diversity of habits. Yet it forms a very homogeneous group, the sub-families of which, with perhaps the exception of one (*Orphuinæ*) are fairly well differentiated, but there are many transition groups uniting genera apparently far removed.

The distinctive characters will be found described in full when treating of the sub-families, and the following is only a short summary of those used in the classification.

Mandibles.—In the coprophagous species, especially the *Coprina* and the *Aphodiina*, these mandibles are hidden under the clypeus on the roof of the buccal cavity; they are membranaceous, but the basal part is horny, and there is a trace in some of the *Aphodiina* of a molar tooth at base.

In the *Cetoninæ*, where they approach nearer to that of the *Coprinæ*, they consist of a membranaceous inner lamella and a more horny lanceolate outer one, with a more or less distinct basal molar tooth.

The third form is found in the *Hoplini-Sericini* section of the *Melolonthinæ*, where they are wholly corneous, thick externally with the inner edge sharp, and have at the base a very small molar tooth.

The fourth form occurs in the *Troginæ*, *Hybosorinæ*, *Geotrupinæ*, the remainder of the *Melolonthinæ*, the *Rutelinae* and the *Dynastinæ*. Here the inner edge has no membranaceous lamella, or if there is one, it is generally restricted to the median part, and is not easily seen; the molar tooth is also more developed than in any of the other three sections.

Labrum.—Labrum horny or membranaceous, not visible when it is membranaceous, and then finely ciliate.

Maxillæ.—The maxillæ are always robust. In the coprophagous species the upper lobe is semicircular, ciliate and wider than the inner one, which is either without spine, or has one, or more, hooked tooth; in the others this inner lobe has disappeared, and is replaced by a hook simple or pluridentate, and penicillate or not. The maxillary palpi have four joints.

Palpi.—The labial palpi are short and tri-jointed; but in some species of *Onthophagus* and *Aphodius* the palpigers are as much developed as the basal joint.

Ligula.—The ligula is either membranaceous, in which case it is separated from the mentum and is more or less densely ciliate, or it is horny and becomes part of the mentum with which it is fused. In the *Dynastinæ* this ligular part is always sloping backwards from the edge of the mentum, and it is probable that this fusion with the mentum has been brought about by the great development of the palpigers. This is especially noticeable in the *Chironinæ*. Whenever the ligula has become fused with the mentum there is in the inner part of the latter two diverging pubescent bands which ought, I think, to be considered as the paraglossæ. These latter are not distinct in the species with free ligula, but they can be said to be represented by the fringe of hairs which are always present.

Head.—The head is not very large, and is inserted in the prothorax, and occasionally separated from the clypeus by a suture or a carina; the latter is strongly dilated laterally and hides the buccal organs (*Coprinæ*, *Aphodiinæ*), or it is elongato-quadrate, sub-semicircular or parabolic, and covers slightly the buccal organs, (*Melolonthinæ*, *Rutelinae*, *Cetoninæ*), or lastly, obliquely attenuate

laterally, and leaving the mandibles uncovered (*Chironinæ*, *Troginæ*, *Hybosorinæ*, *Geotrupinæ*, *Orphuinæ*, *Dynastinæ*).

Eyes.—The eyes are lateral, large, divided by a canthus formed by the genæ, except, however, in the *Troginæ*, where they are inserted under a ledge formed by the genæ, as in *Ateuchus*, but not divided.

Antennæ.—Antennæ inserted in front of the eyes under a ledge, and with joints varying from eight to ten in number; the apical ones are mobile, lamellate, and form a club consisting generally of three more or less concave and convex joints, but which vary considerably in number, shape, and size in the *Melolonthinæ*.

Prothorax, Scutellum, and Elytra.—The prothorax varies considerably in shape; the scutellum is wanting in some *Coprinæ*, but is present in the other sub-families; the elytra never overlap the abdomen to any great extent.

Abdomen.—The abdomen has six ventral segments, sometimes reduced to five (*Troginæ*), and eight dorsal ones. The penultimate dorsal segment (propygidium) is partly horny like the last one (pygidium), but there are exceptions (*Trox*, *Bolboceræ*), and the disposition of the seven pairs of spiracles affords a very good character for the division of the family.

Legs.—The legs are adapted for digging, the eggs being deposited in the ground. The anterior are broad or very broad and strongly digitate or dentate outwardly, but the four posterior ones vary greatly; in some *Coprinæ* the anterior tarsi are entirely wanting; they are, however, five-jointed normally, but in some myrmecobious *Cetoninæ* (*Scaptobius*, *Trichoplus*, *Placodidus*) some of these joints are fused and vary apparently in number; the claws are simple and equal in the *Cetoninæ*, and also in the *Coprinæ*, *Aphodiinæ*, *Chironinæ*, *Troginæ*, *Hybosorinæ*, *Orphuinæ* and *Geotrupinæ*, which, with the exception of the *Cetoninæ*, form the first section of the family (LAPAROSTICTI), and in which, with the exception of the *Troginæ*, the ligula is not soldered with the mentum; they are very variable, and not equal in the *Melolonthinæ*, *Rutelinae*, and *Dynastinæ*, which, with the *Cetoninæ*, are included in the second section of the family (PLEUROSTICTI); but in both sections there is on the apex of the last tarsal joint, and between the two claws, a slender, rod-like process ending in two setæ or penicillate at the tip, (*onychium*) and sometimes as long as the claws themselves (*Rhizoplatys* in the *Dynastinæ*).

Stridulation.—Some species of *Coprinæ*, *Dynastinæ*, *Troginæ* have organs of stridulation, consisting of transverse raised lines, generally disposed in two rows on the penultimate dorsal segment; the noise

is produced by the friction of the abdomen against the inner edge of the elytra.

Sexual Characters.—The sexual outer characters are very strongly marked in some of the sub-families. They consist in cephalic and prothoracic horns, tubercles or excavations, especially in many of the *Coprinae*, *Geotrupinae*, *Orphninae*, *Dynastinae* and a small number of *Cetoniinae*; in the other groups the difference is to be found in the shape of the clypeus, the antennal club, the claws, &c., sometimes the two sexes are alike. Although the enormously developed horns on the head and prothorax of some of the males might prove to be weapons of offence, dangerous even to armour-clad insects as some of these are, I am not aware that they have been observed using them in fight; but I have two examples of *Heliocopris gigas*, which were found dead on the veld, having their cephalic horns interlocked; one had turned over in the struggle, and both in death retained this position. It is worthy of note that together with males, in which the sexual characters are exaggerated, are found others, in which these scarcely differ from those of the females; or, in others again, having the distinctive characters considerably less conspicuous than in the large development; with this difference there is a corresponding diminution in general size.

Habits and Mode of Life.—Some SCARABÆIDÆ feed on excrements, decomposed animal and vegetable matter, many on roots, others on leaves of trees or shrubs; some prefer the nectar of flowers or the juices, or sap exuding from trees and creepers; some are suspected of parasitism or commensalism, and the larvæ of some *Dynastinae* and *Cetoniinae* are now known to feed on the material of which termite mounds are made. The habits of the South African species are mentioned, when known, with the description of genera and species.

The Scarabæid fauna in South Africa.—The former abundance of big game, now replaced by cattle, has naturally made its influence felt in South Africa, and the COPRINÆ are especially numerous. Most of the genera are, however, represented elsewhere, and many species are very closely allied to those occurring in the Eastern part of Africa as far as Abyssinia, and even in Senegambia; some are even identical.

In the *Scarabæini*, however, there are six genera (*Pachysoma*, *Sceliages*, *Circellium*, *Sphengæcus*, *Odontoloma*, *Gyronotus*), which are restricted to South Africa; and *Circellium* is even restricted to the South-Western Districts of the Cape Colony; while in the *Coprini*, *Epirhinus*, *Macroderes*, *Delopleurus*, *Heteroclitopus*, and *Parapinotus* are peculiar to South Africa, where also the species

of *Coptorrhina* are fairly numerous (ten); of this latter genus, one representative only is found on the West, and one on the East Coast of Africa.

The large and widely distributed genus *Copris* has numerous representatives, two of which—*Copris globulipennis* and *Catharsius heros*—have a very peculiar facies; the *Onitis* abound in South Africa, and include the giants of the group (*O. paradoxus*, *Bohemani*, &c.); while two genera, *Tapeinopterus* and *Neonitis*, seem to be restricted to the South African region. Species of *Onthophagus* are very numerous, but it cannot be said that on the whole the South African species have a special facies. This is also the case with *Oniticellus*, of which all the species differ very much from one another; *Drepanocerus* was thought at one time to be restricted to South Africa, but it has been met with in Zanzibar and Abyssinia. In the APHODINÆ, only the genera *Harmodactylus* and *Drepanocanthus* are known, so far, to be peculiar to South Africa; there is none among the HYBOSORIDÆ, GEOTRUPIDÆ, and TROGINÆ, and only one, *Hystrichocanthus*, in the ORPHNINÆ.

In the DYNASTINÆ the adaptation of several species to a mode of existence connected with white ants (*Termes*, spp.) accounts for the comparatively large number, nineteen genera and forty-eight species. But of these only nine genera are restricted, so far as I know, to South Africa. They are: *Pöntodoitoscema*, *Hyboschema*, *Orsilochus*, *Callistemonus*, *Homæomorphus*, *Pseudocyphonistes*, *Syrichthus*, *Syrichthodoutus*, *Venedus*.

It is in the MELOLONTINÆ that the South African Scarabæid fauna is especially rich, not only in genera, but also in species. The group *Pachyemides*, with eight genera, is peculiarly South African, being restricted to the Cape Colony with the exception of a few *Eriesthis*, three species of which are found in Natal and in the Transvaal, and the true *Hopliini* are exceedingly numerous and have a facies especially their own. The purely South African genera are *Dichelus*, *Encyophanes*, *Diaplochelus*, *Platychelus*, *Mitrophorus*, *Monocheilus*, *Gymnoloma*, *Goniaspidius*, *Dicranocnemus*, *Nanniscus*, *Cylichnus*, *Anisochelus*, *Scelophysa*, *Lepisia*, *Harpina*, *Tugela*, *Microdoris*, &c.; the genus *Hoplia*, which is spread on most of the regions of the globe, has also a few representatives (three) in South Africa. A few species, however (four), belonging to the genera *Eriesthis*, *Dichelus*, *Monocheilus*, have been recorded—three from East Africa and one from Loanda. ^{A few} Many of the species are evenly distributed from Natal to Namaqualand, but I have not yet seen any from Damara- and Ovampo-land. Their time of appearance is very short. They are found buried in the corolla of flowers, especially in *Composite*,

sometimes in incredible numbers. The true *Sericides*, as represented by *Triodonta*, *Serica*, *Omaloplia*, *Trochilus*, and *Pleophylla*, are very numerous, but only the last genus is peculiar to South Africa. *Ablabera*, with fairly numerous species, ~~*Serica*~~, *Ablaberoides*, and *Tulbaghia* are indigenous. The true *Melolonthini* are not numerous, and only two genera are purely South African, but in the *Macrophyllini* five genera having a very peculiar facies are not found elsewhere; they are *Sparrmannia*, *Sebaris*, *Onochæta*, *Macrophylla*, *Encylophylla*; and in the *Pachypodini*, *Achloa*, *Paraclitopa*, *Clitopa*, *Ædanomerus*, &c., can be considered as South African genera.

The sub-family *RUTELINÆ* is only represented by the genera *Anomala*, *Popilia*, *Phænomeris*, and *Adoretus*, none of which are restricted to South Africa.

But the *CETONINÆ* are very numerous in genera and species, and some of the purely South African forms are very peculiar; such are *Hypselogenia*, with a most variable species; *Ischnostoma*, with five; *Heteroclita*, numbering two; *Rhinocæta*, also with two species living in cattle enclosures, *Xiphoscelis*, *Anoplochilus*, *Odontorhina*, &c.

In the tribe *Cremastochilini*, of which several genera are known to be myrmecobious, *Gennuchus*, *Scaptobius*, *Trichoplus*, *Nyassinus*, *Placodidus*, are, so far as we know, restricted to the South African fauna; and among the *Trichini*, *Agenius* and *Stegopterus* are also South African.

A full table of the distribution of the genera will be found appended to this part of the Catalogue.

Classification.—Sharp has slightly altered Lacordaire's arrangements, which excluded the sub-family *Melolonthinæ* from the *LAPAROSTICTI*, and he divides the Family according to the disposition of the spiracles on the abdomen as follows:—

<i>Laparosticti</i>	{ <i>Coprinæ</i> , <i>Melolonthinæ</i> .
<i>Pleurosticti</i>	{ <i>Rutelinæ</i> , <i>Dynastinæ</i> , <i>Cetoninæ</i> .

This arrangement throws, however, the *Chironinæ*, *Orphuinæ*, *Hybosorinæ*, and *Geotrupinæ*, which are certainly not coprophagous insects, and the *Troginæ*, which are still less so, among the true *Coprinæ* and *Aphodiinæ*, whereas their truest affinity lies with the *Dynastinæ*, which, however, are pleurostictic; and in spite of the slight difference in the position of the spiracles, I prefer to leave the *Melolonthinæ* in the pleurostictic division, as proposed by Lacordaire and other authors.

FIRST DIVISION.

Abdominal spiracles placed on the connective membrane of the dorsal and ventral segments SCARABÆIDÆ LAPAROSTICTI.

A². Ligula ^{an}membraceous, free.

B². Abdomen consisting of six ventral segments.

C². Mandibles hidden by the clypeus.

D². Posterior tibiae with one apical spur *Coprinæ*. 21

D⁴. Posterior tibiae with two apical spurs.

Antennæ nine-jointed *Aphodiinæ*. 369

C⁴. Mandibles not hidden by the clypeus.

c³. Antennæ nine-jointed *Chironinæ*. 473

c². Antennæ ten-jointed.

d². Abdominal segments free *Orphinæ*. 498

d⁴. Abdominal segments, except the apical one, soldered . . . *Hybosorinæ*. 492

e⁴. Antennæ eleven-jointed *Geotrupinæ*. 477

A⁴. Ligula horny, almost fused with the mentum.

B⁴. Abdomen consisting of five ventral segments *Troginæ*. 451

SECOND DIVISION.

Abdominal spiracles placed partly on the connecting membrane, partly on the ventral segments SCARABÆIDÆ PLEUROSCTICTI.

A. Abdominal spiracles placed almost in a line, but only the basal three on the connecting membrane, the terminal one not usually covered by the wing-cases *Melolonthinæ*.

A. Abdominal spiracles on two lines, the basal three on the connecting membrane, the others, very diverging, on the ventral segments.

a². Claws of the tarsi unequal, labrum distinct, free . . . *Rutelinae*.

a⁴. Claws of the tarsi equal, labrum not visible.

b². Mandibles projecting beyond the clypeus, front coxæ transverse, deeply sunk in the cotyloid cavities . . . *Dynastinæ*. 507

b⁴. Mandibles hidden by the clypeus, front coxæ not very transverse, and projecting from the cavities . . . *Cetoninae*.

With the exception of the *Glaphyrinæ*, all the sub-families are represented in South Africa. I have created a new sub-family for the reception of the genus *Chiron*, which can certainly not be included in the *Aphodiinæ*, and I have placed the *Dynastinæ* after the *Orphinæ*, with which they have manifest affinities.

All the descriptions of genera and species have been made from the specimens, with extremely few exceptions, and these are mentioned.

Genital armature of the male.—I have found that an examination of the genital armature of the males cannot be dispensed with in the specific study of the *Scarabæidæ*. In many cases it is well-nigh impossible to make out certain species without comparing these genital organs. In certain groups, they are quite different in shape in species of which the distinctive characters could otherwise be ascertained only with difficulty and described with still greater difficulty. But whereas in certain genera this character is of the greatest importance, in others the difference in shape is almost *nil*, or is not so marked as other external characters. I have had many of these genital armatures figured, and I am quite sure that they will prove not only useful, but even indispensable. In many cases they bring forcibly to the mind the impossibility for the males of certain species to successfully mate with the females of very closely allied species.

Generically the shape of these organs does not seem to have the same importance.

I have been able to compare, through the courtesy of Professor Chr. Aurivilius, my material with Boheman's and Fähræus' types and co-types; I have also examined some species from the Harold Collection now in the possession of Mons. René Oberthür, in Rennes, France; Mr. R. Oberthür has kindly consented to compare some of my examples with the types in his collection; to Professor H. Kolbe, of the Berlin Museum, I am indebted for the loan of some of Klug's co-types, and for valuable information regarding other species, and to Professor Bouvier of the Paris Museum for all the South African types of Blanchard. Mr. O. E. Janson, of London, has helped me occasionally with his advice; Mr. C. O. Waterhouse, of the British Museum, has very kindly compared some of my examples with some of his types; and the late Dr. Candèze had placed at my disposal his collection of the *Hoplini* collected by Drège, named by Dejean, and described by Burmeister, and in which most of the species are represented.

Moreover, I have had a large quantity of material at my disposal from nearly all parts of South Africa.

For this material, which has taken me twenty-two years to bring together, I am indebted to many correspondents, whose names are always given in the introductory pages of the various parts of this Catalogue as its publication proceeds.

To Messrs. A. W. Eriksson, G. A. K. Marshall, C. N. Barker, A. E. Haviland, F. C. Selous, G. Alston, the sons of the traveller

C. J. Andersson, Alex. Ross, Rev. F. Kolbe, Rev. J. A. O'Neil, I am especially indebted for invaluable information, as well as for the accumulation of material. But there are many other correspondents who have also helped, and to those I tender my very best thanks, and may this Catalogue, in which I have endeavoured to bring together within certain limits all that is known of the South African representatives of the Family SCARABÆIDÆ, be to them the tangible expression of my indebtedness.

The types and co-types of nearly all the new genera or species are in the South African Museum.

SUB-FAMILY COPRINÆ. = *Scarabæinæ*

Clypeus semicircular, strongly developed, hiding the buccal organs, ligula membranaceous, free, bilobate, labrum hidden under the clypeus, mandibles lamelliform, membranaceous or slightly horny at base, maxillæ with both lobes strongly developed, but with the upper one broader than the inner, and briefly villose; labial palpi with the apical joint smaller than the preceding, sometimes obliterated; antennæ eight- or nine-jointed, the club tri-jointed, ovate, or lamellate, basal joint very long; eyes divided by a canthus formed by the genæ, and with the inferior part larger than the upper; prothorax and elytra variable in shape; abdomen with six ventral segments fused together; coxæ variable, but longitudinally or obliquely set; anterior tibiæ dilated at tip, strongly dentate and intended for digging; posterior legs with only one apical spur, intermediate ones with one or two.

The sub-family is divided in two tribes.

Intermediate and posterior tibiæ arcuate, slender, and increasing gradually; sexual differences absent, or not very conspicuous . . .

Scarabæini. *Scarabæini.* 21

Intermediate and posterior tibiæ dilated at tip; sexual differences seldom wanting

Coprini. 108

TRIBE SCARABÆINI.

Tibiæ slender, anterior ones with or without tarsi; the joints of the posterior legs narrow and of nearly equal width from base to apex.

Key to the Genera.

- A3. Intermediate coxæ somewhat near to each other and very obliquely set; elytra covering slightly the sides of the abdomen

SCARABÆIDES.

B². Body winged, intermediate coxæ separated.

C². Anterior legs without tarsi.

D². Antennæ nine-jointed.

E². Intermediate legs with one spur.

Clypeus six-dentate, teeth equal, metasternum
cuneiform, mesosternum small.. .. *Scarabæus.* 23

E¹. Intermediate legs with two spurs.

Metasternum plane, mesosternum large, club of
antennæ normal *Circellium.* 61

Metasternum cuneiform, mesosternum small, club
of antennæ cupuliform *Sceliages.* 62

C¹. Anterior legs with tarsi.

D¹. Antennæ eight-jointed.

Metasternum cuneiform, elytra very deeply sinuate
laterally *Gymnopleurus.* 64

B¹. Body wingless, intermediate coxæ nearly contiguous.

Metasternum plane, mesosternum large, sharply acumi-
nate between the intermediate coxæ; claws of tarsi
greatly developed *Pachysoma.* 76

A². Intermediate coxæ very distant from each other, and longi-
tudinal, lateral fold of elytra wide, intermediate tibiæ with
two spurs, posterior tarsi compressed CANTHONIDES.

B². Anterior legs without tarsi or spur.

Apical joint of labial palpi very small, basal dilated,
pygidium vertical *Anachalcos.* 81

Apical joint of labial palpi small, basal dilated, pygidium
vertical *Gyronotus.* 84

Labial palpi not dilated, pygidium horizontal *Byrrhidium.* 87

B¹. Anterior legs with tarsi and spur.

C². Clypeus bi-dentate.

Second joint of posterior tarsi longer than the first, no
wings *Epilissus.* 95

Second joint of posterior tarsi not longer than the first,
body winged, depressed *Epirinus.* 89

C¹. Clypeus six-dentate.

Anterior tibiæ truncate, gradually dilated and strongly
serrate above the digitation *Aphengæcus.* 97

Anterior tibiæ truncate, strongly dilated at tip, and not
serrate *Odontoloma.* 86

A¹. Intermediate coxæ very much apart, lateral and longitudinal SISYPHIDES.

Fold of elytra extremely narrow, abdomen compressed,
aculeate, antennæ eight-jointed *Sisyphus.* 48

GEN. SCARABÆUS, Lin.,

Syst. Nat., 12th ed., 1767, p. 545.

Actinophorus, Creut; ~~/~~ *Ateuchus*, Web.; *Heliocantharus*, McLeay;
Mnematum, McLeay.

Mentum ovoid, sometimes with a distinct basal vertical tubercle; last joint of labial palpi very small, that of the maxillary narrow, elongate, grooved outwardly; clypeus semicircular, sometimes very broadly triangular (*S. laticeps*), always armed with six triangular, more or less recurved teeth the two median ones of which are often sub-carinate underneath, or with vertical teeth pointing downwards and with a smaller tooth in the centre (*Sebasteos*); the surface of the head and of the lateral lobes is deeply punctured, the punctures are very elongate and closely set on the clypeus, but the base of the head and of the lateral lobes is sometimes granulate; there is always a more or less distinct transverse ridge on the head, as well as a median protuberance, more or less conical, and turning into a very distinct tubercle in some species (*S. zambesianus*, *cornifrons*, *modestus*); the eyes are divided into two by the genæ of the clypeus, and have always a superciliary ridge; antennæ ten-jointed, basal joint as long as the five following, the three apical ones forming the club; prothorax large, always convex, although more depressed in some species (*S. cicatricosus*, *parvulus*, *lucidulus*, *rubripennis*, *fritschii*), granulate or punctured with the sides often granulose, broader than the elytra, rounded and more or less closely crenulate laterally and always ciliate; scutellum indistinct or very small (*S. prodigiosus*, *infernalis*); elytra little convex except past the middle where they are often gibbose along the suture, finely striate with the intervals more or less deeply punctured and sometimes nearly smooth, but always showing traces of two series of punctures; shoulders always slanting and sides sometimes nearly parallel, but oftener a little ampliate past the shoulder and attenuate towards the apex; the outer margin is carinate, and there are always two supra-marginal carinæ more or less overhanging the outer margin and set close to one another; in the sub-genus *Sebasteos*, however, the inner carina disappears or becomes obliterated either in the posterior part (*S. caffer*, *laticeps*), in the anterior part (*S. galenus*), or is normal (*S. plausibilis*); the pygidium is exposed, obtusely triangular, punctured or granulose; the mesosternum is more or less aculeate in front and more or less deeply impressed in the centre, or in the centre and base, while the anterior part is often more or less deeply grooved; the anterior legs are tri- or quadri-dentate outwardly, but in the first instance there is always a basal tooth smaller than the

three apical ones, and very often these teeth are preceded by a strong serration; the inner part of the tibiæ is often simple, serrate, somewhat laminate at tip (*S. prodigiosus profanus*), mucronate at apex (*S. hottentotus*, *S. galenus*), and occasionally with short, vertical teeth on the upper side (*S. modestus*); the anterior femora are very much developed at base, muticous or armed with two conspicuous spines underneath (*Pachylomera femoralis* ♂) or a small one on the lower edge of the groove (*S. metallicus*), but the upper edge of the groove is more or less distinctly serrate; the intermediate and posterior tibiæ are densely ciliate and end in a very long, compressed spur, slightly arcuate and fused, or nearly so, with the tibia (*Pachylomera*, *Scarabæus*), or arcuate nearly at right angles from about two-thirds of the length, articulate and slender (*Sebasteos*, save for *S. laticeps*, in which the spurs are not more sharply arcuate than in other species of *Scarabæus*), they are carinate outwardly, and the ridge has two more or less distinct blunt teeth; the posterior legs are always sinuate and sometimes conspicuously so (*S. interstitialis*, *S. licitus*, &c.); in *S. caffer* the two posterior trochanters are produced in a distinct, sharp spine projecting beyond the junction of the femur. The two valves of the genital armature of the male are either symmetrical (*Pachylomera*) or asymmetrical (*Scarabæus*, *Sebasteos*).

I cannot detect any difference in the appearance of the two sexes, except in *Pachylomera femoralis*, the male of which has two spines instead of one on the under side of the anterior femora. When the inner serration of the anterior tibiæ is strong in the female, this serration is not quite so conspicuous, but the difference is hardly noticeable.

Until quite recently it was thought that the female *Scarabæus* deposited its egg or eggs in the round ball of dung rolled by her, but it is now known (*vide* Fabre's *Souvenirs Entomologiques*, 5th series, 1897) that this ball is intended for elaboration at leisure, under the ground, into a pear-shaped mass, in which the egg is deposited at the narrowed apical part. The male also buries the ball, but it is appetite only that prompts him to do so. Fabre says that he has timed a *Scarabæus sacer* of Southern Europe taking his meal. This lasted twelve hours without interruption, and during that time the *Scarabæus* digested nearly its own volume of food.

These round balls, sometimes one and a half inches in diameter, are often found in the Cape Colony partly eaten on one side. They are dug out by mice and baboons, but it is most probable that this digging out is intended for securing the beetle, and not for the sake of its provision of victuals.

The larva, like that of *Sisyphus* and of *Gymnopleurus*, has the fifth, sixth, and seventh dorsal segments very conspicuously gibbose.

The South African species are diurnal, but Mr. G. A. K. Marshall informs me that *S. infernalis* is nocturnal.

I have not been able to identify or to recognise the following South African species: *S. costatus*, Wied.; *S. palemo*, Oliv.; and *S. reichei*, Waterh. The first and third species are most likely identical with some of the species here described, and, judging from Olivier's figure, *S. palemo* seems to be identical with *S. intricatus*.

The Key to the South African species does not give their true affinity, and it is only intended as a help to identification. These species should be grouped as follows:—

Type *S. cicatricosus*.

S. parvulus, *lucidulus*, *rubripennis*, *glavicornis*, *fritschi*, *alienus*, *proximus*, *cognatus*, *suri*, *viator*.

Type *S. funebris*.

S. rugosus, *ambiguus*, *interstitialis*.

Type *S. satyrus*.

S. profanus, *pacatus*, *zambesianus*, *rixosus*, *modestus*.

Type *S. infernalis*.

S. prodigiosus, *metallicus*, *usurpator*.

Type *S. bonellii*.

S. clericus, *nigro-æneus*, *cupreus*, *mashunus*.

Type *S. savignyi*.

S. hottentotum^{ex}, *convexus*, *rusticus*, *licitus*.

I have divided the genus into three sections, which might be considered as sub-genera. The distinctive characters are not of sufficient importance to allow of looking upon them as distinct genera. One, *Pachylomera*, seems restricted to South Africa; the other, *Sebasteos*, represented at one time by one species, *S. galenus*, has now one representative on the Congo, and *Scarabæus* occurs all over Africa, Southern Europe, Persia, Asia Minor, and India.

It is quite possible that some of the South African species may in time be found to have a much wider range, and that some Senegal kinds may prove to be identical with some of them. An examination of the genital armature of the male has enabled me to discrimi-

nate between species very closely allied to one another. Although very distinct in some groups, in others the difference is not great, but that small difference is strengthened by the habitat. Thus in *S. metallicus* and *S. usurpator* the facies, as well as the colour, are very similar, but the genital armature differs very much; in *S. bonellii* and in *S. clericus* the difference between the two genital armatures is very feeble, and the general appearance is nearly similar, but *S. clericus* does not occur in the Cape Colony, except on the northern border (Griqualand West), nor in Natal, as far as I know, and I am somewhat inclined to consider it as a mere variety of the former. I have also examined the clasping organs of some of the convex, metallic African species from the West Coast, Abyssinia, &c., and the shape of the valves is certainly distinct, although specifically different from that of the other groups.

Key to the Sub-genera.

- A². Sheaths of the genital armature symmetrical.
 B². Spurs of intermediate and posterior tibiae fused with the leg.
 Anterior femora extremely large *Pachylomera*.
 A¹. Sheaths of the genital armature asymmetrical.
 C². Clypeus with the two median teeth not dentate vertically
 underneath.. . . . *Ateuchus*.
 B¹. Spurs of intermediate and posterior tibiae articulate.
 C¹. Clypeus with the two median teeth dentate vertically
 underneath.. . . . *Sebasteos*.

SUB-GEN. PACHYLOMERA, Kirby,

Zoolog. Journ., iii., 1828, p. 520.

PACHYLOMERA FEMORALIS, Kirby,

Plate XXXI., fig. 5, and Plate XXXVII., fig. 1.

Zoolog. Journ., iii., p. 520, pl. xiv., fig. 1.

P. horridus, Bohem., Ins. Caffr., ii., p. 179.

Black, moderately shining; antennæ piceous brown; head finely and distinctly granulose, but nearly smooth in the centre of the vertex; clypeus covered with very elongated and very closely set punctures merging into one another, and forming striæ, teeth of the clypeus not very long, but acute, and not very much reflexed; prothorax little convex, distinctly bi-sinuate at the apex the angles of which are sharp, very diagonal laterally from the anterior angle to about the median part, lateral margin serrulate, basal margin still more feebly serrulate, disk sub-opaque, finely granulate, and with

five impressions the edges of which are broad and shining; the first impression is diamond-shape, placed in the centre of the disk, and has two slanting ones under it, nearly abutting against a supra-lateral one more or less deep or broad; elytra nearly plane with the humeral angle a little oblique, slightly attenuate towards the apex, very narrowly striate; the intervals are very finely shagreened and have a double series of aciculate punctures; lateral margin bi-carinate, suture slightly gibbose at middle; pygidium finely aciculate; intermediate and posterior tibiae fringed with a short thick black pubescence; anterior femora extremely massive, sharply carinate in the anterior margin, with the ridge serrulate and pluri-dentate; those of the ♂ are thicker still than in the ♀, and have a sharp tooth under the marginal one; anterior tibiae distinctly quadridentate outwardly, and with one or two serrate teeth next to the digitation, sub-falcate internally and provided with a non-serrate lamina ending in a distinct blunt tooth in a line with the outer basal one; metasternum with a deep groove with rounded walls between the intermediate coxae, and an elongate impression with a narrow median line disconnected from the anterior groove, sides of metasternum very finely granulose.

Length 34–38 mm.; width 21–28 mm.

Hab. Transvaal (Rustenburg, Lydenburg); British Bechuana-land (Palapye), Southern Rhodesia (between Limpopo and Zambese, Victoria Falls), Mozambique (Maputa River, Lourenço-Marquez, Beira), Northern Damaraland, Ovampoland (Omrumba), N'Gamiland, teste Kolbe. Occurs also in Central and East Africa (Usambara, Tanga, Dschaggaland, Dar-es-Salaam, Bagamoyo).

PACHYLOMERA OPACA, Lansb.,

Coleopt., Heft. xii., 1874, p. 4.

“Near *P. femorata*, Kirb.; it is easily distinguished besides its smaller size by the following characters: the teeth of the clypeus are stronger, the longitudinal carina on the vertex is missing, the head is less broad, the prothorax is wider at base and has a more triangular shape, the posterior angles are recurved in a spine, while in *P. femorata* they are nearly rounded, it is more distinctly granulate, and instead of the stronger granules seen in *femorata*, there are a few scattered punctures; the elytra are more plane, equally granulose all over without any trace of scattered punctures, and are less distinctly striate; the anterior tibiae have no vestige of a fifth outer tooth.”

This description is based on one example only from Lake N'Gami, and I have not been able to identify the species.

SUB-GEN. SCARABÆUS, Lin.

Key to the Species.

FIRST DIVISION.

Upper side bronze or bronze green.

A¹. Elytra convex.

Prothorax finely granulose and having a smooth, longitudinal, narrow, lanceolate median space reaching from near the median part to the base *cupreus*.

Prothorax covered with small, very closely set foveæ, and having a smooth, narrow, median longitudinal line reaching from base to apex; intervals of elytra broadly and deeply punctured; colour of upper side bronze green *mashunus*.

Intervals of elytra with two series of small, not closely set punctures; colour of upper side bronze *usurpator*.

A². Elytra not convex.

Prothorax finely granulose and having a supra-basal, transverse, smooth space produced from the base in a blunt triangle, the apex of which reaches nearly the median part *metallicus*.

SECOND DIVISION.

Upper side black or with a faint metallic green tinge, with one exception (*rubripennis*).

A². Prothorax moderately convex, gradually sloping in front, and marginate or punctate along the base.B². Fore tibiae distinctly quadri-dentate outwardly.C². Elytra quite plane, nearly sub-parallel.

Prothorax foveolate; elytra with the intervals raised and divided at equal intervals by deep, transverse impressions *intricatus*.

Prothorax deeply pitted; elytra black, intervals plane and with a series of deep punctures; antennæ black *parvulus*.

Prothorax deeply pitted and densely pubescent; elytra somewhat æneous, intervals sub-carinate, striæ deeply punctured; antennæ black *lucidulus*.

Prothorax pitted more closely in front than behind; elytra brick-red, intervals between striæ plane, impunctate; club of antennæ flavescent *rubripennis*.

Prothorax deeply and closely pitted; elytra black, intervals between the striæ costate, costæ impunctate; club of antennæ yellow *flavicornis*.

Prothorax deeply and moderately pitted, and having a basal smooth area on each side of the central smooth line; elytra black, intervals between the striæ non-costate *fritschii*.

Prothorax finely granulate, very parallel, not broader than the base of the elytra, not sinuate below the shoulders; pygidium with a longitudinal median line *proximus*.

Prothorax similar to that of *S. proximus*; elytra a little sinuate below the shoulders; pygidium without longitudinal line. *cognatus*.

C¹. Elytra moderately convex, distinctly sub-gibbose along the suture, not sub-parallel.

D². Mentum simple.

a². Head with a frontal tubercle.

Prothorax covered with deep sub-scalbrose, nearly coalescing foveæ, elytra not much attenuate laterally behind, striæ finely geminate, anterior tibiæ not serrate inwardly; size moderate *alienus*.

Prothorax covered with moderately closely set punctures, striæ of elytra very fine, simple, anterior tibiæ strongly serrate inwardly; size large *zambesianus*.

a¹. Head without a frontal tubercle.

Prothorax with scattered, shallow punctures, and four more or less distinct impressions in the posterior part; intervals of elytra raised *suri*.

Prothorax with two indistinct impressions; intervals of elytra plane *viator*.

Prothorax covered with irregular foveate punctures, slightly granulose laterally; intervals of elytra raised, and with one series of foveæ on each—

Posterior tibiæ normal. *funbris*.

Posterior tibiæ strongly bi-sinuate *interstitialis*.

Prothorax covered with shallow foveæ enclosing a minute granule; intervals of elytra with a double series of very broad but shallow punctures. *rugosus*.

Prothorax sparingly and not deeply punctured; elytra very finely shagreened *ambiguus*.

Prothorax very finely punctato-granulate; anterior tibiæ not serrate nor laminate *satyrus*.

Prothorax very finely and closely granulose; anterior tibiæ with a distinct inner lamina deeply emarginate in the posterior part. *profanus*.

Prothorax very finely and closely granulose; anterior tibiæ simple *pacatus*.

D¹. Mentum produced in a vertical tubercle.

a. Head tuberculate in the frontal part.

Prothorax closely punctured; anterior tibiæ mucronate inwardly at tip and with seven or eight conspicuous teeth; vertical tubercle of mentum very long and bifid *modestus.*

Prothorax moderately closely punctured; anterior tibiæ simple inwardly; vertical tubercle of mentum not very long, simple. *rixosus.*

B¹. Fore tibiæ with three greatly developed outer teeth, and one rudimentary basal one.

C². Elytra not plane.

a². Upper part black.

Prothorax finely granulose, and with the supra-basal part very slightly punctulate, median basal groove hardly noticeable *bonellii.*

Prothorax closely punctulate, basal part included, a median basal longitudinal groove *clericus.*

a¹. Upper part dark green.

Prothorax very closely foveolate in the anterior part, closely and finely granulose laterally, and having a distinct longitudinal denuded line *nigro-ceneus.*

C¹. Elytra plane.

Prothorax with three longitudinal smooth spaces reaching close to the apex and connected with a smooth, supra-basal, transverse, sinuate band, median smooth space lozenge-shape; elytra with the second and third intervals distinctly raised, punctures in the intervals broad and shallow *infernalis.*

Prothorax with a longitudinal lanceolate smooth space reaching the apex; intervals of elytra not raised, very finely aciculate, the double series of punctures fine and deep; anterior femora with a small, median spine . . . *prodigiosus.*

A¹. Prothorax very convex and somewhat retuse in front.

B². Base of prothorax neither marginate nor punctate.

Fore tibiæ distinctly quadri-dentate.

Prothorax impunctate and with two nearly median round impressions as well as a sub-lateral one; anterior tibiæ not mucronate or serrate inwardly *savignyi.*

Prothorax impunctate and not impressed; anterior tibiæ distinctly serrate inwardly and outwardly, outer margin normal—

Club of antennæ black *convexus.*

Club of antennæ yellow *rusticus.*

Prothorax smooth, sparsely punctulate, outer margin mucronate at the base; anterior tibiæ not mucronate inwardly at tip, but serrulate outwardly; posterior tibiæ distinctly sinuate *ebenus*.

B¹. Base of prothorax punctate.

Prothorax smooth, sparingly punctulate; anterior tibiæ mucronate at tip, inwardly and strongly serrate; posterior tibiæ not sinuate *hottentorum*.

SCARABÆUS CUPREUS, Casteln.,

Plate XXXI., fig. 6, and Plate XXXVII., fig 2.

Hist. Natur., ii., 1840, p. 65.

S. ceruginosus, Klug., Monatsb. Berl. Acad., 1855, p. 650.

S. cupreus, Bohem., Insect. Caffrar., ii., 1857, p. 163.

Shining coppery bronze with the suture and the lateral carinae of elytra greenish; under side and legs dark bronze-green; head covered with very closely set, deep, elongate punctures, clypeus six-dentate, the teeth well defined but not quite acute, sides fringed with fulvous hairs; prothorax moderately convex, closely and very distinctly serrate laterally, grooved along the posterior margin, covered with very closely set granules, and having in the middle a narrow, smooth longitudinal space reaching from the base to the median part; elytra convex at about the median part, a little amplified laterally behind the humeral part, very finely striate, the striae are smooth and the intervals are very slightly shagreened and have each two rows of minute punctures; the outer margin is distinctly three-carinate; pectus clothed with fulvous hairs, metasternum with two deep ovate impressions in the centre; legs rugoso-punctate, anterior tibiæ tri-dentate outwardly, and with a rudimentary basal tooth, carinate inwardly, and not serrulate outwardly; pygidium very closely punctured.

Length 29–38 mm.; width 17–23 mm.

Hab. Zambesia (Victoria Falls, Buluwayo, Enkeldoorn); Transvaal (Lydenburg).

SCARABÆUS METALLICUS, Bohem.,

Plate XXXVII., fig. 3.

Insect. Caffrar., ii., 1857, p. 164.

Dull coppery bronze on the upper side, bronze black underneath, legs also bronze-black; head covered with very closely set, deep, elongate punctures, teeth of the clypeus sharp; prothorax depressed, closely serrate laterally and with a sharp tooth at the anterior angle,

grooved along the posterior margin, covered with closely set granules, and having a supra-basal transverse smooth space produced in the shape of a blunt triangle the apex of which reaches to about the median part, while the base does not reach the angulate part of the posterior margin; from the median part to the apex there is a very narrow, smooth, longitudinal line; elytra plane, but with the suture slightly gibbose past the median part, and shining, the shoulders are very slightly diagonal, the striae are very distinct and impunctate, the intervals are finely shagreened and have each two series of shallow but distinct punctures, the outer margin is bi-carinate; the pygidium is granulose, the metasternum is smooth in the centre and has two deep impressions, the anterior one deeper than the posterior, and a longitudinal narrow line interrupted in the middle; the legs are rugulose, the anterior tibiae not serrulate, tri-dentate outwardly, and with a rudimentary basal tooth, inner part carinate, sinuate behind and with a small tooth in a line with, but under, the first outer tooth.

Length 32 mm.; width 20 mm.

Hab. Zambesia (Victoria Falls).

SCARABÆUS MASHUNUS, n. spec.,

Plate XXXVII., fig. 5.

Bronze-green, moderately shining on the upper part, darker green underneath; legs also dark green; head covered with closely set, deep, elongate punctures, and having a short, little raised carina in the middle of the anterior part, clypeus six-dentate, the teeth sharp; prothorax convex, covered with very closely set small foveae the intervals of which are slightly granulose laterally, and having a narrow, median longitudinal smooth line reaching from base to apex, strongly serrate laterally, and narrowly impressed along the base in the median part; elytra hardly convex, but with the suture slightly raised at about the median part, slightly attenuate towards the apex, humeral part a little oblique, striae narrow, distinct, impunctate, intervals with two rows of shallow but broad punctures sometimes coalescing in the second interval, outer margin bi-carinate; metasternum with a deep, round impression between the intermediate coxae; anterior tibiae tri-dentate outwardly, and with a rudimentary basal tooth, inner part carinate from the tip to one-third of the length, and with two or three ill-defined serrations after the carina, outer part not serrate; pygidium scrobiculate.

Length 32-33 mm.; width 21 mm.

Hab. Southern Rhodesia (Salisbury).

SCARABÆUS USURPATOR, n. spec.,

Plate XXXVII., fig. 4.

Coppery, dull, or not very shining on the upper side, under side bronze, legs greenish bronze; head very closely punctured; the punctures are closely set and elongate along the edge of the clypeus; median part of the head with a very small, slightly elongate tubercle, teeth of clypeus long and sharp; prothorax convex, very distinctly serrate laterally, grooved transversely along the base for about half the length, covered with very closely set, small punctures the intervals of which are finely granulose on the sides; in the middle there is a longitudinal median smooth line, very narrow in the anterior part, and slightly lanceolate from the median part to the base; elytra with two supra-marginal carinæ, sub-parallel, convex principally towards the median part, suture shining, striæ well defined, intervals shagreened and having two series of closely set, moderately deep punctures; pygidium covered with closely set, round punctures; legs fringed with short, blackish hairs; anterior tibiæ foveolato-punctate on the upper side, armed with three sharp teeth outwardly, and having a very rudimentary one at base, sub-laminate inwardly from apex to half the length, and with the upper ridge ending in an apical spine at the junction with the edge of the inner lamina, the inner and outer edges are not serrate; metasternum acuminate at tip and having a deep, ovate impression between the intermediate coxæ, and a very slight one near the base connected with the anterior one by a very fine, short impressed line.

Length 28–30 mm.; width 17–19 mm.

Intermediate in form between *S. mashunus* and *S. cupreus*, Casteln.

It is not quite so convex as the former, and the prothorax instead of being granulose is very closely punctured; the two supra-marginal carinæ overhang the margin as in *S. cupreus*, and the shape of the genital armature of the ♂ is very different from that of both the above-mentioned species.

Hab. Southern Rhodesia (Manica).

SCARABÆUS INTRICATUS, Fabric.,

Plate XXXVII., fig. 6.

Syst. Eleuth., i., p. 56.

S. bohemani, Har. Col., Heft. iv., 1868.

S. cicatricosus, Bohem., Ins. Caffr., ii., p. 177.

Black, shining; head setulose laterally at base, and sometimes on the vertex, having a broad, median smooth longitudinal space, and

covered with punctures broader than those on the clypeus which has six long and very sharp teeth, the lateral lobe is very little rounded or ampliate outwardly; prothorax convex, serrulate laterally, and covered with fossulate punctures set irregularly and moderately close to one another, in the centre of the disk there is a very fine hollow line, often indistinct, and reaching from the median part to near the base which is neither impressed nor grooved transversely; elytra depressed, sub-parallel, very narrowly striate with the striae closely and deeply punctured; the intervals are raised, and interrupted by equi-distant, deep, somewhat transverse foveæ of the same width as the interval; on each side are two lateral carinae parallel to each other; metasternum punctulate and with a deep longitudinal groove interrupted at middle and reaching from apex to base; legs set with long black hairs, anterior tibiae quadri-dentate and serrulate on both sides; pygidium broadly punctulate.

Length 10-14 mm.; width $5-6\frac{1}{2}$ mm.

Hab. Cape Colony (Cape Town, Worcester, Namaqualand, Griqualand West, Stellenbosch, Fraserburg, Graham's Town). Bechuanaland (Kanye), Southern Rhodesia (Middle Limpopo, Enkeldoorn, Salisbury), Ovampoland (Omrumba).

The figure and description of *S. palemo*, Oliv., agree fairly well with the present species. The habitat given by Olivier is Senegal and Cape of Good Hope.

SCARABÆUS PARVULUS, Bohem.,
Ofvers. Vet. Ak. Förh., 1860, p. 108.

Black, moderately shining; head with a median denuded longitudinal band prolonged in a narrow line as far as the apex of the clypeus, and covered with punctures well defined and not very closely set, while those on the clypeus are smaller, elongate, and very closely set, teeth of the clypeus long, sharp, the lateral lobe nearly straight or hardly ampliate laterally; prothorax convex, feebly serrulate laterally, and with the anterior angles sharp, not impressed along the base, and covered with deep, round punctures set somewhat closely and leaving a narrow, ill-defined, smooth, longitudinal median line; elytra plane, a little narrowed behind, deeply punctato-striate, the intervals plane and having one median row of deep, not closely set, punctures; on each side are two marginal carinae; metasternum punctulate laterally, smooth in the centre, and with a median, longitudinal groove slightly interrupted at middle; legs briefly setose, fore tibiae sharply quadri-dentate, and closely serrulate inwardly as well as outwardly behind the digitation; pygidium deeply but not closely punctured.

Length 8 mm.; width 5 mm.

Might be mistaken for very small examples of *S. intricatus*, but the punctures in the interstices of the elytra are less deep, do not fill more than half the width of the intervals and are set more apart from one another.

Hab. Cape Colony (Calvinia). Originally discovered near the Swakop River in Damaraland.

SCARABÆUS LUCIDULUS, Bohem.,
Öfvers. Vet. Ak. Förh., 1860, p. 107.

Black, tinged with a metallic greenish sheen, and covered with moderately dense light fulvous hairs; antennæ yellow except the basal joint which is black; head with a short, median denuded longitudinal smooth line in the centre, covered with moderately closely set punctures which are broader and much more apart from one another than those on the clypeus which are extremely closely set, teeth of clypeus very long and very sharp, the genæ nearly straight laterally; prothorax a little convex, very closely and finely serrulate laterally, with the basal margin carinate and without any supra-basal impression, deeply punctured, with the punctures more closely set and narrower laterally; it is clothed with dense, short, decumbent fulvous hairs, while the outer sides have long, ciliate black hairs, denser and longer in the posterior part; elytra plane, a little attenuate towards the apex, striate with a series of strong punctures touching one another, and impinging on the sides of the intervals, which are distinctly convex and sub-carinate at tip; they are clothed with a brief, light fulvous pubescence springing from the punctures in the intervals; the posterior margin is fringed with moderately dense, long, black hairs, and the lateral margins are distinctly bi-carinate; legs slender, intermediate and posterior ones fringed with very long black hairs, anterior tibiæ strongly and sharply quadri-dentate, setulose inwardly, and closely serrulate outwardly; metasternum with a narrow and very shallow longitudinal groove, sides closely punctured as far as the coxal cavities; pygidium closely punctured.

Length $11\frac{1}{2}$ mm.; width 8 mm.

Hab. Ovampoland.

SCARABÆUS ANDERSENI, Waterh.,
Annals and Magaz. Natur. Hist., 1890, p. 366.

From Mr. Waterhouse's description I assumed that this species

was identical with *S. lucidulus*, Bohem., but Mr. Waterhouse, who kindly compared my typical example with his type, writes: "Very near my *S. anderseni*, but larger. My species has the interstices of the elytra much broken up by pits or punctures, and has much fewer punctures on the pygidium."

Length 10 mm.

Hab. Lake Nyassa.

In spite of this I would not be at all surprised if *S. anderseni* were to prove identical with *S. lucidulus*. Its habitat, Lake Nyassa, may also prove to be erroneous. Andersson, not Andersen, collected in and around Damaraland and Ovampoland and also in the neighbourhood of Lake N'Gami; he certainly never went to Lake Nyassa.

SCARABÆUS RUBRIPENNIS, Boh.,

Plate XXXVII., fig. 7.

Öfvers. Vet. Ak. Förh., 1860, p. 107.

Black, shining, palpi and all the joints of antennæ flavous, and elytra light brick-red; head with a median, narrow, elongated smooth space, very closely punctured, clypeus more closely punctured, and somewhat striolate in the anterior part, clypeus fringed with long, flavescent hairs, teeth long, sharp, and as in the two preceding species; prothorax not much convex, strongly and closely serrulate laterally, and having a narrow supra-basal, closely punctulate line, anterior angle produced in a very distinct, sharp tooth; it is covered with moderately closely set punctures, more separated from each other in the central part where there is a nearly impunctate longitudinal space, as well as a not very distinct, rounded, supra-basal one on each side, the outer sides have a fringe of very long, flavescent hairs; elytra sub-parallel, plane, distinctly striate with the intervals smooth and slightly convex, the outer margin is bi-carinate, and the suture is black; legs long, intermediate tibiae coarctate near the apex above the insertion of the tarsus, and produced from there in an elongato-quadrate slightly dilated process in both sexes; posterior tibiae and tarsi fringed with very long, black hairs, anterior ones with four strong teeth, and distinctly serrate outwardly, serrulate and deeply emarginate inwardly under the second tooth, and fringed with long hairs; metasternum with a median narrow groove culminating behind in a small elongate impression a little wider than the groove itself; pygidium closely punctulate.

Length 17 mm.; width 10 mm.

Hab. Damaraland (Gonab).

SCARABÆUS FLAVICORNIS, Bohem.,

Plate XXXVII., fig. 8.

Öfvers. Vet. Ak. Förh., 1860, p. 107.

Black, shining, head and prothorax clothed with a short, decumbent flavescent pubescence; antennæ yellow; head closely punctured and with a distinct, median longitudinal, smooth line broadly dilated at base, clypeus covered with very closely elongate punctures, the teeth long, the lateral lobes nearly straight; prothorax not much convex, slightly serrulate laterally with the anterior angle sharp but not dentate, and the base not impressed, covered with fossulate punctures closely set, but leaving a smooth median lineiform space reaching from apex to base, outer sides fringed with moderately dense black hairs; elytra plane, a little attenuate towards the apex, very narrowly striate with the striæ closely and finely punctate, intervals raised, tectiform, and having on the sharp edge a series of distinct punctures bearing a very short flavescent hair, outer sides bi-carinate; legs long, slender, intermediate and posterior tibiæ fringed with very long black hairs, anterior tibiæ with four long teeth, serrulate outwardly, hardly so in the inner side, and somewhat densely pilose; metasternum closely punctulate, and with a median longitudinal groove of equal width throughout; pygidium somewhat closely punctured.

Length 12 mm.; width 7 mm.

Hab. Ovampoland (Omrraniba).*SCARABÆUS PROXIMUS*, n. spec.

Plate XXXVII., fig. 9.

Black, head and prothorax sub-opaque, elytra shining; antennæ black, head closely punctured and with a distinct median short carina in the anterior part, densely clothed with sub-fulvous hairs, teeth of the clypeus long, very sharp, genæ very little amplified laterally; prothorax not amplified laterally, not much convex, finely serrulate laterally, and with the anterior angle slightly blunted, basal margin sub-carinate and with a series of closely set punctures, disk covered with very closely set granules leaving a distinct median longitudinal smooth raised line reaching from base to apex, the granules are replaced towards the base by very closely set scabrose punctures, the outer sides are setulose, and on the disk are a few decumbent black, very short hairs; elytra plane, parallel, hardly narrower than the prothorax at its widest part, striate, with the striæ impunctate; the intervals are slightly tectiform, not quite smooth, and have each one series of somewhat shallow, small, not

very distinct punctures; the outer margin is bi-carinate, the inner carina is very sharp and prominent; legs slender, tibiae and tarsi ciliate with very dense, long black hairs; anterior tibiae with four long outer teeth, strongly serrate below the digitation and serrulate between the outer teeth, inner part diagonal at tip and sub-mucronate, serrulate from base to apex; metasternum pilose, closely punctulate, the central part with a short median central groove, ending in an elongato-ovate, deep apical impression; pygidium sub-punctulate and with a distinct longitudinal median raised line.

Length 20-24 mm.; width 11-14 mm.

Hab. Cape Colony (Namaqualand), Port Nolloth.

SCARABEUS COGNATUS, n. spec.

The description of *S. proximus* might serve for this species which is, however, distinguished by the granules of the prothorax, which are very much finer but equally dense, and instead of the conspicuous longitudinal median slightly raised line, there is a shining, smooth impressed line obliterated at apex and also near the base; the elytra are nearly equally parallel, hardly narrower at apex than at base, but a little more sinuate laterally behind the shoulder, whereas in *S. proximus* ♀ they are quite straight, the intervals are similar, although less tectiform, especially the third, but the striae are very much broader and are opaque, while the intervals are shining; pygidium closely punctate, and without a median longitudinal raised line; the legs are equally densely ciliate, and the club of the antennae is flavescent.

Length 25 mm.; width $12\frac{1}{2}$ mm.

Damaraland (Salem). One example only. It is said to be very scarce there.

SCARABEUS FRITSCHI, Har.,

Coleopt., Heft. iii., 1868, p. 80.

Black, shining on the head and prothorax, elytra opaque; head with a median, smooth, longitudinal carina reaching from the base to the median part, sides of the head closely punctulate, clypeus sub-striolate, and with the teeth long and sharp, and the genae nearly straight, slightly pilose like the head, and fringed laterally with long, brownish black hairs; prothorax convex, distinctly serrulate laterally, anterior angles not prominent, basal margin closely punctulate towards the sides, disk covered with moderately closely set setigerous, sub-foveolate punctures, and having a central, longitudinal smooth

line, and a smooth, somewhat shining area on each side of it; elytra plane, but with the suture raised past the middle, slightly attenuate towards the apex, indistinctly striate; the intervals are sub-rectiform; the sharp edge is shining and has a very indistinct series of not closely set punctures; outer margin bi-carinate, inner margin very sharp and much raised from behind the shoulder to the middle, suture shining; legs slender, ciliate with long black hairs; pectus densely pilose; metasternum closely punctulate, narrowed, not deeply grooved, and ending behind in a narrow elongate impression not much broader than the groove itself; anterior tibiae with four long, sharp outer teeth, and serrate from the base to the digitation, while the space between the teeth is distinctly serrulate; inner part closely and finely serrulate; pygidium with a few scattered punctures.

In one example from Wynberg, in the neighbourhood of Cape Town, the lateral, basal smooth patch is closely punctate, and the intervals of the elytra are more tectiform than in the examples from Damaraland.

Length 14-18 mm.

This species is intermediate between *S. proximus* and *S. suri*. The shape of the thorax and legs is similar to that of the former, but the sculpture of the prothorax is very different, and the elytra are more parallel.

Hab. Cape Colony (Cape Town), Damaraland (Gonab).

SCARABÆUS ALIENUS, n. spec.

Black, head and prothorax opaque, elytra nearly opaque, but with the suture slightly shining; head with a very distinct conical tubercle in the centre, and covered with elongate, closely set punctures, teeth sharp, but not as long, nor as acute as in the three preceding species, lateral lobe ampliate laterally; prothorax not much convex, serrulate laterally, and fringed with sub-rufescent long hairs, anterior angle not very angular, basal margin with a series of small, closely set punctures, disk very closely granulose laterally and in the median part, the posterior part of which, however, is partly closely punctulate and the supra-basal part impunctate except above the scutellum, there is a distinct, median, longitudinal, smooth line reaching from apex to base; elytra sub-parallel, nearly plane but with the suture slightly gibbose at about the middle, narrowly but distinctly striate, the striae with a very slender double line, intervals covered with an extremely fine aciculation, and having a few slightly shining, extremely small, scattered granules, and a

double row of shallow, somewhat indistinct punctures on each, posterior part with erect, long black hairs springing from the punctures; legs moderately slender, intermediate and posterior tibiae ciliated with long, black hairs, anterior ones sharply quadri-dentate with the basal tooth set close to the base, slightly serrate below and between the digitation, inner side dilated, carinate from the apex to half the length, and not serrulate; metasternum produced at apex, in a distinct, acutely tuberculiform process, broadly grooved longitudinally, the groove is interrupted at middle and the posterior part is a little broader and shallower, the sides are closely punctured as far as the median groove.

Length 19 mm.; width 12 mm.

I have seen one example only (a female) of this very distinct species, the exact habitat of which is not known to me.

SCARABÆUS SURI, Hausm.,

Plate XXXVII., fig. 10.

Illig. Magaz., vi., 1807, p. 244.

S. caffer., Serv. Encycl. Méth. *recedens*

S. hottentotus, McLeay, Hor. Entom., i., 2, p. 498.

Black, nearly opaque on the upper part; head covered with elongate punctures less closely set on the head than on the clypeus where they merge slightly into one another at apex, teeth moderately long, sharp, lateral lobe a little ampliate and diagonal laterally, median apical part of the head sub-carinate as far as the median part of the clypeus, the carina a little more shining than the rest of the surface, and nearly smooth, sides ciliated with moderately long black hairs; prothorax convex, finely aciculate, covered with scattered punctures bearing a minute, brownish black seta, and having a smooth, median longitudinal, nearly smooth space reaching from the apex to a short distance from the base, and a diagonal one beginning on each side of the basal part of the median line and reaching nearly the median part; the outer sides are distinctly serrulate, and the base has a series of very closely set, deep punctures, every one of which bears a rigid seta, the base itself is angular in the centre; elytra sub-parallel, but a little attenuate towards the apex and with the humeral angle very sloping, not striate but with the intervals sub-rectiform and having on the sharp edge a very indistinct series of punctures which, in some examples, are found on the sides of the intervals and nearly where the stria should be; the whole

surface is covered with extremely fine sub-shiny granules, the suture is shiny; tibiae ciliate, with moderately dense, but not very long black hairs, anterior tibiae with four strong, sharp outer teeth, and closely serrulate on both sides; metasternum sharply carinate at tip, and narrowly grooved from nearly the apex to a little beyond the apical part of the coxal excavation of the intermediate legs; the whole of the sides and the pygidium is impunctate.

Length 18–22 mm.; width 11–14 mm.

Hab. Cape Colony (Worcester, Stellenbosch, Paarl, Tulbagh, Somerset East).

SCARABÆUS VIATOR, n. spec.,

Plate XXXVII., fig. 11.

The description of *S. sari* suits this species, which, however, varies sensibly. The colour is nearly always opaque with the suture slightly shining, but I have seen examples shining a little; the punctures on the prothorax are shallower, the median longitudinal line is slightly visible, but very often disappears altogether, and the diagonal smooth spaces have disappeared, leaving a faint supra-basal depression on each side of the median line, which impressions are often obliterated; elytra striate with the intervals plane, finely and closely granulose, the granules slightly shining.

Length 18–23 mm.; width 11–14 mm.

This species differs somewhat in the sculpture of the prothorax, and could be divided in two groups:—

- A². Prothorax with a more or less distinct depression on each side of the central longitudinal line *S. viator*.

This sub-species is rare in the western part of the Colony (Worcester, Beaufort West, Knysna), and more abundant in the eastern (Graham's Town, Port Elizabeth, Uitenhage).

- A¹. Prothorax without any trace of a depression on each side of the central longitudinal line.. .. . *S. viator*, sub-species *deceptor*.

This sub-species is generally smaller and has a wider range (Cape Town), Transvaal (Potchefstroom), Bechuanaland (Kanye), and very much resembles in size and appearance *S. ambiguus*; but the latter can be distinguished by the total absence of the median line on the prothorax in the base of which the punctures are obliterated towards the outer angle, whereas in *deceptor* these punctures are continued along the whole base.

SCARABÆUS RUGOSUS, Hausm.,

Plate XXXVII., fig. 12.

Illig. Magaz., vi., 1807, p. 250.

S. convalescens, Wiedem. Zool. Mag., ii., 1823, p. 21.

Black, sub-opaque; head punctulate with the intervals between the punctures granulose, no median longitudinal smooth line or carina, clypeus covered with elongated, very closely set punctures, teeth sharp, but not long; prothorax convex, strongly serrulate laterally, and fringed with flavescent hairs, base with an ill-defined series of small punctures interrupted in the centre, disk covered with round, shallow, closely set, scar-like punctures the interstices of which are finely granulose; these punctures disappear near the outer margins, and there is a distinct, median, longitudinal, smooth line reaching from base to apex; elytra a little attenuate towards the apex, not plane, suture not much gibbose at middle, narrowly striate, striæ with a very slender line, intervals with two rows of round, moderately broad, shallow punctures the intervals of which are a little shining, suture also shining, outer margin bi-carinate; legs moderately slender, clothed with long, fulvous hairs, anterior tibiæ strongly quadri-dentate outwardly, and conspicuously serrulate on both sides; metasternum broadly canaliculate from the apex till near the base in the middle, sides of the groove punctulate; pygidium very finely aciculate.

Length 19 mm.; width 13 mm.

Hab. Cape Colony (Malmesbury).

I have seen two examples only of this rare species.

SCARABÆUS FUNEBRIS, Bohem.,

Plate XXXVII., fig. 14.

Insect. Caffr., ii., p. 176.

Black, shining; head and clypeus covered with closely set punctures which are more elongate on the clypeus the teeth of which are sharp and long; prothorax convex, serrulate laterally, basal margin with a series of deep and very closely set punctures, disk foveolato-punctate in the median part, finely granulose laterally with the granules not closely set, in the middle is a longitudinal smooth line fairly well defined, and occasionally a lateral smooth, more or less round space, there is a narrow impunctate transverse space above the base, the sides and also the clypeus are fringed with blackish hairs; elytra very little narrower at middle than the prothorax, somewhat convex, not much attenuate towards the apex,

and a little amplified at middle, very distinctly striate with the striae faintly punctured, the intervals are raised, and have each a row of foveate punctures nearly as broad as the interval, and closely set, outer margin very closely bi-carinate; under side pilose except on abdomen; intermediate and posterior tibiae fringed with moderately dense black hairs, anterior tibiae quadri-dentate and serrulate on both sides; metasternum punctulate and having a very narrow median groove extending for nearly all the length and ending in an ovate impression at apex.

Length 14-17 mm.; width 9-11 mm.

Hab. Bechuanaland (Kanye), Transvaal (Lydenburg), Zambesia (Buluwayo), Cape Colony (Kimberley).

SCARABEUS INTERSTITIALIS, Bohem.

Insect. Caffr., ii., p. 171.

"Black, moderately shining; head finely, closely and rugosely punctate, almost smooth behind, deeply punctate on each side, with six acute teeth in front; prothorax nearly twice as broad as long, black, moderately shining, outer sides finely crenulate, and sparsely fringed with black hairs, moderately convex, closely but not strongly shagreened and having a few scattered punctures more closely set in front and on the sides, and rarer in the middle; elytra a little ampliate behind the base and slightly narrowed from there towards the apex, finely but distinctly striate with the intervals plane and covered with moderately close and somewhat deep punctures; anterior tibiae crenulate on each side, sharply quadri-dentate outwardly, basal tooth small, posterior tibiae long, bi-arcuate, fringed with very long, dense black hairs, and having no trace of sub-apical outer teeth."

Length 17 mm.; width $10\frac{1}{2}$ mm.

Hab. Interior of Caffraria, teste Bohem.

The only example of this species I have seen is Boheman's type. It is easily distinguished by the long, sinuate and arcuate posterior tibiae, which resemble those of *S. ebenus*. It is nearly similar in size and facies to *S. funebris*.

SCARABEUS AMBIGUUS, Bohem.,

Plate XXXVII., fig. 13.

Insect. Caffr., ii., p. 173.

Black, opaque; head very closely punctured, the punctures are more elongated on the clypeus the teeth of which are fairly long

and sharp; prothorax serrate laterally, convex, fringed with slightly fulvous hairs, basal margin with a very distinct row of very closely set setigerous punctures, disk finely aciculate and with fine, moderately deep punctures not set very close to each other, and almost wanting along the base which is aculeate at middle, and also hardly noticeable along the outer margins, in the centre there is a smooth, faintly raised line reaching from base to apex; elytra hardly convex, suture gibbose at middle and shining, the rest of the surface is opaque, they are faintly striate with the intervals nearly plane and very finely shagreened, the outer margin has two carinæ very close to each other; tibiæ moderately villose, anterior quadri-dentate, serrate below the digitation, and finely serrulate inwardly; metasternum punctulate laterally and having a median longitudinal groove reaching from near the apex to beyond the median part, and an elongate impression behind; pygidium very finely aciculate.

Length 17–20 mm.

Some examples from Estcourt (Natal) differ a little from the typical examples in having hardly any trace of the median smooth line on the prothorax, the elytra are less opaque, and the striæ are filled with minute, elongate punctures, but I cannot detect any other difference, and the shape of the genital armature of the ♂ is identical with that of the type form.

Hab. Cape Colony (Cape Town), Transvaal (Potchefstroom), Natal (Estcourt).

SCARABÆUS HOTTENTORUM, n. spec.,

Plate XXXVII., fig. 15.

Black, shining; head and clypeus covered with elongated punctures, teeth of the clypeus long, sharp, club of antennæ brownish; prothorax convex, declivous in front, strongly serrulate laterally where it is fringed with sub-fulvescent hairs, base aculeate in the middle, and having a series of small but deep and closely set, setiferous punctures, the disk is very finely aciculate and has some small scattered punctures which disappear along the outer margins; elytra attenuate from the middle towards the apex, gibbose at middle along the suture, very finely striate, the striæ consisting of a very slender, not depressed line, intervals plane, nearly smooth, but with a very faint trace of a double series of punctures, outer margin with only one carina; intermediate and posterior tibiæ fringed with somewhat long, slightly brown hairs, anterior tibiæ strongly quadri-dentate, mucronate inwardly at tip, and very conspicuously but not closely serrate inwardly, some of the teeth of the serration are longer than the others, and the outer part is serrulate;

metathorax closely punctured on the sides, somewhat sharp at the base, grooved longitudinally from apex to base, the sides of the groove are raised in the anterior part only; the pygidium is hardly aciculate.

Length 22-26 mm.; width 15-16 mm.

Hab. Cape Colony (Namaqualand, Barkly West).

SCARABEUS SAVIGNYI, McLeay,

Plate XXXVII., fig. 16.

Hor. Entom., i., 2, 1821, p. 503,

S. transversus, Casteln., Hist. Nat., ii., p. 65.

Black, shining; basal part of the head nearly impunctate, clypeus covered with closely set, elongate punctures, teeth not long, and moderately sharp; prothorax very convex, slightly serrulate laterally, basal margin impunctate and not impressed, disk impunctate and with two sub-diagonal shallow foveæ not quite in the centre, and a faint, supra-lateral impression on each side, which might, however, be accidental; elytra a little attenuate from the shoulder to the apex, obsoletely striate with the intervals plane, smooth and very nearly impunctate, outer margin closely bi-carinate, suture sub-gibbose at middle; legs fringed with short, black hairs; anterior tibiæ with three moderately long outer teeth, and a small basal one, inner part with a sharp ridge on the upper side ending in a short spine at apex, smooth in the anterior part and crenulate at base; metasternum compressed apically and having a slight canalication beginning almost at the apex and ending in a shallow, triangular basal impression; pygidium impunctate. The shape of the genital armature is very nearly identical with that of *S. hottentorum*, and the two species are undoubtedly very closely connected, the difference between the two consisting in the absence of the two foveæ on the disk, as well as the quadri-dentate tibiæ, which are very conspicuously crenulate inwardly and strongly mucronate at tip in *S. hottentorum*.

Length 29 mm.; width 17-18 mm.

Hab. Cape Colony (Caledon, Tulbagh, Knysna, Graham's Town).

SCARABEUS CONVEXUS, Hausm.,

Plate XXXVII., fig. 17.

Illig. Mag., vi., 1807, p. 249.

S. lævis, Thunb., Mém. Ac. Petr., vi., 1818, p. 408.

Black, shining equally on prothorax and elytra; head nearly smooth in the middle of vertex, clypeus with very closely set, elongate punctures.

tures, teeth long and sharp; antennæ black; prothorax very convex, carinate laterally for a short distance from the anterior angle which is sharp, and serrulate from there to the posterior angle, basal margin quite smooth and rounded, disk impunctate; elytra amplified diagonally from the humeral angle to one-sixth of the length, and attenuated from there towards the apex, base with a series of ill-defined punctures or rather round impressions, one above each stria, striation extremely fine, intervals nearly smooth and with a very faint trace of a double series of very fine punctures, suture gibbose past the middle, outer margin bi-carinate, the two carinæ diverging much near the base, suture gibbose past the middle; pygidium opaque, impunctate; legs and pectus clothed with moderately long black hairs; anterior tibiæ quadri-dentate outwardly, but with the basal tooth shorter than the one following, but equally sharp, denticulate from base to apex on the outer side, inner part closely serrate and slightly mucronate at apex; metasternum broadly but not deeply grooved in the centre, and with a fine line in the middle reaching from the apex to a round, shallow, basal impression.

Owing to the lateral ampliation of the elytra the facies is not unlike that of *Sceliages*.

Length 17–18 mm.; width 12–12½ mm.

Hab. Cape Colony (Cape Town, Malmesbury, Stellenbosch, Worcester, Tulbagh), Natal (Durban).

SCARABÆUS RUSTICUS, Bohem.,

Plate XXXVII., fig. 18.

Insect. Caffrar., ii., p. 175.

Head and prothorax quite similar to those of *S. convexus*; the antennæ are yellow, except the three basal joints, which are brown, but I have seen examples from Lydenburg and Pretoria in the Transvaal in which the club is black; the elytra have the same sculpture, but they are more parallel, and therefore do not bulge beneath the shoulder, and the two supra-marginal carinæ are hardly divergent at base; the metasternum is not grooved, but has a longitudinal fine line reaching from apex to base, and no posterior impression.

Length 18–23 mm.; width 11–15 mm.

Very closely allied to *S. convexus*; its distinctive character lies in the more parallel shape of the elytra.

Hab. Transvaal (Rustenburg, Potchefstroom, Lydenburg).

SCARABÆUS EBENUS, Klug.,

Plate XXXVII., fig. 19.

Monatsb. Berl. Acad., 1855, p. 650; Peter's Reis., 1862, p. 214.

Black, very shining all over; antennæ fuscous; clypeus sharply five-dentate, scrobiculate, head with a sub-quadrate posterior patch smooth in the centre and with a few lateral round punctures; this quadrate patch is produced triangularly in front; prothorax convex in the anterior part, where it is somewhat dehiscant, more than twice as broad as long, having a few punctures somewhat closely set on the sides of the anterior part, but widely scattered on the disk, and a little more numerous along the base than above it; it is strongly serrate laterally, the margin ending abruptly in a sharp angle a little above the rounded part of the base; elytra gradually attenuate laterally from the rounded sub-humeral part to the apex, which is narrower than the base by about one-fourth of the width; the sutural part is raised at about the median part; it is very slightly striate, the striae being merely indicated except near the basal part by sub-obliterated seriated punctures; pygidium punctate; metasternum sharply aculeate, and without any median groove or impression; anterior tibiae very sharply quadri-dentate and very closely and strongly serrate inwardly and outwardly; the hind legs are as long and as strongly sinuate as in *S. interstitialis*.

Length 12-17 mm.; width 8-11 mm.

Hab. Southern Rhodesia (Victoria Falls), Mozambique (Inhambane), Transvaal (Lydenburg).

The sub-mucronate posterior part of the lateral margin of the prothorax is peculiar to this species. In the large examples (type) the elytra are more distinctly attenuate laterally towards the apex.

Scarabæus politifrons, Fairm., is the same species as *S. ebenus*, but in my example from Shoa the punctures on the prothorax are a little less deep laterally, and the median part of the disk is more impunctate; but the punctuation varies also in the four examples of *S. ebenus* which I have seen, and is denser in the small development.

SCARABÆUS SATYRUS, Bohem.,

Plate XXXVII., fig. 20.

Öfvers. Vet. Ak. Förh., 1860, p. 107.

Black, shining; under side and legs fringed with rufous hairs; head granulose in the basal part and also on the lateral lobe, covered with elongate punctures closely set and forming a sort of striation near the edge of the clypeus the teeth of which are sharp and long;

palpi and antennæ rufous brown, the club slightly flavescent; prothorax moderately convex, distinctly serrate along the outer margins, and also along the basal one except in the central part which is deeply and closely punctured, the disk is closely and finely granulose laterally and closely punctured in the central part, with the punctures more distant towards the basal part; elytra very nearly as broad at base behind the shoulders as the prothorax at its widest part, not amplified laterally, and very little attenuated towards the apex, sutural part very little gibbose at middle; they are finely striate with the intervals plane and have each a double series of small, hardly discernible punctures; pygidium faintly aciculate; anterior tibiae with four long and sharp outer teeth, the part of the tibiae before the digitation is serrate, and the space between the digits serrulate, but the inner part is not; metasternum with a broad but shallow groove between the intermediate coxæ, and connected by a fine line with a basal, shallow, quadrate impression.

Length 23–29 mm.; width 14–17 mm.

Hab. Cape Colony (Bushmanland, Kakamas, Calvinia), Damara-land (Otjimbingue, Swakop River).

The general facies of this species is very much like that of small examples of *S. rostratus* and *S. modestus*, but it is easily distinguished by the absence of the dentiform process of the mentum, as well as by the non-serrate inner part of the anterior tibiae.

SCARABEUS PROFANUS, Bohem.,

Plate XXXVII., fig. 21.

Ins. Caffr., ii., p. 162.

Black, equally shining on the upper side; head covered with a fine granulation between the eyes, central part slightly aculeate occasionally in the ♂, clypeus covered with very elongated punctures becoming striolate on the edges, basal lateral lobe granular, anterior teeth long, sharp; prothorax somewhat short, convex, not much broader at its widest part than the elytra immediately behind the shoulder, closely and finely serrate laterally with the serration recurved, basal margin almost serrulate and with a median supra-basal transverse line, disk finely and closely granulose, with the granules less closely set near the base, in the centre is a narrow, smooth, longitudinal, lineiform space reaching from the base to a little beyond the median part; elytra moderately plane, but with the sutural part distinctly gibbose past the middle, a little amplified from beyond the shoulder to about one-quarter of the length, where it is wider than the prothorax at its widest point, extremely finely acieu-

late and striate, the striae lineiform, and the intervals with a double series of vaguely apparent punctures; pygidium vaguely punctulate; legs fringed with short, fulvous hairs, anterior tibiae with four strong outer teeth, and having an inner lamina reaching as far as the basal part of the second apical tooth, and a small tooth at a short distance from it under the second basal outer one; the inner carina is serrulate at the base, but the outer side is not; metasternum with a broad basal impression, and, between the intermediate coxae, an elongate one prolonged in a very shallow narrow groove stopping at a certain distance from the apex; pectus clothed with long, dense flavous hairs.

Length 36–40 mm.; width 23–24 mm.

Hab. Ovampoland (Okatchero), Lower Rhodesia (Enkeldoorn, Hanyani River), Transvaal (Rustenburg), Natal (Durban).

SCARABÆUS PACATUS, n. spec.

Black, or piceous black, sub-opaque; very closely allied to *S. profanus*, the description of which applies equally to this species: the difference, however, consists in the shape of the anterior tibiae which instead of having at tip a very distinct and sharp inner lamina broadly scooped out at about the middle, and a short tooth forming the posterior angle of the broad incision, is simply carinate inwardly and very slightly sinuate with a very slightly dentate process at the end of it under the second basal outer tooth.

Were it not that in *S. profanus* the female has the fore tibiae similar to those of the male, this species might be taken for it. It is distinguished from *S. satyrus*, the fore tibiae of which are nearly similar, by the more ampliate body and by the finely granulose prothorax. I have seen female examples only.

Length 33 mm.; width 20 mm.

Hab. Southern Rhodesia (no exact locality).

SCARABÆUS ZAMBESIANUS, n. spec.

Black, moderately shining; head, thorax, and legs fringed with fulvous hairs; head closely granulate at base, centre, and on the sides, clypeus striolate, teeth sharp, recurved, the two median ones sharply carinate beneath, central part of the head with a conspicuously long and sharp triangular tubercle; prothorax moderately convex, closely serrulate laterally along the base as far as the fourth stria, and closely punctured from there, the surface is very finely aciculate, and it is covered with somewhat closely set but not deep punctures; elytra a little attenuate from behind the shoulders towards the apex, not much raised at middle along the suture, very

finely striate with the intervals plane and slightly aciculate, the aciculation is more shining than the background; the two supra-marginal carinæ are set very close to one another, and are hardly diverging at the base; pygidium aciculate; anterior tibiæ strongly and sharply quadri-dentate outwardly, crenulate inwardly from under the second outer tooth to the basal one, outer side sub-serrate from the base to the digitation; the surface is foveolate on the upper part, and closely striate underneath; metasternum not aculeate at apex and grooved from apex to base.

Length 27 mm.; width 18 mm. Female unknown.

Hab. Southern Rhodesia (Victoria Falls).

SCARABÆUS RIXOSUS, n. spec.

Black, moderately shining; head, thorax, and legs fringed with fulvous hairs; head granulate at base, centre, and sides, clypeus striolate, teeth sharp, recurved, the two anterior ones not carinate beneath, central part of the head with a very conspicuous, sharp, triangular tubercle, mentum with a broad triangular, very conspicuous tooth-like process sharp at tip; prothorax moderately convex, serrate laterally, closely punctured along the basal margin, closely and deeply aciculate, almost shagreened along the anterior margin and on the sides, and with moderately closely set granules replaced along the base and in the posterior median part by punctures; elytra with very oblique shoulders, a little attenuate from behind the humeral part towards the apex, slightly gibbose at middle towards the suture, very finely striate with the intervals plane, smooth, and having two series of very fine, shallow, yet distinct punctures; the two supra-marginal carinæ are very sharp and raised, and do not diverge much at base; pygidium punctulate; the anterior tibiæ have four very strong, long outer teeth, and are strongly serrate from the digitation to the base, inner part carinate but not serrate, upper part foveolate, under side striate; upper edge of femora serrate at apex; metasternum not aculeate at tip, not deeply grooved in the anterior part as far as the median coxæ, posterior part with a shallow impression.

Length 29 mm.; width 18 mm.

Near *S. rostratus*; differs mainly by the shape of the vertical tooth in the mentum, which is shorter, broader, and not bifid at tip; the cephalic tubercle is also sharper and as long as in *S. zambesianus*; the elytra, however, are not so parallel nor so elongate as in *S. rostratus*, and the sculpture of the prothorax is also different.

Hab. Southern Rhodesia (Middle Limpopo).

SCARABÆUS MODESTUS, Bohem.,

Plate XXXVII., fig. 23.

Öfvers. Vet. Akad. Förh., 1860, p. 22.

S. rostratus, Péring., Trans. S. Afric. Phil. Soc., vol. iv., pt. ii., 1888, p. 92.

Black, shining, but with the elytra a little duller than the prothorax; head verrucose and with a very distinct conical tubercle in the centre in both sexes, median part of clypeus striolate, teeth moderately long and sharp; it is fringed with fulvous hairs, and the mentum has a vertical, bifid toothed process extremely conspicuous; prothorax not much convex, outer sides closely serrulate, amplified diagonally from the outer angle to one-third of the length, and slanting from there to the base, basal margin not impressed and having a series of fine, closely set punctures, the upper part is covered with punctures fine but not very closely set, and it is fringed laterally with fulvous hairs; elytra moderately plane, suture hardly gibbose, slightly amplified in the middle laterally and a little attenuate from there towards the apex, very finely striate with the striae lineiform and the intervals plane, very slightly aciculate, and having each two vague series of minute, indistinct punctures; pygidium closely but not deeply punctured; legs fringed with long, fulvous hairs; anterior tibiae strongly quadri-dentate outwardly, mucronate inwardly at tip, and having a closely and sharply serrate inner lamina reaching as far as the basal outer tooth, the basal carina is very strong and very distinctly serrate, and so is the outer edge from the digitation to the base; pectus densely villose, metathorax with a very fine groove beginning at the apex and ending in an elongate, not very deep, basal impression.

Length 21–38 mm.; width 15–22 mm.

Hab. Cape Colony (Bushmanland, Clanwilliam, Namaqualand), Damaraland.

SCARABÆUS INFERNALIS, Klug,

Plate XXXVII., fig. 24.

Monatsb. Berl. Acad., 1855, p. 650; Peter's Reis., 1862, p. 213.

Black, opaque with some shining longitudinal lines and patches on the prothorax, the suture of the elytra is also shining; head entirely covered with deep, elongate and very closely set punctures the edges of which are shining, and fringed laterally with short brownish hairs, median part of head with a sharp, but short protuberance, teeth of clypeus long, sharp; prothorax covered from apex to past the median part, and totally along the sides, with a very distinct

granulation, the greatest part of the base is, however, nearly smooth and opaque, and there is a median lozenge-shaped, smooth, shining, patch prolonged in a smooth line as far as the apex, a broader line on each side of it also smooth and opaque and reaching from the middle to a short distance from the apex, and a supra-lateral, transverse sub-triangular impression, sometimes granulose, but sometimes also nearly smooth; the disk is very little convex, closely denticulate laterally, and the anterior angles are produced in a short but very distinct spine; the posterior margin is carinulate and has a series of very closely set punctures; elytra plane, with the suture hardly gibbous at middle, sub-parallel but distinctly attenuate towards the apex, very finely shagreened, narrowly striate, intervals with a nearly obliterated double series of punctures, second and fourth intervals more shining than the others, outer margin distinctly bi-carinate; pygidium punctulate and slightly granulose; intermediate and posterior tibiae fringed with not very long black hairs, anterior tibiae armed outwardly with three long and sharp spines, and a small basal one, not serrulate outwardly, very sharply and distinctly carinate inwardly, the carina scooped out in a line with the third outer tooth and armed with a sharp spine at base; metasternum with a deep elongate excavation between the intermediate tibiae, a fine line reaching from there to the apex, and another similar line reaching the base; sides punctulate and pilose.

Length 33-41 mm.; width 20-24 mm.

Hab. Natal (Durban), Transvaal (Rustenburg), Southern Rhodesia (Salisbury, Victoria Falls), Mozambique (Delagoa Bay).

Gerstaecker considers this species as a variety of *S. lamarki*, McLeay, from Senegal, Nubia, and Guinea. Kolbe does not mention it in his enumeration of the *Scarabæus* from East Africa.

SCARABÆUS PRODIGIOSUS, Erichs.,

Plate XXXVII., fig. 25.

Wiegman. Arch., 1843, i., p. 231.

Black, moderately shining; head and clypeus covered with deep, elongate punctures somewhat striolate in the anterior part, teeth of the clypeus long, sharp, central part of the head with a very short ridge, somewhat aculeate, but not always distinct; the hairs fringing the head are brown; prothorax not much convex, very closely serrate laterally with the anterior angle produced in a sharp, short spine, basal margin carinate and with a narrow supra-basal linear impression, disk covered with closely set granules leaving a smooth, median lozenge-shaped space continued as far as the apex in a smooth line

and a supra-basal transverse patch spreading on each side in a line with the base of the fifth stria; this smooth patch does not reach quite the basal margin in the middle; elytra plane with the suture very little gibbose at middle, nearly parallel, not quite as shining as the prothorax, except the suture itself, very narrowly, but deeply striate, intervals very finely aciculate, and having two rows of fine punctures, third and fifth a little more raised than the others, outer margin bi-carinate, the two carinae closely set; pygidium granulose; intermediate and posterior legs fringed with moderately long fulvous hairs; anterior femora with a small, but distinct tooth at the apex of the lower edge of the groove, anterior tibiae strongly and sharply tri-dentate and having an obsolete basal tooth, the second and third outer teeth have a smaller tooth at base, the inner part is sharply carinate, and emarginate behind with the two ends of the emargination distinctly dentate; metathorax with a short, shallow, and narrow groove ending in a small impression between the median coxae, and a very fine line uniting the median impression with a similar apical one, sides very closely granulose, median part punctulate; pectus and coxae partly clothed with long, fulvous hairs.

Length 36-42 mm.; width 20-26 mm.

Hab. Southern Rhodesia (Victoria Falls), Ovampoland.

SCARABEUS BONELLII, McLeay,

Plate XXXVII., fig. 26.

Hor. Entom., i., 2, p. 498.

Black, sub-opaque, suture shining; head deeply and closely punctured, the punctures more elongated towards the edge of the clypeus than in the central part where there is a very short but distinct tubercle, teeth of clypeus moderately long, and not very sharp; prothorax convex, very distinctly serrate laterally and fringed with black hairs, basal margin grooved, the groove with a series of small setiferous punctures, upper part covered with very closely set granules except near the base where there is a denuded broadly triangular space the sides of which reach to a little distance from the outer angle, and the apex not quite to the median part; at a short distance from the base there is a faint trace of a fine longitudinal line with a small impression on each side of it; elytra sub-parallel, gibbose at middle along the suture, finely striate, intervals extremely finely aciculate and with a double series of fine punctures; there are two supra-marginal carinae; pygidium punctato-granulate; legs fringed with dark or black hairs, anterior tibiae with three valid outer teeth and a smaller basal one, foveolate on the outer upper side and

sharply carinate inwardly, but not serrulate on either side; pectus clothed with black hairs, metasternum with a broad groove beginning near the apex and ending at a very short distance behind the intermediate coxæ, no posterior impression, only a faint longitudinal line.

Length 24–28 mm.; width 16–18 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Malmesbury, Worcester, Robertson, Tulbagh.)

SCARABÆUS CLERICUS, Bohem.,

Insect. Caffr., ii., p. 167.

Very closely allied to *S. bonellii*, and it seems to take its place in the northern part of South Africa. It is, however, not so robust, and the elytra are a little more parallel; it is also more shining, but the sculpture of the prothorax is different; the granulation is finer and more closely set, and instead of there being a broadly triangular smooth space at base, the said space is covered with closely set punctures leaving only a narrow, longitudinal smooth band reaching from the base to the median part, and including a fine depressed line; the intervals of the elytra are finely but very distinctly shagreened instead of being aciculate, and the double series of punctures are lost in the shagreened surface; the legs and pygidium are identical, but the metasternum instead of a long, broad groove has only a round, moderately deep impression between the intermediate coxæ; the head has no trace of a median tubercle.

Length 25–26 mm.; width 15–16 mm.

Hab. Transvaal (Potechefstroom, Pretoria).

SCARABÆUS NIGRO-ENEUS, Bohem.,

Plate XXXVII., fig. 27.

Insect. Caffr., ii., p. 165.

Black, with a faint greenish-bronze tinge turning to bronze green in some examples; head covered with deep, elongate, almost lozenge-shaped punctures very closely set, median part of the head with a slight, sub-conical protuberance; prothorax strongly serrate laterally with the teeth stouter from the anterior angle to past the median part, basal margin with a transverse narrow impression not reaching the outer angle; it is convex and very closely punctato-foveolate with the intervals finely granulose except in the median part, and has a narrow, smooth, longitudinal line reaching from base to apex and a small diagonal smooth patch on each side, often nearly obliterated, and situated at a short distance from the base; elytra

sub-opaque, sub-parallel, suture shining, and sub-gibbose at middle, finely shagreened, very finely striate, each interval with a double series of fine but deep punctures; pygidium deeply and closely punctured; legs fringed with short, brownish black hairs, anterior tibiae tri-dentate outwardly and with a rudimentary tooth at the base of the digitation, not serrulate outwardly or inwardly, but having a narrow lamina in the inner side reaching from about the middle to the apex where it ends in a short tooth; metathorax aculeate at tip, and having only a shallow impression between the intermediate coxae.

Length 27-30 mm.; width 16-18 mm.

This species varies much in colour, some examples from the Upper Limpopo or Salisbury have the elytra nearly green.

Hab. Cape Colony (Griqualand West), Orange Free State, Transvaal (Potchefstroom), Southern Rhodesia (Salisbury, Mazoe, Bulawayo, Manica).

(The following species have been described, but hitherto I have not been able to identify them.)

SCARABEUS PUBIVENTRIS, Lansb.,

Coleopt. Hefte xii., 1874, p. 5.

“Black, sometimes piceous, moderately shining; head six-dentate with the teeth recurved, a little shorter than broad, closely and rugosely granulate, somewhat smooth behind and having on the vertex a minute tubercle as well as two short inter-ocular ridges directed towards the thorax; prothorax twice as broad as long, moderately convex, closely and somewhat strongly granulate and having in the middle a line which expands behind, emits a ramus on each side, and becomes evanescent towards the base; the median part of the base projects slightly, the outer sides are rounded and crenulate, and the anterior angles denticulate; the scutellum is distinct; elytra nearly parallel, longer than broad, hardly punctato-striate with the intervals plane, sub-rugulose and with a few somewhat deep punctures; pygidium triangular, rugulose; under side shining; pectus clothed somewhat abundantly with fulvous hairs, granulate; abdomen impunctate; metasternum deeply canaliculate, impressed at base, a little dilated in the anterior part; anterior femora scabrous, armed with a tooth towards the apical part, anterior tibiae quadri-dentate outwardly, with the basal tooth obsolete, bi-dentate inwardly, posterior tibiae fringed with fulvous ciliae.

Length 40-45 mm.; width 10-35 mm.

This species belongs to the same group as *S. lamareki*, *cuvieri*, *sub-ceneus*, &c. It is distinguished from the last-named species by the non-metallic colour and by the punctuation of the striae of the elytra which are also brighter; the colour of the pubescence with which the under side is clothed will prevent it being mistaken for the two species above mentioned.

Hab. Mozambique."

SCARABÆUS CANALICULATUS, Fairm.,

Annal. Soc. Entom. d. France, 1888, p. 177.

"Briefly ovate, somewhat plane, fuscous bronze, moderately shining; head moderately finely granulate, strigulose in front and sharply six-dentate, bi-impressed between the eyes, the impressions being strongly rugose, clothed with rufous hairs, intermediate space a little raised, nearly smooth, pilose transversely, the hairs rufous; antennæ testaceous, with the base more obscure and the club lighter; prothorax strongly transverse, broader than the elytra, rounded and serrulate laterally, the anterior margin is straight on each side, the angles are slightly obtuse and the posterior margin is very obtusely angular in the middle, crenulate above, and rounded towards the angles; the dorsal part is covered with dense, rough punctures, but smaller and denser on the sides; in the middle there is a somewhat irregular smooth band, two smaller ones, little distinct and smoother on each side, and the punctures are pilose and the hairs rufous; elytra broadly sulcate, the furrows opaque and smooth, the intervals moderately narrowly costate; the costæ and the suture are shining, the fifth costa is dilated at base, and the sixth interrupted past the base; pygidium very slightly punctate; under side somewhat asperous, pectus and legs clothed with long, rufous hairs; abdomen nearly smooth, with the lateral part of the segments moderately densely asperous; anterior tibiæ armed with four long and sharp teeth the intervals of which are crenulate.

Hab. Great Namaqualand.

This insect is related to *S. intricatus* and *S. morbillosus*; it is noticeable by the elytra having broad furrows separated by narrow and smooth costæ, and the prothorax covered with deep, somewhat close, large punctures, and with the sides serrate; the head has between the eyes two rugose impressions dotted with rufous hairs, and separated by a small, oblong, nearly smooth raised part; the legs are fringed with closely set, moderately long, bright rufous hairs."

SCARABÆUS REICHEI, Waterh.,

Annals and Magaz. Nat. Hist., 1890, p. 365.

"Oblong, moderately depressed, black; head rugose, smooth on the middle behind, sharply six-dentate in front; thorax distinctly broader than the elytra, a little convex, strongly closely punctate and having an irregular median smooth line and four macules set before the base, sides crenulate and ciliate with black hairs; elytra moderately depressed, opaque fuscous black but with the suture smooth, distinctly striate, the striae finely punctulate, and the intervals moderately convex, very finely and very closely granulate, and having moderately small sub-seriate punctures; sides tri-carinate; metasternum pilose, canaliculate in the middle, punctate.

Length 19 mm.

Hab. Cape of Good Hope.

This species has the general form and characters of *S. intricatus*, Fabr., but is much larger. The thorax has the punctures similar to those in *S. intricatus*, but crowded together, leaving a smooth median line and four irregular smooth spots near the base. The elytra are dull, very densely and finely granular; each interstice has in its middle portion very minute shining dots which are placed near together and give a more shining appearance to the middle of the interstice. The metasternum has an impressed line for its whole length; the punctures are distinct and not very widely separated."

SUB-GEN. SEBASTEOS, Westw.,

Trans. Ent. Soc., iv., 1847, p. 226, pl. xvii., fig. 1.

Key to the Species.

A¹. Trochanters of posterior legs normal.

Clypeus with two long, porrect median teeth, anterior tibiae strongly bi-mucronate inwardly.. .. *galenus*.

Clypeus normal, anterior tibiae not mucronate inwardly *plausibilis*.

Lateral lobe of clypeus prolonged diagonally and very long, anterior tibiae mucronate at tip.. .. *laticeps*.

A². Trochanters of posterior legs produced in a sharp, very distinct spine.

Head normal, anterior tibiae bi-mucronate inwardly *caffer*.

SCARABÆUS GALENUS, Westw.,

Plate XXX., fig. 8; Plate XXXVII., fig. 28.

Trans. Entom. Soc., iv., 1847, p. 226, pl. xvii., fig. 1; Lacord.,
Gener. Atlas, pl. xxv., fig. 5.

S. paradoxus, Bohem., Ins. Caffr., ii., p. 170.

S. westwoodi, Har. Coleopt., Heft. v., 1869, p. 95.

Black, sub-opaque with the suture of elytra shining; head covered with deep, nearly reticulate punctures which do not become much elongated on the edge of the clypeus the two front teeth of which are very elongate and slightly diverging, broadly scooped, rounded at tip, and have underneath a vertical apical very conspicuous spine, and a smaller one, also vertical, in the centre of the sinuation; prothorax convex, very deeply emarginate at apex on each side, and with a conspicuous, sharp spine on the anterior angle, lateral part serrulate for a quarter of the length, carinate from there to the posterior angle, and with a series of punctures bearing a small fascicle of three or four erect hairs; the basal margin is slightly carinate and has a series of more closely set setigerous punctures; it is slightly punctured on the disk, the punctures are not closely set and disappear along the base, and there is also a narrow median longitudinal space reaching from base to apex without any puncture; elytra slightly attenuate from base to apex, finely striate, the striae deep, the intervals nearly but not quite plane, faintly aciculate, and each with a double series of small punctures, sutural part convex at middle, outer margin with only one supra-marginal carina, which begins at a long distance from the base; legs slender, intermediate and posterior tibiae very distinctly bi-dentate outwardly, anterior ones rugose, nearly foveolate on the upper side, strongly quadridentate outwardly, the basal tooth is, however, smaller than the one following, the space between the penultimate and the last one is much greater than between the two preceding, the penultimate one has a vertical tooth in the centre of the upper side, the outer edge is serrate, the inner part is very conspicuously crenulate, strongly mucronate at tip, and has a sharp, incurved spine under the second outer tooth, the tibia itself is inflexed in the middle, and there is an incurved spine in the upper apical part of the femora which are not deeply grooved and have the upper edge of the grooves serrulate for half the length; metasternum hardly aculeate at apex, and having an elongate median impression between the intermediate femora, and a shorter and shallower one at base; pygidium impunctate.

Length 26–28 mm.; width 13–14 mm.

Hab. Cape Colony (Burghersdorp, Kimberley, Prieska); Southern Rhodesia (Upper Limpopo, Salisbury).

SCARABÆUS LATICEPS, n. spec.,

Plate XXXVII., fig. 30.

Black, little shining; head very finely granulose, and having a few shallow punctures in the central part, while the anterior part of the clypeus, and also the lateral lobe are covered with long, elongated punctures very closely set, the four anterior teeth of the clypeus are moderately long and sharp, and the lateral lobe is extremely elongate and diagonal and the outer edge a little emarginate; prothorax convex, covered entirely with very minute, closely set, depressed granules, and a few punctures interspersed; it is very distinctly serrate laterally with the anterior angle spinose, the basal margin has a series of closely set punctures, and there is a fine, depressed, longitudinal line in the median part reaching neither base nor apex; elytra a little attenuated from near the shoulder towards the apex, moderately gibbose near the suture at base, very finely striate with the intervals very finely shagreened and having a more or less well duplicated series of small punctures; pygidium shagreened; legs fringed with brownish black hairs, apical teeth of intermediate and posterior tibiae strong, anterior tibiae quadri-dentate outwardly, but with the basal tooth smaller than the one following, inner side very distinctly crenulate from base to apex where it is mucronate on the upper side, outer edge not serrate from the base to the basal tooth; metathorax aculeate and having a narrow, elongate impression or rather shallow groove between the intermediate coxæ, and an ovate, deep one at base; the whole of the sides is very closely punctured with the intervals finely granulose.

This species is at once distinguishable by the elongate shape of the basal lobe of the clypeus.

Length 26–27 mm.; width 16–17 mm.

Hab. Natal (Frere, Durban).

SCARABÆUS PLAUSIBILIS, Péring.,

Trans. S. Afric. Philos. Soc., vol. vi., pt. ii., 1892, p. 25.

Black, not very shining, elytra opaque, but with the suture shining; head broad, striolate except at the base, which is broadly but not very deeply punctured, teeth of clypeus sharp and fairly

long, lateral lobe broad the two front teeth not diverging, it has underneath a moderately conspicuous vertical spine, and another, also vertical, in the centre of the sinuation; prothorax serrate laterally, and with a sharp apical spine, basal margin punctulate on each side for half the length and impressed in the middle, upper side finely and distinctly granulate laterally but with the median part deeply punctured; the said punctures have a small granule in each interval in the anterior part, but not from middle to base, and there is a longitudinal smooth line reaching from apex to base, and slightly lozenge-shaped in the centre; elytra a little rounded past the middle, which imparts them a more rounded appearance, broadly striate with the intervals a little convex and having an ill-defined duplicate series of small punctures, the suture is shining and the striae and intervals are aciculate, the aciculation being more shining than the background; legs moderately long, intermediate and posterior ones fringed with long, black hairs; anterior tibiae, strongly quadri-dentate and serrate outwardly from the digitation to the base as well as between the outer teeth, inner side closely crenulate; pygidium sub-punctulate; metasternum not aculeate at apex, deeply and broadly grooved from the apical part to beyond the intermediate coxae, and having a small ovate impression at base.

Length 27-30 mm.; width 17-19 mm.

Hab. Ovampoland.

The facies of this insect is not so singular as that of *S. galenus*; the two median teeth of the clypeus are not so long, nor diverging, neither are they rounded at tip, and they would resemble those of *Scarabæus* but for the three vertical teeth underneath, which are quite similar to those of *S. galenus*.

SCARABÆUS CAFFER, Bohem.,

Plate XXXVII., fig 29.

Insect. Caffr., ii., 1857, p. 169.

Black, shining; head, thorax and legs fringed with black hairs; head shagreened in the centre and sides, clypeus covered with closely set elongated punctures, teeth long, the two anterior recurved and having underneath at about half the length a small conical tooth and a sharp carina ending above the mouth in a conical tubercle in the middle; prothorax convex, closely serrate laterally and very closely punctured along the basal margin, very finely shagreened, or more properly, deeply aciculate, and with some moderately deep but very distinct punctures scattered about on the disk, but rarer near the base; elytra bulging a little past the

humeral part, and a little attenuate from there to the apex, not gibbose at middle near the suture, very finely shagreened and finely striate, the intervals without any distinct trace of punctures; the second supra-marginal carina runs from the base to the middle only; pygidium punctulate; anterior tibiæ with three strong outer teeth, the apical one of which is much longer than the other two, and two or three serrations beyond the basal tooth, inner part mucronate at tip and about one-third of the length, the space between the two points being laminate in the male, but slightly less so in the female, while the remainder of the inner part is serrate, the upper edge of the fore femora is distinctly serrate, and the trochanters of the intermediate and posterior legs are produced in a distinct spine longer in the hind leg; metasternum rounded at tip and having a deep median groove ending between the intermediate coxæ, and a sub-triangular impression at the base connected with the anterior groove by a shallow line. The armature of the male is very small.

Length 25–28 mm.; width 14–17 mm.

In this species the first supra-marginal carina runs from the base to about the median part of the elytron and disappears beyond that point, instead of being obliterated in the anterior part and running in the posterior as in the other South African species of *Sebasteos*.

Hab. Natal (Eshowe, Durban), Transvaal (Potchefstroom).

GEN. CIRCELLIUM, Latr.,

Régn. Anim., 2 éd., iv., 1829, p. 535.

Mentum slightly emarginate at tip, ovate laterally, lobes of ligula falcate at tip, ovate laterally, corneous and densely ciliate inwardly; basal joint of labial palpi long, thick, very swollen at tip, second much shorter than the first, incurved, not as thick as the first, third short, subulate, and planted in the inner side of the apical part of the second; last joint of maxillary palpi fusiform, grooved outwardly at tip only; maxillæ robust, upper lobe apical, not much broader than the apical part, inner lobe short, fasciculate at tip, and reaching close to the upper lobe which is not fasciculate; basal joint of antennæ as long as the six joints following, sinuate on either side, club normal, three-jointed; head broadly semicircular, clypeus emarginate in the centre and with a small horizontal round tooth on each side of the emargination; prothorax and elytra very convex; pygidium triangular, bending forward; legs very robust, anterior tibiæ strongly tri-dentate outwardly, intermediate and posterior ones strongly

bi-dentate outwardly and having two apical spurs; the posterior ones are arcuate and very distinctly serrate on either side; tarsi short, triangular, spinose on each side, the outer spine longer and more robust than the inner one; coxæ slightly diagonal; metasternum broad, divided from the mesosternum by a sharp carina; no sexual difference.

The habitat of the only species included in this genus seems restricted to the extreme south-eastern part of the Cape Colony.

CIRCELLIUM BACCHUS, Fabr.,

Plate XXXVIII., fig. 1.

Spec. Ins., i., p. 32.

C. hemisphaericus, Pall. Icon., p. 20, pl. B., fig. 23.

C. lyceus, Westw., Brit. Cyclop., ii., p. 55.

C. bacchus Reiche., Ann. Franc., 1842, p. 81, pl. v., fig. 4.

Black, shining; head very broad, genæ carinate, clypeus emarginate in the centre and having on each side a small horizontal rounded tooth, head and clypeus covered with closely set, round punctures; prothorax very broad and convex, carinate all round, closely but not deeply punctulate, and having no trace of central line or impression; elytra fitting against the thorax, orbicular, as convex as the prothorax, bi-carinate along the outer margin, the carinae very close to one another, but slightly diverging towards the base, base sub-serrulate, suture not raised; they are very finely striate with the intervals plane, slightly aciculate, and having several more or less seriate rows of small punctures; under side rugose and deeply punctured, metasternum with a deeply impressed median line from between the intermediate coxæ to the base, and a small ridge on each side of it at the apical part; legs very little hairy, under side hairless.

Length 21-46 mm.; width 20-31 mm.

Hab. Cape Colony (Knysna, George, Bredasdorp, Caledon, Paarl).

GEN. SCELLIAGES, Westw.,

Proceed. Zoolog. Soc., v., 1837, p. 12.

Mentum ovate, not at all emarginate at tip, lobes of ligula sub-spatulate, densely ciliate, maxillæ not very broad, deeply scooped inwardly, upper lobe directed inwardly, inner lobe nearly as broad and not reaching the fringe of the upper one; first and second joints of the maxillary palpi ob-conic, apical one longer than the two

preceding, sub-cylindrical, a little attenuate at tip, and not grooved inwardly; labial palpi short, thick, the penultimate one is half the size of the one preceding, and the apical one very much narrower and sub-cylindrical; clypeus six-dentate; basal joint of antennæ longer than the five following, club three-jointed, somewhat globose, the joints fitting into each other; prothorax very convex, marginate laterally; elytra hardly convex, slightly gibbose in the middle near the suture past the median part of the disc, bi-carinate laterally; pygidium nearly vertical; legs robust; anterior tibiæ strongly quadridentate outwardly; posterior and intermediate tibiæ dilated at apex, bi-dentate outwardly, and the intermediate with two apical spurs; tarsi short, broadly triangular, spinose, claws normal; intermediate coxæ diagonal, broadly separated, metathorax produced in a sub-cuneiform process at apex; body and legs well-nigh hairless; no sexual difference; shape of genital armature identical in the two species included in the genus.

The facies of *Sceliages* is very much like that of some species of *Scarabæus*. The characteristic differences are: (1) The shape of the antennal club, the last joint of which is smaller than the second and fits into it, the second is also smaller than the third and fits also into it; (2) the shape of the tarsi; (3) the presence of two apical spurs on the intermediate and posterior tibiæ; (4) the broadly separated intermediate coxæ.

Two species of *Sceliages* are now known to occur in South Africa, and the genus has not as yet been met with anywhere else.

Key to the Species.

Anterior tibiæ not curved or dilated inwardly at tip; antennæ									
yellow	..	..	..	..	..	..	..	..	<i>hippias</i> .
Anterior tibiæ curved and dilated inwardly; antennæ black									
	..								<i>adamastor</i> .

SCELIAGES ADAMASTOR, SERV.,

Plate XXX., fig. 9; Plate XXXVII., fig. 35.

Encyclop. méthod., x., 1825, p. 351.

Sceliages jopas, Westw., Trans. Zool. Soc., ii., p. 159, pl. 29, fig. 1.
Ateuchus microcephalus (pars.), Bohem, Ins. Caffr., ii., p. 174.
Sceliages adamastor, Lacord., Gener. Atlas, pl. xxvi., fig. 2.

Black, shining; clypeus six-dentate and covered, like the head, with very closely set punctures which are deeper than those on the head; antennæ rufo-piceous; prothorax very convex, quite smooth, sharply carinate laterally and in front, outer margin slightly ser-

rule in the anterior part only, base not carinate, smooth; elytra hardly narrower behind the sloping humeral angle than the prothorax at its broadest part, attenuate from a short distance of the base towards the apex, plane but slightly gibbose past the middle along the suture, very finely striate with the intervals plane and filled with very fine, shining, very slightly raised dots; the outer margin is bi-carinate, and the carinae are set very close to one another, and are very slightly divergent towards the shoulder; pygidium closely aciculate and slightly shagreened; legs nearly glabrous, robust, anterior tibiae strongly quadri-dentate outwardly and strongly serrate from the base to the digitation and also between the teeth, inflexed and dilated from near the median part to the apex inwardly, and closely and distinctly serrate in the male, but not dilated inwardly, and with the outer teeth longer and sharper in the female, and also more sharply serrate, coxae scarcely punctured; metasternum slightly punctured on the sides, smooth in the centre and aculeate in front, with the aculeate apex nearly vertical.

Length 14–19 mm.; width 9–13 mm.

Hab. Cape Colony (Mossel Bay, Knysna, Seymour), Natal (Durban), Southern Rhodesia (Salisbury, Mazoe), Transvaal (Rustenburg), Mozambique (Rikatla).

SCELIAGES HIPPIAS, Westw.,

Proceed. Ent. Soc., 1844, p. 100; Trans. Ent. Soc., iv., 1847, p. 226, pl. xxvii., fig. 2.

Atenuchus microcephalus (pars.), Bohem., Ins. Caffr., ii., p. 174.

So closely allied to the preceding species that it is difficult to distinguish the one from the other. It is, however, considerably smaller, the antennae are flavous-yellow; the prothorax is very finely and closely punctured, in the male the anterior tibiae are not incurved nor dilated at apex, and the elytra are not as attenuate from the humeral angle towards the apex as they are in *S. adamastor*.

Length 12–13½ mm.; width 9–10½ mm.

Hab. Transvaal (Johannesburg, Lydenburg).

GEN. GYMNOPLEURUS, Illig.,

Illiger's Magaz., ii., 1803, p. 199.

Mentum ovate, widely and deeply emarginate at tip, each lobe of the ligula narrowly horny at base, at middle, membranaceous on

each side and fringed on the top with dense, long, ciliate hairs; first joint of labial palpi thick, one-third longer than broad, second half the length of the first, massive, a little incurved, truncate at tip, last joint narrow, sub-cylindrical, subulate, also truncate at tip; maxillæ concave inwardly, upper lobe lateral, moderately broad, inner one short, maxillary palpi moderately long, their apical joint fusiform, grooved underneath; antennæ nine-jointed, basal joint longer than the five following, second short, the other six ob-conical, club tri-foliate; head with a semicircular clypeus bi- or quadri-dentate in front; eyes divided into two, the upper part smaller than the lower; prothorax convex, sinuate in the anterior part and with the outer angles sharp, sub-diagonally amplified from there to past the middle where the sides are nearly straight as far as the base, or very slightly rounded; all the outer margins are more or less sharply carinate, the lateral one being often bi-carinate for the whole length or part of it, but always slightly recurved towards the base and produced there in a distinct angular point; the disk is very convex, and there is on each side a supra-lateral, conspicuous, round impression, and sometimes a smaller one on each side of the median part of base; scutellum wanting; elytra sinuate on each side along the base, always sharply carinate, the carina being broadly emarginate, and leaving the angle of the three ventral segments uncovered; they are always a little attenuate towards the apex, rather plane than convex, and a little callose above the apical part; pygidium nearly vertical; metasternum produced in front in a more or less sharp, triangular, aculeate process, median part very broad between the coxæ the cotyloid cavities of which are not very diagonal, generally finely grooved in the centre, and more or less impressed at base; legs moderately strong, anterior tibiæ tri-dentate outwardly, and provided with tarsi armed with a long claw, always serrate outwardly and also inwardly, posterior and intermediate tibiæ curved inwardly, provided with a long, incurved spur, more or less distinctly bi-dentate at apex and always closely serrate outwardly; in the male the apical part of the anterior tibiæ is often mucronate inwardly, and the spur is broad and obliquely truncate at apex.

The specific differences in the genital armature are not sufficiently distinct to be of much use.

The species of this genus have the same habits as those of *Scarabæus*, and the larvæ are similar. The genus is represented in Europe, India, Asia, and Ceylon, but the species are very numerous in Africa, and they are so closely allied that their identification is very difficult.

*Key to the Species.*A². Basal part of prothorax with two impressions on the middle.B². Clypeus quadri-dentate.

Metallic green, opaque; upper part very roughly and closely shagreened; metathorax produced in a triangular tubercle deeply impressed at base *splendens*.

Metallic green, shining; prothorax closely shagreened; elytra slightly plicate transversely near the suture, intervals finely shagreened and set with small granules; metathorax produced in a triangular tubercle deeply impressed at base . . . *wahlbergi*.

Bronze, opaque; upper part very finely shagreened; metathorax slightly aculeate in front, the aculeate process not impressed at base; anterior tibiae not deeply emarginate inwardly and not dentate in the male *consocius*.

A¹. Basal part of prothorax not impressed in the middle.

Upper side blue or greenish blue, shining; prothorax and elytra finely aciculate; metathorax produced in a sharp, triangular point not impressed transversely at base *insidiosus*.

Upper side coppery bronze, sub-opaque; prothorax very finely aciculate; elytra very finely shagreened; metathorax produced in a sharp, triangular point not impressed transversely at base . . . *caffer*.

Upper side dull bronze; prothorax covered with not closely set granules; elytra very finely shagreened, intervals set with small granules; metathorax produced in a triangular tubercle impressed at base *fastiditus*.

Upper side bronze, sub-opaque; prothorax covered with very closely set granules; elytra very closely shagreened; metathorax produced in a somewhat blunt triangular process not impressed at base *unicolor*.

Bronze or bronze-green, sub-opaque; prothorax covered with not very closely set granules wanting in or near the base; intervals of elytra set with moderately close minute tubercles; metathorax produced in a somewhat blunt triangular process:

Striae of elytra very shallow *thalassinus*

Striae of elytra deep *chloris*.

Upper side coppery bronze, opaque; prothorax striolate and covered with numerous impressions, elytra very roughly shagreened; metasternum aculeate at tip *caelatus*.

B¹. Clypeus bi-dentate.a². Head without a median smooth longitudinal carina.c². Upper part of the lateral sinuation of elytra sharp, aculeate.

Outer margin of the prothorax sharply angulate past the middle *humeralis*.

c¹. Upper part of the lateral sinuation of elytra rounded . . . *connexus*.

Coppery red, slightly opaque; prothorax with a smooth, raised longitudinal line *cupreus*.

Upper side light bronze with a slight coppery tinge, opaque; prothorax without a raised median shining line *sericatus*.

Upper side dark blue, opaque; prothorax with a fine, not very distinct longitudinal median band *modestus*.

*a*¹. Head with a median, smooth longitudinal carina.

d. Lateral part of pectus clothed with a silky white pubescence.

Coppery red or bright green: prothorax with a nearly continuous smooth, raised line, and two raised, smooth spaces on each side of it *ignitus*.

Green or greenish blue, shining; prothorax not granulose in the centre, only punctate, the two lateral areas absent *virens*.

GYMNOPLEURUS SPLENDENS, Cast.,

Hist. Nat. d. Ins., ii., p. 71.

G. profanus, Latr., Voy. Cailliaud., iv., p. 281.

G. splendidus, Bertolon., Nov. Comment. Ac. Bonon., x., p. 393.

Sub-opaque metallic green on the upper side with the under side violaceous green and the legs green underneath, but sometimes slightly violaceous on the upper side; head very closely granulate, apical part of clypeus sub-foveate; prothorax very closely shagreened with the anterior and lateral part very closely granulose, in the centre of the disk there is a short, impressed longitudinal line reaching neither the middle nor the base, and on each side of it there is a very short, basal, lineiform impression, the marginal carina is nearly straight from past the median part to the base where it is recurved and produced in a very distinct angle; elytra very finely striate, and evenly shagreened in the intervals; pygidium closely aciculate and finely granulose; metasternum produced in a sharp triangular tubercle deeply impressed at the base, the intercoxal space is vaguely punctured with the anterior part granulose; it has a slender median impressed line reaching from near the base, which is not impressed, to a short distance from the basal impression of the apical tubercle, sides very closely granulose; anterior tibiae of male slightly incurved and dilated at tip, a little emarginate inwardly beyond the blunt internal mucro, and sinuate under the basal external tooth.

Length 16-18 mm.; width 11-12 mm.

Hab. Southern Rhodesia (Middle Limpopo, Salisbury, Victoria Falls), Natal (Durban, Frere), Bechuanaland (Kanye).

GYMNOPLEURUS WAHLBERGI, Fähr.,

Insect. Caffrar., ii., p. 183.

Coppery green on the upper side, and very shining, legs and under side shining metallic green; head and clypeus covered with minute granules set moderately close to one another, and very distinct, edge of clypeus slightly foveate; prothorax covered with small granules set very close to one another, median part of the disk with a faint, yet discernible, median line reaching from a short distance from the base to about the median part, and on each side on the base itself there is a very distinct linear impression; the outer margin is nearly straight from past the middle to the base, where it is recurved and angular; elytra very finely striate, with the intervals plane and covered with small granules somewhat dense but not touching one another; the first and second, and also sometimes the third intervals are slightly plicate at middle; pygidium aciculate; metathorax produced in a sharp triangular process; it has no longitudinal line or impression, is very closely punctulate in front on each side of the triangular process, and is sparingly granular laterally.

Intermediate in sculpture between *G. caffer* and *G. profanus*; from the former it is distinguished by the closely granular prothorax and the presence of the two linear impressions on each side of the centre of the base, and by the shape of the metasternum which projects a good deal more in front and is not grooved; it differs from the latter in the more shining appearance, the sculpture of the prothorax is nearly identical, but the intervals of the elytra are not closely and uniformly shagreened, they are set with minute, somewhat distant granules, and the triangular process of the metasternum has no transverse impression nor is the metasternum itself grooved.

Length 13-17 mm.; width 9-11 mm.

Hab. Ovampoland (Omrromba), Southern Rhodesia (Buluwayo, Salisbury).

The Ovampoland examples have a brighter coppery sheen than those from Lower Rhodesia.

GYMNOPLEURUS CONSOCIUS, n. spec.

Size, shape, and colour of *G. thalassinus*, but with a different sculpture except on the head and clypeus, where it is similar; the prothorax instead of being granulose is finely shagreened except in the anterior part and also along the outer margin; the median discoidal line is nearly similar, but it has on each side a basal linear

impression wanting in *G. thalassius*; the intervals of the elytra are more evenly shagreened, that is to say, the granules are more closely set, slightly smaller, and of equal height; the shape and sculpture of the metasternum is the same; the anterior tibiae of the male are also emarginate inwardly at tip, but the emargination is not so circular, nor so deep, and there is no mucro at tip.

Length 13–15 $\frac{1}{4}$ mm.; width 8 $\frac{1}{2}$ –9 $\frac{1}{2}$ mm.

Hab. Transvaal (Potchefstroom), Orange Free State (Bloemfontein).

GYMNOLEURUS INSIDIOSUS, n. spec.,

Greenish blue or dark blue and moderately shining on the upper side, under side and legs nearly black; head as long as broad, slightly shagreened from the base to about the median part, but foveolate from there with the intervals of the small foveae granulose; clypeus quadri-dentate, the four teeth long, the two median ones much recurved, anterior part of the head black; prothorax convex, a little attenuate laterally from the middle to the apex the angle of which is very sharp, slightly sinuate past the median part, and straight from there to the base where the supra-marginal carina ends in a sharp angle, finely and closely punctured, and having a median longitudinal smooth line ending in a small, triangular impression situated above the base; elytra with narrow, deep striae, intervals very finely shagreened; pygidium finely aciculate; metasternum produced in a long triangular process the apical part of which is perpendicular with the prosternum, the median part of the metasternum is smooth, very slightly punctured, and has a narrow median line reaching from a short distance from the base as far as the apex, and also a shallow depression near the apex, while the sides are densely granuloso-punctate; anterior tibiae of male incurved at tip, a little dilated inwardly and incised at the extreme end; anterior coxae with a spine underneath nearer to the apex of the coxa than to the base; all the tibiae are serrate.

Length 21–23 mm.; width 13–14 mm.

Hab. Southern Rhodesia (Salisbury).

This species is allied to *G. azureus*, Oliv., but quite distinct.

GYMNOLEURUS CAFFER, Fähr.,

Insect. Caffrar., ii., p. 181.

Light bronze, shining on upper and under sides, median part of metasternum and legs dark bronze, the latter nearly black; head

with a few scattered granules on each side of the base, becoming denser in the centre and replaced in the anterior part by foveolate punctures the intervals of which are finely granulose; prothorax convex, very finely aciculate rather than shagreened, and having laterally some minute granules hardly visible; the outer margin is very feebly sinuate a little past the middle, and slightly rounded towards the base with the marginal carina angulate; elytra as in the preceding species, but a little less elongate, the striæ are not so deep, and the intervals are a little more roughly shagreened; pygidium aciculate; metasternum produced in a triangular process similar to that of *G. mashunus*, and with the same sculpture; legs similar.

Length 20 mm.; width 13 mm.

This species is to be distinguished from *G. azureus* as well as from *G. profanus* and *G. chloris* by the prothorax being more rounded laterally towards the base.

Hab. Natal (Durban).

GYMNOPLEURUS FASTIDITUS, Har.,

Coleopt., Heft. 1867, i., p. 74.

? *G. mundus*, McLeay, Hor. Entom., 1821, p. 510.

Dark bronze, sub-opaque on the upper side, legs and under side dark cyaneous; head covered with granules not closely set, anterior part of clypeus sub-fossulate; prothorax covered with small but very distinct granules not set close to one another; the carina of the outer margin is distinctly sinuate in the middle and slightly rounded towards the base where it is slightly recurved, and distinctly angular; in the centre of the disk there is a very indistinct lineiform longitudinal impression; elytra finely striate, intervals finely shagreened and with minute granules springing from a puncture-like impression, not closely set, and more shiny than the background; pygidium finely granulose; metasternum produced in a sharp aculeate process the basal part of which is impressed transversely; the sides of the metasternum are closely granulose, but the median part is very slightly punctate and has a very faint median line reaching from near the base to about two-thirds of the length; anterior tibiae of male a little incurved and broadening at tip where they are slightly emarginate inwardly a little below the apex, but the apical part is mucronate in the male.

Length 19–21 mm.; width 13–14 mm.

Hab. Southern Rhodesia (Manica, Salisbury).

GYMNOPLEURUS UNICOLOR, Fahr.,

Insect. Caffrar., ii., p. 182.

G. delagorqueti, Waterh., Ann. and Mag. Nat. Hist., 1890, p. 370.

Bronze, sub-opaque or very moderately shining on the upper side, darker bronze underneath, legs of the same colour as the under side, but sometimes with a slight violaceous tinge; head and prothorax covered with very minute, closely set granules; the latter has a very fine longitudinal smooth median line, often quite indistinct, and reaching from the base to about the middle; the outer margin is slightly crenulate, hardly duplicate, distinctly sinuate beyond the median part and a little attenuated towards the base where it is slightly angular; elytra narrowly striate, intervals finely and equally shagreened; pygidium shagreened; metathorax produced in a somewhat blunt triangle at apex, slightly impressed transversely at base, and having a fine impressed line reaching from the basal impression to a short distance from the apex; it is fairly closely punctured at middle, and granulose in front and laterally; in the male the anterior tibiae are a little thickened at tip, very slightly sinuate below the second external tooth, and not mucronate inwardly at tip.

Length 17–19 mm.; width 11–12 mm.

This species is very closely allied to *G. consocius*, but it is more distinctly shagreened on the upper side, and it is always larger; it is distinguished from *G. fastiditus* by the apical part of the metasternum having no transverse impression, and being much less pronounced; the anterior tibiae of the male are not so much amplified, nor so conspicuously emarginate inwardly at tip.

Mr. Waterhouse has himself identified this species as his *G. delagorqueti*.

Hab. Transvaal (Johannesburg, Potechefstroom), Southern Rhodesia (Salisbury), Natal (Frere, Durban), Cape Colony (Port St. John).

GYMNOPLEURUS THALASSINUS, Klug,

Monatsb. Berl. Acad., 1855, p. 650.

G. sub-cupratus, Fahr., Insect. Caffr., ii., p. 184.*G. coracinus*, Fahr., *loc. cit.*, p. 185.

Obscure bronze, turning sometimes to very dark green on the upper side, under side and legs bronze black, the latter sometimes with a dark green or violaceous tinge; head and clypeus very distinctly granular, the granules are not closely set; prothorax also

covered with very distinct granules set close to one another, but not coalescing, in the centre of the disk there is a fairly well-defined longitudinal impressed line reaching from near the base to past the median part, and the basal part itself is not as granulose at middle as the anterior or the lateral part of the disk, the outer margin is slightly crenulate, not much rounded behind past the median part, and is neither recurved nor angular at base; elytra distinctly striate with the intervals set with very minute, not closely set granules; pygidium set with very minute remote granules; metasternum produced in a distinctly triangular process and grooved from a deep transverse basal impression to a short distance from the tip of the aculeate process, the whole metasternum is very closely granulose; anterior tibiæ of male deeply emarginate in a semicircle inwardly at tip, and with a sharp, inner spur, tooth of anterior femora situated half-way between apex and middle.

Length $12\frac{3}{4}$ –13 mm.; width 9 mm.

Hab. Transvaal (Potchefstroom), Southern Rhodesia (Middle Limpopo), Mozambique (Delagoa Bay), Natal (Durban, Umvoti County), Bechuanaland (Kanye).

GYMNOLEURUS CHLORIS, Klug,

Monatsb. Berl. Acad., 1855, p. 650.

Smaller, greener, and less opaque than *G. thalassinus*; the shape and sculpture of the head and prothorax are similar, but the elytra, which are a little more narrowed behind, are very much more deeply striate, the intervals are also a little more distinctly granulose in the basal part.

I am indebted to Herr H. Kolbe, of the Berlin Museum, for a female example of this species.

Length 12 mm.; width 8 mm.

Hab. Mozambique (Sena, teste Klug).

GYMNOLEURUS CÆLATUS, Wiedem.,

Plate XXXV. fig. 11.

Germ. Mag. Ent., iv., 1821, p. 127.

Somewhat dark coppery bronze on the upper side, legs and under side dark cyaneous; head and clypeus rugulose, anterior part of the latter sub-foveate; prothorax with numerous conspicuous finely plicate impressions, outer sides very roughly shagreened, outer margin distinctly duplicate from the median part, and directed

obliquely from there to the base where the upper carina is produced in a sharp recurved angle; elytra extremely shagreened, with the grain running lengthwise, narrowly but deeply striate, and plicate at middle on the second interval; pygidium roughly shagreened; metasternum produced in a moderately sharp triangular process, closely granulose all over and having a deep transverse impression at base, and an elongate one at a short distance from the apical process; anterior legs neither ampliate nor emarginate inwardly, tooth of anterior femora set nearer to the apex than to the median part; anterior tibiae not dilated inwardly, similar in both sexes.

Length 10–13 mm.; width 7–9 mm.

Easily distinguished from its South African congeners by the impressions on the prothorax. Examples from Cape Colony are of a redder coppery hue on the upper side than those from beyond.

Hab. Cape Colony (Knysna, Port Elizabeth, Somerset East, Graham's Town), Natal (Durban, Newcastle, Maritzburg), Transvaal (Potchefstroom, Boksburg).

GYMNOPLEURUS HUMERALIS, Klug,

Monatsb. Berl. Acad., 1855, p. 650; Peter's Reis., 1862, p. 216.

Dark cyaneous, turning sometimes to green, opaque; head very finely and equally shagreened, anterior part sub-foveate and granulose; prothorax finely aciculate, lateral margin sub-aculeate at about three-fourths of the length, not grooved, and produced at the base in a very distinct angular process; there is hardly any sign of a longitudinal line in the centre of the disk; elytra attenuate laterally towards the apex, and having the upper angle of the lateral emargination sharply aculeate, intervals aciculate, some of the punctures shining more than the background; pygidium shagreened; metasternum produced in a moderately sharp triangular process impressed slightly at times at a short distance from the apex, and very closely granulose, sides less densely granulose, median part closely aciculate, and with an indistinct longitudinal line stopping at some distance from the apical process.

Length 11–14 mm.; width 6–9 mm.

This species is very closely allied in shape and colour to *G. modestus*; the difference consists in the sculpture of the upper surface, which, with the exception of the head, is aciculate instead of being shagreened, the elytra are much more attenuate laterally towards the apex, and the upper angle of the lateral emargination is sharply angular instead of being rounded.

Hab. Bechuanaland (Kanye), Southern Rhodesia (Limpopo River, Buluwayo, Umcheki River), Mozambique (Tette, teste Klug).

GYMNOPLEURUS CUPREUS, Fähr.,

Insect. Caffr., ii., p. 189.

Coppery-red, moderately shining on the upper and under side, legs of the same colour; head covered with very closely set, distinct granules, central part of the head with a conspicuous smooth ridge reaching from base to apex, edge of the bi-dentate clypeus violaceous; prothorax covered with very closely set but very distinct elongate granules, central part of the disk with a smooth raised line, being the continuation of the occipital one, and stopping a little short of the base; there is no other smooth line or areolet on the sides, and the outer margin is slightly oblique from the middle to the base where it projects in a moderately sharp angle; elytra finely striate with the intervals conspicuously granulose and the granules closely set; pygidium granulose; metasternum granulose laterally and also on the sides of the triangular process which is somewhat blunt at apex, punctulate in the middle, and slightly impressed longitudinally between the intermediate coxæ.

Length $10\frac{1}{2}$ –11 mm.; width 7 mm.

Hab. Cape Colony (Barkly West), Southern Rhodesia (Victoria Falls), Ovampoland (Omrramba).

GYMNOPLEURUS SERICATUS, Erichs.,

Wieg. Arch., 1843, i., p. 232.

The description of *G. modestus* applies also to this species which, however, is coppery-bronze instead of dark-blue, it is also opaque, but has sometimes a slight sericeous appearance, the shagreened surface is, however, finer and yet at the same time more conspicuous owing to the less subdued sheen, and the basal process of the outer margin is sharper and projects further.

Length $9\frac{1}{2}$ mm.; width 6 mm.

Hab. Damaraland (Otjimbingue), Northern Damaraland; occurs also in Angola, from which place it was originally described.

GYMNOPLEURUS MODESTUS, Péring.,

Trans. S. Afric. Philos. Soc., vol. iv., pt. i., p. 94, 1888.

Cyaneous-blue, opaque or little shining on both sides, legs of the same colour as the rest of the body; head shagreened, anterior part

of the clypeus sub-foveate, prothorax finely and equally shagreened, supra-marginal carina rounded laterally towards the base, and produced there in a very sharp angle, the lateral margin is grooved for three-fourths of the length, and the central part of the disk has an ill-defined longitudinal line hardly noticeable beyond the middle and nearly ending in a slight depression in the centre of the base; elytra with distinct striæ, intervals as finely shagreened as the prothorax, upper angle of the lateral emargination rounded; pygidium very finely granulose; metasternum absolutely similar in shape and sculpture to that of *G. humeralis*, but not impressed transversely at tip.

Length 11 mm.; width 6 mm.

Hab. Cape Colony (Beaufort West).

GYMNOPLEURUS IGNITUS, Klug,

Plate XXXVIII., fig. 2.

Monatsb. Berl. Acad., 1855, p. 650.

G. smaragdinus, Fähr. (pars.) Insect. Caffrar., ii., p. 187.

Bright coppery-red on the upper part with the sides beneath and the legs greenish, or totally metallic green; head covered with minute and closely set elongate granules and having in the centre a narrow longitudinal smooth carina beginning as a small smooth patch at the base and ending in the centre of the bidentate clypeus; prothorax very convex, covered with very closely set elongate granules, and having in the centre a broad, raised, smooth, band reaching from the apex to a short distance from the base, and a curved patch and a smaller one, also raised, on each side; elytra narrowly and not very distinctly striate, intervals closely shagreened, second interval with three very broad and deep transverse impressions in the middle; pygidium closely granulose; metasternum aculeate at tip, faintly punctulate in the centre, and without any distinct median groove or impression; sides of pectus and also outer part of posterior femora clothed with a silky white pubescence.

Length 9 mm.; width 6 mm.

The nearest ally of this species is *G. fulgidus*, Oliv., from Senegal. As for *G. smaragdinus*, Fähr., being identical with *G. ignitus*, there is, I think, little doubt of it, judging from the description, although in the co-type which I examined the longitudinal line and patches of the prothorax were not much more raised than in some examples of *G. virens*; these lines and patches do not appear so much raised in the green variety (*G. smaragdinus*), but it is simply an optical illusion.

Hab. Southern Rhodesia (Victoria Falls, Middle Limpopo), Ovampoland, Northern Damaraland.

GYMNOPLEURUS VIRENS, Erichs.,

Wieg. Arch., 1843, i., p. 231.

G. smaragdinus, Fähr. pars. Insect. Caffrar., ii., p. 187.

Bright metallic green, sometimes bluish green, and occasionally green with a brassy tinge, clothed like *G. ignitus*, with a silky white pubescence on the sides of abdomen and the outer part of the posterior femora; head shaped and sculptured as in *G. ignitus*; the prothorax is similar in shape, but it is moderately closely punctured on the greatest surface of the disk, the curved patch and areolet on the sides are not raised, and as often as not are quite obliterated, and the median longitudinal impunctate line reaches from apex to base, but is very inconspicuous and sometimes hardly visible; the elytra and under side are as in *G. ignitus*.

Length $8\frac{1}{2}$ –11 mm.; width $5\frac{1}{2}$ –7 mm.

This species has a very wide range in South Africa; the sculpture of the prothorax is very variable and at times approximates that of *G. bicolor*, but in some examples from Natal it is almost impunctate.

Hab. Natal (Durban, Maritzburg), Cape Colony (? Griqualand West, Port St. John, East London), Bechuanaland (Kuruman, Kanye), Transvaal (Rustenburg, Potchefstroom, Lydenburg), Lower Rhodesia (Buluwayo, Mazoe, Manica), Damaraland, Ovampoland (Evare River, Omrramba).

GEN. PACHYSOMA, McLeay,

Hor. Entom., i., 2, 1821, p. 507.

Mentum very deeply emarginate in the centre and with a long fascicle of hairs on each side of the emarginations, diagonal laterally from the apex to about the middle, and parallel from there to the base, ligula bi-lobate, sub-styliform, sub-membranaceous and ciliate; basal joint of labial palpi sub-conical, second joint conspicuously incurved, a little narrower at base than the basal part of the first one, third one thin, subulate; maxillæ very robust, apical inner part produced in a distinct hook, upper lobe very short, briefly fasciculate, inner lobe also very small and widely disconnected, also ciliate, basal joint of maxillary palpi slender, slightly clubbed at tip, second much swollen inwardly at middle, third swollen at tip also inwardly, apical joint styliform, longer than the preceding one and slightly grooved inwardly; clypeus very diagonal laterally and provided with two

or four very distinct anterior teeth; antennæ normal; prothorax convex, rounded and serrulate laterally; elytra rotund; pygidium somewhat inflexed; intermediate coxæ almost contiguous; anterior tibiæ quadri-dentate outwardly, and distinctly serrate from the digitation to the base; intermediate and posterior ones strongly bi-dentate outwardly, and bi-mucronate at tip; posterior tibiæ and tarsi provided with long, fasciculate hairs; posterior and intermediate tarsi provided with claws.

The habits of *Pachysoma* are the same as those of *Scarabeus*; they are, however, far from being as common as the latter; they work at their balls in daytime.

While in one species, *P. æsculapius*, there is no sexual difference, in *P. hippocrates*, *marginatum* and *denticolle*, the anterior tibiæ of the male and sometimes the posterior ones are (*marginatum*) incurved at tip, and laminate, mucronate, or distinctly dentate inwardly.

The genus numbers six species, of which I have seen four. The identity of one, however, *P. striatum*, Cast., seems to me to be very doubtful, and I feel rather inclined to think that Castelnau's very short description was made from a small example of *P. hippocrates*, which is the only species with a punctulate prothorax. (Fairmaire does not mention the sculpture of the prothorax of *P. schinzi* in his description.)

The shape of the genital armature of *P. æsculapius*, *hippocrates* and *denticolle*, is the same, but that of *M. marginatum* differs sensibly.

Key to the Species.

A³. Clypeus bi-dentate.

Anterior and lateral part of prothorax covered with closely set granules; anterior tibiæ not serrate inwardly in either sex; elytra feebly costulate.. .. *æsculapius*.

Anterior tibiæ dilated inwardly at tip in the ♂.

Whole surface of prothorax closely and deeply punctate; elytra not costulate.. .. *hippocrates*.

Prothorax set with very distinct scattered granules, elytra distinctly costate; anterior tibiæ mucronate at tip in the ♂, and with a series of five distinct teeth inwardly *marginatum*.

A². Clypeus with two bi-lobate anterior processes.

External teeth of the anterior tibiæ truncate at tip *schinzi*.

A¹. Clypeus quadri-dentate in front.

Prothorax closely foveate and with a median lozenge-shaped deep impression and a diagonal one on each side; anterior tibiæ denticulate inwardly and bi-mucronate at tip in the male.. .. *denticolle*.

PACHYSOMA ESCULAPIUS, Oliv.,

Plate XXX., fig. 10; Plate XXXVII., fig. 32.

Entom., i., 3, p. 154, pl. xxiv., fig. 207.

P. barbatum, Thunb., Mém. Ac. Petr., 1818, p. 409.*P. cristatum*, Fabr., Ent. Syst., i., p. 62; Syst. El., i., p. 51.*P. validum*, Bohem., Ins. Caffrar., ii., p. 180.

Black, opaque, or very little shining; head rugose, basal part of the head and of the lateral lobes slightly granular, the whole margin fringed with black or blackish brown hairs; prothorax also fringed laterally and at base with dense, long hairs, closely serrulate on the sides, and with the base punctato-serrulate, moderately convex, shagreened, and covered with small granules somewhat closely set in the anterior and median part, there is a short sub-median impressed longitudinal line in the centre of the disk; elytra rotund, sharply marginate all round with the margin slightly grooved laterally for two-thirds of the length, rugose, broadly striate with the intervals a little raised and having a faint trace of a median line, striæ with very indistinct, inconspicuous somewhat seriate granules; pygidium granulose; legs strong, fringed with very dense black hairs, anterior femora distinctly granulose beneath, anterior tibiæ very strongly quadri-dentate outwardly and closely and strongly serrate from the base to the basal tooth, as well as between the outer teeth; metasternum and sides granulose, and having a short, sub-lanceolate impression close to the intermediate cotyloid cavities; abdominal segments with a transverse series of granules, except the last one, which is more densely sprinkled with them.

Length 26 mm.; width 28 mm.

Hab. Cape Colony (Cape District, Somerset West, Tulbagh).

I have seen one of Boheman's co-type of *P. validum*, and I cannot detect any difference with the present species.

PACHYSOMA HIPPOCRATES, McLeay,

Plate XXXVII., p. 31.

Hor. Entomol., i., 2, 1821, p. 507.

Facies of preceding species, but larger and proportionally more robust; black, shining on the prothorax; head rugose but punctulate in the anterior part of the clypeus the basal lobes of which are entirely granulose, basal part of head also granulose; prothorax serrulate laterally and with the base also serrulate; the sides are fringed with very long and dense fulvous hairs, the disk is covered with closely set, deep punctures, and has a median smooth line

reaching from base to apex, and also a diagonal sub-basal, elongate impression on each side of it, not reaching quite the median part; elytra slightly rugose, very faintly striate with the intervals plane, and having a very inconspicuous series of minute granules; pygidium slightly granular; legs as in the preceding species, but the anterior tibiæ are dilated inwardly from the apex to about the median part and bluntly serrate, and there is only one serrate tooth beyond the basal outer one; the metasternum has no impression between the median coxæ; the abdominal segments are as in the preceding species.

Length 32 mm. ; width 20 mm.

Hab. Cape Colony (Malmesbury).

I have not been able to examine a female of this species.

PACHYSOMA MARGINATUM, Pér.,

Plate XXXVII., fig. 33.

Trans. S. Afr. Philos. Soc., vol. iv., 1888, p. 92.

Black, opaque; head rugulose at base, with the central and apical part of the clypeus smooth, lateral lobes granular, the two front teeth of the clypeus sharper and a little longer than in *P. æsculapius* and *P. hippocrates*; prothorax similar in shape, sharply and closely serrate laterally, and punctato-serrulate along the base, nearly shagreened and besprinkled with very distinct, not closely set granules; the disk has a very indistinct longitudinal median smooth line; in the ♂ the granules of the central part of the disk disappear and foveate punctures take their place; elytra orbicular, broader in the middle than the thorax at its widest part, striate and having five intervals convex and in some examples sub-rectiform, the juxta-marginal space is depressed and closely granulate, and each interval has a series of smaller granules; in the female the granules have a tendency to become bi-seriate on each alternate interval; outer margins sharp, nearly bi-carinate and slightly serrulate; pygidium granulose; legs strong, fringed with dense, long fulvous hairs; anterior tibiæ quadridentate outwardly, those of the male broadly mucronate inwardly at tip, and having five sharp, straight, equi-distant spines in the inner curve; posterior tibiæ in the same sex incurved a little at middle and serrate from the curve to the apex; in the female the anterior tibiæ have no inner teeth nor are they bluntly mucronate at tip; femora deeply pitted but not granulose; metasternum not impressed between the intermediate coxæ.

Length 20–27 mm. ; width 14–17 mm.

Hab. Cape Colony (Namaqualand).

PACHYSOMA DENTICOLLE, Pér.,

Plate XXXVII., fig. 34.

Trans. S. Afric. Phil. Soc., vol. iv., 1888, p. 93.

Black, moderately shining, elytra with a broad rufescent patch beginning at the third stria, extending on the disk close to the outer margin, and reaching behind to three-fourths of the length; head foveolate with the intervals minutely granulose, lateral lobes of clypeus with distinct granules, anterior part of clypeus sharply quadridentate, the two median teeth being the longest; prothorax acutely dentate laterally, the teeth being separate and equi-distant; the basal margin is serrulate, the disk foveate with the walls of the foveæ raised, and there is in the centre a broad, deep lozenge-shaped smooth impression reaching apex and base, and a diagonal, sub-basal ovate one, also smooth, but having a few foveæ in the centre; elytra rotund, smooth, narrowly striate with the intervals convex, and having each a series of small granules, outer margin distinctly bi-carinate; pygidium with a few granules in the centre; anterior tibiæ sharply quadridentate outwardly, sharply serrate from the basal tooth to the base and with the serration not closely set, incurved at tip where the inner spur is very distinctly divaricating and bi-fid in the male, scooped out inwardly below the inner spur, and provided with an incised tooth and two short sinuations in the female, while in the male the upper carina is produced inwardly and armed with conspicuous sharp teeth, the inner margin is thus grooved owing to the projecting upper carina, and is also denticulate, and the broadly dentiform process at the tip is not incised; the hind tibiæ are similar in both sexes; metasternum granulose, slightly impressed in the centre; abdominal segments hardly granulose.

Length 16-17 mm.; width 11 mm.

Hab. Damaraland.

PACHYSOMA SCHINTZI, Fairm.,

Annal. Soc. Entom. de France, 1888, p. 178.

“Ovate, convex, black, shining; head transverse, feebly scabrate, smooth in the centre and dilated and flattened on each side, undulate laterally and somewhat sharply angulate in front; clypeus slightly rounded in the middle and armed on each side with a horizontal process bi-lobate at tip; prothorax transverse, a little rounded yet slightly angular laterally with the margins crenulate, the lateral ones are fringed with long brown hairs, and the basal one is broadly sinuate with the angles strongly rounded on each side; elytra short,

broadier than long and with the sides and the angles strongly rounded, striate with the intervals somewhat plane and smooth, but slightly striolate behind; pygidium convex, smooth; anterior tibiæ robust, armed externally with four strong teeth, truncate at apex, and fringed outwardly at base with long rufo-piceous hairs; posterior tibiæ and tarsi also fringed with dense and long rufo-piceous hairs.

Length 29 mm.

This remarkable species is easily distinguished by the shape of the head, which is deeply incised in the centre, and has on each side of the incision a bilobate prolonged process; the sides of the head are depressed and dilated, and hardly narrowed in front; the anterior angles of the prothorax are rounded as in *S. æsculapius*, and the elytra are smooth and have simple, well-defined striæ; the outer teeth of the anterior tibiæ are not triangular, and are abruptly truncate at tip.

Hab. Namaqualand."

PACHYSOMA STRIATUM, Casteln.,

Hist. Nat. d. Insect., ii., p. 68.

"Black, clypeus not incised laterally, having in front two sharp teeth; prothorax transverse, somewhat strongly punctate; elytra feebly striate and having between each stria a longitudinal row of very small tubercles; all these lines are obliterated behind and on the sides; anterior tibiæ with a fine longitudinal line reaching from base to apex; they are quadri-dentate; sides of prothorax and legs fringed with black hairs.

Length 9 lin. ; width 6 lin."

This species might prove to be identical with *P. marginatum*, Pér.

GEN. *ANACHALCOS*, Hope,

The Coleopt. Manual, i., 1837, p. 50.

Mentum quadrate, deeply incised in the centre and without any trace of bi-lobate ligula, labial palpi inserted behind the mentum, first joint produced inwardly in a large sub-oblong process, second joint not quite so large and with the inward process aculeate, third joint very small, inserted not quite in the centre of the upper part of the second and somewhat club-shaped; last joint of maxillary palpi fusiform, grooved outwardly, upper lobe of maxillæ moderately curved and projecting a little beyond the inner lobe; head broad,

semicircular, deeply incised in front with the angles of the incision dentate, suture of genæ very fine; first joint of antennæ as long as the five following; prothorax convex, aculeate laterally before middle, carinate all round; elytra convex, finely striate, with the intervals foveolato-punctate and slightly granular, and having a sharp supra-marginal ridge reaching from the base to the lateral rounding of the apical part; legs long, anterior tibiæ strongly tri-dentate, sharply serrate outwardly, and having a strong inward tooth and no tarsi; intermediate and posterior tibiæ a little incurved and having two setulose carinæ on the upper side, joints of tarsi short, triangular, basal one not longer than the following one, claws moderately strong; metasternum broad between the coxæ, edged at tip by a semicircular ridge; cotyloid cavities slightly diagonal; pygidium perpendicular, either rounded or aculeate at apex, and produced underneath in a more or less elliptical smooth process fitting against a deep emargination of the last abdominal segment in the male; in the female the pygidium is normal and not recurved at apex.

Chalconotus are bronze or coppery-bronze convex insects having the same habits as *Scarabeus* and *Gymnopleurus*. The genus is an African one, occurring on the West and East Coast, as well as in Central Africa.

Synopsis of Species.

Pygidium rounded at apex in the male and with the apical margin
very little recurved *convexus*.

Pygidium aculeate at apex in the male and with the apical margin
strongly recurved *spectabilis*.

ANACHALCOS CONVEXUS, Bohem.,

Plate XXXVIII., fig. 3.

Insect. Caffr., ii., p. 196.

Bronze with a coppery sheen on head and prothorax; clypeus scooped out in the centre and with the angles of emargination sharp and dentiform, closely punctate with the punctures fine but deep; prothorax convex, anterior margin deeply bi-sinuate and with the angles very sharp, outer margin diagonally amplified from the anterior angle to a little more than one-third of the length, attenuate from that angular part towards the base, but a little emarginate under the lateral impression, the median part is covered with closely set punctures, but the sides are somewhat foveolate and

there is a faint trace of a smooth longitudinal median line reaching from apex to base; elytra very little broader than the prothorax at base, and a little amplified laterally from the base to a short distance from the apex where they are one-fifth broader than the prothorax at its widest part, convex, finely striate, the striae punctate at intervals of about 1 mm., and the intervals filled with equi-distant foveolate punctures moderately closely set and interspersed with minute shining granules; along the base there is a distinct but minute tubercle in each interval; pygidium sub-semicircular, flat, sharply carinate, and very slightly recurved at apex; in the male it is produced underneath in an elliptical process fitting in the deeply emarginate last abdominal segment and is covered with equi-distant and moderately closely set foveolate punctures, but in the female the apical margin of the pygidium is not at all recurved, nor is it produced underneath against the last abdominal segment which is not emarginate; the sculpture is the same as that of the male, but there are very often two small flattened tubercles set close together at about the median part; under side glabrous, foveolato-punctate; metasternum deeply impressed at the base, and less deeply so between the intermediate coxae; these two impressions are united by a longitudinal line.

Length 21-26 mm.; width 15-18 mm.

This species has a very wide range in South Africa, and reaches as far as Mpapwa in German East Africa. It is very closely allied to *C. cupreus*, Fabr., from the West Coast of Africa, but the pygidium of the male is not so sharply aculeate and recurved at tip, and the elytra are more rounded.

Hab. Cape Colony (East London, Kimberley), Natal (Durban, Frere, Maritzburg), Transvaal (whole country), Bechuanaland (Kurnuman), Lower Rhodesia (Salisbury, Buluwayo, Mazoe, Victoria Falls, Manica, Salisbury), Damaraland, Ovampoland.

ANACHALCOS SPECTABILIS, n. spec.

Colour, shape, and sculpture of *A. convexus*, but less convex and more elongate. The difference between the two species consists in the shape of the pygidium. In *A. convexus* the pygidium is broadly rounded at apex and uniformly carinate all round, whereas in *A. spectabilis* the pygidium is sharply triangular, and the margin is very distinctly recurved at the apex; it is slightly impressed in the centre and closely foveolato-punctate.

Length 31 mm.; width 18 mm.

Hab. Southern Rhodesia (Mazoe).

GEN. BYRRHIDIUM, Har.,

Coleopt., Heft. v., 1869, p. 96.

"Comes in the vicinity of *Coprecus* (an Australian genus), and differs from it among other things by the intermediate tibiæ which have two apical spurs; body ovate, very convex, apterous; upper part of eyes very small; clypeus quadri-dentate, intermediate teeth set at some distance from one another and sharp, lateral ones obtuse; no scutellum; epipleura broad; pygidium inflexed and sub-horizontal; antennæ nine-jointed, ninth joint deeply sulcate longitudinally underneath; mesosternum large, divided from the metasternum by a nearly straight suture; anterior tibiæ truncate in a straight line at tip, bi-dentate outwardly, posterior ones sinuate externally before the apex; tarsi short, posterior ones compressed and with the joints of nearly equal length."

BYRRHIDIUM OVALE, Har.,

Loc. cit., p. 96.

"Black, hardly shining, head and prothorax finely and densely punctulate; prothorax with the anterior angles rounded and the posterior ones obtuse, base non-marginate, lateral margin carinate lengthway; elytra obsoletely striate, intervals plane, smooth but with some fine punctures briefly pilose and disposed in series; antennæ dark ferruginous; prosternum carinate transversely and foveolate in the anterior part; pygidium, abdomen, mesosternum and metasternum very finely and densely punctured.

Length 12 mm.

Hab. Port Natal."

GEN. GYRONOTUS, Lausb.,

Annal. Soc. Entom. d. Belg., 1874, p. 187.

Mentum longer than broad, slightly rounded laterally, incised in the centre and set with long bristles, some of these fasciculate, on each side of the median incision, first joint of the labial palpi broadly dilated inwardly, the second is also dilated inwardly but less so than the first, and is somewhat triangular, the third one is small, glabrous and sub-fusiform, lobes of the ligula longer than the labial palpi, membranaceous and thickly fringed with hairs inwardly, last joint of maxillary palpi fusiform, not grooved outwardly, upper lobe of maxillæ curved, not broad but long, inner lobe narrow; head semi-circular, clypeus deeply emarginate in the centre and with each angle

of the emargination produced into a sharp tooth; prothorax short, convex, a little attenuate laterally in front but not angulate towards the median part, and having a small lateral tubercle; elytra convex, sub-orbicular or oblong, finely striate with the intervals punctato-squamose, they have a sharp supra-marginal carina; pygidium inflexed, sharply marginate; cotyloid cavities slightly diagonal, metasternum separated from the prosternum by an indistinct suture, and not impressed; legs as in *Anachalcos*, but the joints of the intermediate and posterior tibiae are longer and more conical.

The characters distinguishing this genus from *Anachalcos*, which it resembles, are the presence of the bi-lobate ligula and the less dilated labial palpi; the joints of the tarsi are not so short and are more conical, and the basal one is longer than the one following; the metasternum is not edged at tip by a semicircular ridge, but by a very indistinct suture, and the pygidium is inflexed, not vertical.

Key to the Species.

Prothorax diagonally attenuate laterally from near the middle to the anterior angle; elytra short, convex, somewhat rotund, deeply striate *pumilus*.

Prothorax not very diagonally attenuate laterally in front; elytra elongate, sub-oblong, not deeply striate *marginatus*.

GYRONOTUS PUMILUS, Bohem.,

Plate XXXVIII., fig. 5.

Insect. Caffrar., iii., p. 197.

Dark bronze, sub-opaque; head covered with very closely set deep punctures, suture of the genae quite indistinct; prothorax short, convex, carinate in front and laterally with the anterior angles rounded at tip, diagonally attenuate laterally for a third of the length, and straight from there to the base with the basal angle sharp, covered laterally and along the base with confluent minute foveolae, while the median anterior part is closely punctured; elytra very convex and dehiscent behind, having a very sharp supra-marginal carina broadly separated from the outer margin and overhanging it much; they are narrowly but deeply striate; the intervals are covered with deep punctures each filled with a slightly flavescent squamose hair; pygidium convex, inflexed, rugoso-punctate; under side and legs foveolato-punctate, median part of metasternum aciculate.

Length 11-13 mm.; width 8-9 mm.

Hab. Natal (Durban, Eshowe), Transvaal (Potchefstroom).

GYRONOTUS MARGINATUS, Pér.,

Plate XXXVIII., fig. 4.

Trans. S. Afric. Philos. Soc., vol. iv., p. 94, 1888.

Dark bronze, opaque, except the head and the median part of prothorax which are shining; head and prothorax very closely foveolato-punctate, the latter is convex, sharply marginate in the anterior part and laterally, the lateral margin is gradually attenuate for about one-third of the length towards the anterior part, but not at all angular at the base of the attenuation, in the anterior part of the disk there is slight trace of a median smooth line; elytra elongate, convex, with the posterior part sloping, very sharply carinate laterally from the base to the rounding of the posterior part, and with the margin carinate, the suture is also raised; it is narrowly striate, the striae are shallow and the intervals plane and covered with very closely set punctures bearing each a squamiform, slightly flavescent hair; pygidium flat, very much inflexed, under side and legs as in *G. pumilus*.

Length 15–16 mm.; width $9\frac{3}{4}$ –10 mm.

Hab. Cape Colony (East London), Transvaal (no exact locality).

GEN. ODONTOLOMA, Bohem.,

Plate XXXIX., fig. 27.

Insect. Caffrar., ii., p. 203, pl. i., fig. C.

Mentum glabrous, rounded laterally at middle and a little attenuate towards the tip, apical part emarginate; basal joint of labial palpi sub-triangular, broad, second a little broader than the first but of nearly the same shape, third one so small as to be almost invisible; lobes of the ligula very slender and a little longer than the labial palpi; maxillae deeply notched at tip outwardly at the point of insertion of the maxillary palpi, inner lateral lobe long, slender; first joint of maxillary palpi slender, curved, second much thicker and a little shorter, third shorter than the second and thicker, fourth very swollen at middle, sharply acuminate at tip, and a little longer than the two joints preceding; clypeus uni-dentate in the centre, bi-dentate on each side, and with the genae projecting very distinctly laterally where the suture with the clypeus should be, because there is no trace of it; the eyes, which are not very large, are not wholly divided by the canthus of the genae, and the upper part showing is very small and narrow, and has a distinct ridge projecting in front of it; the antennae are normal; the last joint of the club is not very convex;

prothorax convex, sub-parallel laterally with the base arcuate; elytra convex, rounded laterally, narrowly striate with the striae carinate on each side and having a supra-marginal carina slightly overhanging the marginal one, epipleura broad; pygidium vertical; metasternum separated from the prosternum in the middle by a sub-arcuate transverse raised line; prosternum moderately broad but not quite as much as in *Epilissus*; anterior tibiae strongly dilated at apex and having two blunt teeth set close together, and a strong one at tip nearly at right angles with the apical part which is straight and has at the apex of the inner part a short curved spur slightly directed downwards; intermediate and posterior legs compressed, a little dilated at tip; the two apical spurs of the intermediate tibiae are not very long but are distinct nevertheless, and the posterior ones have none; anterior tarsi very short, not longer than the width of the apical part of the tibia; intermediate and posterior ones compressed, basal joint shorter than the others.

Odontoloma are small convex insects found sometimes in decaying vegetable matter. The upper part of the body is covered with deep round punctures, some of which bear moderately long black or whitish bristles which are arranged regularly at some distance from one another on the elytra.

Three species are recorded from South Africa, and have not as yet been met with elsewhere.

Key to the Species.

A². Prothorax without a median smooth longitudinal line in the anterior part.

a². Bristles whitish, pygidium rounded at base and setulose .. *pauillum*

a¹. Bristles black, pygidium aculeate at base and with a median transverse row of bristles *pygidiale*.

A¹. Prothorax with a median smooth longitudinal line in the anterior part.

a¹. Bristles black, pygidium sub-aculeate at base and strongly transversely plicate *dentinum*.

ODONTOLOMA PAUXILLUM, Bohem.,

Insect. Caffr., ii., p. 203.

Epirinus sculpturatus, Har. Coleopt., Heft. iv., 1868, p. 80.

Black, moderately shining, legs brownish red; head closely and deeply pitted all over, the teeth of the clypeus are sharp, and the genæ are as sharp as the intermediate tooth; the solitary median

tooth is very small; prothorax nearly straight laterally, but rounded towards the apex, marginate in front only, convex, but a little depressed near the anterior angles which are not very sharp, and with a median basal impression; it is covered with deep foveolate punctures, closely set, and having some scattered whitish sub-decumbent bristles, which occur also partially on the head; elytra a little longer than broad, convex, somewhat ampliate towards the middle, not very declivous behind, narrowly striate with the edges of the striæ carinulate; the intervals have three irregularly arranged series of foveolate punctures, from which spring a row of white, sub-erect, thick bristles, set at some distance from one another; the lateral supra-marginal ridge does not begin quite at the base, but is very distinct and runs to a short distance from the rounded posterior part; pygidium rugosely punctured, sub-arcuate at the base, plane, and set with whitish bristles; abdominal segments with a series of deep punctures; metasternum and prosternum also very deeply punctured all over; intermediate and posterior legs nearly smooth, anterior ones closely punctured.

Length 2-2 $\frac{1}{4}$ mm; width 1 $\frac{1}{2}$ mm.

Hab. Cape Colony (Uitenhage), Natal (Frere).

ODONTOLOMA PYGIDIALE. n. spec.

Black, moderately shining; legs black; head closely and deeply pitted all over, teeth of the clypeus sharp, but the angle formed by the genæ is much more blunt than in the preceding species; the prothorax has the same shape, but it is more broadly pitted; the elytra are also nearly of the same shape, but they are more ampliate laterally at middle, the striæ are wider, the intervals are also wider, and have an additional irregular row of punctures, the seriate bristles of the intervals are fewer, and black; the basal margin of the pygidium is distinctly aculeate in the middle, the median part is raised, and there is a transverse series of black, stiff bristles, the whole pygidium is very finely striate transversely, and the under side is still more deeply punctured than in *O. pauxillum*.

Length 2-4 mm.; width 1 $\frac{1}{2}$ -2 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl).

ODONTOLOMA DENTINUM, Har.,

Coleopt., Heft. iv., 1868, p. 80.

The description of *O. pygidiale* suits this species; the difference consists in the prothorax having a distinct, raised, smooth line

reaching from the apex to about the median part, the outer sides are also more rounded laterally, and the punctuation seems deeper; the shape of the elytra is the same, but the striae are more in relief, and the punctures are deeper; the pygidium is also slightly aculeate at base, and has several very distinctly raised transverse folds almost carinate.

Length $3\frac{1}{2}$ mm.; width 2 mm.

Hab. Cape Colony (Cape Town).

GEN. EPIRINUS, Reich.,

Rev. Zoolog., 1841, p. 212.

Mentum sub-parallel laterally from the base to the median part, diagonally attenuated from there to the apex, broadly but not deeply emarginate in the centre, ligula divided in two short lobes, strongly ciliate inwardly, hardly longer than the basal joint of the labial palpi, the latter are short, the basal one is sub-clavate, the second is one-third shorter and has somewhat the shape of an inverted cone and is a little broader at the tip than the apical part of the first, the third one is very distinct, swollen, truncate at tip, and extends at the base on one-half of the apical width of the second joint; maxillae not very broad but long, upper lobe apical, long and not broad, inner lobe narrow, maxillary palpi long, basal joint bent and very slender, second and third somewhat in the shape of a long, truncate cone, apical one fusiform but a little more swollen inwardly in the middle, and with a long median groove outwardly; clypeus with semi-circular emargination in front and with the angles of the emargination projecting and recurved, genae without suture but projecting slightly laterally beyond the line of the clypeus, eyes not equally divided by the canthus of the genae, the lower part being more developed; prothorax moderately convex, sinuate in the anterior part, sub-diagonally ampliate from the anterior angle to about one-third of the length, and a little attenuate from there to near the basal part, and marginate all round; elytra as broad as the prothorax at base, hardly ampliate laterally, but a little attenuate towards the posterior part, and more or less depressed; they are striate with the striae more or less geminate; epipleura broad; pygidium vertical, metasternum trapezoid at middle, finely marginate, and with a slight transverse impression at apex extending all along the length; mesosternum reduced to a mere line at the apex of the cotyloid cavities; anterior legs strongly tri-dentate outwardly as well as denticulate below the digits, and having a long, inner, apical spur slightly curving downwards; anterior tarsi short, last joint long,

compressed; intermediate and posterior tibiae inflexed, the latter more strongly than the former, and provided with two spurs inwardly, they have two grooves in the outer side divided by a serrate line, the posterior tibiae are crenulate inwardly, in some species sometimes in both sexes, or are simple, the intermediate and posterior tarsi are moderately long, and the joints are triangular, elongate, but compressed, and a little more bristly inwardly than outwardly.

The habits of *Epirinus* are the same as those of *Scarabæus*, but the balls they make are not quite so large in proportion to their size. I have only observed *E. scabratus* and *E. obtusus* making them, but *E. hilaris* is only found in decaying leaves or vegetation.

Key to the Species.

A¹. Striæ of elytra not geminate.

B¹. Colour of body black.

Intervals of elytra raised, sub-pectiform, and punctured *sulcipennis*.

Intervals of elytra plane and finely granulose *validus*.

A². Striæ of elytra geminate.

B². Colour of body black.

Intervals of elytra with one series of conspicuous, oblong tubercles *scabratus*.

Intervals of elytra with two series of small but very distinct tubercles *asper*.

Intervals of elytra with two series of very minute, slightly setigerous granules *obtusius*.

B³. Colour of body metallic.

Prothorax sharply diagonal laterally in the anterior part, intervals of elytra plane, impunctate, glabrous *ceus*.

Prothorax rounded laterally in the anterior part, prothorax and intervals slightly setulose *gratus*.

Prothorax rounded laterally in the anterior part, intervals of elytra carinate and setulose *hilaris*.

A³. Striæ of elytra consisting of a series of broad, round punctures.

B⁴. Colour of body metallic.

Whole surface of body covered with long, stiff, curved bristles .. *comosus*.

EPIRINUS SULCIPENNIS, Bohem.,

Plate XXXVIII., fig. 12.

Insect. Caffrar., ii., p. 198.

Black, opaque, glabrous; head very closely punctured, teeth of the clypeus moderately sharp; prothorax convex, very closely punctured,

and having a very fine, sometimes indistinct, median raised line slightly depressed, however, at the base, the outer sides are sub-diagonally attenuate in the anterior part, but the apical angle is not very sharp; elytra as broad past the shoulders as the prothorax at its widest part, a little rounded laterally past the middle, somewhat depressed, narrowly striate, striae simple, intervals raised, sub-rectiform and moderately deeply punctured; under a high power the punctures are seen to bear a very minute white hair; the seventh interval is higher and more tectiform than the others; pygidium very finely aciculate and moderately deeply punctured; abdominal segments, femora, and metasternum very closely and deeply punctured, the latter has a faint, median longitudinal impressed line; posterior tibiae sharply crenulate inwardly in the male.

Female unknown.

Length $11\frac{1}{2}$ mm.; width 8 mm.

Hab. Cape Colony (Knysna).

EPIRINUS VALIDUS, n. spec.

Black, opaque; head and prothorax similar in shape and sculpture to *E. sulcipennis*; elytra a little ampliate laterally behind the shoulders and a little broader there than the prothorax at its widest part, somewhat plane, but slightly gibbose past the middle along the suture, narrowly striate, with the walls of the striae not sufficiently sharp to make it appear geminate, and the intervals are plane and have each four irregular series of minute, glabrous, shining granules; the pygidium is also granulose, and the femora and under side are as deeply punctured as in *E. sulcipennis*; the metasternum has also a faint, median longitudinal impressed line, and the posterior tibiae are very sharply crenulate inwardly in the male.

Female unknown.

Length 13 mm.; width $8-8\frac{1}{2}$ mm.

Hab. Transvaal (Lydenburg).

EPIRINUS SCABRATUS, Fabr.,

Ent. Syst. Append., p. 436.

E. flagellatus, Fabr., Spec. Ins., i., p. 32.

E. granulatus, Oliv., Ent., 1, 3, p. 167, pl. 8, fig. 67.

Dull black on head and prothorax, tubercles on the elytra very shining; clypeus broadly emarginate in the anterior part, and with the angles of the emargination produced in a distinct, slightly recurved tooth, and slightly sinuate on each side of the recurved

tooth, and also at the suture of the genæ; the whole surface is closely shagreened, and the antennæ and palpi are piceous-red; prothorax as closely shagreened as the head, sub-diagonally amplified laterally from the rounded apical angle to about one-third of the length, where it is rounded and is sub-parallel from there to the basal angle which is nearly rounded; in the centre of the disk there is a longitudinal, smooth, shining line interrupted in the median part, and also a very shallow basal impression; elytra as broad as the base of the prothorax, slightly amplified laterally before the middle where it is broader than the prothorax at its widest part, and narrowly and finely striate; the striæ are edged by two parallel lines slightly interrupted at short distances, and the intervals are covered with elongate, shining tubercles; pygidium shagreened; abdomen deeply aciculate; metasternum closely and deeply punctured on the sides and at middle, and with a very faint median impressed line at base; the anterior femora are very closely and deeply punctured, while the intermediate and the posterior ones have a few scattered granules; posterior tibiæ sharply seriate inwardly in the male, but not in the female.

Length 6-11 mm.; width 4-7 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Malmesbury, Worcester, Namaqualand, Oudtshoorn, Hope Town).

EPIRINUS ASPER, n. spec.

Head and prothorax dull black, elytra a little less dull, clypeus as in *E. scabratus* and equally shagreened; antennæ and palpi black; prothorax still more closely shagreened and having the same shape, but there is no trace of a longitudinal shining line in the anterior part, and there is a narrow short impressed line at the base; elytra as broad as the base of the prothorax, slightly amplified laterally before the middle where it is as broad as the prothorax at its widest part, depressed, but with the suture a little convex, narrowly and finely striate; the striæ are geminate, and the intervals have each a double series of elongate, very distinct granules; these intervals are slightly raised at the base, and the double series of granules on the seventh interval is more pronounced than the others; the lateral ridge is serrulate; pygidium deeply and somewhat closely punctured; the whole under side, including the legs, is closely and deeply punctured; the metasternum has a very faint, median longitudinal groove; posterior tibiæ crenulate inwardly in both sexes.

Length 10-11 mm.; width $6\frac{1}{2}$ mm.

Hab. Natal (Durban, Ladysmith), Transvaal (Lydenburg).

EPIRINUS OBTUSUS, Bohem.,

Insect. Caffr., ii., p. 199.

Dull black; head, prothorax, and elytra shaped as in the preceding species, and sculpture of head and prothorax identical, the sculpture of the elytra, however, differs; they are narrowly striate, the striae are geminate, the intervals are plane, and they have also each two series of granules, but these granules are extremely fine and very briefly setigerous, the lateral ridge is not serrulate, nor are the intervals raised at the base, and the seventh is not more pronounced than the others; pygidium deeply punctate, metasternum and under side deeply punctured, the latter has a distinct median longitudinal impressed line reaching from the base to two-thirds of the length; posterior tibiae crenulate inwardly in the male only.

Length 7–9 mm.; width $4\frac{1}{2}$ –6 mm.

Hab. Cape Colony (Stellenbosch, Paarl, Hope Town, Somerset East, Albert, Albany).

EPIRINUS AENEUS, Wied.,

Zoolog. Magaz., ii., 1, p. 24.

E. deplanatus, Bohem., Res. Eugen., 1858, p. 41.

Bluish black, or very dark green, sometimes nearly black; head deeply and closely punctured; palpi and antennae piceous-red, clava black; outer sides of prothorax quite diagonal in the anterior part for one-third of the length, anterior angles very sharp; it is depressed and very closely and equally punctured, and has a median, longitudinal, shallow furrow extending from the median part to the base; elytra shaped as in the preceding species, they are finely striate, the striae are geminate and the intervals are plane and have a double series of very minute, non-setigerous granules, the basal part of the seventh interval is distinctly raised; pygidium foveolato-punctate; metasternum punctured, but smooth in the centre, slightly callose at middle near the tip, and having a median, short, longitudinal groove; legs generally more metallic than the rest of the body; posterior tibiae not serrate nor crenulate inwardly.

Length 6– $7\frac{1}{2}$ mm.; width $3\frac{1}{2}$ –4 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Worcester).

EPIRINUS GRATUS, n. spec.

Bronze, hardly shining; head deeply and closely punctured and with many of the punctures bearing a very short, greyish hair; antennae and palpi piceous-red; the prothorax is covered with very

closely set punctures, many of which bear a very short, greyish hair, the sides are rounded in the anterior part, the apical angle is very sharp, and there is in the middle of the discoidal part a very narrow impressed line extending from the base to the median part; elytra a little broader at base than the basal part of the prothorax, and also a little broader behind the shoulders than the prothorax at its widest, not ampliate laterally, very little convex, finely striate, striae geminate, intervals slightly convex and having each one row of decumbent, very short, greyish hairs not closely set; pygidium punctulate; sides of abdomen deeply pitted; the median part of the metasternum is closely but not deeply punctulate, slightly callose near the tip, and has no median longitudinal impression, the sides are very deeply pitted; posterior tibiae very slightly serrulate inwardly.

Length 6 mm. ; width $3\frac{1}{4}$ mm.

Hab. Cape Colony (Griqualand West).

EPHINUS HILARIS, n. spec.

Bronze, not very shining; head very deeply and closely punctured; prothorax convex, very closely and deeply punctured, sides slightly coriaceous, there is hardly any trace of a median longitudinal impressed line in the discoidal part, but there is a very slight impression at the base, the outer sides are regularly rounded in the anterior part, and there is on each side of the lateral part an anterior round impression a little better defined than in the other species of the genus; elytra one-half longer than the prothorax, convex and very dehiscent behind, suture raised and slightly gibbose in the posterior part; they are striate with the striae geminate, and the intervals are sub-carinate and have each a closely set row of punctures bearing short, greyish bristles, the outer carina is very sharp, and a little recurved; pygidium punctulate; abdominal segments deeply pitted; metasternum closely punctulate in the middle, not callose at tip and without a trace of longitudinal impressed line, the punctures on the sides are deeper than in the median part; posterior tibiae not serrulate inwardly in either sex.

Length $3-3\frac{1}{4}$ mm. ; width $2\frac{1}{2}$ mm.

Hab. Cape Colony (Cape Town, Stellenbosch).

EPHINUS COMOSUS, n. spec.

Bronze-black, opaque on the upper part, but a little lighter beneath; head deeply and closely punctured, and covered with dense semi-decumbent, greyish, bristle-like hairs; prothorax rounded

laterally in the anterior part, moderately convex, and having a distinct median longitudinal impressed line at a short distance from the base, closely shagreened and covered, like the head, with half-decumbent, dense greyish hairs; elytra as broad behind the shoulders as the prothorax at its widest part, not ampliate laterally, moderately convex, distinctly punctato-striate with the striae geminate, and the intervals not quite plane, sub-rugose and having each two series of stiff, curved hairs set close to one another and very distinct; pygidium and metasternum also hairy, the latter is very deeply pitted in the middle, and is not callose towards the apex; posterior tibiae not serrulate inwardly.

Length 5 mm.; width $3\frac{1}{2}$ mm.

I have seen only one example of this hirsute species; the striae are much more broadly punctured than in the other.

Hab. Cape Colony (Stellenbosch).

GEN. EPILISSUS, Reiche.,

Rev. Zoolog., 1841, p. 212.

Nanos, Westw., Trans. Lond. Ent. Soc., 1847, p. 228.

Mentum rounded laterally, attenuate diagonally towards the apex, broadly and deeply emarginate at tip, marginate laterally; labial palpi with a very distinct palpiger nearly as long as the first, or basal joint which is nearly three times as long as broad, second joint in the shape of an inverted cone, and shorter than the first by half, third somewhat spindle-shape, but not sharp at tip and inserted in the centre of the preceding one; lobes of the ligula somewhat broad, a little shorter than the palpi and slightly curving inwardly at tip; maxillae long, moderately thick, nearly truncate at tip, upper lobe moderately broad, first joint of maxillary palpi short, second club-shaped, as long as the third which is much less swollen, fourth not quite twice as long as the preceding one, fusiform but not sharp at tip, and slightly grooved at the base outwardly; antennae nine-jointed, second joint thick, nearly twice as long as broad, clava large, first and second joints of club, hardly convex; clypeus of head recurved slightly, deeply emarginate at tip and with the angles of the emargination produced in a sharp, recurved tooth; beyond this tooth there is a smaller one at no great distance from it, but the genae are in a line with the lateral part in the South African species of the genus, and there is no trace of suture on the upper side; the upper part of the eye is smaller than that beneath, but is very distinct; prothorax deeply emarginate in

the anterior part with the outer angles sharp, the lateral part is very diagonally amplified from the apical angle for one-third of the length, and parallel from there, the base is not very much arcuate, the upper part is convex; elytra not broader than the prothorax and not quite twice as long, convex, sub-orbicular, edged laterally by a ridge overhanging the outer margin; epipleura moderately broad; pygidium sub-vertical but overhung by the elytra; metasternum produced in a sub-quadrate shape in the middle, and separated from the prosternum by a distinct impressed line, prosternum somewhat broad; legs moderately long, femora swollen, tibiæ incurved, especially the posterior ones, the anterior ones have three equidistant, moderately short, sharp teeth at the upper external part, and are serrulate from the digits to the base, thickened and emarginate at tip, and have a short spur, directed slightly outwards not at the inner angle of the thickened part, but midway and close to the insertion of the tarsi, the fourth of which is as long as the four preceding, and armed with a feeble bifid claw, intermediate and posterior ones compressed, and dilated at tip, the two apical spurs of the intermediate ones are very small, and those of the posterior ones are wanting; tarsi moderately long, compressed; the basal joint shorter than the one following, claws very small.

Nearly all *Epilissus* occur in Madagascar, but the genus is represented in South Africa by one species, which is found in decaying vegetable matter, and the sculpture of which seems to differ from that of the Madagascar species. Harold has described one species from Brazil.

EPILISSUS SUBTILIS, Bohem.,

Insect. Caffrar., ii., p. 201.

Piceous red, with the edges of the clypeus, the palpi, the antennæ, with the exception of the club, and the legs reddish brown, glabrous; head a little depressed in the middle in the anterior part, and covered with round, shallow punctures set moderately closely to one another; prothorax deeply sinuate at middle in the anterior part, and with the outer angles sharp, diagonally attenuate laterally towards the anterior angle for about one-third of the length, but the other two-thirds are straight, the base is not much arcuate in the middle, but the outer angles are much rounded; it is convex, and covered with oblong punctures enclosing a smaller one and set moderately close to one another; elytra sub-orbicular, convex, a little deliscent behind from about the middle, smooth and having impunctate

geminatae striae placed at some distance from one another, but with the space between them one-half as wide as the intervals; pygidium slightly punctulate; abdominal segments with scattered punctures; metasternum deeply punctured laterally and in the centre, but having a smooth transverse space at apex; prosternum also deeply punctured; femora and legs nearly smooth, apical spur of posterior tibiae very small, upper carinae of tibiae set with close bristles in the intermediate ones, posterior ones only with a few bristles.

Hab. Cape Colony (Cape Town, Stellenbosch), Southern Caffraria, teste Boheman.

Length $1\frac{1}{3}$ – $1\frac{1}{2}$ mm.

GEN. APHENGÆCUS, n. gen.

Mentum very concave in the median part, a little ampliate laterally in the middle and slightly attenuate towards the apex where it is moderately deeply emarginate; basal joint of labial palpi quite cylindrical, longer than the second which is sub-quadrata, wider than the first and truncate at tip, apical joint half the width of the second, nearly as long, and set in the centre of the apex of the former; maxillae strong, deeply sinuate and emarginate inwardly, apical lobe oblong, longer than broad, internal lobe nearly as long as the whole inner part of the maxillae; apical joint of the maxillary palpi fusiform outwardly, acuminate at tip, very deeply grooved inwardly for nearly all the length, and as long as the three basal ones put together; basal joint of antennae moderately slender, slightly increased at tip, second as broad as the apex of the previous one, sub-moniliform, third elongate, more slender than the second and a little thickened at tip, fourth, fifth, and sixth conical, the last two broader and shorter than the fourth, basal and apical lamellae of the club convex; clypeus strongly tri-dentate on each side, genae also sharply dentate; eyes showing on the upper side through a narrow, long slit; prothorax simple, convex; elytra very convex, geminato-striate, not sinuate laterally; epipleura distinct and having a diagonal carina reaching from the humeral angle to the median part, no wings; pygidium bluntly triangular, a little convex; metasternum broad between the coxae, separated from the metasternum by a nearly transverse raised line; anterior tibiae quite straight at tip, strongly tri-dentate outwardly, serrate between the three outer teeth and all along the outer part, apical spur very short, slender, acuminate and curved outwardly; tarsi slender, intermediate and posterior tibiae slightly bi-carinate on the upper part,

triangularly amplified at apex; basal joints of tarsi triangular, gradually decreasing in size; claws very slender; valves of penis asymmetrical.

APHENGÆCUS CLYPEATUS, n. spec.,

Plate XXXIX., fig. 22; Plate XXXVIII., fig 33.

Black, opaque or nearly so, palpi and antennæ rufous, club of the latter flavescent; clypeus armed with four long teeth slightly recurved, genæ distinctly serrate and with the anterior angle produced laterally in a triangular tooth; head very deeply and closely punctulate, the suture of the genæ is nearly obliterated, and there is hardly any trace of a frontal carina; prothorax simple convex, not much rounded laterally at middle, very little arcuate at base, faintly marginate laterally and along the base, covered with deep, elongate, very closely set punctures, and sprinkled with short, thick, sub-flavescent setæ; elytra very convex, not emarginate laterally, outer margin carinate, suture not raised, striæ narrow, impunctate, geminate; intervals plane, extremely finely plicate longitudinally, and having a very faint median series of very small tubercles, and a double row of thick, short setæ similar to those on the prothorax; pygidium punctate; mesosternum and metasternum closely and deeply punctate all over.

Length $4\frac{1}{2}$ –5 mm.; width $3\frac{1}{2}$ – $3\frac{3}{4}$ mm.

The habits of this curious species are unknown; I captured some numbers of it in trap-trenches where they had fallen during the night. I never found it anywhere else, and I suspect it to live in the dung-heaps of white ants.

Hab. Cape Colony (Stellenbosch).

GEN. *SISYPHUS*, Latr.,

Gen. Crust. et Ins., ii., 1807, p. 79.

Mentum nearly straight laterally but a little attenuate in front, very deeply emarginate in the centre; first joint of labial palpi broad, triangular, second joint not quite so broad, but also triangular, apical one half the width of the preceding one, inserted in the centre of it, and somewhat oblong; maxillæ moderately thick, upper external lobe very long and sub-falcate, internal one very short, hardly distinct; first joint of maxillary palpi very short, slender, and curved, second and third conical, apical joint longer than the two preceding, fusiform but slightly more swollen inwardly than outwardly; antennæ eight-jointed, second basal joint quite round, third

longer than the two following, external and internal joints of the elava slightly convex; head broadly emarginate in front with the angles of the emargination more or less dentiform, and with the angles of the genæ, which are parallel, also aculeate; in some species, however, the head is sub-hexagonal; eyes moderately large but only a small, oblong part shows on the upper side; prothorax very convex, attenuate laterally in the anterior part with the anterior angles acute, nearly straight from there to the base, declivous in front, and having a more or less distinct median longitudinal groove beginning at middle and reaching the base; elytra fitting against the prothorax, sub-parallel, or a little ampliate behind the humeral angles, and gradually attenuate behind, they are narrowly striate and covered with rows of small tufts of rigid hairs, no epipleura; pygidium narrowly triangular; abdomen very much compressed and deep; metasternum very broad in the centre, marginate, and with a broad and deep impression occupying nearly two-thirds of the median part in both sexes; prosternum with a sharp longitudinal carina aculeate at tip under the femora; mesosternum fairly broad for this group; intermediate cotyloid cavities nearly straight; anterior legs somewhat short, femora moderately thick, tibiæ short, and provided with three external, sharp, slender teeth, and a very long inner spur; anterior tarsi moderately long; intermediate and posterior legs very long, trochanters always greatly developed, posterior coxæ robust, tibiæ incurved and sometimes sinuate, bi-carinate outwardly and uni-carinate inwardly, intermediate ones with two, posterior ones with one long spur; intermediate and posterior tarsi very long, narrow, compressed, claws long, slender.

The species of *Sisyphus* have a very peculiar facies owing to the body being compressed laterally, and also to the length and curved shape of the intermediate and posterior legs. Their habits are very much like those of *Scarabæus*; and they make also balls of dung, but they seem to prefer horse- to cow-dung for their purpose. But instead of burying the ball in order to work it underground into the proper condition necessary for the young, one species, *S. appendiculatus*, after it has elaborated it into the orthodox shape, affixes it to a blade of grass.

I am indebted for that information and a figure of the subpyriform ball, and of the larva to G. A. K. Marshall, Esq.

In several species the trochanters of the posterior pairs are produced into long spines in the males, and the intermediate and posterior tibiæ have inner spines; these characters are also found in the females of these same species, but always in a rudimentary manner, and these appendages vary as much in size and length as the

cephalic and thoracic horns of *Copris*; certain species are also characterised by having spines beneath the anterior tibiæ, but this character does not occur in all kinds, and I have had to rely on the shape of the horny sheath of the penis of the male to differentiate the species. In spite of the great likeness in general facies of nearly all the species, this distinctive character holds remarkably good.

The female is very much like the male; in the first South African group in which the intermediate tibiæ have a basal spine and the posterior femora a projecting trochanter, the shape of the tibiæ is the same, but the spine of the femora is wanting, the trochanter does not project much, and the posterior tibiæ are much less incurved at apex; this last character, although not quite so conspicuous, is the only distinctive one in those species in which the intermediate tibiæ and the hind femora are simple and the trochanters not projecting (*S. appendiculatus*, *goryi*, ~~*manniscus*~~).

The number of species recorded from South Africa is eighteen, eight of which have been figured; but although adding two species I reduce the number to nine, the range of which in South Africa is very great, extending for some species from Cape Town to the Zambesi. Gory, in his 'Monographie du genre Sisyphus,' figures six species; but in spite of the plates, it is nearly impossible to ascertain the identity of all of them, some of which are probably the two sexes of one, or the small development of the same. One, *S. spinipes*, has most extraordinarily shaped legs, and although the habitat is alleged to be the Cape of Good Hope, I have not yet met with this singular species. This author's meagre description does not bear out the details given in the figures. This remark holds good especially for *S. rugosus*, in which the intermediate leg has a small spine on the upper side of the femur; the legs of *S. muricatus* are also not properly figured.

Klug has described three species and figured two of them; but except for one species, I believe the others to be identical with other kinds already described. The identity of *S. costatus*, Thunberg, and *S. barbarossa*, Wiedem., can only be guessed.

Boheman has described five species, the types or co-types of which I have seen, but only two species are valid.

Key to the Species.

A¹. Anterior tibiæ of male spinose beneath.

B². Three spines beneath.

Intermediate tibiæ with a very distinct sharp inner spine near the knee; trochanter of posterior legs very long, curved, transparent, blunt at tip, no spine on hind femora *rubripes*.

Similar to preceding species, but with the trochanter of posterior femora not transparent *fortuitus*.

Intermediate tibiæ angular inwardly near the knee, trochanter of posterior legs long, sharp at tip, posterior femora with an acute projection at middle beneath *quadricollis*.

B¹. Two spines beneath.

Intermediate tibiæ sub-serrulate underneath, and angulate near the knee, trochanter of posterior legs long, sharp, posterior femora with a short, sharp tooth far from the apical part of the trochanter *atratus*.

Intermediate tibiæ not angulate near the knee; trochanter of posterior legs long and sharp; posterior femora with a long, sharp spine beneath, or a triangular obtuse one . . . *spinipes*.

A¹. Anterior tibiæ of male without spines beneath.

B². Elytra with series of separate tufts of hairs.

Prothorax closely and densely setulose, and produced in a conspicuous angular process in the anterior lateral part.. *muricatus*.

Prothorax with series of distinctly separate tufts of hairs, prothorax normal *fasciculatus*.

B¹. Elytra with series of non-separate tufts of hairs.

Elytra with all intervals of nearly equal height; posterior tibiæ serrate *goryi*.

Elytra with all intervals equal; posterior tibiæ not serrate *manniscus*.

SISYPHUS RUBRIPES, Bohem.,

Plate XXXIV., fig. 20.

? *S. barbarossa*, Wiedem., Zool. Mag., ii. 1, p. 23.

Light brown, with a slight metallic sheen; head broadly and deeply emarginate in the anterior part, and with the angles of the emargination sharp and slightly recurved, genæ slightly incised laterally and with also the angles of the incision sharp, that of the genæ, however, is sharper than that of the clypeus, the surface is covered with setigerous punctures not closely set, and there is a slight indication of a transverse raised line between the eyes; anterior part of the head depressed in the centre; prothorax convex, strongly declivous in the anterior part, sides deeply impressed, nearly vertical, and with the edge of the lateral impression sub-carinate; it is very slightly attenuate in the anterior part, and the surface is covered with somewhat closely set punctures bearing each a moderately short, sub-flavescient hair curved at tip, the lateral depressions, however, have much shorter hairs, in the central part of the disk there is a longitudinal impressed line reaching from the top of the

anterior declivity to the base; elytra as broad at base as the prothorax, a little ampliate diagonally behind the shoulders, and distinctly attenuate from there towards the apex, they are moderately plane, but the suture is raised, the sides are somewhat vertical, they are finely striate with the striæ sub-geminate and slightly punctulate, the intervals are somewhat plane and have on each side of the striæ a row of short, erect bristles set close to one another, the suture has also a series of bristles on each side; pygidium covered with setigerous punctures not closely set; abdomen nearly glabrous; metasternum and legs covered with closely set setigerous punctures.

Male: Anterior tibiæ with one short blunt spine underneath at about the middle, one at a small distance from it and a little smaller, and a third one at the point of insertion of the tarsus; intermediate femora with a distinct tooth at a short distance from the apex, intermediate tibiæ arcuate and having a long, perpendicular spine at a short distance from the knee; trochanter of posterior legs light testaceous, very long, reaching nearly to half the length of the femora which are simple, slightly bent inwardly and not sharp at tip; the posterior tibiæ are more accurate at tip than in the female; in the smaller development, the hind trochanter does not reach the median part of the femur, but it is always distinct.

Female: Anterior tibiæ with the three spines underneath smaller than in the male, and at times quite rudimentary; intermediate tibiæ and femora as in the male, trochanter of posterior femora very slightly projecting, but not produced in a spine.

Length 8-10 mm.; width 4-6 mm.

Hab. Cape Colony (Transkei, Queen's Town), Natal (Durban, Frere), Transvaal (Lydenburg).

The valves of the male armature are long, deeply emarginate laterally in the middle and with the apical part long, narrowed and sharply curved downwards. From a dorsal view the valves are deeply constricted on each side at about two-thirds of the length, truncate and produced at middle in a sub-horizontal, narrow forceps.

This species resembles very much *S. quadricollis*, in general appearance, colour, and size of the posterior trochanters, but the hind femora have no median spine. The two species can, however, be easily distinguished by the very differently shaped genital armature. Boheman's species was described evidently from a female, and it is quite possible that some of the male examples have been mistaken for *S. quadricollis* = *S. appendiculatus*, Bohem.

Hab. Cape Colony (Worcester, Queen's Town, Transkei), Natal (Durban, Frere, Maritzburg), Transvaal (Lydenburg).

SISYPHUS FORTUITUS, n. spec.,

Plate XXXVIII., fig. 13.

Differs from *S. rubripes*, merely in the colour, which is darker brown; the size is also somewhat larger, and the elytra are a little more ampliate, but the facies and also the disposition of the hairs are identical. In the male, however, the three spines beneath the anterior tibiae are stronger and more closely set, and the very long trochanter is not light testaceous, is less incurved at tip, and the extremity is compressed. In the female the trochanters do not project. But the valvular sheaths of the penis are of very different shape; they are less curved, only slightly emarginate at about the middle, and the apical part is less abruptly curved. In the figure the emargination is too near the base.

Length 11 mm.; width 6-7 mm.

Hab. Natal (Durban).

SISYPHUS QUADRICOLLIS, Gory,

Plate XXXVIII., fig. 15.

Monogr., p. 9, pl. i., fig. 7.

S. hessi, Gor., loc. cit., p. 11, pl. i., fig. 3.

? *S. calcaratus*, Klug, Monatsb. Berl. Acad., 1855, p. 651; Peter's Reis., 1862, p. 218, pl. xii., fig. 12.

S. appendiculatus, Bohem., Insect. Caffr., ii., p. 190.

Shape, size, colour and sculpture of *S. fortuitus*, but occasionally paler; the difference consists in the shape of the intermediate and posterior legs and that of the sheaths of the penis; the anterior tibiae have the three teeth beneath very much developed, and the intermediate tibiae are similar, but the trochanter of the posterior leg is not quite as long as in the two preceding species, and is very sharp, and in the male the femora have beneath an acute projection at middle very much resembling a blunt spine; this projection is absent in the female. The shape of the valvular sheaths of the penis do not resemble that of any South African species; they are short, not emarginate at middle, but have a very slight constriction which has not been indicated in the figure.

Length $8\frac{1}{2}$ -10 mm.; width 5-7 mm.

Hab. Cape Colony (Transkei, Port Elizabeth, Stockenström, Graham's Town, Somerset East) Natal (Durban), Mozambique (Lourenço-Marquez and Beira, Sena, teste Klug).

Boheman's co-type of *S. appendiculatus* is a little lighter than the species from the Cape Colony and from Mozambique, but does

not otherwise differ, and as for *S. calcaratus*, Klug, not only does this figure agree very well with *S. quadricollis*, but I have also got some examples from the same locality. Not having been able to examine the genital armature, I cannot say with certainty that it is the same species, although I believe it to be such.

SISYPHUS ATRATUS, Klug,

Plate XXXVIII., fig. 16.

Monatsb. Berl. Acad., 1855, p. 651; Peter's Reis., 1862, p. 218,
pl. xii., fig. 12.

Lighter brown than most examples of *S. quadricollis*, but otherwise similar in shape, sculpture, and vestiture; the distinctive characters are the presence in the male of a sharp median tooth directed backwards in the posterior legs, and the shape of the valvular sheaths of the penis which are not quite so short, are emarginate past the middle, and are more sharply curved at tip; in the anterior tibiae the intermediate tooth underneath is absent.

Length 9 mm.; width $5\frac{1}{2}$ mm.

I have seen only one example (male) of this species. It is a little lighter in colour than Klug's figure, and it may not after all prove to be the same species, but an inspection of the genital armature of the type, which is in the Berlin Museum, would soon settle the point.

Hab. Cape Colony (Queen's Town).

SISYPHUS SPINIPES, ~~Thunb.~~, *Wes. & Gory*

Plate XXXIV., fig. 19.; Plate XXXVIII., fig. 17.

Mém. Ac. St. Petersb., vi., 1818, p. 411. *Wes. & Gory*, p. 12, pl. 1.

~~*S. spinipes*, Gory, Monogr., 1833, p. 8, pl. i., fig. 4.~~

Shape of the preceding species, but more robust, the colour is darker brown and that of the prothorax dark bronze, the elytra have a peculiar silky sheen, and the hairs of the upper side are longer and denser; the distinctive characters are the two spines under the tibiae which are very strong, the absence of a sharp tooth near the apex of the intermediate femora which are carinate underneath right to the trochanter, the posterior tibiae which are serrate from the apex to near the joint of the knee, whereas in all the preceding species the serration reaches only from the base to the median part, the trochanter of the posterior femora is long or very long and sharp, and runs somewhat longitudinally to the femur which has a long spine at

middle underneath; in the small development, however, the spine is replaced by a triangular, somewhat blunt process underneath, and the trochanter is not so much developed. Apart from the shape of the sheaths of the penis which is different from all the others, and only approximates to that of *S. atratus*, this species can also be distinguished by the absence of inner spine at a small distance from the knee of the intermediate tibiae.

Length $7\frac{1}{2}$ –12 mm.; width 5–8 mm.

Hab. Cape Colony (Cape Town, Worcester, Stellenbosch, Paarl), Natal (Durban), Transvaal (Lydenburg), Rhodesia (Zambesi River), Mozambique (Lourenço-Marquez).

SISYPHUS MURICATUS, Oliv.,

Plate XXXIV., fig. 18; Plate XXXVIII., fig. 19.

Entom., i., 3, p. 188, pl. xxvii., fig. 240; Gory, Monogr., p. 7, pl. i., fig. 1.

Black, not metallic; emargination of clypeus broad, not deep, the angles long and sharp, genæ alone angulate laterally, head finely and sparsely punctured, punctures briefly setigerous; prothorax very declivous in front from the apex to more than half the length, and somewhat plane on the upper side, very deeply constricted laterally, and with the anterior part produced in a greatly developed triangular process; the constricted part is deeply excavate and the upper part sharply carinate, it is covered with moderately long, brownish or dark hairs curved at tip, very closely set, but not fasciculate, and in the middle of the discoidal part there is a fine impressed longitudinal line; elytra fitting against the prothorax but distinctly ampliate at a short distance from the shoulders, they are striate, but the striae are very faint, and they have five rows of small fascicles of hairs not set very close to one another; pygidium hairy; anterior tibiae without teeth underneath.

Male: Intermediate tibiae slightly sinuate on the upper side, ampliate at middle underneath, trochanters produced in a sub-vertical, short, but very distinct spine; the posterior trochanters are also produced in a similar spine, and the femora have a broad, triangular, not very sharp tooth at about the middle; the posterior tibiae are conspicuously curved inwardly at tip, but not serrate or hairy in the inner part; the genital armature is slender, and the valvular sheaths are sinuate from near the base, little declivous at apex, but not much curved at tip.

Female: Trochanters of intermediate and posterior legs projecting,

but much less than in the male; posterior tibiæ without tooth underneath.

Length 10–12 mm.; width $6-7\frac{1}{2}$ mm.

Hab. Cape Colony (Knysna), Transvaal (Lydenburg).

SISYPHUS FASCICULATUS, Bohem.,

Plate XXXVIII., fig. 18.

Insect. Caffr., ii., p. 192.

Black, opaque, with a faint metallic tinge on the head which is shaped as in the preceding species, *i.e.*, without an intermediate tooth between the angular tooth of the clypeal emargination and the genæ, and has a few hairs and a few fascicles of the same in centre and at base; prothorax declivous in the anterior part, sharply carinate on the upper side from the base where the carina is produced in a sub-erect, triangular, very conspicuous tooth to near the anterior angle which is sharp, the lateral anterior part is slightly diagonal, and there is no deep impression laterally, only a moderately narrow space edged by the discoidal carina; the upper surface is covered with distinct tufts of black hairs more or less seriate; elytra fitting against the prothorax, ampliate behind the shoulders, very indistinctly striate, and having on each side four conspicuous rows of tufts of black hairs, and a rudimentary one along the outer margin; pygidium with three longitudinal rows of hairs.

Male: Intermediate and posterior femora without tooth or spine, posterior trochanter briefly and bluntly spinose at tip, posterior tibiæ not much curved, not serrate inwardly, but fringed there with long, black hairs.

Female: Like the male; differs only by the posterior tibiæ which are not fringed with such dense and long black hairs.

Length $8-8\frac{1}{2}$ mm.; width $5\frac{1}{2}-6$ mm.

Hab. Natal (Durban), Transvaal (Komati Poort).

SISYPHUS GORYI, Har.,

Berl. Ent. Zeit., 1859, p. 224.

S. hirtus, Gory, Monogr., 1833, p. 14, pl. i., fig. 10.

S. caffr., Boh., Ins. Caffr., ii., p. 195.

S. sordidus, id; *ibid.*, p. 194.

Black, sub-opaque, hardly metallic; head distinctly six-dentate and densely covered with greyish hairs slightly recumbent; prothorax diagonally attenuate laterally in the anterior part, and from there

parallel; the vertical lateral part is not impressed, there is a slightly impressed median longitudinal line beginning at about middle and reaching the base, and the whole surface is covered with nearly rigid, very dense hairs; elytra of the same shape as the species preceding, having no distinct trace of striæ, and covered with series of hairs curled at tip, the alternate duplicate series always more or less raised than the others; pygidium fringed laterally with curling hairs, and having in the centre a longitudinal row of the same; femora and tibiæ without any spine or tooth, posterior trochanters projecting very slightly; posterior tibiæ regularly arcuate and closely serrate inwardly; the female shows no difference from the male, except that the tibiæ are slightly less arcuate; sheaths of the penis rather long for the size of the species, sinuate for half the length from the base, declivous at tip, but not curved.

Length 4–8 mm.; width 3–5 mm.

It often happens that through the hairs being partly rubbed off in the intervals, the duplicate alternate series, which are always a little stiffer and longer, show more in some examples; to such Boheman has given the name of *S. sordidus*. They are not, however, to my mind, even a variety, and I have come to this conclusion after having examined a good many examples. The mere rubbing with a camel-hair brush after relaxing will cause the hairs of the intervals to fall off before the others. The shape of the sheaths of the penis is the same for *S. goryi*, and for the typical *S. sordidus*, Boh. The range of this species is very great. I have examples from Somaliland, showing no difference whatever with the South African ones.

Hab. Cape Colony (Queen's Town, Kimberley), Natal (Durban, Frere, Maritzburg), Transvaal (Boksburg, Lydenburg, Potchefstroom), Lower Rhodesia (Salisbury, Victoria Falls, Manicaland, Bulawayo), Ovampoland (Humbe).

SISYPHUS NANNISCUS, n. spec.

Reddish brown, slightly metallic; legs redder; head with the median teeth of the clypeus well developed, the lateral one as well as the apex of genæ being hardly distinct, finely punctured and slightly pubescent; the prothorax is convex, not declivous in front, normally attenuate laterally in the anterior part and covered with minute sub-flavescent hairs; elytra normal, indistinctly striate, and having regular series of very minute, sub-erect hairs; trochanters not projecting, posterior tibiæ arcuate, sub-serrulate inwardly in the ♂, and not at all in the ♀.

Length 3-3 $\frac{1}{4}$ mm.; width 2-2 $\frac{1}{6}$ mm.

This minute species which, owing to the two median teeth of the clypeus being very developed, looks a little like an *Epirinus*, is distinguished from the very small examples of *S. goryi*, not only by the absence, or nearly so, of the lateral tooth of the clypeus, but also by the posterior tibiae which are only very slightly serrulate. I have seen two examples only.

Hab. Natal (Durban).

TRIBE COPRINI.

Intermediate and posterior tibiae robust and strongly dilated at apex, joints of the posterior legs attenuate gradually from base to apex; fold of elytra not overhanging the sides of the abdomen; sexual characters strongly marked.

Key to the Genera.

A². Second joint of labial palpi longer than the basal one, the apical one small, subulate, often hidden ONTHOPHAGIDES.

B⁴. Elytra with eight striae and a lateral fold.

a². Antennae nine-jointed.

b³. Anterior tibiae without spur or tarsi.

Tarsi of intermediate and posterior tarsi, moderately long, not slender, scutellum absent or very small .. { *Onitis*.
Neonitis.

Tarsi of intermediate and posterior tarsi very long and slender *Tapinopterus*.

b². Anterior tibiae with tarsi in the female only.

Scutellum comparatively large *Cheironitis*.

a¹. Antennae eight-jointed.

b¹. Anterior tibiae with spur and tarsi in both sexes.

Body depressed, very hairy, elytra not distinctly striate .. { *Drepanocerus*.
Tiniocellus.

B². Elytra with seven striae and a lateral fold; a scutellum.

C². Labial palpi bi-jointed.

Anterior tibiae with a long, falcate mucro in the male .. *Drepanochirus*.

Anterior tibiae truncate at tip, basal joint of posterior tarsi very long and slender *Scaptonemis*.

17

Anterior tibiæ not truncate at tip, basal joint of posterior tarsi not long and dilated:

Clypeus very deeply emarginate, head with one or two hooked horns according to the sex *Tragiscus*.

Clypeus not deeply emarginate, scutellum distinct *Oniticellus*.

B². Elytra with eight striae, no lateral fold, no scutellum.

a. Antennæ nine-jointed.

Clypeus reflexed at tip in the male, posterior tarsi very compressed *Phalops*.

B³. Elytra with seven striae, no lateral fold, no scutellum.

C¹. Labial palpi tri-jointed.

Basal joint of labial palpi very dilated at base, anterior tibiæ normal.. . . . *Diastellopalpus*.

Basal joint of labial palpi broad, triangular, anterior tibiæ normal.. . . . *Onthophagus*.
Melichus.

Basal joint of labial palpi triangular, anterior tibiæ of male laminate transversely at tip in the male *Caccobius*.

A¹. Second joint of labial palpi shorter than the first, third one always distinct COPRIDES.

B². Upper side of intermediate and posterior tibiæ uni- or bi-carinate, longitudinally, but without transverse ridges.

a¹. Anterior tibiæ truncate transversely at tip.

Clypeus emarginate, striae of elytra geminate; tibiæ quite straight at tip, spur not quite on the inner margin *Pedaria*.

Clypeus deeply incised and produced in two recurved teeth, elytra not geminato-striate, deeply sinuate below the shoulder.. . . . *Coptorhina*.

Clypeus deeply incised and produced in four small, not recurved teeth, elytra not geminato-striate, deeply sinuate laterally.. . . . *Delopleurus*.

Labrum somewhat distinct; mandibles sub-areolate, well developed, facies of *Aphodius* *Aulonocnemis*.

a². Anterior tibiæ a little oblique at tip and with the inner angle projecting in the male.

Body very convex, clypeus semicircular, emarginate at tip; claws of hind tarsi long, conspicuously divaricating; pseudopipleura very broad, and with an interrupted stria *Macroderes*.

Body elongate, convex, clypeus produced in two long reflexed teeth; claws of hind tarsi very small; pseudopipleura very narrow and with a whole stria.. . . . *Parapipnotus*.

Body depressed, clypeus bi-dentate, posterior tibiae very short and very much dilated; hind tarsi ~~four~~ ^{five or six} jointed and without claws *Saproecius.* ↗

Body moderately depressed, clypeus bi-dentate; posterior femora short, triangular, all the joints of the hind tarsi fused in a patelliform process; no claws.. *Heteroclitopus.* ↗

B¹. Upper side of posterior tibiae with a transverse ridge above the apex.

a. Anterior tibiae obliquely truncate.

Elytra with seven striae on each side, the outer one edged by a carina reaching from the shoulder to the apical part, and another beginning at some distance from the base and reaching the apex *Heliocopris.* ↗

Elytra with eight striae on each side, the outer one being carinate from the base to past a third of the length *Catharsius.* ↗

Elytra with eight striae on each side, the outer one not carinate, and often obliterated towards the apex *Copris.*

GEN. DREPANOCERUS, Kirby,

Zoologic. Journ., iii., 1828, p. 521.

Mentum parallel for three-fourths of the length and with the lateral apical part diagonal, broadly emarginate from side to side, labial palpi bi-jointed, basal joint short, dilated triangularly at tip, second joint very long, sub-oblong, ligula divided in two, very slender, lobes very diverging and as long as the labial palpi; maxillae moderately slender, a little attenuate at tip from the insertion of the maxillary palpi the first joint of which is slender, curved, second thicker, somewhat in the shape of a sub-elongate club, third sub-cylindrical, last fusiform but blunt at tip and a little thicker at middle than the penultimate one; upper maxillary lobes very long and moderately broad; antennae nine-jointed, the three apical joints forming a somewhat compressed club the three foliate joints of which are nearly three times as long as broad; head with a more or less elongate clypeus, genae parallel, eyes showing very little on the upper side through a narrow longitudinal slit; prothorax elongate, sub-parallel or very slightly rounded laterally and depressed on the upper side; elytra plane, not covering the sides of the abdomen and without distinct epipleura; no scutellum; pygidium vertical; metasternum very large, intermediate coxae straight, posterior ones very contiguous; anterior tibiae quadri-dentate outwardly, and having a long spur at about the

median part of the apex, intermediate and posterior ones slightly denticulate outwardly; tarsi long, slender, basal one as long as the three following, terminal spurs very long and slender.

The species of *Drepanocerus* are small insects, having the habits of *Oniticellus*. The males have a very long cephalic horn, and two equally long prothoracic ones directed forward (*D. kirbyi*), or are without cephalic horns, but have a very deep longitudinal furrow with the walls raised on two perpendicular walls (*sulcicollis*), a more or less deep sulcus in the centre (*fastiditus*, *laticollis*), or a broad quadrate impression and three lateral ones (*impressicollis*).

The main character distinguishing them from some species of *Oniticellus* is the absence of scutellum. They are a form of transition between the ATEUCHIDES and the CORRIDES, for they have eight-jointed antennæ like *Sisyphus*, from which genus they are not greatly removed.

The genus is represented in the Zanzibar Island, and Abyssinia, and also in India, China, Ceylon, and Java.

Key to the Species.

A². Head with a cephalic horn in the male.

Clypeus of ♂ six-dentate, emarginate in front and bearing a very long, curved, slender horn; prothorax with two sub-horizontal horns, and with several deep impressions in both sexes; elytra with two sharp carinæ on each elytron *kirbyi*.

A¹. Head without cephalic horn.

Prothorax of ♂ with a deep, median longitudinal furrow edged on each side by a sharp, high earinate wall; prothorax of ♀ with a median, broad, longitudinal impression reaching from the base to the median part; elytra not carinate. . . . *sulcicollis*.

Prothorax with a moderately deep median longitudinal furrow and a narrower and parallel one on each side in the ♂, and having only a broad, quadrate impression in the ♀; elytra with only one discoidal earina *fastiditus*.

Prothorax of ♂ very broadly ampliate laterally, and convex, having a broad median groove and three little distinct lateral impressions on each side of it, not ampliate in the ♀, but with the same median groove; elytra with two sharp carinæ *laticollis*.

Prothorax with a broad furrow with carinate edges extending from base to apex, narrowed in the anterior part, and having a short carinule on each side of the anterior part as well as a deep and broad lateral impression; elytra with the alternate intervals raised and the striae broadly punctured *impressicollis*.

DREPANOCERUS KIRBYI, Kirb.,

Plate XXXIV., fig. 23.

Zoolog. Journ., iii., p. 521, pl. xiv., fig. 2; *Casteln., Hist. Nat.*, ii., p. 92.*D. furcifer*, *Cast.*, *Hist. Nat.*, ii., p. 92.

Fuscous brown, little shining; clypeus elongate, bi-dentate laterally and deeply incised in front, somewhat roughly punctured and setulose; prothorax sub-parallel laterally, and having a broad median longitudinal impression, and four lateral ones the edges of which are indicated by very thick, short setæ; elytra with a transverse diagonal flavous band extending from the humeral angle to the median part of the suture, and an apical spot of the same colour, as broad as the base of the prothorax, with the shoulders very well defined and tuberculate, straight laterally, but tapering a little from base to apex, plane on the disk with the suture slightly raised, and having two discoidal sharp costæ and a very short supra-humeral one on each side; the suture and the costæ have a series of thick short setæ which are much longer and slightly decumbent at tip at the apex; pygidium fringed at the top by moderately long bristles and having two median series of squamiform setæ diverging towards the apex; abdominal segments, except the penultimate, projecting much beyond the sides of the elytra, and giving thus to the dorsal surface the appearance of being ampliate at middle; legs rufescent, anterior tibiæ quadri-dentate outwardly, basal tooth short, the others gradually longer; intermediate and posterior spurs very long.

Male: Clypeus more elongate than in the female, and bearing a long, sub-porrect or curving backward horn situated at the apex between the two angles of the incised part; in the anterior part of the prothorax, which is slightly declivous in front, are two long, slender horns curving forward and not diverging; metasternum with three very distinct longitudinal carinæ; the cephalic and thoracic horns vary in length from $4\frac{1}{2}$ to $1\frac{1}{2}$ mm.

Female: The clypeus is more deeply emarginate in the centre, and without clypeal horn; the prothorax has also no horn, the impressions are similar, but the median one is divided in two, and the anterior part is not declivous, the median impression is broadly but not deeply punctate.

Length 5-6 mm.; width 2-3 mm.

Hab. Cape Colony (Somerset East, Queen's Town, Bedford, East London, Graham's Town, Knysna), Natal (Durban), Transvaal (Potchefstroom, Lydenburg, Pretoria).

DREPANOCERUS SULCICOLLIS, Cast.,

Plate XXXIV., fig. 22.

Hist. Nat., ii., 1840, p. 92.

D. dispar, Boh., Ins. Caffr., ii., p. 324.

Black, opaque; sides of the head attenuate diagonally towards the apex, clypeus incised in the centre, angles of incision sharp but not projecting, head glabrous, finely punctured and without any trace of transverse carina; palpi ferruginous; prothorax sub-parallel or very slightly ampliate, covered with broad but shallow, nearly confluent punctures, and clothed with a very short bristle-like pubescence; elytra not broader than the prothorax, sub-parallel but rounded from some distance from the apex, plane with the humeral callus prominent, finely striate, with the suture, and the third, fifth, and seventh intervals raised or sub-carinate and very briefly squamoso-pilose, along the humeral callus there is also a very short squamose costa, intervals roughly aciculate; pygidium densely squamose; metasternum closely punctured and sub-carinate longitudinally in the centre; tibiae and legs as in the preceding species; the abdomen is covered by the elytra.

Male: Head without any transverse ridge or raised line; prothorax with a deep, longitudinal median groove reaching from the apex to the base, sides of groove produced in a thin very high vertical wall slightly emarginate at tip, and more or less sharply aculeate behind.

Female: Head similar to that of the ♂, but not quite so deeply incised in front; prothorax with a moderately broad but not very deep longitudinal impression reaching from the central part to the base.

Length 4-5 mm.; width 2-2 $\frac{1}{4}$ mm.

Hab. Cape Colony (Somerset East, Bedford, Graham's Town, Knysna).

DREPANOCERUS FASTIDITUS, n. spec.

Black, opaque; under side slightly aeneous; clypeus attenuate diagonally towards the apex which is broadly but not deeply emarginate with the angles of the emargination sharp and slightly recurved, head distinctly punctured and bristly, and without any median carina or raised line; prothorax a little ampliate laterally, plane, covered with very broad but shallow, nearly confluent punctures, briefly squamoso-setulose, broadly impressed longitudinally in the centre and having a narrower impression on each side of the median one, the edges of this impression are set with

rigid setæ; elytra plane, nearly parallel, but a little narrower at apex than at base, the humeral callus is distinct, and they cover the abdomen; they are deeply and finely striate, but the striation is very peculiar and consists of two deep lines nearly as far apart from one another as the interval itself, the sutural part is raised and broad, and there is a sharp carinate longitudinal line nearer to the outer margin which is also sharply carinate, than to the suture; both these carinæ are very briefly and closely setose, but the setæ on the apical part, and also along the outer margin, are much longer and very distinct, principally at apex; pygidium very broadly punctured and carinate lengthway in the centre; under side deeply punctured, metasternum not declivous at tip, broadly and closely punctured, and depressed on each side along the coxæ, which causes the central part to appear as if it were slightly carinate; there is a distinct impressed median line at the base; legs rufo-aneous.

The male is distinguished from the female by the narrower and deeper median longitudinal furrow, the lateral groove is also deeper; in the female the median furrow is replaced by a very broad impression, and the lateral are less deep than in the male.

Length $4\frac{1}{2}$ mm.; width $2\frac{1}{2}$ mm.

Hab. Natal (Frere, Durban, Estcourt).

DREPANOCERUS LATICOLLIS, Fahr.,

Plate XXXIV., fig. 24.

Insect. Caffrar., ii., p. 325.

Black, opaque, elytra sometimes ferruginous at base; head attenuate diagonally from the genæ which are very sharply angular to the apex where the clypeus is slightly emarginate with the angles very sharp and recurved, punctulate, and in the centre there is a distinct transverse ridge; prothorax very closely punctured and covered with scattered, short, rigid setæ; elytra slightly attenuate laterally from the base to the apex, and strongly sinuate below the shoulder, they are roughly aciculate and have on each side two dorsal, very sharp carinæ, and a very short, basal one along the humeral callus; the carinæ have a few rigid setæ at apex; metasternum very sharply keeled from the anterior part which is not declivous to half the length, the other half is occupied by an oblong depression; pygidium with a median longitudinal raised line, and having an impression on each side, and one at apex; legs as in preceding species.

Male: Head with a median laminate transverse sub-horizontal

ridge; prothorax broadly dilated laterally, convex, declivous in the anterior part and having a deep median furrow with rounded edges, and three lateral impressions on each side, the apical part of the median furrow stops at the apex of the anterior declivity, and the outer impression is broader than the inner ones.

Female: Angles of the clypeus not quite as sharp as in the ♂, transverse ridge reduced to a raised but very distinct line; prothorax a little convex, slightly ampliate laterally in the anterior part, not declivous at apex, and having a moderately deep median impression from base to middle, and a smaller one in the anterior part.

Length 4-5 mm.; width 2-3 mm.

Hab. Transvaal (Rustenburg). Occurs also in the island of Zanzibar, and on the Zanzibar mainland, teste Kolbe.

DREPANOCERUS IMPRESSICOLLIS, Bohem.,

Plate XXXVIII., fig. 9.

Insect. Caffrar., ii., p. 322.

D. natalensis, Har. Berl. Zeit., 1859, p. 199.

Dark aeneous brown, slightly shining on the head, prothorax and under side. Head attenuate diagonally in front, clypeus moderately deeply emarginate, in the centre of the head there is a horse-shoe-shaped ridge connected with the basal part; prothorax deeply emarginate in front and with the angles very projecting, parallel laterally, depressed, but with the sides of the anterior part sloping; it has in the middle a broad impression with carinate edges narrowing to nearly half the size in the anterior part, and having there a sub-lateral short, interrupted carina, as well as three moderately broad impressions divided by ridges of very short, dense setæ; elytra parallel, not covering quite the abdomen, plane with the humeral callus very distinct, the three alternate intervals are very distinctly carinate, and the striae have a duplicate series of round conspicuous foveæ divided by a narrow interval, the raised costæ are closely setulose; pygidium with a longitudinal median carina, and a transverse one; metasternum sloping in front and carinated from the apex to the median part, hollowed in the centre and at base, and depressed laterally along the intermediate coxæ; it is closely foveato-punctate, and the punctures are squamigerous; anterior legs as in the preceding species; intermediate and posterior tibiae a little sinuate inwardly and outwardly. No sexual difference.

Length 5 mm.; width 2½ mm.

Hab. Natal (Durban), Southern Rhodesia (Salisbury).

GEN. TINIOCELLUS, n. gen.

Buccal organs of *Drepanocerus*, which it resembles somewhat in general appearance, being very plane on the upper side; the legs are also similarly shaped; the spurs of the intermediate and posterior tibiae are very long; the lateral fovea on the prothorax is also wanting or extremely rudimentary, and there is a visible scutellum.

TINIOCELLUS SPINIPES, Roth.,

Wieg. Arch., 1851, i., p. 128.

Oniticellus variegatus, Fahr., Ins. Caffr., ii., p. 320.

Oniticellus humilis, Gerst. Decken's Reis. Gliederth., p. 138.

Opaque, slightly ænescent, testaceous brown variegated with lighter brown patches or ill-defined bands; head covered with moderately long flavescent hairs; clypeus deeply emarginate in the centre in the male, and with the angles of the emargination projecting and slightly recurved, or very slightly emarginate in the female the raised suture of the genæ is not visible, they do not project beyond the line of the clypeus, and there is no trace of transverse ridge, or of any impression; prothorax plane, a little attenuate laterally from the middle to the posterior part and covered with closely set scabrous granules bearing each a decumbent sub-flavescent hair, and there is a longitudinal impressed line running from about the median part to the base; scutellum somewhat elongate and sharp; elytra as broad as the base of the prothorax, and very slightly longer, attenuate from the humeral part towards the apex, geminato-striate, with the intervals plane and having each two rows of deep punctures bearing a sub-decumbent hair, eighth interval sharply carinate above the outer margin, along the suture, which is raised, there is on each side a row of erect, rigid whitish bristles which also fringe the apical margin, and in some examples these bristles are noticeable on the intervals; lateral part of abdominal segments projecting much beyond the wing covers; mesosternum normal, metasternum somewhat declivous at tip, slightly convex, covered with closely set elongate punctures; mesosternum invisible; pygidium sulcate longitudinally in the middle. Length $6\frac{1}{2}$ –7 mm.; width 4 mm.

Hab. Southern Rhodesia (Salisbury, Victoria Falls), Transvaal (? Boksburg).

This species was originally described from Abyssinia. I have seen examples from the Galla country which are slightly lighter in colour than the South African ones.

GEN. DREPANOCHIRUS, n. gen.

Buccal organs of *Drepanocerus* and *Oniticellus*, but the mentum is very deeply and broadly furrowed longitudinally in the centre; head transverse, clypeus very little attenuate in front, eyes lateral not showing at all on the upper side; antennæ eight-jointed; prothorax plane, nearly parallel, and without any lateral round impression; scutellum elongate, narrow; elytra parallel, plane, and without epipleura; pygidium plane, vertical; anterior femora very dilated, compressed, and with the anterior margin sharply laminate; anterior tibiae quadri-dentate externally, the teeth strong, and not set close to one another; in the male they are prolonged inwardly in a falciform mucro; intermediate and posterior tarsi long, slender, and with the basal joints slightly arcuate at base, a little longer than the three following, and not thickened; prosternum sharply carinate; mesosternum invisible, metasternum nearly plane but slightly carinate longitudinally in the centre.

This genus is created for *Oniticellus ambiguus*. The sculpture of the prothorax, elytra, and pygidium approximates to that of *Drepanocerus* from which it is readily separated by the eyes which are not visible on the upper side, and the presence of a scutellum. The sheaths of the penis of the male are similar in shape to those of *Oniticellus*.

DREPANOCHIRUS AMBIGUUS, Kirby,

Zoolog. Journ., iii., p. 522; Lacord., Gener. Atl., pl. xxvii., fig. 6.

D. impressus, Cast., Hist. Nat., ii., p. 92, pl. vi., fig. 2.

D. trogiformis, Roth., Wieg. Arch., 1851, i. p. 129.

Black, covered with a chocolate colour squamose tomentum; head with the clypeus dipping at apex, slightly emarginate, the angles of the emargination are sharp and even recurved in the female, and there are two small lateral teeth next to the genæ, the surface is divided in five moderately broad areas by carinate, squamose ridges; prothorax nearly parallel, a little declivous at apex, plane, and divided in eighteen areas by squamose reticulate carinæ, there is no lateral puncture or round impression, and the areas are very deeply and closely punctured; scutellum narrow, sub-parallel and aculeate at tip; elytra parallel, plane, with the humeral callus well developed and quite lateral, truncate at apex, broadly striate, the striæ distinctly foveolate, and the intervals plane except the suture which is raised, and the fourth and seventh intervals which are sharply carinate and setulose, at apex the setæ become fasciculate on the suture,

and the second, fourth, and seventh intervals; pygidium vertical and having in the centre a triangular squamose carina, fasciculate at apex and at each basal angle; metasternum finely aciculate and densely squamose like the remainder of the under side; anterior tibiae of ♂ long, a little sinuate at base, strongly falcate at tip, where it is produced in a long mucro beyond the apical outer spur; and the outer teeth are very far apart; in the ♀ the anterior tibiae are not elongate nor falcate, and the outer teeth although not close to one another are not so far apart.

Length 9–10 $\frac{1}{4}$ mm.; width 5–5 $\frac{1}{4}$ mm.

Hab. Cape Colony (Knysna, East London, Graham's Town); Natal (Frere, Newcastle, Estcourt, Eshowe); Transvaal (Lydenburg).

This species is recorded from Senegal and Abyssinia, and I have seen some examples from the Galla country.

GEN. ONITIS, Fabric.,

Plate XXXIX., fig. 30.

Entom. Syst. Suppl., 1798, p. 25.

Mentum concave, rounded laterally, emarginate at tip, very densely hairy, and broader than long, first joint of the labial palpi half as broad as long, nearly straight inwardly, produced diagonally outwardly, second joint longer than broad, a little ampliate at middle, truncate at tip, set with long, rigid setae, third one subulate, narrow and one-third the length of the second; lobes of the ligula broad, membranaceous, briefly setulose inwardly, and not as long as the labial palpi; first joint of maxillary palpi very short, triangular, second broad, triangular, third not quite as broad as the second, and shaped as a truncate cone, last sub-fusiform, as long or a little longer than the two preceding, slightly emarginate laterally outwardly and impressed longitudinally there; maxillae broad, long or moderately long; apical lobe very broad, inner one very small; antennae nine-jointed, basal joint nearly as long as all the others, club moderately broad, ultimate joint flat and smaller than the first which is cupuliform; head with a distinct clypeus, either semicircular, emarginate at middle, rostrate or aculeate at middle, and bearing often a small transverse clypeal carina, at about the median part of the head there is another and more raised frontal carina sometimes interrupted at middle, and the vertical margin is also raised and sometimes carinate, the genae have a very distinctly carinate suture and project beyond the line of the clypeus, the eyes are large, completely divided by the canthus of the cheeks, the upper surface showing is

about one-third of the size; prothorax convex or dehiscient in the anterior part, depressed or sometimes plane behind, carinate in the anterior and lateral part, and often along the base the central part of which is projecting and bears two more or less deep or oblique impressions, and the lateral fovea is very conspicuous; the scutellum is hardly visible; elytra more or less sinuate laterally, plane or moderately convex, as broad as the base of the prothorax, they have nine striæ, the ninth interval is produced in a sharp carina close to the eighth stria, and there is a conspicuous humeral diagonal callus on the seventh, eighth, and ninth intervals, the epipleura are distinct; pygidium triangular, slightly convex; prosternum without intercoxal process except in *O. castelnauï* and *O. audens*, mesosternum invisible; metasternum wide, sometimes deeply grooved, and having always two impressions at the base; abdomen short; anterior legs longer in the male than in the female, the fore tibiæ are quadri-dentate outwardly, more or less curved or falcate at apex in the male with the apical part curved and mucronate and without any apical inner spur; this spur is, however, found in the female the anterior tibiæ of which are quadri-dentate outwardly and normal; the anterior tarsi are wanting in both sexes; the femora and the tibiæ of the male are armed with spines or crenulate laminae usually wanting in the female, the intermediate and posterior tibiæ are broadly dilated and triangular at apex.

The sexual differences of the insects included in this genus are very great. In the female not only does the shape of the clypeus vary, but often the clypeal carina varies also, and, as a rule, whenever there is a tubercle, this tubercle, as well as the vertical margin, are more raised; in *O. Castelnauï* the vertex bears even a conspicuously cristate process. The genus is represented in Southern Europe, and the circa-Mediterranean region; Africa (Senegal, Egypt, Abyssinia, Galla, Somaliland, Sierra Leone, Old Calabar, Congo, Victoria Nyanza, Albert Nyanza, Nyassaland) and Asia (British India, Burmah, Indo-China, Siam, Ceylon, Java, Sumatra, The Philippine Islands, New Guinea).

Key to the Species.

A². Head with a clypeal and a frontal carina.

B⁴. Not interrupted.

C². Muero of anterior tibiæ of ♂ sharp and long.

D². Prosternum of ♂ produced in a bifid process.

Anterior femora with a very long, arcuate tubercle at the lower edge; prosternal process pedunculate with the bifid part horizontal *castelnauï*.

Anterior femora simple; prosternal process not pedunculate, and with the bifid part recurved and nearly vertical *audens*.

D¹. Prosternum of ♂ simple.

Anterior tibiae with an inner, serrulate, laminate process *bohemanni*.

Posterior femora not dentate; metasternum very broadly grooved:

Anterior tibiae without an inner laminate process .. *gigas*.

Posterior femora dentate:

Anterior tibiae dilated inwardly and with a sharp inner tooth; posterior femora emarginate at tip and dented there above and under, metasternum highly carinate *paradoxus*.

B³. Head with a clypeal carina and a frontal one interrupted in the centre.

a⁴. Body short, convex, upper surface very metallic, and posterior intermediate femora, deeply incised and with a curved tooth on each side of the incision—

Anterior tibiae four-dentate *cerarius*.

Anterior tibiae five-dentate *fulgidus*.

Intermediate tibiae with a quadrate lamina *westermanni*.

a³. Body elongate, prothorax green, elytra testaceous.

Posterior trochanters spinose, posterior femora with a sub-median bifid tooth; anterior tibiae with five teeth beneath *agulus*.

Posterior trochanters not spinose, posterior femora with a median simple tooth, anterior tibiae pluriserrate beneath *sphinx*.

a². Prothorax bronze green variegated with longitudinal testaceous bands.

Anterior tibiae with three teeth beneath; posterior legs as in *sphinx* *picticollis*.

a¹. Prothorax and elytra dark bronze.

Anterior tibiae quadri-dentate beneath, posterior femora with a nearly vertical, slightly curved tooth *crenatus*.

Posterior femora with a sharp tooth and an inner lamina, posterior trochanters projecting often nearly as much as the angle of the lamina *viridulus*.

B². Head with a slightly interrupted frontal carina connected by a small tubercle.

Prothorax deeply punctured and granulose along the base; body coppery: (♀) intervals of elytra punctured.. .. *perturbator*.

Prothorax very closely punctured, almost shagreened,
intervals of elytra obliquely rugose *cribratus*.

B¹. Head with an uninterrupted frontal carina.

a². Anterior tibiae without teeth beneath.

Prothorax granulose; anterior tibiae much arcuate at
tip, the two apical outer teeth set close to one another,
posterior femora with two or three serrations *minutus*.

Clypeus aculeate, not emarginate; prothorax covered
with very closely set, somewhat scabrose punctures,
posterior and intermediate femora serrulate beneath *cruginosus*.

Prothorax granulose, anterior tibiae not much arcuate
at tip, the two apical outer teeth not set close to one
another, posterior femora slightly serrulate *licitus*.

a¹. Anterior tibiae dentate beneath.

Clypeus emarginate, anterior tibiae with a very dis-
tinct vertical tooth beneath at apex, posterior femora
very slightly crenulate towards the apex *confusus*.

Clypeus emarginate, anterior tibiae as in preceding
species; posterior femora entirely crenulate; body
very convex *caffer*.

Clypeus not emarginate, anterior tibiae without an
apical, vertical tooth, posterior femora sub-dentate on
the upper margin, and emarginate at apex, lower
margin crenulate beneath *fabricii*.

C¹. Mucro of anterior tibiae short, blunt and ciliate.

Clypeus not emarginate; tibiae and femora simple, outer
apical part of posterior tibiae produced in an elongate
process as long as the inner spur *dispar*.

A¹. Head without any clypeal carina, frontal one not interrupted.

B². Mucro of anterior tibiae, long, sharp.

C². Head with a tubercle on the vertex.

Intermediate and posterior femora more or less deeply
incised beneath and with two incurved teeth at apex;
intermediate tibiae broadly dilated inwardly; pro-
thorax rugoso-punctate:

Clypeus rostrate (?) *miszechi*.

Prothorax granulose, clypeus triangular in both sexes *nubiensis*.

C¹. Head without a tubercle on the vertex.

Prothorax punctate and granulose, anterior tibiae with
equi-distant outer teeth, and not dilated inwardly; clypeus
of ♀ rostrate *curripes*.

Prothorax granulose, anterior tibiae dilated inwardly at
apex, outer teeth equi-distant; clypeus of ♀ triangular *uncinatus*.

Prothorax granulose, anterior tibiæ not dilated inwardly and having the basal outer tooth widely separated from the others; elypeus of ♀ triangular *deceptor*.

Intermediate tibiæ broadly dilated inwardly, intermediate femora deeply incised beneath, posterior femora serrulate at base, not dentate.

Prothorax punctate, tubercle on the vertex of the head grooved transversely *robustus*.

B¹. Mucro of anterior tibiæ short, blunt, and densely ciliate at tip.

C¹. Head with a tubercle on the vertex.

a¹. Anterior tibiæ long, slender, and with a sharp carina beneath produced in a triangular tooth at or near the base, body depressed.

Intermediate femora with two arcuate teeth beneath facing one another; posterior ones armed with a long sub-horizontal spine on the upper side, and a thicker but equally long one on the lower side . . . *inversidens*.

Intermediate femora serrulate beneath, posterior ones with a sharp, sub-median tooth *abyssinicus*.

Intermediate and posterior femora simple; posterior tibiæ compressed in a thin, remiform lamina, rounded externally *orthopus*.

ONITIS CASTELNAU¹, HAR.,

Plate XXXIV., figs. 3, 3a; Plate XXXVIII., fig. 6.

Berl. Ent. Zeitsch., 1862, p. 401.

Black, with a faint greenish tinge, elytra moderately shining; head very rugose, palpi and antennæ reddish brown, clava sub-flavescent; prothorax large, one-fourth longer than broad, roughly and deeply punctate in the centre of the anterior part, and with the punctures scabrous, the sides and posterior part are covered with slightly oblong granules, there is a median longitudinal depressed line and two diagonal and very conspicuous impressions in the centre of the base which is very much produced triangularly in the centre; scutellum elongate, smooth; elytra sub-parallel, depressed, deeply but very narrowly striate; the striae are edged on each side by a very fine line, and are faintly punctured; intervals slightly punctulate, first, third, and fifth sharply raised, tectiform, second and fourth broad or slightly raised in the centre, sixth and seventh very narrow, carinate, eighth as broad as the third and edged by a very sharp carina, the discoidal part is glabrous, and the declivous part pilose; under side clothed with dense, fulvous hairs; pygidium transversely plicate and slightly granulose.

Male: Clypeus sub-obtusely triangular, clypeal carina extending to over one half of the width, frontal ridge very much raised and curved laterally as far as the edge of the base which is sub-carinate and has a short, sharp triangular tubercle in the centre; prothorax canaliculate from the base to near the median part, the end of the groove limited by a very small tubercle; anterior tibiae ending in a sharp inward tooth slightly curving downward at tip, and having beneath a distinct laminate ridge, and a little lower down a vertical spine in a line with the second basal outer tooth; intermediate tibiae produced at a short distance from the knee into a large quadrate laminate process the anterior angle of which is very sharp and projects a little; anterior femora very thick, their anterior margin has a very small spine curving outwardly and situated near the apex, the posterior margin has a very conspicuous, broad, sub-lamelliform vertical tooth at about the median part; prosternum produced beyond the coxæ in a long process broadly bifid at tip, and more or less anchor-like; intermediate femora very thick and emarginate at tip underneath, posterior ones with a sharp and long horizontal spine on the upper side; posterior tibiae dilated triangularly from a short distance from the knee, and having inwardly a sharp lamina not quite as broad as the one on the intermediate ones, and also very little angular at tip.

Female: Clypeus rostrate, sculpture of head similar to that of the male, and carinae similar, but the edge of the base is produced in a trifid carinate process with a distinct ridge at the base of it; the prothorax is shorter and rather deeply excavated in the middle, and the excavation is clothed with fulvous hairs; the elytra are as in the male; the pygidium is more granulate; the anterior tibiae are strongly quadri-dentate outwardly and have an horizontal spur inwardly, but are neither laminate nor dentate beneath; the median femora are not emarginate at tip, but the intermediate and posterior tibiae are gradually amplified triangularly inwardly from a short distance from the knee; the posterior femora have no spine on the anterior edge, and the punctures on the intervals of the elytra are a little deeper than in the male.

Length 25-36 mm.; width 12-17½ mm.

Hab. Damaraland, Ovampoland, Southern Rhodesia (Limpopo and Zambesi Rivers).

ONITIS AUDENS, n. spec.

Black, with a slight metallic sheen; head closely punctured, the punctures scabrose; prothorax covered with small granules equally

distinct all over the surface, broadly but not deeply grooved longitudinally in the centre from the median basal impressions to the anterior declivity; scutellum long, sharply triangular; elytra sub-parallel, finely striate with the intervals nearly smooth, plane, except the fourth, which is tectiform for half the length, the basal part of the fifth intervals is nearly as much raised as the humeral callus, the suture is raised, and the whole surface is glabrous; under side almost hairless; metasternum granulose; pygidium finely aciculate.

Male: Clypeus emarginate in front; clypeal carina sharp, extending over one-half of the width, frontal carina curved, slightly tuberculate in the centre, non-interrupted, curving laterally and uniting with a transverse, slightly supra-basal ridge of equal height, genæ projecting distinctly; anterior tibiæ without spines, prosternum with a short, broadly divaricating, furciform recurved process without any stalk under the coxæ; anterior tibiæ not much incurved and with the inner mucro slanting inwardly, sharply carinate underneath from base to apex, with the carina slightly dentiform at middle, intermediate femora and tibiæ without spine and normal, posterior femora with a sharp, nearly vertical tooth in the lower margin set nearer to the apex than to the base; pygidium with a small, central tubercle, and sparsely aciculate; upper edge of the first abdominal segment distinctly aculeate close to the apex of the episternon of the metathorax.

Female unknown.

Length 13 mm.; width 7 mm.

Hab. Cape Colony (Prieska).

Most of the insects received from this extremely dry and arid locality are, as a rule, very dwarfed; it is therefore quite possible that the present species, which is most likely only a straggler, will be found to be of larger size further north.

ONITIS BOHEMANNI, Lansb.,

Plate XXXIV., figs. 1, 1a.

Annal. Soc. Entom. d. Belg., 1875, p. 58.

Dark bronze-black on head and prothorax; elytra dark green.

Male: Head longer than broad, attenuate from the genæ to the apex which is truncate and slightly sinuate at tip, genæ projecting and sharply angular at the suture with the clypeus which is truncate, clypeal carina sharp, transverse, interrupted at middle, frontal carina entire, very much raised, and strongly arcuate, basal carina sinuate, and as much raised as the frontal one; the whole surface is covered with

closely set, sharp granules; prothorax one-third longer than broad, deeply emarginate in front, marginate all round, gradually, although slightly, attenuate laterally in front for about one-fifth of the length, hardly ampliate in the centre, but diagonal from a little past the median part to the outer angle, and also slightly sinuate above it, basal impressions deep, conspicuous, there is also a narrow, elongate one along the base on each side next to the basal angle, the surface is punctulate and sub-granular laterally, and there is a faint trace of a longitudinal line in the middle of the disk; elytra nearly parallel, deeply striate, intervals rugose, fifth and seventh raised, sub-pectiform, eighth very sharply carinate from the basal angle to the rounding of the apical part; pygidium roughly granulose; metasternum with a transverse, very deep cavity at base, and having in the middle, for about two-thirds of the length, two much-raised, thick, roughly punctured longitudinal ridges enclosing a very broad groove, median part of metasternum sharply and conspicuously carinate; legs massive, anterior femora with the end of each trochanter produced in a sharp, triangular dentiform process, and armed with a short tooth near the base, and a long and sharp one at about the middle of the anterior edge (fig 1a); anterior tibiæ falcate at tip, long and having in the inner part a narrow, laminate process gradually attenuate from near the base, where it is deeply emarginate, to the curve of the anterior part, this process is strongly crenulate, intermediate and posterior femora compressed, the former very dilated, and having an acute cariniform process beneath broadly incised towards the apex, and ending in a sharp, triangular tooth; posterior femora grooved underneath, but not mucronate; the sides of the metasternum are closely granulate, and the legs are rugose, and the apical part of the intermediate coxæ are also granulate; scutellum distinct, truncate at tip.

Female: Clypeus rostrate, femora simple, tibiæ shorter and broader; anterior ones slightly incurved, and finely crenulate underneath.

Length 44 mm.; width 19 mm.

Hab. Damaraland.

The male only is known to me.

ONITIS GIGAS, Bertol.,

Mém. Ac. Bologn., vi., 1855, p. 431, pl. xxii., fig. 1.

“ Oblongo-quadrate, piceous black; head roughly granulate, clypeal, carina broad, arcuate, situated near the apex, frontal carina entire, arcuate, vertex raised behind and marginate, the margin strongly

sinuate at middle, genæ straight, not prominent; prothorax convex, large, marginate on each side, finally punctate with the punctures denser in front and on the sides, sub-canaliculate longitudinally, a little projecting in the centre of the base, hardly ampliate laterally, somewhat straight behind and with the posterior angles rounded; scutellum elongate; elytra elongate, depressed, striate, intervals rugulose, third and fifth more raised than the others, second, fifth, and eighth transversely rugose; body granulate beneath, clothed with fulvous hairs, metasternum broadly sulcate, and cristate on the sides.

Male: Clypeus sub-triangular, truncate in front, anterior femora with the anterior margin armed with four teeth; anterior tibiæ simple beneath, ciliate, mucro curved, obtuse; intermediate femora plane, dilated inwardly, sub-emarginate at apex, posterior femora simple."

Female unknown.

Length 40 mm; width 20 mm.

This description, which is taken from Lansberge, who has also culled it from Bertoloni, would, as he rightly says, correspond with that of *O. bohemani*, were it not that the anterior tibiæ are non-spinose underneath.

Hab. Mozambique (Inhambane), teste Bertoloni.

ONITIS PARADOXUS, Bohem.,

Plate XXXIV., fig. 2.

Insect. Caffr., ii., p. 244.

Piceous red, shining; head closely granulate; prothorax covered with closely set, elongate, scabrose punctures which are granulose in the anterior and lateral parts, but less dense along the base, the latter is carinate like the sides and anterior margin, and moderately aculeate in the centre, the two foveæ on each side of the median part are deep and elongate, the median part of the disk has a smooth longitudinal line slightly grooved; scutellum narrow, parallel, truncate at tip; elytra elongate, sub-parallel, one-fifth longer than the prothorax, nearly plane but with the posterior part of the suture carinate, and the anterior part depressed; they are deeply striate with the first four intervals plane and the outer three tectiform, the supra-marginal carina is very sharp, and all the intervals are sub-rugose; the declivous part is clothed with long, fulvous hairs; under side clothed with long and dense fulvous hairs; metasternum very closely granulate; pygidium granulose.

Male: Clypeus slightly emarginate; clypeal carina broad, set close

to the frontal one, frontal carina broadly interrupted at middle, in the centre of the vertex there is a not very well defined carina, and the posterior margin is much raised and bi-sinuate; anterior femora slender and having at the base of the anterior margin a small tooth on each side, and another and more robust one at about two-thirds of the length, anterior tibiae long, arcuate at base, and straight from there, thickened inwardly, ciliate beneath, apical part strongly incurved, mucro falciform, elongate; intermediate coxae flattened, strongly dilated inwardly, and bi-dentate at tip, trochanters spinose, tibiae slender, arcuate at tip and ending in a broad quadrate lamina which is spinose inwardly; posterior coxae slightly dilated inwardly, emarginate at tip, the tip dentate above and under, tibiae broadening obliquely, arcuate inwardly and with a small tooth at middle.

Length 36 mm; width 18 mm.

Female: Clypeus produced in a very long, rostrate process slightly recurved at tip, clypeal carina nearly equi-distant from the apex and the frontal carina and extending only over half the width, frontal one semicircular, slightly emarginate in the centre and connected laterally with the basal carina which is straight and has in front of it an arcuate laminate ridge much more raised than the frontal one; sculpture of head, prothorax, and elytra similar to that of the male; anterior femora thick, tibiae sharply carinate beneath, the carina serrulate for two-thirds of the length, intermediate femora very compressed, posterior ones normal; pygidium closely granulose and having a longitudinal median shallow groove; metasternum finely aciculate laterally, granulose at middle and having a very deep and broad median longitudinal furrow extending from the base to three-fourths of the length, and a transverse, arcuate, narrow impression at base.

Length 44 mm; width 20 mm.

Hab. Southern Rhodesia (Victoria Falls).

The description of the ♂ is culled from Lansberge. I have seen, however, Boheman's example of this sex. The female had not hitherto been described.

ONITIS AERARIUS, HAR.,

Plate XXXIV., figs. 14, 15a.

Mith. Entom. Ver. Münch., 1878, p. 46.

Coppery bronze, turning sometimes to green, moderately shining; head covered with punctures somewhat elongate transversely in the anterior part and scabrous and granulose in the centre and posterior part, and having a very obsolete clypeal transverse carina often entirely wanting, but a little more developed in the female than in

the male, frontal carina very distinct, there is a small tubercle equi-distant from the frontal carina and the basal part of the head which is also distinctly carinate; prothorax a little more convex than any of the other South African species, one-third or nearly so broader than long, very distinctly ampliate in the middle; scutellum reduced to a mere rudiment; elytra one-fifth longer than the prothorax, sub-gibbose along the suture past the middle, and moderately convex, distinctly striate, intervals plane, finely punctate, often also the sixth and seventh only are provided with a small tubercle at the top of the declivity, which is very short; in the females that I have seen, these tubercles are nearly obliterated, and rudimentary on the sixth and seventh intervals only; the supra-marginal carina ends also on a short spine in the male, but not in the female; the pygidium is scabroso-punctate, and the under side very slightly pilose; the metasternum has an impressed line from the median part to the apex.

Male: Clypeus a little elongate in the centre and not quite semi-circular; anterior tibiæ with four equi-distant outer teeth broadly separated, mucro very long and arcuate inwardly, provided underneath with a serrated carina, posterior normal and without any spine; intermediate coxæ swollen and having a sharp triangular tooth near the knee; posterior coxæ with the inferior margin subserrulate and having near the apex two incurved small teeth fronting one another and nearly enclosing an open space.

Female: A little more convex than the male; clypeus more pointed in front, punctures on the elytra deeper.

Length 14–16 mm.; width $8\frac{1}{2}$ –9 mm.

Hab. Southern Rhodesia (Victoria Falls; Salisbury, Mazoe. Buluwayo). Occurs also in Nyassaland and the Galla country.

ONITIS FULGIDUS, Klug,

Berl. Monatsb. 1855, p. 652; Peter's Reise, p. 223.

Bohem., Ins. Caffr., ii., p. 258.

O. Klugi, Har. Berl. Zeit., 1859, p. 224.

O. cupreus, Har. Coleopt., Heft. viii., p. 10 (♀).

Closely allied to *O. ærarius*, Har.; the shape of the head, prothorax, and elytra is the same, and the sculpture identical; the sixth and seventh intervals of the elytra are also tuberculate at apex, but the third, fourth, and fifth have a short longitudinal series of large granules, but the distinctive character is found in the shape of the anterior tibiæ, which are a little more falciform than in *O. ærarius*,

owing to the incurved mucro being longer, and are besides very distinctly quadri-dentate outwardly and have between the knee and the basal tooth a fifth tooth sharper and longer than the basal one; the carina on the under side is a little more conspicuously serrate; the intermediate femora have two very distinct teeth set close to one another and nearly vertical near the apex, in the posterior ones the two apical teeth are similar but stronger.

Female unknown.

Length 18 mm.; width 12 mm.

Hab. Transvaal (Lydenburg).

ONITIS WESTERMANNI, Lansb.,

Notes from the Leyden Museum, viii., 1886, p. 77.

“Bronze-green, shining, very briefly hairy; head granular, clypeus black at apex, slightly produced and bearing in the middle an arcuate carinule, frontal carina somewhat obliterated at middle, vertex tuberculate at middle, and with the margin of the occiput acute; prothorax aciculate and granular and having in the middle some areolets the bottom of each of which is arcuate, sides roundly ampliate in front, sinuate behind, and without any posterior angles; elytra sub-sericeous, finely striate, with the dorsal intervals convex, and those on the sides plane, and having each two series of punctures; these intervals are finely plicate in the neighbourhood of the scutellum.

Male: Tubercle of the vertex of the head sub-transverse, sixth and seventh intervals on the elytra tuberculate at the apex; anterior tibiæ crenulate beneath, intermediate femora tri-dentate behind, the first tooth being in the trochanter, the spiniform second one in the middle, and the third one, which is triangular, is situated near the apex; tibiæ crenulate underneath, suddenly dilated into a quadrangle past the middle; posterior femora provided with a crenulate lamina and two spines forming together a letter O.

Female: Clypeus totally black, carinæ more raised, the frontal one being entire, tubercle on the vertex conical; elytra sub-tuberculate at apex; legs simple.

Length 14–16 mm.

Very near *O. cerarius*, Har., with which it has in common all the distinctive characters, but it cannot be mistaken for it owing to the quadrate dilatation of the intermediate tibiæ. The colour is also greener than in any of the other species belonging to this group.”

Hab. Zambesi River.

I have not seen this species.

ONITIS AYGULUS, Fabric.,

Plate XXXIV., fig. 11; Plate XXXVIII., fig. 7.

Spec. Ins., i., p. 15.

Olivier, Entom., i., 3, p. 137, pl. xiii., fig. 120.

O. inuus, Herbst., Käff., ii., p. 117, pl. ii., fig. 5.

Bronze green with the base and sides of the prothorax, the elytra, the under side and legs testaceous with a slight greenish tinge; head plicate in the anterior part, sub-punctate on the vertex, clypeal carina situated a little nearer the apical part than the median, well defined, and long in both sexes, frontal carina interrupted in the centre, with each section curved, immediately behind the interruption there is a distinct tubercle, the vertical carina is hardly raised, and the genæ are nearly straight, but not sharp at apex; prothorax convex, a little ampliate laterally in the middle, very distinctly marginate all round, covered with moderately closely set punctures and having only a faint trace of a raised, smooth, longitudinal line in the middle, basal impressions deep, parallel; scutellum long for this genus, well defined; elytra elongate, somewhat plane, very deeply and broadly sinuate laterally at a short distance from the median part, and slightly wider behind than at the base, they are geminato-striate, the suture is raised, the intervals are also raised near the base, and the sides from the carinate outer interval to the fifth stria are very broadly impressed, these intervals are faintly and loosely aciculate, and glabrous; pygidium nearly impunctate; pectus closely and densely granular; metathorax very closely punctured.

Male: Clypeus moderately long, emarginate at tip, edges slightly recurved; anterior femora with a small spine on the upper margin a little beyond the median part in the direction of the knee, and a strong sub-vertical, curved tooth on the lower margin a little nearer to the knee, anterior tibiæ long, slightly bi-sinuate inwardly, curved at tip, with the mucro also incurved but directed downwards, quadridentate outwardly with the teeth widely separated, long and slender, underneath the carina thickens at middle and bears there four or five very distinct teeth (fig. 11); intermediate femora without tooth but with the lower carina moderately deeply emarginate near the knee; trochanters of the posterior femora distinctly dentate, inferior margin of the latter with two sharp teeth connected at base and the outer of which is twice as long as the inner and curves slightly inwards; intermediate tibiæ normal, posterior ones slender and slightly curved at the base.

Female: Clypeus elongate, sub-aculeate, not emarginate at tip,

much more strongly plicate than the male, and black, tubercle on the vertex more developed; legs normal.

Length 19–23 mm.; width $10\frac{1}{2}$ –12 mm.

Hab. Cape Colony, apparently restricted to the South-Western part.

ONITIS SPHINX, Fabr.,

Plate XXXIV., fig. 12.

Colour, shape, and sculpture of *O. aygulus*, but smaller, and at once distinguishable in not having the base of the prothorax marginate, except slightly between the two basal impressions; the metasternum is distinctly grooved longitudinally at middle.

Male: Clypeus not emarginate in front as in *O. aygulus*; anterior femora with a small tooth at a short distance from the upper margin of the groove and another small one opposite in the lower edge, as well as a long and sharp one on the same edge, but close to the knee, and a short, blunt tooth or sharp tubercle at about the median part of the inferior surface; anterior tibiæ quadri-dentate outwardly, not sinuate inwardly, muero not much incurved, inferior carina not thickened and with six or seven serrations, or small, even teeth; intermediate coxæ and tibiæ as in *O. aygulus*; trochanters of posterior legs not spinose, lower margin of femora produced into a sharp, long, sub-horizontal triangular tooth situated at about the median part; posterior tibiæ simple.

Female: The clypeus is only a little more elongate than in the male, but not aculeate, and the tubercle on the vertex is very much more developed.

Length 10–21 mm.; width 7– $10\frac{1}{2}$ mm.

Very common everywhere in South Africa, except perhaps in the extreme south-western part of the Colony. It occurs probably in the whole of Africa, and is met with also in Southern Europe and Syria.

ONITIS PICTICOLLIS, Bohem.,

Insect. Caffrar., ii., p. 255.

Totally testaceous, with three large, longitudinal, green metallic patches on the prothorax; clypeus elongate in both sexes, clypeal and frontal carinæ as in the two species preceding, but there is only a faint trace of a tubercle behind the interrupted frontal carina in both sexes, and the basal carina is hardly distinct even in the female; prothorax a little attenuate laterally in front, but nearly

straight from near the median part to the base; it is finely and moderately closely punctured, not marginate along the base, the two basal impressions are deep and more or less slanting towards one another, and there is a faintly raised smooth line reaching in the middle from the apex to the median part, and from there a short, impressed line; scutellum short, distinct, triangular; elytra shaped as in *O. aggulus*, but a little less deeply emarginate laterally; pygidium a little convex, not deeply punctured; metasternum not grooved.

Male: Clypeus slightly emarginate in front; anterior tibiae not very falciform, the apical mucro more or less sharply incurved, quadri-dentate outwardly, and having underneath three long, vertical teeth the basal of which is more or less bifid; in some examples there are only two teeth; femora with only one strong, slanting, long tooth on the upper margin, at about the median part, this spine projects above the tibiae when the latter is closed; intermediate femora with a sharp, even carina, intermediate tibiae simple; posterior femora with a long, slanting, sharp tooth on the lower margin.

Female: Clypeus aculeate, tubercle on the vertex not more developed than in the male.

Length $14\frac{1}{2}$ – $17\frac{1}{2}$ mm.; width $8\frac{1}{4}$ –10 mm.

Apart from the colouring of the prothorax, this insect differs from *O. sphinx* in the shape of the prothorax, which is longer and more parallel, the armature of the under side of the fore tibiae is different, and the tooth on the lower margin of the posterior femora is longer and sharper, the anterior femora have only one long tooth on the upper margin, and none on the lower.

Hab. Transvaal (Potchefstroom), Southern Rhodesia (Victoria Falls, Salisbury, Buluwayo).

ONITIS CRENATUS, Reich.,

Plate XXXIV., fig. 13.

Voy. Galin. Abyss., 1850, p. 328, pl. xx., fig. 1.

Bronze with a greenish tinge, slightly rufescent on the elytra; clypeus not emarginate in front, genae not projecting much, clypeal carina short, equi-distant from apex and base, frontal carina broadly interrupted in the centre, tubercle small, set close to the interrupted part of the frontal carina, basal carina hardly noticeable in the central part, the clypeus is rugose or plicate according to the sex, and the posterior part of the head is punctulate; prothorax attenuate laterally in the anterior part, but not much from the median part

towards the base; it is convex, marginate in front, on the sides, and between the two basal impressions which are deep, and slightly slanting towards each other, the whole surface is covered with deep punctures moderately closely set; scutellum very distinct, a little rounded at tip; elytra sub-parallel, slightly sinuate laterally a little before the middle, a little convex along the suture, narrowly striate with the intervals nearly plane, and slightly coriaceous; the ninth interval is deeply foveato-punctate along the supra-marginal carina in the male, but not in the female; pygidium a little convex, impunctate; metasternum with a median shallow grooved line.

Male: Clypeus not emarginate at tip, but not quite round; anterior tibiae long, a little incurved and with the mucro slanting, sharply quadri-dentate outwardly, and having underneath three or four equi-distant and very distinct teeth, femora having on the anterior carina a truncate tooth situated nearer to the apex than to the base; intermediate femora carinate beneath but simple, trochanters slightly spinose, tibiae normal; posterior femora with a sharp, long, nearly vertical, slightly bent tooth on the lower margin, not laminate on either side (fig. 13); posterior tibiae very slender from the base to about the median part, and amplified from there.

Female: Clypeus aculeate, sub-truncate at tip; supra-marginal carina of elytra not foveolato-punctate laterally; legs simple.

Length 16-19 mm.; width 9-11 $\frac{1}{4}$ mm.

Hab. Cape Colony (Cape Town, Graham's Town, Knysna, Kimberley), Natal (Durban, Estcourt, Newcastle), Southern Rhodesia (Bulawayo, Salisbury, Enkeldoorn), Orange Free State (Bloemfontein), Transvaal (Potchefstroom).

ONITIS VIRIDULUS, Bohem.,

Plate XXXIV., fig. 14.

Insect. Caffrar., ii., p. 253.

O. pecuarius, Lansb., Annal. Soc. Entom. d. Belg., 1875, p. 32.

Bronze, with a faint greenish tinge on the elytra; the description of *O. crenatus* applies to this species in almost every point, except that the clypeal carina is situated a little nearer the apex in both sexes, and that the tooth of the posterior femora has inwardly a sharp lamina abruptly truncate near the trochanters which are distinctly spinose (fig. 14); the supra-marginal carina of the elytra is not foveolato-punctate inwardly, except very occasionally, and then only in the posterior part, and the anterior tibiae of the male have sometimes five teeth underneath.

Length 17-20 mm.; width 9 $\frac{1}{2}$ -11 $\frac{1}{2}$ mm.

Hab. Natal (Durban), Cape Colony (Seymour), Southern Rhodesia (Victoria Falls, Buluwayo).

In his description of *O. viridulus*, Boh., Lansberge mentions a small longitudinal carina beginning at the centre of the clypeal one, and reaching the apex, and he says also that Boheman has not mentioned that character. Further on, in his comparison between *O. pecuarius* and *O. viridulus*, he insists upon the shape of the spine of the posterior femora which is straight and conical, while in *viridulus* it is triangular and recurved, and the trochanters of the latter are not spinose; it is also smaller than *O. pecuarius*, the colour of which is bronze black, while *O. viridulus* is bright bronze; and he adds that it seems to be rarer than *O. pecuarius*. I am of opinion that Lansberge has mistaken the small developments of his *O. pecuarius*, which in truth are rare, for Boheman's species, the co-type of which I have seen and which I take to be identical with *pecuarius*, Lansb. In two small examples from Natal this very slight longitudinal carina on the clypeus exists but is extremely fine and hardly noticeable; the posterior trochanters are as spinose as in normal examples, but although the lamina is well defined, the tooth is hardly projecting and certainly not recurved; the colour is also as dark, and the marginal carina of the elytra is not foveolato-punctate. For these reasons I think that the two species can safely be considered as one.

ONITIS PERTURBATOR, n. spec.

Female: Metallic green with a dull coppery sheen; clypeus darker than the rest of the head, nearly black, transversely plicate, elongate, acuminate at tip and with the margin recurved, genæ not projecting, there is a short but distinct clypeal carina, a frontal one with a distinct tubercle in the centre of it, and a moderately raised vertical one; prothorax convex, covered with closely set, deep punctures, slightly impressed towards the basal part, which is granulose instead of being punctate; the two basal impressions are very shallow; elytra a little longer than broad, somewhat convex and gibbose at middle along the suture, sinuate laterally at middle, striate, intervals plane and having each a double series of briefly setigerous punctures; pygidium roughly and deeply punctured; under side densely pubescent, femora closely scabroso-punctate, metasternum scabrous in the centre and very closely granulose laterally.

Length 21 mm.; width 9 mm.

Male unknown,

Easily distinguishable from *O. licitus* by the sculpture of the prothorax, which is punctate instead of being granulose.

Hab. Lower Rhodesia (Manica).

ONITIS CRIBRATUS, Lansb.,

Annal. Soc. Entom. de Belg., 1875, p. 92.

"Oblongo-quadrate, thick; dark bronze, black beneath, clothed with fulvous hairs, mouth and antennæ brown; head transversely rugose, less closely punctate behind, clypeal carina situated in the middle, hardly manifest, frontal carina interrupted and joined by a small, median tubercle, vertex slightly raised behind, smooth in the middle, non-marginate, genæ distinct, angular at tip; prothorax covered with very closely set confluent punctures, sub-canaliculate longitudinally behind in the middle, base non-marginate, basal impressions nearly obsolete, lateral part dilated and rounded behind; scutellum round, smooth; elytra striate, striæ non-punctate, seventh hardly deeper than the others, intervals obliquely coriaceous; pygidium sub-carinate lengthways; under side granulate, abdomen smooth, metasternum slightly sulcate; anterior femora carinate beneath.

Length 22 mm.; width $14\frac{1}{2}$ mm.

Male: Clypeus truncate; prothorax more dilated in front than in the female and with the seventh stria of elytra deeper; anterior femora with the anterior margin provided with a small tooth on each side near the apex; tibiæ slender, with five incurved teeth underneath, the last one being the longest, muero little elongate, obliquely truncate; posterior femora armed underneath with an acute spine connected by a narrow lamina with a smaller tooth situated close to the trochanters which are spinose.

Female: Clypeus triangular; prothorax narrowed in front; femora non-spiny, tibiæ shorter.

Not unlike *O. pecuarius* in shape, but more massive, and distinguishable from all the other metallic species by its shagreened elytra and the triangular clypeus."

Hab. N'Gamiland, teste Lansberge.

I have not seen this species.

ONITIS MINUTUS, Lansb.,

Annal. Soc. Entom. d. Belg., vol. xviii., 1875, p. 112.

Bronze green on the head and thorax, with the legs and under side metallic green, elytra testaceous, but with a slight greenish tinge;

head scabrous, clypeus more elongate in the male than in the female, and slightly less emarginate in the former than in the latter; prothorax one-fourth wider than long, somewhat convex and distinctly deliscent in front in the female, closely granulose, slightly impressed longitudinally in the middle, and having on each side of the median impression two very short, smooth, lineiform, longitudinal patches which are, however, not well defined and are sometimes absent; the two basal impressions are deep, and set close to one another; scutellum small; elytra moderately plane, but sub-gibbose at middle along the suture, as long as broad, or very little longer, a little narrower at apex than at base, distinctly striate with the suture, the second and third intervals and the basal part of the fourth raised and sub-rectiform; the intervals are slightly punctate; pygidium sub-punctate; under side scabrous, clothed with long flavous hairs, metathorax closely granulose.

Male: Clypeus elongate, blunt and slightly emarginate at tip, clypeal carina almost wanting, frontal carina very distinct, entire, basal part sub-carinate, there is a small tubercle equi-distant from the frontal carina and the base; anterior tibiae long, quadri-dentate externally but with the two apical teeth set close to one another, mucro long but not much inflexed, and having a distinct external tooth at base, the carina beneath is sharp, serrulate from the base to half the length, and they are fringed with hairs inwardly; the anterior femora have no teeth; the intermediate ones have the lower edge deeply punctured but not serrulate, and the tibiae are very distinctly crenulate; the basal part of the posterior femora has two or three short, closely set teeth, and the posterior tibiae are normal; the metasternum has a slightly impressed longitudinal line.

Female: Clypeus a little less elongate than in the male and more deeply emarginate, clypeal carina a little more distinct, frontal carina and supra-basal tubercle similar; prothorax more convex; shape and sculpture of elytra identical.

Length 13–19 mm.; width 7–8 mm.

Hab. Cape Colony (Knysna, Calvinia).

ONITIS AERUGINOSUS, Klug,

Monatsb. Ac. Berl., 1855, p. 652 (♀).

O. cupreus, Har. Coleopt., Heft. viii., 18, p. 10 (♂).

Male: Bronze with a greenish sheen, elytra sub-opaque; head plicate on the clypeus which is a little produced in front, but rounded at tip, and granulose on the vertex, clypeal carina long,

arcuate, distinct, and equi-distant from the tubercle on the vertex and from the apex, frontal carina interrupted in the centre and having immediately behind it, but not connected with it, a narrow, transverse tubercle, basal carina not arcuate, and not quite as much raised as the frontal one; prothorax attenuate diagonally for one-third of the length, and rounded from there to the basal angle which is very distinct, marginate laterally and in front, but not at base, and covered with scabrose, extremely closely set punctures, basal impressions moderately deep and more finely granular, in the centre of the disk there is a depressed line disappearing in the anterior part; scutellum invisible; elytra depressed, but with the suture raised, not at all sinuate laterally, and a little ampliate at middle, humeral callus distinct at the base only of the sixth and seventh intervals, the striæ are narrow, and the intervals plane and punctulate; pygidium sparsely granulose; metasternum granulose laterally and in the anterior part; anterior tibiæ moderately slender, a little incurved, mucro sharp and distinct inwardly, quadridentate outwardly, but with the basal tooth small and very blunt, carina underneath sharp but neither serrate nor dentate; intermediate and posterior femora sharply and closely serrate underneath, and roughly punctured; tibiæ simple, normal.

Length 13 mm.; width $7\frac{1}{2}$ mm.

Female: Clypeus a little clongate, sub-truncate, legs shorter.

Resembles in general appearance *O. dispar*, but it is much smaller, and is at once differentiated by the interrupted frontal carina as well as by the armature of the legs.

I have seen one example only from the Zambesi River, which is certainly not convex, but otherwise it answers very well to Lansberge's description.

ONITIS LICITUS, n. spec.

Male: Bronze green, shining; clypeus elongate, emarginate at tip, genæ not projecting, anterior part closely punctured, posterior part granulose, clypeal carina obsolete, frontal carina entire, slightly arcuate, vertex sub-carinate, a small tubercle midway between the frontal and the vertical ridge; prothorax manifestly convex, closely covered with short, elongate granules, and having in the centre a faint longitudinal impression, and at about the middle an inconspicuous smooth line, the basal impressions are set moderately close to one another, and are triangular; scutellum small, acuminate; elytra a little attenuate laterally from base to apex, a little sinuate past the shoulders, then slightly ampliate past the middle, and

again a little sinuate towards the apex, more convex than plane, and distinctly sub-gibbose past the middle along the suture, they are narrowly striate with the first five intervals raised and more or less tectiform, slightly plicate transversely and not punctured but rugulose at apex; pygidium punctulate and convex; anterior tibiæ not very elongate, mucro hardly incurved and moderately long, carina underneath not very much developed, and simple, fringed with fulvous, not dense, hairs inwardly, the anterior femora are normal, but the intermediate and posterior ones are distinctly serrate, the intermediate tibiæ are faintly serrulate, but the posterior ones are not; metasternum scabroso-punctate in the centre, closely granulose laterally, and having a narrowly grooved longitudinal line in the centre.

Length 12 mm.; width 7 mm.

Female unknown.

Hab. Cape Colony (Burghersdorp).

ONITIS CONFUSUS, Bohem.,

Plate XXXIV., figs. 5, 5a.

Öfvers. Vet. Ak. Förh., 1860, p. 111.

Piceous black, with a very faint metallic tinge on the elytra.

Male: Clypeus a little elongate and acuminate but deeply incised at apex, genæ not projecting, margins of clypeus and genæ recurved, the whole head is finely and closely granular, instead of a clypeal carina there is a very small tubercle, the frontal carina is slightly sinuate, the vertical one is as much raised as the frontal, and close to the former there is a median tubercle of about the same height as the clypeal one, which latter is sometimes cariniform; prothorax somewhat convex, covered with moderately deep, closely set, round punctures, the central part has a slight longitudinal impression which, however, is not always noticeable, the two basal impressions are set close to one another and are sub-triangular, the median part of the base does not project much; scutellum extremely small; elytra longer than broad, slightly sinuate laterally at some distance from the shoulder, more plane than convex, sub-gibbose past the middle along the suture, very narrowly striate with the seven intervals distinctly raised and tectiform from the base to past the middle and irregularly punctured, the punctures apparently non-setigerous; pygidium a little convex, covered with setigerous punctures; anterior tibiæ slightly curved, and with the mucro sub-horizontal and turning slightly outwards, under the apical outer tooth there is a very distinct vertical one (fig. 5), and the carina beneath is

crenulate for nearly half the length, the anterior and intermediate femora have no teeth, the intermediate tibiæ are deeply emarginate inwardly at base, and the apical part of the carinate lower margin of the posterior femora is serrate (fig. 5a); the whole of the metasternum is covered with scabrose punctures, and in the centre is a rounded raised line reaching from apex to base.

I am not sure of the identity of the female. Lansherge says that the clypeus is longer, but rounded, the tubercle on the vertex of the head is more raised, all the femora are without spines, and the tibiæ are shorter.

Length 20-22 mm.; width 11 mm.

Hab. Cape Colony (Graham's Town), Transvaal (Potchefstroom).

ONITIS CAFFER, Bohem.,

Plate XXXIV., fig. 6.

Insect. Caffr., ii., p. 251.

Black or piceous black, shining; clypeus a little elongate, slightly emarginate at tip in both sexes, and with the edges slightly recurved, genæ hardly projecting beyond the line of the clypeus, clypeal carina slightly arcuate, better defined in the female than in the male, frontal carina straight, united laterally with the carina of the base which is very little raised, between the frontal carina and the basal one there is a small median tubercle, the clypeus is transversely plicate and the vertex deeply punctured; prothorax short, convex, covered in the median part of the disk with very closely set, very elongate, depressed granules replaced by punctures alongside the base, it is marginate all round, has a median longitudinal impressed line, better defined in the male, and two deep, broad impressions in the centre of the base; elytra short, glabrous, and having a very convex look owing to the sutural part being much raised a little past the median part, slightly sinuate laterally at some distance from the shoulder, distinctly and narrowly striate with the intervals raised but not tectiform, covered with ill-defined, small impressions neither deep nor regular enough to be called punctures; pygidium sub-punctate and with a few bristles in the anterior part; metathorax deeply punctured.

Male: Tubercle of clypeus very distinct, but not as much raised as in the female; anterior femora without spine but with both edges very strongly developed yet not deeply grooved, anterior tibiæ long, quadri-dentate outwardly, incurved slightly at tip but with the mucro long, strongly incurved, and having underneath at the base a small vertical tooth at the junction of the mucro with the apical outer

tooth, the carina underneath is sharp, but not serrate, and is ciliate; intermediate femora serrulate all along the lower margin, intermediate tibiæ slightly bi-incised inwardly; posterior femora serrate all along the margin like the intermediate ones (fig. 6), posterior tibiæ normal.

Female: The shape of the body is a little more convex, the tubercle on the vertex of the head is more developed, and the depressed longitudinal median line of the prothorax is less visible and shorter.

Length 20–21 mm.; width 11–11½ mm.

This species differs from *O. confusus* in the general facies, which is shorter and more convex; the tooth on the under part of the fore tibiæ of the male is not so much developed, and the serration of the hind femora is different; the intermediate femora are serrate, which is not the case in *O. confusus*.

Hab. The whole of Cape Colony, but more abundant in the eastern than in the western part; Natal (Durban, Newcastle, Estcourt), Transvaal (Potchefstroom).

ONITIS FABRICII, Roth.,

Plate XXXIV., fig. 8.

Wieg. Archiv., 1851, i., p. 129.

O. perplexus, Boh., Ins. Caffr., ii., p. 247.

Sub-ovate, moderately convex, black or brown, moderately shining; head covered with rugose granules, clypeal carina, broad, sub-arcuate near the apex, frontal carina entire, arcuate, raised, vertex moderately elongate, depressed on each side, posterior margin raised and transversely grooved, genæ rounded; prothorax moderately convex, broader than long, roughly punctured in front and between the basal foveæ, while the punctures on the disk are deep and not very close and are very slight behind, base crenulate, nearly straight between the foveæ and marginate, the foveæ are close to one another, and moderately large, sides somewhat strongly ampliate at middle, sub-sinuate behind, narrowed and without any posterior angle; scutellum very small, elongate; elytra moderately convex, striate, the striæ obsolete punctate transversely, intervals plane, sparsely and very finely punctulate, shoulders hardly prominent; under side granular, clothed with fulvous hairs, metasternum plane, very faintly sulcate lengthways and punctate in the posterior part.

Male: Clypeus a little more rounded in front than in the female; the upper margin of the anterior femora bearing inwardly an obtuse tooth past the middle, tibiæ sub-crenulate, elongate, strongly incurved

at apex, mucro elongate; posterior margin of the intermediate femora having underneath a crenulate carina ending before the apex in a sharp tooth, and obtusely dentate at apex; tibiæ slender at base, straight, curved from there and suddenly narrowly dilated; posterior femora sub-dentate in the upper margin at middle, and emarginate from there, lower margin crenulate underneath, tibiæ gradually dilated from base to apex, the dilatation not being great.

Female: Clypeus more suddenly rounded at tip than in the male; femora simple, tibiæ shorter, intermediate ones straight.

Length 18-23 mm.; width 10-13 mm.

Hab. Mozambique, and Caffraria, teste Lansberge. Occurs also in Abyssinia.

This species is distinguishable from *O. robustus*, Boh., by the presence of a clypeal carina and the incision on the anterior part of the hind femora of the male.

ONITIS DISPAR, Péring.,

Plate XXXVI., fig. 31.

Trans. Entom. Soc. Lond., 1895, p. 155.

Dark metallic green or bronze green, moderately shining; head granular, clypeus with a short carina, frontal carina raised, nearly straight, basal carina not much raised and having in the middle a short but distinct elongate tubercle somewhat grooved transversely; prothorax a little attenuate laterally in front and not much behind in the male, moderately convex and covered with deep, closely set punctures and some fine granules on the two basal impressions which are not deep; the median part of the base is carinate like the sides and the anterior part; scutellum moderately long and very sharp; elytra a little convex, sinuate laterally at some distance from the shoulder, humeral callus not very prominent, striae narrow, intervals plane, finely and regularly punctured; pygidium scarcely punctulate, metasternum distinctly granular and having an ill-defined hollowed median longitudinal line.

Male: Anterior tibiæ slender, nearly straight, quadri-dentate outwardly, the teeth being blunt, mucro short, stumpy and densely ciliate at base, carina underneath simple; femora simple, intermediate tibiæ normal, simple, posterior ones a little compressed and with the outer angle produced into a long, flat unciform process nearly as long as the inner spur and curving slightly inwards (fig. 31).

Female: A little more robust than the male, the clypeus is transversely plicate, the tubercle on the vertex of the head is stronger the intervals on the elytra are slightly coriaceous and the punctures

deeper, and the outer angle of the posterior tibiæ is also a little elongated.

Length 23–24 mm.; width 13–14 mm.

Hab. Southern Rhodesia (Manica).

ONITIS MNISZECHI, Lansb.,

Annal. Soc. Entom. d. Belg., 1875, p. 62.

“Oblongo-ovate, black, moderately shining; head triangular, dense, covered with rugose granules, no clypeal carina, frontal one entire, sub-arcuate, raised, basal part moderately raised, provided with a sharp tubercle, genæ somewhat prominent, rounded; prothorax moderately large, rugose in the anterior part, punctate behind, sulcate longitudinally in the middle, the sulcus granulate, base marginate, basal impressions small, not deep, sides roundly amplified in front, and straight behind with the posterior angles blunted; scutellum shining, cordiform; elytra elongate, striate, striæ disappearing behind, intervals finely punctulate; pygidium strongly punctured; under side shining, granulate, clothed with fulvous hairs; metasternum with a longitudinal smooth carina; median part of abdomen smooth.

Length 28 mm.; width 14 mm.

Male unknown.

Female: Clypeus produced in front, truncate, femora short, punctate, tibiæ ciliate with fulvous hairs.

Hab. Damara land. One single female example from the Mniszech collection. It is easily recognised by the absence of clypeal carina, the rugose punctuation of the prothorax, the longitudinal carina of the metasternum, and the size, which is nearly equal to that of small examples of *O. tridens*, which it resembles also in general appearance.”

ONITIS NUBIENSIS, Lansb.,

Annal. Soc. Entom. d. Belg., 1875, p. 63.

“Oblongo-quadrata, black, moderately shining; head covered with rugose granules; clypeus triangular, rounded in front and having no clypeal carina, frontal carina arcuate, entire, very much raised in the middle, basal margin of the vertex, which is also raised in the middle, interrupted by a sharp tubercle separate from it and situated a little in front of it, genæ straight, slightly prominent in the anterior part; prothorax closely granulate, but less closely at the base, faintly grooved longitudinally, base marginate, produced a little

behind between the impressions, and granulate, these two basal impressions are very close together, the lateral part is ampliate in the middle, narrowed behind, distinctly sinuate, with the angles nearly straight; scutellum reduced to a mere dot; elytra elongate, striate, striae obsoletely punctulate, intervals plane, very finely and sparsely punctulate, seventh stria slightly impressed; pygidium smooth; under side granular, clothed with long, fulvous hairs; metasternum and abdomen smooth in the middle, and the latter is sub-earinate.

Length 22-25 mm; width 11-12½ mm.

Male: Anterior femora thick, with the anterior margin broad, and having an external spine near the apex; tibiae nearly straight and having underneath at the base a very strong, straight spine, as well as an obsolete small tooth, they are dilated inwardly, and the mucro is small and sharp; intermediate femora serrulate inwardly, deeply emarginate and dentate at apex, tibiae slender, incurved, suddenly dilated in a quadrate shape at apex; posterior femora provided inwardly with a lamina gradually increased in a strong recurved tooth, and briefly emarginate at apex, tibiae slender at base, and then suddenly and strongly incurved, and dilated inwardly in a quadrate shape.

Female: Tubercle on the vertex of the head more raised; legs simple, intermediate and posterior femora finely serrulate inwardly; tibiae dilated into a triangle.

Allied to *O. unguiculatus*, from which it differs, as also from *O. curvipes* and *O. uncinatus*, by having a tubercle on the posterior edge of the head. It differs from *O. mniszewski*, which has a similar tubercle, by its smaller facies, the shape of the clypeus, which is not rostrate in the female, and by the sculpture of the prothorax, which is granulate, whilst in *O. mniszewski* it consists to a great extent of punctures."

Hab. Mozambique and Nubia, teste Lansberge.

I have not yet met with this species.

ONITIS CURVIPES, Lansb.,

Plate XXXIV., figs. 4, 4a.

Annal. Soc. Entom. d. Belg., 1875, Klug, p. 652.

Piceous black or piceous red, hardly metallic; head sharply aculeate; granulose, no clypeal carina, frontal carina connected laterally with the basal one which in the male is not more raised than the frontal one, and in the female scarcely more so, genae not projecting at all; prothorax ampliated laterally from the apex to about two-

thirds of the length, and there deeply sinuate, marginate all round, very convex, having a distinct, although not deep, median longitudinal furrow, covered with closely set scabrose punctures turning to fine granules laterally and in and near the two basal impressions which are elongate and parallel; scutellum almost invisible; elytra somewhat convex, slightly sinuate laterally a little before the median part, humeral callus extending only on the seventh and sixth striae, striae fine, intervals slightly aciculate and slightly coriaceous at times; pygidium with a few minute granules; metasternum closely granular except in the centre, which is very slightly carinate.

Male: Head aculeate, but not as sharply as in the female; anterior tibiae a little bent at base, nearly straight, strongly quadridentate outwardly, mucro thin, sharp, diagonal, underneath there is a very strong somewhat serrate lamina, aculeate, or ending in a small tooth at tip, and a much longer and vertical one at base in a line with the outer basal tooth (fig. 4a); anterior femora with a strong tooth on the upper margin near the knee, and another and sharper one at about the middle of the lower margin; intermediate femora broadly grooved underneath, sinuate and deeply incised at apex, where there is a curved tooth, while each side of the sub-apical groove is also dentate, the intermediate tibiae are very slender for one-third of the length and from there incurved at a very sharp angle, and broadly dilated; posterior femora with a sharp, broad lamina developed into a long sharp curved tooth directed towards the knee, the remaining part of the femur broadly grooved underneath (fig. 4) and dentate on each side at apex; posterior tibiae also very slender at base for about one-third of the length, and from there curved, but not quite so sharply as the intermediate one, and dilated in an elongato-quadrate thick lamina.

Female: Clypeus very long, somewhat rostrate; punctures and granules on the prothorax deeper and more closely set; legs very robust.

Length 16-27 mm.; width 10-14 mm.

The insects which I identified as *O. curvipes* answer completely to the careful description of Lansberge, except that the anterior tibiae are normally dentate outwardly. Yet in one of my examples two of the basal teeth are nearly wanting, worn out in fact, and it is quite possible that the same thing had occurred in the examples made use of by Lansberge for his description.

This species is very closely allied indeed to *O. uncinatus*, Klug, but it is more massive, more convex; the clypeus in the female is decidedly rostrate, and in the male the upper carina of the anterior tibiae becomes rounded towards the apex and seldom edges the inner

part, whereas in *O. uncinatus* it diverges outwardly towards the penultimate outer tooth and the apical inner part is dilated; and in the ♀ the clypeus is triangular and not so sharp at tip.

Hab. Transvaal (Potchefstroom, Pretoria, Boksburg, Johannesburg); British Bechuanaland (Kanye); Ovampoland.

ONITIS UNCINATUS, Klug,

Monatsb. Berl. Acad., 1855, p. 652; Peters' Reis. n. Mossamb.,
1862, p. 223.

O. fodiens, Bohem., Insect. Caffr., ii., p. 249.

This species is also closely allied to the two preceding ones, and is a somewhat intermediate form. The prothorax is as closely scabropunctate as in *O. deceptor*; the head and clypeus are similar; the anterior tibiae of the male, however, are distinctly amplified internally from opposite the second basal outer tooth, and the upper carina runs there in the median part, the four outer teeth are equi-distant, the curve of the intermediate tibiae is intermediate between that of *O. deceptor* and *O. curvipes*, and the posterior tibiae and femora are similar to those of the last-named species, with which it is intimately connected.

Length $10\frac{1}{2}$ –25 mm.; width 10–11 mm.

Hab. Southern Rhodesia (Limpopo River); occurs also in Abyssinia and Victoria Nyanza.

ONITIS DECEPTOR, n. spec.

Very similar to *O. curvipes*, Lansb., in both sexes; it differs mainly in the sculpture of the prothorax, the whole punctures of which are distinctly more scabrose and a little more closely set right down to the base, and there is no trace of a longitudinal median sulcus, the elytra are more opaque and the intervals not coriaceous, the pygidium is more granulose, the size is also generally a little smaller, and in the male the tibiae are quite straight inwardly and the upper inner carina runs quite parallel to the edge, whereas in *O. curvipes* it is a little sinuate and does not run near the edge, underneath the carina also runs near to the edge, is bi-serrate at about the median part, has a very distinct vertical tooth towards the base at about one-third of the length, and the whole carina is only half the size of that of *O. curvipes*, all the femora are similar, but the intermediate tibiae, although having nearly the same shape, are not bent at quite so sharp an angle, and the lamelliform ampliation is more regularly

triangular; the posterior tibiae are similar, and the basal outer tooth of the anterior tibiae is broadly separated from the others.

The female has more convex elytra than the male, and the clypeus is triangular but more aculeate than in the same sex of *O. uncinatus*.

Length 21–22 mm.; width 11–11½ mm.

Hab. Southern Rhodesia (Enkeldoorn, Buluwayo).

ONITIS ROBUSTUS, Bohem.,

Plate XXXIV., fig. 7.

Insect. Caffr., ii., p. 246.

O. zambesianus, Péring., Trans. Entom. Soc., 1896, p. 154.

Reddish brown, moderately shining, elytra sub-opaque; head granulose, clypeus somewhat elongate, slightly truncate, no clypeal carina, frontal carina highly raised, connected laterally with the basal one which is nearly as highly raised, slightly tuberculate in the centre with the tuberculiform process grooved, the space between the frontal carina and the basal one is deeply impressed on each side; prothorax convex, marginate in front and laterally, as well as in the base between the two basal impressions which are not very deep, the surface is scabrous in the anterior part for about one-third of the width, and somewhat closely punctured from there to the base, except in and between the two basal impressions where they are granulose; scutellum very small; elytra robust, convex, a little sinuate laterally behind the shoulder, humeral callus not conspicuous, they are finely striate, the striae are geminate and shining, and the intervals plane and finely aciculate; pygidium coriaceous in the male, granular in the female; metasternum totally granular, and having a longitudinal, smooth, slightly raised line.

Male: Anterior tibiae strongly quadri-dentate outwardly and very strongly and acutely serrate underneath from the base to a short distance from the mucro which is long, sharp and sub-diagonal; anterior femora thick, sharply carinate, and having a small, but very distinct tooth on the upper edge, not quite in the centre, and another and smaller one close to the knee, intermediate femora with a sharp lamina deeply incised at apex and forming thus a curved tooth on each side of the incision (fig. 7), intermediate tibiae very slender at base and amplified inwardly into a long, quadrate process; posterior femora having a narrow five-serrate lamina, posterior tibiae normal, somewhat slender and straight.

Female: Clypeus a little more elongate than in the male; posterior femora serrulate underneath; the raised, grooved carina at the base of the head is not higher than that of the male.

Length 23–25 mm.; width $12\frac{1}{2}$ –14 mm.

O. zambezianus, Pér., is only the large development of the typical *O. robustus*; it is also a little more convex.

Hab. Southern Rhodesia (Victoria Falls, Manica), Ovampoland.

ONITIS INVERSIDENS, Lansb.,

Plate XXXIV., figs. 10, 10a, 10b, 10c, 10d.

Annal. Soc. Entom. d. Belg. 1875, p. 81.

Piceous-black, shining, somewhat depressed; head granulose and somewhat plicate transversely in both sexes, no clypeal carina, frontal carina a little curved, distinctly raised, and connected laterally with the basal one which is not quite so much raised, but has in the centre a short blunt tubercle, genæ rounded, not prominent at tip; prothorax not very convex, regularly ampliate laterally, and having no basal angle, covered with moderately closely set, round punctures, while the two basal impressions which are very shallow and nearly confluent, are covered with fine granules; it is marginate laterally and in front, but not at the base; scutellum small but very distinct; elytra sub-parallel, very slightly sinuate behind the shoulder, humeral callus moderately strong, striae narrow, intervals slightly convex near the base, fifth one a little convex for nearly all the length, and all covered with small but deep punctures; pygidium set with small granules; metasternum scabrose and having in the centre a longitudinal smooth, shallow groove.

Male: Anterior tibiae long, slender, deeply curved inwardly from middle to apex, tri-dentate outwardly, or having occasionally a small sinuation where the basal tooth should have been, the three teeth are triangular, not very long, and have a tendency to point a little backward, the mucro is slanting, somewhat sharp at tip, and densely ciliate, underneath there is a long carina reaching from under the basal outer tooth to the base where it is produced into a long, sharp triangle (figs. 10, 10a); anterior femora sharply carinate and having a moderately long tooth close to the knee (fig. 10a); intermediate femora deeply incised in the middle underneath and having on each side of the incision a curved tooth (fig. 10b), intermediate tibiae simple; posterior femora having on the upper side a projecting spine, long, sharp, and a little sinuate (fig. 10d), and at the lower side a narrow lamina ending in a long, sub-horizontal sharp spine (fig. 10c) projecting from about the median

part of the femur, posterior tibiæ long, slender for one-third of the length, and gradually dilated from there. The length of the upper and lower spines of the posterior femora varies, and I have seen a male example in which the intermediate femora have a long apical, hardly incurved tooth, while the median part is hardly incised, and is crenulate; in the small development, the carina under the fore tibiæ is not so sharp at base, and the spine on the upper edge of the posterior femora is wanting.

Female: Clypeus distinctly aculeate, tubercle on vertex of the head a little more pronounced than in the male; anterior tibiæ strongly quadri-dentate, intermediate femora distinctly serrate beneath.

Length 17–20 mm.; width 9–11 mm.

Hab. Southern Rhodesia (Victoria Falls).

ONITIS ABYSSINICUS, Reich.,

Voyage de Galin. en Abyss., p. 333, pl. 20, fig. 3.

O. lycophron, Klug, Monatsb. Berl. Ac. 1855, p. 651; Peters' Reis., p. 222, pl. xii., fig. 14.

Black, shining, somewhat depressed; head granulose, clypeus slightly plicate transversely, more distinctly so in the female than in the male, no clypeal carina, frontal one curved, very distinct, basal one not quite so much raised, sinuate and having in the centre a short, but distinct tubercle, genæ rounded; prothorax amplified diagonally laterally from the anterior angle to past the middle, and more abruptly attenuate from there to the base, marginate in front and laterally, but not at base, covered with moderately closely set punctures, while the two basal impressions, which are moderately deep and sometimes coalesce, are filled with small granules; scutellum distinct, sharp; elytra sub-parallel, very slightly sinuate laterally, humeral callus showing very little, striæ narrow, intervals nearly plane and deeply punctured; pygidium slightly punctured; metasternum granular, median part with a smooth longitudinal band.

Male: Clypeus rounded; anterior tibiæ long, arcuate, quadri-dentate outwardly, the teeth somewhat blunt, the basal one especially, and the mucro short, a little incurved, and densely ciliate; underneath the carina is produced at base into a more or less sharply triangular tooth; anterior femora simple, intermediate ones crenulate beneath, posterior ones with a sharp tooth underneath at middle, intermediate and posterior femora simple.

Female: Clypeus aculeate, tubercle on vertex of the head hardly more raised than in the male; punctures on prothorax and elytra more pronounced; intermediate tibiae serrate beneath.

Length 15–20 mm.; width 8–10 mm.

Hab. Southern Rhodesia (Salisbury). Occurs also in Abyssinia and the Galla country.

ONITIS ORTHOPUS, Lansb.,

Plate XXXIV., fig. 9.

Annal. Soc. Ent. de Belg., p. 79.

Piceous red, with a faint metallic tinge; somewhat depressed; head granulate, no clypeal carina, frontal one arcuate, basal one sinuate, nearly as much raised as the frontal one, and slightly tuberculate in the middle, genæ not rounded, but not projecting at tip; prothorax attenuate laterally for one-third of the length, and very little rounded from there towards the basal angle, marginate in front and laterally, but not at base, not very convex, and covered with somewhat closely set punctures changing into minute granules on the two basal impressions which are shallow; scutellum very small but distinct; elytra sub-parallel, slightly sinuate behind the shoulder, humeral callus developed only on the seventh interval, narrowly geminato-striate with the intervals plane and finely, but very distinctly, punctured, the punctures very briefly setigerous; pygidium convex, very slightly granulose; metasternum entirely granulose, and faintly sulcate longitudinally.

Male: Clypeus rounded and deeply emarginate at tip; anterior tibiae bluntly quadri-dentate outwardly with the teeth equi-distant, straight internally for three-fourths of the length and emarginate at a short distance from the base of the mucro which is very short, blunt, and densely ciliate, underneath there is a very sharp carina running from apex to base, and forming a triangular tooth at base; femora and intermediate tibiae simple, but the intermediate femora are sometimes slightly crenulate beneath, posterior tibiae compressed in a laminate remiform process rounded externally, sinuate internally and without any external teeth (fig. 9).

Female: Clypeus aculeate, a little truncate at tip, and with the margin recurved; tubercle on the vertex a little more raised than in the male; intermediate femora serrulate underneath.

The shape of the posterior tibiae of the male will easily lead to the identification of this species; the female very much resembles that of *O. abyssinicus*, and especially that of *O. inversidens*, but the

aculeate part of the clypeus is a little more distinctly truncate than in either of these two species.

Length 15–18 mm ; width $9-9\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Victoria Falls, Middle Limpopo, ? Salisbury).

(I have not been able to identify the two following species.)

ONITIS VICINUS, Lansb.,

Annal. Soc. Ent. d. Belg., 1875, p. 95.

O. shoensis, Bohem., Ins. Caffr., ii., p. 254.

“Oblongo-quadrate, bronze or bronze green ; head closely rugoso-punctate, slightly smooth behind, clypeal carina distant from the frontal part, short, frontal carina straight, broadly interrupted at middle, obtusely tuberculate in the middle of the vertex, slightly raised behind, smooth, genæ slightly prominent in front ; prothorax closely and moderately deeply punctate, the punctures being sometimes confluent in the centre, sides hardly punctate, moderately ampliate, rounded but somewhat angular at base ; scutellum smooth, cordiform ; elytra slightly striate, the striæ crenato-punctate, the intervals plane and sub-rugulose ; pygidium smooth, sub-convex ; under side granulate, sparingly clothed with flavous setæ ; metasternum and abdomen smooth, the former sub-sulcate in front and plane behind ; anterior femora obsoletely carinate underneath.

Male : Clypeus sub-truncate at apex ; anterior margin of anterior femora sharply dentate beyond the middle ; anterior tibiæ slender, quadri-dentate internally, mucro recurved, short, thick ; posterior femora slightly emarginate at base and armed after the middle with a moderately large tooth.

Female : Clypeus slightly rounded at tip ; femora non-spiny, tibiæ shorter than in the male.

Length 16–17 mm. ; width $9\frac{1}{4}-9\frac{1}{2}$ mm.

Hab. Caffraria.”

This species comes probably in the vicinity of *O. sphinx*, but I have not yet seen it.

ONITIS ROTH, Lansb.,

Annal. Soc. Ent. d. Belg., 1875, p. 101.

“Oblongo-quadrate, bright bronze, very shining, greenish underneath, coppery on the head which is obsoletely rugoso-punctate behind and less so in front, clypeal carina moderately broad,

situated in the middle, frontal carina broadly interrupted, vertex with a median tubercle, posterior part a little raised, smooth, immarginate, genæ rounded; prothorax sparingly and not deeply punctured, having a median longitudinal smooth line, and the sides also smooth, base immarginate, basal impressions large, rounded, sides moderately dilated, rounded behind and sub-angular; scutellum cordiform; elytra slightly striate, striae obsoletely punctate, intervals plane, fifth and sixth raised together, seventh stria slightly impressed; pygidium sub-convex, smooth, sub-carinate longitudinally; under side granulate, clothed with fulvous hairs, abdomen smooth at middle, metasternum plane, anterior femora carinate underneath.

Male: Clypeus emarginate, vertical tubercle transverse; prothorax broader in front than that of the female, margin of elytra sub-crenulate behind; anterior femora with a spine on each side at middle, tibiæ slender, contorted, tri-dentate beneath, mucro elongate, strongly incurved, and with long, ciliate hairs at tip; posterior femora with an inner strong erect tooth, connected with another very small one; trochanters spinose.

Female: Clypeus projecting, truncate, black in front, tubercle on the vertex of the head larger than in the male, and conical; prothorax narrower, femora non-spiny, tibiæ shorter.

Length 16–18 mm.; width 8–9 mm.

“*O. Rothi* resembles *O. sphinx*, and the metasternum is also completely granulate. It differs, however, by the armature of the femora and legs, and the absence of groove in the metasternum. It is easily distinguishable by the fold produced by the continuation of the humeral tubercle on the fifth and sixth intervals. The male is more particularly distinguished by the position of the anterior spines in the anterior femora where they are placed exactly opposite one another and turned outwardly. The punctuation of the prothorax is much less pronounced than in the other metallic species.”

Hab. Caffraria, Abyssinia, teste Lausberge.

GEN. TAPEINOPTERUS, Lansb.

Annal. Soc. Entom. d. Belg., 1875, p. 15.

“Labial palpi with the second joint much larger than the first, thick, densely villose, third not distinct; head broad, emarginate at tip, transversely carinate, tuberculate on the vertex, genæ hardly divided from the clypeus; prothorax moderately convex, non-marginate at base, where it is bi-foveolate; scutellum distinct; elytra

somewhat plane, and not impressed round the scutellum; mesosternum very short, metasternum large; abdomen short, pygidium sub-inflexed; intermediate tibiæ carinate externally, anterior ones sinuate and having some very long slender tarsi; posterior tibiæ denticulate externally, sinuate at apex, tarsi long, densely ciliate."

TAPEINOPTERUS ATEUCHOIDES, Lansb.,

Loc. cit., p. 16.

"Oblongo-ovate, black, with the elytra piceous, opaque; head with a recurved margin, and closely rugosely granulate; clypeus transverse, broadly but not deeply emarginate and having no clypeal carina; frontal carina sub-arcuate, vertex with a sharp median tubercle the basal part of which is connected with the frontal carina by a small longitudinal smooth carina, posterior margin bi-sinuate, genæ straight; prothorax ample, sub-convex, finely punctate in front, more densely asperous behind and having in the middle a longitudinal smooth line, sub-obliquely truncate on each side of the base, immarginate, advancing a little in the middle of the base the impressions of which are very near to each other, outer sides moderately ampliate, narrowed and straight behind, rounded from there, and having no basal angle; scutellum narrow; elytra longer than broad, narrower than the prothorax, obsoletely striate, striæ indistinctly punctate, intervals very finely and sparsely punctulate, plane, nearly equal in width, eighth stria crenulate; pygidium sparingly granulate; under side shining, granulate, clothed with long, fulvous hairs; metasternum plane, carinulate at apex; antennæ, mouth, and tarsi brownish.

Length 20 mm.; width 10 mm.

Male: Anterior tibiæ moderately thick, slightly incurved at apex, crenulate beneath, mucro short, acute, inflexed, suddenly curving inwards; intermediate femora crenulate near the base, posterior ones elongate, narrow, simple; intermediate and posterior tibiæ moderately elongate.

Female not known."

Hab. South Africa, teste Lansberge.

I do not know this species.

GEN. NEONITIS, n. gen.

Buccal organs of *Cheironitis*, but the second joint of the maxillary palpi is very diagonally truncate inwardly, the third joint is inserted in the central part of the truncate part, and curves slightly

inwards; antennæ as in *Onitis* and *Cheironitis*; head broadly triangular, sharply acuminate and very distinctly recurved at apex, genæ projecting; prothorax one-third broader than long, amplified and rounded laterally at middle, foveate on each side; scutellum small, but distinct; elytra as broad as the base of the prothorax, a little ampliate from the humeral angle to about the middle, and attenuate from there to the apex, not sinuate laterally, somewhat plane, they have nine narrowly geminate striæ on each side and the ninth interval is produced into a very high, somewhat recurved carina; epipleura very narrow; pygidium vertical; prosternum normal, mesosternum narrow, separated from the metasternum by a raised line, metasternum broad; legs as in *Onitis*, basal tarsal joints dilated.

Apart from the general facies, which is indeed very different, the distinctive character of this genus is the shape of the second and third joints of the labial palpi.

NEONITIS PORCULUS, Bohem.,

Plate XXXIX., fig. 20.

Ins. Caffr., ii., p. 260.

Dark cyaneous blue, turning sometimes to greenish blue on the prothorax; head densely granulate; antennæ cyaneous with the club black; prothorax densely covered with closely set, very elongate granules, convex from near the base, marginate all round, bi-impressed above the centre of the base, and having a very faint, smooth, median longitudinal line in the anterior part; elytra somewhat ampliate and rounded laterally from the humeral angle to a short distance from the middle, and a little attenuate gradually from there to the apex, moderately plane, but with the suture slightly raised near the posterior declivity, very finely striate with the intervals plane, finely but not closely punctulate, the ninth interval, however, is very highly and sharply carinate from the base to three-fourths of the length, not at all sinuate, deeply impressed laterally inwardly and sometimes serrulate at tip; the humeral callus is very distinct; pygidium vertical, finely granulose, metasternum finely granulate laterally, asperoso-punctate in the centre, and having a shallow, median, longitudinal line reaching from base to apex; the two basal impressions are hardly distinct.

Male: Clypeus rounded but a little elongate, and produced in the centre into a distinct, recurved, sharp, compressed tooth, genæ projecting much beyond the line of the clypeus, the head has a frontal

carina and a basal one connected laterally by the ocular ridges, and having a short, sharp tubercle on the frontal carina; anterior femora moderately thick and armed with a sharp median tooth on the lower margin; anterior tibiae quadri-dentate outwardly, strongly falcate at tip, with the mucro very long, underneath there is a carina produced at middle into a broad, triangular sub-obtuse vertical tooth; trochanters of intermediate and posterior legs sharply spinose, intermediate femora deeply emarginate from the median part, armed with a sharp spine and having the apical part of the emargination sub-dentate, intermediate tibiae produced inwardly into a large, quadrate lamina at apex; posterior femora with a broad, sharp, horizontal, moderately broad spine, posterior tibiae slender for one-third of the length and dilated from there.

Female: Differs from the male merely by the shape of the clypeus, which is more elongate and therefore more sharply triangular; the frontal carina is hardly discernible, and the tubercle is identical; the legs are, of course, simple.

Length $16\frac{1}{2}$ – $18\frac{1}{2}$ mm.; width 10–11 mm.

Hab. Southern Rhodesia (Salisbury, Mazoe).

GEN. CHEIRONITIS, Lansb.,

Plate XXXIX., fig. 29.

Annal. Soc. Ent. d. Belgique, vol. xviii., 1875, p. 19.

Mentum short, nearly twice as broad as long, very deeply excavate in the central part, and deeply and widely emarginate at tip; labial palpi as in *Onitis*, but the second joint is much more elongate and narrower (fig. 29); the maxillary palpi are nearly similar, but the third joint is longer and slightly curved, and the apical one is more fusiform, but not attenuate at base, and has a slight, short, impressed line outwardly; the maxillae are a little more slender than in *Onitis*, and the lobes are similar; antennae nine-jointed, first joint of the clava cupuliform; head pentagonal, genae projecting; prothorax debiscent or vertical at apex, with the disk somewhat plane and the sides declivous, ampliate laterally at middle and foveolate on each side, base nearly straight, slightly sinuate at middle, but not projecting, and distinctly bi-impressed on each side of the median part; scutellum wide, sharply triangular at tip; elytra somewhat plane, as broad as the base of the prothorax, deeply sinuate laterally at a short distance from the humeral angle, declivous at apex and sub-callose outwardly; they have nine geminate striae, the epipleurae are very

narrow, and some of them are tectiform; pygidium vertical, triangular; legs robust, anterior tibiæ quadri-dentate outwardly, falcate and strongly mucronate at tip and without apical spur or trace of tarsi in the male, normal and with short tarsi in the female; prosternum produced in a long furcate process between the coxæ in the two South African species; mesosternum wide and divided from the metasternum by a distinct transverse carina; intermediate and posterior tibiæ as in *Onitis*, but the upper outer carina is slightly obliterated in the intermediate tibiæ and not very conspicuous in the posterior.

The genus is represented in the circa-Mediterranean region, India, and Africa (Senegal and German East Africa).

Key to the Species.

Prothorax punctured, and with raised lines forming an irregular lozenge at middle; elytra with the intervals finely punctured .. *hoplosternus*.

Prothorax granulose and covered with short irregular, conspicuously raised lines; intervals of elytra set with equi-distant shining tubercles *scabrosus*.

CHEIRONITIS HOPLOSTERNUS, Har.,

Plate XXXIV., fig. 17a.

Coleopt., Heft. iv., 1868, p. 83.

Bronze green on the prothorax and on the under side, elytra testaceous with the costæ green, head with the exception of the vertex and lateral part of the prothorax whitish yellow, legs greenish, testaceous; clypeus widely but not deeply emarginate in the centre, edges dark green, slightly recurved, genæ distinctly projecting, there is a short median clypeal carina shorter in the male than in the female, a frontal arcuate one connected laterally with the basal one which is sinuate and as much raised as the frontal one, the clypeus is punctate, and the space on the vertex between the two carinæ is scabrose; prothorax very convex, marginate all round, amplified in the anterior part, declivous in front, faintly impressed longitudinally in the median part, deeply and closely punctured, and having in the median part some raised, smooth lines somewhat lozenge-shaped, and two longitudinal, parallel impressions in the middle of the base; scutellum long, triangular; elytra attenuate laterally from the base towards the apex, deeply sinuate laterally, moderately plane, but with the suture raised, they are finely striate with the intervals

highly tectiform except the sixth, the second is tectiform only near the base, but more convex than the sixth, and the fifth is distinctly carinate in the male; pygidium sub-vertical, rounded at apex, deeply punctate; legs flavous, spotted with greenish bronze; under side and legs villose.

Male: Clypeal carina very short and slightly incised at middle, frontal carina with a very slight, median projection very much less rounded laterally behind than in the female; prosternum armed with a very long compressed process diagonally truncate at tip, and with both ends slightly furcate (fig. 17*a*); anterior femora with a sub-vertical conspicuous conical tooth set nearer to the apex than to the middle in the inferior edge, and two smaller equi-distant ones on the upper edge, anterior tibiae long, not very arcuate and with the terminal mucro hardly curved; distinctly quadri-dentate outwardly, serrulate inwardly for half the length from the base, sub-laminate from there to the tip, the lamina being very narrow, sinuate, and nearly carinate and contorted at tip, underneath there is a median vertical tooth; intermediate femora with a conspicuous sub-median tooth beneath, trochanters sub-spinose, tibiae with three very sharp teeth outwardly, and the space between the first and the second is more deeply incised than between the second and the apical one; posterior femora and tibiae normal.

Female: Clypeal carina arcuate, longer than that of the male, frontal carina with a compressed vertical tooth, sharp at tip and very conspicuous; prothorax more attenuate laterally from the median part towards the basal angle; prosternum without any process, metasternum carinate at tip and sub-aculeate; legs normal.

Length 14–17 mm.; width 8–9 mm.

This species is probably met with in the whole of the Cape Colony, and occurs also in the Transvaal (Potchefstroom, Lydenburg).

CHEIRONITIS SCABROSUS, Fabr.,

Plate XXXIV., fig. 16; Plate XXXVIII., fig. 8.

Gen. Ins. Mant., p. 209.

Herbst., Käff., ii., p. 189, pl. 13, fig. 9.

Voët., pl. xxv., fig. 23.

C. apelles, Fabr., Spec. Ins., i., p. 13.

Oliv., Ent. i., 3, p. 141, pl. xi., fig. 97.

Light testaceous, with a bronze tinge deepest on the prothorax; head with the exception of the vertex, sides of prothorax, and under side of legs flavescent, with a slight greenish tinge; clypeus emarginate

in both sexes in the middle, but more widely though not deeply in the male, edges curved and greenish, genæ projecting, a median transverse clypeal carina of about half the width of the clypeus in both sexes, straight in the female, very slightly curved in the male, the clypeal carina has two curves and a tubercle in the centre, and is connected laterally with the carina on the vertex which is as much raised as the frontal one, and is also slightly sinuate, it is closely punctured in the anterior part, and scabrose on the vertex; antennæ flavescent; prothorax dehiscent in the anterior part, in the male, declivous in the female, not convex on the upper part, amplified laterally in front, and equally attenuated from the median part towards the base in both sexes, broadly but not deeply impressed longitudinally in the middle, generally more deeply in the male than in the female, and covered, except on the sides, which are smooth, with irregular, interrupted raised greenish lines forming irregular intervals filled with minute, not closely set granules; the two basal impressions are deep and straight; scutellum very sharp; elytra deeply sinuate laterally, nearly plane but with the suture slightly, raised, finely striate, with the striæ geminate, intervals raised, fifth highly carinate; bearing each a series of spaced, shining green tubercles, and having on each side a row of very short, fine, but rigid flavescent hairs which are longer in the apical region; pygidium vertical, slightly rounded at apex, a little convex in the middle and sub-punctate; under side moderately hairy and rugose, metasternum aculeate at tip.

Male: Tubercle of the frontal carina very small; anterior femora with a sharp horizontal spine at the apex of the upper carina, anterior tibiæ curved inwardly and with the mucro long and curving moderately inwardly, quadri-dentate outwardly, and bearing at middle an inner horizontal, very distinct spine, and a smaller vertical one next to it; the intermediate femora bear no spine, but the intermediate tibiæ are broadly and deeply scooped out outwardly between the first outer spine and the two apical ones; posterior femora with a thick, bluntly toothed carina on the upper edge, posterior tibiæ normal; prosternum with a broadly furcate, sub-vertical process (fig. 16), which is, however, sometimes rudimentary.

Female: Frontal carina with a very distinct conical horn in the middle, prosternum carinate and sub-aculeate; anterior legs normal, intermediate tibiæ also hollowed outwardly, but not as deeply as in the male.

Length 13-15 mm.; width $7\frac{1}{2}$ -8 mm.

Hab. The whole Cape Colony; Natal (Estcourt, Durban), Transvaal (Potchefstroom, Lydenburg), Damaraland.

GEN. SCAPTOCNEMIS, n. gen.

Buccal organs of *Oniticellus* ; head with hardly any trace of genæ, clypeus emarginate, eyes showing on the upper side through a narrow slit, antennæ eight-jointed ; prothorax plane, sub-parallel ; scutellum small but distinct ; elytra sub-parallel, without epipleura, a little sinuate laterally with the posterior angles rounded, striate with the lines of the striæ geminate ; pygidium very long, vertical and a little convex in the centre ; metathorax divided from the mesosternum by a raised line, very distinctly compressed in the anterior part into an aculeate process fitting into a narrow, sub-ovate one proceeding from the base of the prosternum ; anterior tibiæ broad, straight at tip, and with the four outer teeth strong, but not very long, and set close to one another ; the outer one is in line with the apical part ; intermediate and posterior tibiæ long, slender ; the basal joint of hind tarsi is not dilated.

The sheaths of the penis are very different in shape from those of *Oniticellus* and *Drepanochirus*. The main distinctive characters are the shape of the fore tibiæ and the geminate striation of the elytra.

SCAPTOCNEMIS SEGREGIS, n. spec.

Plate XXXVIII., fig. 10.

Bronze-brown, head and prothorax shining, elytra duller and having small basal rufescent patches in each interval, and one in the middle of the second and third ; head with the sides of the clypeus somewhat diagonal, and the anterior part emarginate in the centre, depressed and having the angles of the emargination blunt and slightly recurved in the male, and very sharp in the female which has also a small tooth in the centre of the emargination ; the suture of the genæ is quite obliterated, the genæ themselves are in a line with the sides of the clypeus, and the whole surface is covered with deep, closely set punctures and a thick, greyish, erect pubescence ; prothorax slightly convex in the anterior part, plane but a little rounded laterally behind, and very slightly attenuate in front, covered with deep thickly set punctures, briefly and densely tomentose, the lateral fovea is very well marked, and the apical margin is slightly flavescent ; elytra sub-parallel but a little rounded towards the apical part, and having the humeral callus moderately developed, they are flat, truncate at apex, do not cover the whole abdomen, and are finely but deeply striate, each stria having a raised line on each side, the intervals are plane, and have two or more series of setigerous punctures on each interval, the

suture and the fifth intervals are raised, and each interval has at apex a fascicle of long, greyish setæ; pygidium very long, hardly acuminate at tip, covered with setigerous punctures, nearly vertical, but a little convex in the centre in the male, and having a triangular tubercle very broad at base on each side in the female; under side covered with closely set granules; legs rugose, anterior tibiæ of male with a small pad of dense flavescent hairs, intermediate tibiæ very slender at base, amplified at some distance from it, and slightly sinuate inwardly in both sexes; tarsi slender, basal joint very long and narrow.

Length 11–11½ mm.; width 6 mm.

Hab. Southern Rhodesia (Manica).

GEN. TRAGISCUS, Klug,
Monatsb. Berl. Ac., 1855, p. 651.

Buccal organs of *Oniticellus*, *Scaptocnemis*, &c.; head very deeply emarginate semicircularly, prothorax depressed, abruptly declivous at apex, not rounded or amplified laterally, slightly arcuate at base; scutellum distinct, elongate and acuminate at tip; elytra quite plane, sinuate laterally, supra-marginal carina overhanging the edge of the abdominal segments, pygidium vertical; metasternum divided from the mesosternum by a raised line; legs as in *Onitis*, but basal joint of posterior tibiæ much dilated and longer than all the other joints put together, and twice as broad as the second.

Although the generic difference between *Tragiscus* and *Oniticellus* of the group of *O. egregius* is small, and consists mainly in the width of the basal joint of the posterior femora which, however, are also more dilated in *O. egregius* than in the other South African species, the armature of the head in both the sexes, as well as the general facies, militate in favour of retaining this genus. So far only one species is known.

TRAGISCUS DIMIDIATUS, Klug,
Plate XXXIV., fig. 21–21a, 21b (♀).

Loc. cit., p. 651; Peters' Reis., 1862, p. 221, pl. xiii., figs. 1–2.

Dull bronze, somewhat darker underneath, basal part of prothorax spotted with small, flavescent dots, anterior part of elytra flavous from the base to the median part; head closely granulose, clypeus deeply and semicircularly emarginate, the emarginate part is very broadly and deeply grooved transversely, and the lower edge is produced into a perpendicular triangle, broad at base, and moderately

sharp at tip, genæ carinate but not projecting beyond the lateral line of the clypeus ; male with a sharp, clypeal recurved horn ; female with two frontal recurved horns situated at the base of the suture of the genæ, the head is glabrous on the upper side ; prothorax nearly plane above, but sub-vertical at apex, covered with a very short and very dense, somewhat silky, brownish pubescence ; slightly impressed longitudinally towards the centre of the base, marginate laterally and at apex, but not along the base ; scutellum long, sharp at tip ; elytra very distinctly carinate above the outer margin, which it overhangs, slightly sinuate laterally below the shoulder, and a little ampliate from there to past the middle, quite plane, somewhat narrowly striate, the striæ not geminate, intervals plane, finely aciculate and extremely briefly bristly, the bristles being a little more distinct towards the apical part the extreme edge of which is briefly fasciculate ; pygidium granular, the granules small and not closely set ; metasternum scabrose laterally, closely punctured in the centre, distinctly canaliculate longitudinally in the middle for half the length, and having on each side of the anterior part a short, flexuose carina ; prosternum normal ; legs punctulate, inner spurs very long, basal joint of posterior tarsi broad, and longer than the other joints put together, including the claw.

Length 16 mm. ; width 9 mm.

This description is made from a female example, the only one known to me ; and that of the cephalic horn of the male is from the excellent figure given in Peter's *Reise nach Mossambique*, plate xiii.

Hab. Transvaal (Lydenburg), Mozambique (Inhamitane, teste Klug).

GEN. ONITICELLUS, Serv.,

Encycl. méthod., x., 1825, p. 356.

Mentum short, broader than long, broadly but not deeply emarginate, sometimes slightly excavate or depressed at apex, more or less densely setose ; labial palpi thickly setose, two-jointed, first joint moderately short, produced triangularly inward, second compressed, three times as long as the second, gradually ampliated from base to apex, where it is truncate, the width of this ultimate joint varies a little according to the species, and in some there is even a very rudimentary trace of a third, subulate joint ; lobes of the ligula very long, and membraneous ; maxillæ long, moderately thick, apical lobe broad and long, inner one narrow, maxillary palpi similar to those of *Onitis* ; antennæ eight-jointed, clava large, ultimate joint flat, basal joint a little incurved and as long as the four following ; head with trans-

verse clypeal and frontal carinae or impressions varying often in the sexes and in the species; eyes showing on the upper side through a narrow longitudinal slit; prothorax as long or nearly as long as the elytra, usually plane on the upper side but more or less convex, sometimes declivous in the anterior part, and with the sides sloping, marginate, and with a deep, lateral fovea, the anterior part is also marginate, the base is more or less aculeate at middle, and has a central impression; the elytra are not quite as wide as the base of the prothorax which is rounded, they are more or less deeply sinuate laterally beyond the humeral callus, often a little depressed laterally along the sinuation, and a little attenuate towards the apex, finely striate with the intervals more or less plane, and without any trace of epipleura; the pygidium is vertical, the abdominal segments are very convex; the metasternum is very broad, somewhat convex; the mesosternum is invisible at middle in some species or distinct in others, and the prosternum has often between the coxae a carinate or tubercular process varying in shape according to the species; the fore tibiae are strongly quadri-dentate outwardly, and the inner apical spur is long, curving a little downward, and is situated at the inner angle; the femora are thick and carinate underneath, the anterior ones are very robust; the intermediate and posterior tibiae are compressed, tri- and bi-dentate outwardly; the spurs are long; the anterior tarsi are slender, the intermediate and posterior ones are thicker, and compressed, and the basal joint is somewhat wider than the second, and as long or longer than the three following joints.

The number of *Oniticellus* occurring in South Africa is seven. Several of these have a very wide range in Africa. They differ much in general appearance and in the shape of the prosternum and mesosternum. The genus is represented in Southern Europe, Africa (Northern Africa, Senegal, Abyssinia, Somaliland, German East Africa, the African Lakes region, Togo, Guinea, and Angola), Madagascar, India, China, Java, Sumatra; and Gemminger and Harold give Cuba as the *habitat* of one species.

Key to the Species.

- A². Prosternum with a more or less broadly triangular intercoxal process overlapping the mesosternum.
- B². Median part of prosternum not visible.
- C³. Prothorax quite plane.
- D². Clypeus emarginate, not recurved.

Head with a frontal carina and a transverse oblong impression at the base; prothorax and elytra blue and broadly edged with yellow *egregius*.

Head without frontal carina or basal impression; whole surface black *planatus*.

D¹. Clypeus emarginate, recurved.

Head without frontal carina, but impressed in the centre; prothorax and elytra flavescent and variegated with very dark brown *pictus*.

B¹. Median part of prosternum visible.

C². Prothorax sub-gibbose in the anterior part.

Head with no well-defined frontal carina in the ♂; ♀ with two clypeal ones; colour flavescent, variegated with bronze irregular patches, two of which are well-defined in the centre *pallipes*.

Head with a transverse clypeal carina and a triangular apical one in both sexes; colour flavescent; prothorax with three very distinct bronze patches *triangulatus*.

Head with a frontal and basal carina, the former replaced in the ♂ by a short, cylindrical horn; colour flavescent, no bronze patches on prothorax *nasicornis*.

A¹. Prosternum without any intercoxal process.

Prothorax bi-tuberculate at apex.

Head with a clypeal and frontal ridge; colour dark bronze; elytra variegated with small flavescent patches *militaris*.

ONITICELLUS EGREGIUS, Klug,

Monatsb. Berl. Ac., 1855, p. 652.

Peters' Reis. n. Mossamb., 1862, p. 225, pl. xii., fig. 15.

Glabrous; head and prothorax dark blue, elytra black, both prothorax and elytra with a broad, flavous metallic band, under side and legs flavous; head as long as broad, slightly emarginate in the anterior median part of the clypeus, basal part with three short, parallel, longitudinal ridges in the male, and an ovate, transverse, impression with a short, small ridge, or rather a faint, elongate tubercle in the female, the genæ do not project beyond the lateral part of the clypeus, and the surface is covered with shallow punctures; prothorax elongate, one-third longer than broad, a little attenuate laterally in the anterior and posterior parts and slightly ampliate past the middle, depressed on the upper side, finely aciculate, and having a median longitudinal impressed line reaching from the median part to the base; scutellum distinct, smooth; elytra not longer than the prothorax, not quite as broad at the base, gradually attenuate laterally, sinuate behind the humeral part and not quite covering the episterna of the metathorax and the

edges of the abdominal segments; plane, distinctly striate, the striae are punctulate, and the intervals nearly plane on the disk, but slightly convex laterally, and very finely aciculate, the lateral flavous band is very broad laterally, but the apical one is narrow; pygidium punctulate, glabrous; the under side and legs are nearly glabrous; the prosternum is produced into a broadly triangular process, strongly carinate at tip between the coxæ, and impinging far on the apical part of the metathorax, which has a deeply impressed median line reaching from apex to base, is smooth in the middle and very broadly but not deeply punctured laterally; legs and tibiæ compressed, first joint of posterior tarsi moderately dilated.

Length 13–16 mm.

Hab. Transvaal (Potchefstroom, Lydenburg), Southern Rhodesia (Victoria Falls). Occurs also in German East Africa and Southern Somaliland.

ONITICELLUS PLANATUS, Casteln.,

Plate XXXVIII., fig. 11.

Hist. Natur. d. Ins., ii., 1840, p. 91.

Black, smooth, shining, elytra slightly iridescent; head broader than long, clypeus very slightly emarginate in front, genæ not projecting beyond the line of the clypeus, suture of the genæ carinate as far as the eyes, surface of the head without any carina or impression in either sex; prothorax quite smooth and impunctate, plane, a little attenuate and rounded laterally in the anterior part, but somewhat parallel laterally, and with the base nearly straight; above the median part of the base there is a very short, longitudinal impressed line; scutellum small; elytra a little narrower at base than the prothorax, sub-parallel but a little attenuate behind, not sinuate laterally behind the humeral part, and covering the episterna, but not entirely the edges of the abdominal segments; they are plane but deeply impressed behind the humeral callus, distinctly punctato-striate with the intervals smooth and glabrous except at the apex where there is a distinct fringe of greyish setæ; pygidium finely aciculate and opaque; under side glabrous but for a few hairs on the sides of the prothorax and on the anterior femora; the prosternum is produced into a broad triangular process very sharp between the coxæ but with the basal part not overlapping the metathorax which is smooth in the centre, but closely sub-foveate laterally, and has a very faint median longitudinal impressed line; posterior tarsi a little dilated, basal one longer than the three following.

Length 10–11 mm.; width 6 mm.

Hab. Cape Colony (Knysna, Graham's Town, Queen's Town, Somerset East, Seymour), Natal (Maritzburg, Durban, Frere, Newcastle), Lower Rhodesia (Salisbury), Mozambique (Lourenço-Marquez).

This species has a very wide range in Africa; it is recorded from Lake Jipe, Kilimandjaro, Lakes Nyassa, Albert Nyanza, and Victoria Nyanza, the Galla country, and Abyssinia.

ONITICELLUS PICTUS, Hausm.,
Illiger's Magaz., vi., 1807, p. 238.

O. formosus, Chev. Guér., Iconog. Règ. Anim., 1831, p. 80,
pl. xxi., fig. 9.

O. formosus, Cast., Hist. Natur., ii., p. 91.

Flavous, with a black triangular patch on the vertex of the head, a sub-hexagonal one on the central part of the thorax as well as a sub-basal small elongate one on each side of the discoidal patch, and three elongate spots on the third, fifth, and seventh intervals of the elytra; head a little broader than long, clypeus produced at middle in two short recurved teeth, and slightly emarginate on each side of the recurved teeth in the female, while in the male the teeth are slightly less pronounced and a little more diverging, and there is no emargination on each side of them; in the female there is often a somewhat shallow depression in the middle of the head which is not found in the male, but there is no ridge in either sex except that of the genæ, which do not project laterally beyond the line of the clypeus; prothorax sub-parallel but a little attenuate laterally in the anterior part; the base is straight, the surface plane, slightly aciculate in the centre, but deeply and closely punctured laterally; scutellum small, smooth; elytra nearly as broad as the prothorax at base, a little attenuate laterally towards the apex, sinuate at some distance from the humeral part, and leaving the edges of the three first abdominal segments very visible; they are plane, glabrous except for a fringe of setæ on the apical margin, very distinctly punctato-striate, with the intervals nearly plane on the disk, and the third, fifth, and seventh broader than the others; under side glabrous, variegated with black; prosternum without any intercoxal process, median part of metathorax smooth and with a faint median longitudinal line, lateral part granulose; pygidium with two small transverse and coalescing median tubercles in the female and a conspicuous sub-horizontal ridge in the male.

Length 7-10 mm.; width $4\frac{1}{2}$ - $5\frac{1}{2}$ mm.

Hab. Cape Colony (Uitenhage, Graham's Town, Queen's Town,

Griqualand West, Knysna, Somerset East), Natal (Frere, Durban, Maritzburg), Transvaal (Rustenburg).

It is also recorded from Angola and Senegal (Kolbe).

ONITICELLUS AFRICANUS, Har.,

Coleopt., Heft. xi., 1873, p. 105.

Pale testaceous with a metallic tinge and variegated on the head, prothorax and elytra with small, irregular, dark green patches; head punctulate, clypeus diagonal laterally, nearly truncate at tip but for a slight emargination, genæ projecting conspicuously, in the male there is a slightly raised median ridge, a faint depression behind it, and the vertex is distinctly carinate, in the female there is a transverse carina following the shape of the edge of the clypeus and set very close to it, and another triangular one reaching both genæ, this second ridge is not quite a median one, the occipital impression, and also the ridge on the vertex are similar in both sexes; prothorax very convex in the anterior part, plane above, sub-vertical laterally, slightly grooved longitudinally at middle, covered with broad but not deep, nor closely set punctures, the dark green patches on the middle are sometimes in the shape of a more or less defined lozenge, but there are nearly always two median, well-defined, small, triangular shining spots, one on each side of the longitudinal impression; scutellum very long and sharp; elytra hardly longer than the prothorax, sub-parallel, not strongly sinuate laterally but with the episternon of the metasternum and the edges of the abdominal segments conspicuously projecting, the suture and the second and fifth intervals are raised, the latter more conspicuously than the former, and ends in an apical green, shining callus, the other intervals are plane and very briefly setigerous, but the apical margin is fringed with long fascicles of hairs; prosternum slightly knobby between the coxæ, mesosternum broad and with a sharp tubercle at apex, metasternum punctulate, and slightly carinate lengthways from apex to base; pygidium vertical and with a small, median, shining tubercle.

Length 9–11 mm.; width 4–5½ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Worcester, Clanwilliam, Somerset East, Kimberley, Queen's Town), Natal (Newcastle, Frere, Durban), Transvaal (Lydenburg, Potchefstroom).

This species is extremely closely connected with *O. pallipes* of Southern Europe, Egypt, Syria, and Morocco, and which Kolbe

records from Senegal and East German Africa, as well as from the Cape. Harold says, in order to show the distinction between the two, that the vertex of the head in the female, instead of having a transverse carina with a small horn in the middle, is obsoletely tuberoso transversely.

ONITICELLUS TRIANGULATUS, Har.,

Coleopt., Heft. xi., 1873, p. 105.

This species is very closely allied to the preceding one; it is, however, usually smaller, the punctures on the prothorax are closer and smaller, and are in size not unlike those of *O. flavipes* of Southern Europe, but the distinctive character is found in the shape of the clypeal carinæ, which is very distinct from that of *O. flavipes* and *O. pallipes*. Whereas in the former the clypeal carinæ are almost wanting in the male, and in the female there are two distinct ones, an apical following the contour of the clypeal margin, and another curved and sub-median, in *O. triangulatus* there is a nearly median, straight transverse ridge, and in the anterior part a sharply triangular one the apex of which nearly reaches the transverse ridge, the shape of these ridges is the same in both sexes, but in the male there is a frontal impression often a little deeper than in the female; the prothorax is not variegated with greenish-bronze patches, but there are five distinct ones, one near the apex, two at middle, and two, sometimes less distinct than the others, on the median part of the base; the mesosternum has a broad, smooth, triangular, raised process which does not, however, project on the mesosternum which is nearly as wide as in *O. pallipes*, but is not tuberculate at apex; shape and sculpture of elytra, pygidium, and metasternum as in *O. pallipes*.

Length 7–10 mm.; width 4–5 mm.

Hab. Cape Colony (Cape Town), Transvaal (Lydenburg), Lower Rhodesia (Victoria Falls), Natal (Estcourt).

ONITICELLUS NASICORNIS, Reiche,

Voyage d. Galinier en Abyssinie, Ent., 1850, p. 339, pl. xx., fig. 7.

O. pallens, Cast., His. Nat. d. Ins., ii., p. 91.

Pale testaceous, with the prothorax slightly variegated with irregular greenish patches; head very slightly punctate, clypeus

diagonal laterally, truncate at tip, and with the two anterior angles sharp and slightly recurved, genæ projecting very much, in the centre of the head the male has a curved thick but short horn, obtuse at tip, not longer than two-thirds of the length of the head, and the vertex is carinate, in the female the vertex is also carinate, but instead of a horn there is a frontal carina slightly curved and of the same length as the one on the vertex; prothorax convex and gibbose in the anterior part in the male, but nearly plane on the upper surface, not gibbose in the anterior part in the female, covered with moderately close, not very deep punctures, and having no trace of median longitudinal impression, except a very small one on the base; scutellum long, sharp; elytra not longer than the prothorax and attenuate laterally from base to apex, the suture is raised, the intervals plane except the fifth, which is slightly tectiform and ends in a small callus; the episterna of the metasternum and the edges of the abdominal segments bulge more than in the two allied species, *O. pallipes* and *O. triangulatus*; the pygidium is slightly carinate longitudinally at middle for half the length; process of the prosternum similar to that of *O. triangulatus*, mesosternum sub-carinate lengthways at middle, but not aculeate at tip, metasternum sparsely punctulate and with a longitudinal impressed, median line.

Length 7-9 mm.; width 4-5 mm.

Hab. Cape Colony (Worcester, Knysna, Queen's Town, Kimberley, Graham's Town, Uitenhage, Albert), Natal (Durban, Maritzburg), Transvaal (Potchefstroom, Klerksdorp), Lower Rhodesia (Buluwayo, Enkeldoorn).

ONITICELLUS MILITARIS, Cast.,

Hist. Natur. d. Ins., ii., 1840, p. 91.

O. tridens, Roth, Wiedem. Arch., 1851, i., p. 128.

Bronze green on the head and prothorax, the latter with a broad lateral flavous band, and a much narrower one along the base; elytra more or less dark bronze green with a basal transverse series of quadrate flavous patch, a median diagonal one and another along the apical margin; under side and legs bronze variegated with yellow; head finely and closely punctulate, clypeus rounded, broadly but not deeply emarginate at apex, genæ not projecting beyond the line of the clypeus, the male has a median, clypeal arcuate carina, and between this carina and the vertex a laminate transverse process supporting a short and sharp erect tooth, in the female the clypeal

carina is similar, but instead of a laminate process toothed at middle, there is a slightly curved frontal carina somewhat higher than the clypeal one, and at times almost laminiform; prothorax nearly plane on the upper side, but nearly vertical at apex, where it is deeply bi-emarginate, and has a bifid tubercle in the middle and one on each side of the emargination, these tubercles are sometimes as conspicuous in the female as in the male, the surface is covered with moderately deep, small punctures set somewhat closely, and there is a median longitudinal groove broadening towards the base and not reaching the apex; elytra a little rounded laterally at the shoulders, and slightly ampliate at middle, as long as the prothorax, plane above and having a supra-marginal carina overhanging the margin and reaching from base to apex, the suture and third and fifth intervals on each side are raised, narrowly striate, covered with minute granules, and glabrous except at the base, which is slightly pubescent; no prosternal process; mesosternum hardly distinct; metasternum impressed at apex, and with a median longitudinal impressed line; pygidium finely granulose; episterna and edge of abdominal segments not projecting beyond the wing-covers.

Length 8–10 mm.; width 4–4½ mm.

In some examples only the median part of the intervals of the elytra is greenish or bronze, the remainder of the background being testaceous.

Hab. Cape Colony (Graham's Town, Port Elizabeth, Uitenhage, Somerset East, Queen's Town, East London, Seymour, Fort Beaufort, Kimberley), Orange Free State (Bloemfontein, Parijs), the whole of Natal and of the Transvaal; Lower Rhodesia (Bulawayo, Enkeldoorn); it seems to occur in the whole of the Lakes region of Central Africa and it reaches the Galla country and Abyssinia.

The shape of this species is very different from that of the other South African *Oniticellus*, and closely resembles that of *Onthophagus*.

GEN. ONTHOPHAGUS, Latr.,

Gen. Crust. and Ins., iii., 1807, p. 141.

Caccobius (part), *Caccophilus*, *Cacconemus*.

Mentum deeply emarginate at apex, hollowed at base, and either rounded laterally or oblique towards the apex, labial palpi tri-jointed but with the palpigers always very remote, and occasionally nearly as long as the basal joint which is triangular or has the shape

of an inverted truncate cone, second joint gradually amplify from the base to the apex, truncate diagonally at tip, third one subulate, implanted nearly on the centre of the second one, and very small, the size of this apical joint varies a good deal, but it is never equal in length to half the width of the truncate part of the second; maxillary palpi very slightly pubescent, second joint a little shorter than the first which is a little curved, apical one fusiform, blunt at tip; antennae nine-jointed, club tri-jointed, the two penultimate joints hollowed, the last one smaller than the two previous ones and also hollowed a little outwardly at the tip, this club is not glabrous like the other joints, and is always opaque; head with a frontal carina, which is, however, often absent, eyes divided, not showing very much on the upper side and carinate above, genae generally distinct, either rounded laterally, in a line with the clypeus or auriculate, clypeus semi-circular and more or less deeply emarginate in front with the angles of the emargination more or less recurved, or sub-triangular only in one case (*O. pudens*) angular laterally so as to form a tooth; prothorax large, moderately convex, seldom quite plane, rounded laterally, but less amplify there in the male of many species than in the female, basal angle generally rounded except in some species having two long, decumbent cephalic horns, in which case it is produced in a sharp spine or sharp angle (*O. rarus*, *furcifer*, *rangifer*), basal part of the prothorax either rounded or acuminate in the centre, it is marginate in front and on the sides and occasionally along the base, but always less distinctly there; no scutellum; elytra short, very seldom convex, narrowed and rounded behind, suture raised, they have each seven striae, very seldom non-geminate, and the second is often broader than the third, in which case there is a faint trace of an auxiliary stria in the middle of it, there is a sub-humeral callus and in many species the three outer intervals are callose at the apex; pygidium in the shape of a triangle rounded at apex, always a little convex at middle in both sexes; metasternum very broad in the middle, always a little convex, occasionally sub-aculeate in the anterior part before the apical transverse impression, carinate laterally, but very seldom in front, where the suture with the mesosternum is but feebly indicated; legs strong, not long; anterior tibiae carinate underneath, dilated and truncate at tip, quadri-dentate outwardly and serrulate below the teeth, spinose or angular inwardly in the male and having an apical spur inserted in or near the median part of the truncate part, this spur varies very much in shape and also according to the sex, both of which have tarsi in the fore legs; posterior legs serrate outwardly and uni-carinate, basal joint of intermediate and posterior tarsi com-

pressed, longer than the three following which decrease in size, and often as long as the four joints.

The males and females differ very much not only in the armature of the head and prothorax, but also occasionally in the sculpturing of the prothorax. Unless captured together it is very difficult often to ascertain their identity. Not only does the development of the males vary enormously, but it is well-nigh impossible to differentiate many of them from normal females without dissection, and in the great development the female itself assumes some of the male characters, although on a reduced scale, and might well be taken for a male of the intermediate or minor development. One distinctive character, however, I find to be constant in the South African species: in the female the fore tarsi which are inserted above the carina on the lower face of the tibia, are always nearer to the inner angle of the tibia than in the male, owing to this carina being more deflexed at tip in the former than in the latter, but while this character is constant, it is not always very conspicuous, principally when the inner apical angle of the tibia is not spinose in the male; but when it is spinose, that of the female is always non-spinose.

The shape of the apical spur of the fore legs varies much. It may be: (1) nearly straight in both sexes, but always with a more pronounced outward bend in the male: (2) equally bent inwardly at tip in both sexes (*O. pyramidalis*, *panoplus*): (3) stouter and bent inwardly at tip in the male only (*O. dispar*, *auriculatus*, *moestus*) or (4) stouter and bent inwardly at tip in the female and not in the male (*O. rarus*, *furcifer*, *bi-callosus*, *brucci*, *aciculatus*, &c.).

In the last-mentioned group I find that the thickened and sharply bent apical spur of the female is associated with a sub-aculeate metasternum. The insects included in this group have, however, a very different facies; cf. *O. rarus* and *O. aciculatus*.

The head has either a transverse frontal carina, which in many cases is either absorbed, or is rendered nearly obsolete by the great development of the cephalic horn or horns when these spring from the middle of the vertex, but which is very distinct in the intermediate or minor developments in the male; this carina may be altogether absent in this sex, but I do not know as yet of this frontal carina being absent in the female. I know of only two species in which there is another carina above but parallel to the frontal one (*O. bovinus*, *interstitialis*). The shape of the prothorax varies very much, but wherever the length of the horns is greater than usual, the depth and width of the thoracic cavities is also greater, which goes to show that the great size of the former has been obtained at the expense of the latter.

The number of species of *Onthophagus* known to inhabit South Africa is considerable: fourteen of them have a wider distribution, and occur in other parts of Africa. Some are nocturnal, others diurnal. Mr. G. A. K. Marshall informs me that in Southern Rhodesia the brighter coloured species are diurnal, but that some dull ones also belong to the same category.

The majority of them are found in dung, but some live in fungi (*O. panoplus*), or in both substances (*O. gemmatus*); others are found in carrion (*auriculatus*, *deterrens*, *herus*, *ditus lugens*). Mr. Marshall writes that *O. præstans* has a curious habitat, as it is only found under dead millepedes, and that several species, notably *O. suturalis* and *O. brevicornis*, utilise the balls made by *Scarabæus*, &c., penetrating into them while being made. In a ball of *Scarabæus nigro-æneus* he took no less than twenty examples of *Onthophagus suturalis*.

Klug has described in Peters' *Reise nach Mozambique* twenty-six species, six of which I have not been able to make out, and some of those may be identical with species described after him. Wallengren has given the description of two species, and van Lansberge of one, which I have not been able to identify with certainty, nor could the former's descriptions help identification in any way. I have not been able to verify two of Harold's species also. Three of Fähræus' species, one of which, according to von Harold, is in synonymy, I have not seen. Assuming that all the species are valid, the number of *Onthophagi* described from the South African area, after deducting those that are synonymous, is now 115, but I have several female examples which I have abstained from describing, and which, when the males are known with certainty, may prove an addition to this number.

The arrangement of the South African species is of course quite artificial and is given simply to facilitate identification. I trust that the numerous figures given will do much to facilitate it. While the genital armature and the shape of the head and prothorax are faithfully represented in the plates, that of the clypeus and also the delineation of the frontal carinæ are not to be relied upon in all cases.

The shape of the clasping organs does not vary much (*vide* figs. 20 to 26 inclusive on plate xxxviii.), yet there are differences.

As a rule the ninth or last sternite is very long and cylindrical, and the clasps, which are bent almost at right angles with the sternite, are short and thick, but in *O. discrepans*, the valves are acuminate, long, sharp at tip, and resemble those of *Scaptocnemis segregis* (plate xxxviii., fig. 10).

Key to the Species.

FIRST SECTION.

A². Anterior tibiæ very long, curved at apex and produced inwardly in a very distinct mucronate process.

Anterior tibiæ strongly curved at tip, and having a conspicuous inner process, frontal carina very slight, vertex produced into a short, truncate basal tooth, whole surface very distinctly granular *herus*.

Anterior tibiæ with a long, inner, truncate spine longer than the apical spur, head with a frontal carina and two curved horns on the vertex. *gazella*.

SECOND SECTION.

A¹. Anterior tibiæ not very long nor curved at apex.

B². Metasternum not aculeate, apical spur not strongly curved inwardly at tip in the female.

C⁷. Head with one horn more or less curved, and more or less long.

a². Clypeus semicircular, not recurved at tip.

b⁵. Head with a long, recurved horn and two long, compressed horns on the prothorax.

c². Inner part of anterior tibiæ spinose at tip.

Prothorax with two small tubercles in the median part of the disk (pl. xxxv., fig. 15). *sub-extensus*.

Prothorax without any tubercle in the median part of the disk (pl. xxxv. fig. 16) *lanista*.

c¹. Inner part of anterior tibiæ non-spinose at tip.

Horns of the prothorax very long and situated near the apical margin of the prothorax *tricorniger*.

Median part of the cavity of the prothorax produced into a sharp, triangular tubercle on each side (pl. xxxv., fig. 18) *insignis*.

b⁴. Head with a long, cephalic horn and no prothoracic tubercles or cavity.

(1) Inner part of anterior tibiæ spinose at tip.

Cephalic horn long, curved, bifid at tip, elytra (pl. xxxv., fig. 18) *loricatus*.

(2) Inner part of anterior tibiæ non-spinose at tip.

d². Colouration metallic, shining.

Head and prothorax green; prothorax granulose, depressed in front; elytra flavescent or testaceous, pygidium clothed with long, silvery hairs; horn curved back (pl. xxxv., fig. 19) *leucopygus*.

Horn curved back; elytra straw colour and with five black dots on each, body conspicuously pubescent .. *stenocerus*.

Head and prothorax green; prothorax closely granulose, deeply impressed in the dorsal part; elytra testaceous, with the suture bluish green and a broad, arcuate dark blue or blackish band (pl. xxxv., fig. 24) *impressicollis*.

Head and prothorax green, the latter scabrospunctate, not deeply impressed in the dorsal part; elytra testaceous with the suture green (pl. xxxv., fig. 20); cephalic horn curving forward .. *opimus*.

Dark blue on the upper side; prothorax not impressed in the anterior part, and closely and regularly punctate; cephalic horn very curved .. *monodon*.

Bronze on the upper side; prothorax not impressed in the anterior part, deeply and roughly punctured; cephalic horn very curved .. *mastrucatus*.

Bronze on the upper part; prothorax impressed in the anterior part, which is very declivous; cephalic horn little curved, basal part of elytra often with testaceous spots (pl. xxxv., fig. 21) .. *pugionatus*.

Bronze black on the head and prothorax, the latter not impressed; cephalic horn tuberculiform; elytra testaceous red .. *brevicornis*.

Totally shining green or violaceous green, smooth and nearly hairless, body elongate; cephalic horn short, broad at base (pl. xxxv., fig. 27) .. *alcyon*.

*d*¹. Colouration dull black, or dull bronze.

*f*². A frontal carina.

Cephalic horn long, recurved, body not very pubescent on the upper side; colour dull black; prothorax closely punctate in the centre of the disk (pl. xxxv., fig. 26) .. *giraffa*.

Colour dull bronze; prothorax closely punctate in the centre of the disk .. *vigens*.

Colour dull black; prothorax entirely granular; cephalic horn long but not curved .. *lutulentus*.

*f*¹. No frontal carina.

Black, somewhat shining, densely hairy; prothorax sulcate in the dorsal part; cephalic horn occasionally very long, and then curved; elytra with the geminate striae deeply punctured and raised, intervals roughly granular (pl. xxxv., fig. 28) .. *pilosus*.

Black, not very densely hairy; prothorax not sulcate; geminate striae not raised, but shining, intervals with two rows of not closely set granules (pl. xxxv., fig. 25) *obtusicornis*

Black, with a humeral testaceous patch on each elytron, striation and sculpture of elytra as in preceding species *axillaris*.

Bronze, with two humeral and two apical patches on each elytron *pernicius*.

*b*³. Head with a short upright horn; prothorax bi-tuberculate in the centre which projects slightly.

Prothorax and elytra very roughly punctured (pl. xxxv., fig. 22) *cretus*.

Prothorax closely punctured; elytra with two series of fine punctures in each interval *scabrosus*.

Prothorax closely punctured; intervals of elytra with several series of minute punctures *lugens*.

Prothorax and elytra granulate; elytra fuscous with ten flavescent maculae (pl. xxxv., fig. 30) *parumnotatus*.

Prothorax and elytra granulate, elytra testaceous and with nine fuscous maculae *trinodosus*.

*b*². Head with a short upright horn.

Prothorax quadri-tuberculate in front (pl. xxxv., fig. 29) *truncaticornis*.

Prothorax greenish suffused with testaceous, granulose laterally and punctured in the centre; elytra light testaceous (pl. xxxv., fig. 29) *quadrinodosus*.

*b*¹. Head with a tuberculiform horn.

Cephalic horn basal; prothorax slightly bi-tuberculate at apex, punctures round and not set close to one another *impictus*.

Cephalic horn basal; prothorax not tuberculate at apex, punctures set close to each other *opacus*.

Cephalic horn in the centre of the vertex; prothorax not tuberculate, punctures very fine and very closely set *pusio*.

*a*¹. Clypeus acuminate, apical part recurved.

*i*³. Prothorax excavate in the centre and not tuberculate.

Cephalic horn short, vertical; prothorax closely punctulate, and obtusely callose (pl. xxxv., figs. 13, 13a) *naso*.

Cephalic horn laminate and curving very distinctly forward; prothorax granulose; intervals of elytra closely scabrose (pl. xxxv., figs. 14, 14a) *cbeuus*.

Cephalic horn laminate and curving very distinctly forward; prothorax granulose; intervals of elytra with two series of slightly scabrose punctures *aequatus*.

- i². Prothorax retuse and distinctly bi-tuberculate in front.

Prothorax very closely granulate; cephalic horn broad at base and conical; elytra pale testaceous and with five round black spots *præstans*.

Prothorax closely punctured; cephalic horn broad at base and conical; elytra greenish dark or bronze (pl. xxxv., fig. 23) *deterrens*.

- i¹. Prothorax not excavate in the centre nor tuberculate.

Cephalic horn triangular and short; prothorax deeply punctate except in the anterior part and on the sides which are scabrose; elytra flavescent red, and having the suture and a broad, transverse, post-median band reaching from side to side, fuscous *ditus*.

- a². Cephalic horns long or moderately long, vertical or sub-vertical; prothorax retuse or impressed in front.

- b². Clypeus incised and with the angles of the incision dentate and recurved.

Cephalic horns dentate inwardly at base; prothorax scabrose and having a median, vertical ridge (pl. xxxv., fig. 38) *merus*.

Cephalic horns slender; prothorax punctate, deeply impressed laterally, and with the median part produced in an arcuate lobe (pl. xxxv., fig. 35) . . . *bovinus*.

Cephalic horns compressed; prothorax punctate, retuse and quadri-tuberculate at apex *auriculatus*.

Cephalic horns short, vertical; prothorax retuse, not impressed in the anterior part; elytra edged with a very broad flavous band *flavolimbatus*.

Cephalic horns vertical, united by a high carina at base; prothorax scabrose, slightly impressed in the anterior part; elytra pale testaceous, spotted with bronze (pl. xxxvi., fig. 41) *venustulus*.

Cephalic horn replaced by a short, transverse laminate carina; no testaceous spots on the elytra *versutus*.

Cephalic horns curved inwardly, bi-dentate inwardly at base; prothorax scabrose, slightly impressed in the anterior part; elytra fuscous, spotted with testaceous red (pl. xxxv., fig. 36) ^u*sgillatus*.

Cephalic horns vertical, dentate inwardly at base; prothorax scabrose and punctate, retuse in front; elytra red with the base, the suture and two discoidal patches on each side fuscous (pl. xxxvi. fig. 4). *exiguus*.

- b¹. Clypeus not incised at tip.

Cephalic horns having a long peduncle, moderately divaricating at the tip, and deeply emarginate at the base; prothorax punctulate, retuse (pl. xxxv., fig. 31) *emeritus*.

Cephalic horn, triangular at base, bi-furcate at tip .. *crucifer*.

Cephalic horns fitting against two impressions in the anterior part of the prothorax, which is lobate in the middle, and has a median longitudinal furrow (pl. xxxv., fig. 33) *bubalus*.

Cephalic horns vertical, curving slightly inwardly and united at base by a tri-dentate carina; prothorax punctate, retuse (pl. xxxv., fig. 36) *interstitialis*.

Cephalic horns sub-vertical; prothorax impressed on each side, and closely granular (pl. xxxv., fig. 34) .. *urus*.

Cephalic horns sub-vertical; prothorax deeply excavate in the middle, and closely punctate (pl. xxxv., fig. 37) *vitulus*.

Cephalic horns vertical, slender; prothorax slightly impressed in the anterior part; prothorax and elytra very shagreened; pygidium clothed with a dense, greyish white pubescence (pl. xxxv., fig. 39) *tenuicornis*.

¹⁶. Head with two horns.

*a*¹. Cephalic horns long, recumbent or slanting backwards.

Cephalic horns not reaching the base of the prothorax, not broadly divaricating, bifid at tip; prothorax deeply excavate and having a long, compressed median horn projecting sub-horizontally from the top of the anterior declivity (pl. xxxv., fig. 12) *pyramidalis*.

Cephalic horns divaricating, not reaching the base of the prothorax, truncate at tip, and having at base, in the centre of the carina, a moderately long, compressed horn, bifid at tip and directed backward; prothorax deeply excavate, and having in the centre at apex a diagonal, moderately long, compressed, laminate horn, also bifid at tip (pl. xxxv., fig. 11).. *panoplus*.

Cephalic horns very short and situated in the outer part of a very narrow horse-shoe shaped carina; prothorax bi-impressed longitudinally in front, not retuse and with a slight median, longitudinal carina *obtusus*.

Cephalic horns crescent-shaped; prothorax excavate in front and either quadri-dentate in the anterior part, or with the median part projecting and recurved (pl. xxxv., fig. 1).. .. . *corniculatus*.

*a*². Cephalic horns tuberculiform; prothorax not impressed in front.

Clypeus deeply and narrowly incised; prothorax punctulate; elytra bronze with a flavescent humeral patch, and a marginal band of same colour *vinctus*.

Clypeus semicircular, not emarginate; prothorax punctulate; elytra black, shining *insulsus*.

Clypeus emarginate and with the angles sharp; prothorax granulose; colour bronze black *fugitivus*.

Clypeus sinuate in front; prothorax bronze, sparsely punctulate; elytra flavous, with part of the suture and two dorsal patches on each side fuscous *decipiens*.

Clypeus emarginate and with the angles sharp; prothorax coppery bronze and closely punctate; elytra deeply punctured, bronze black and having often a humeral and an apical reddish patch on each side .. *talpa*.

a⁴. Cephalic horns tuberculiform; prothorax impressed in front.

Clypeus slightly emarginate; prothorax with a median impression and a tubercle in the anterior edge (pl. xxxvi., fig. 2) *ambiguus*.

Clypeus slightly emarginate; prothorax without a median impression, without any tubercle in the anterior edge *virescens*.

C⁵. Head without horns, but having instead a transverse laminate carina in the centre of the vertex, in both sexes.

Clypeus deeply emarginate; prothorax not tuberculate in front; elytra shining bronze, with a broad flavescent outer band *patricius*.

Clypeus sub-truncate and slightly emarginate at tip; prothorax with a transverse carina in front; elytra black *dispar*.

Clypeus sub-truncate and slightly emarginate at tip; prothorax with a transverse carina in front; elytra with six elongate flavous patches on each side *incertus*.

Clypeus elongate, not emarginate at tip; prothorax with two excavations in front separated by a vertical blunt lobe-like tubercle, and having a sharp conical tubercle on the outer part of the excavation (pl. xxxvi., fig. 5) *obtus*.

C⁴. Head without horns or tubercles, but having instead two transverse carinae.

a⁴. Prothorax excavate; body black; elytra flavous.

Elytra flavous or black, with a sub-basal flavous patch on each side (pl. xxxvi., fig. 3); prothorax with lateral round punctures in front *biplagiatus*.

α^3 . Prothorax not excavate; elytra flavous, with a black suture.

Prothorax impunctate, except for a few punctures along the anterior part *pallidipennis*.

Prothorax covered all over with round, not closely set punctures *semiflavus*.

α^2 . Prothorax not excavate; elytra testaceous, and with broad transverse fuscous band.

Clypeus strongly bi-sinuate laterally, and broadly and deeply emarginate at tip *signatus*.

α^1 . Prothorax not excavate; elytra bronze or bronze black.

Prothorax closely punctate; intervals of elytra deeply punctate, coriaceous; body bronze, moderately shining.. .. . *modestus*.

Prothorax closely punctate; intervals of elytra with a double series of scabrose small punctures; body violaceous black *inconspicuus*.

Prothorax granulose; intervals of elytra with two series of granules or scabrose punctures; body black, opaque.. .. . *indigus*.

C³. Head without horns or tubercles, but having one frontal carina.

α^2 . Clypeus very deeply incised; body convex.

Clypeus very deeply incised; prothorax very closely granose, impressed in the apical anterior part; elytra testaceous and with a broad, median basal fuscous lacerate patch, or entirely fuscous black *laceratus*.

Clypeus not very deeply incised; prothorax closely granose, deeply sulcate in the posterior part; elytra violaceous *asimilis*.

Clypeus very deeply incised; prothorax deeply punctate; elytra black *coptorhinodes*.

α^1 . Clypeus not very deeply incised; body depressed.

Clypeus deeply emarginate with the angles a little reflexed; prothorax with a distinct longitudinal impressed line in the posterior part; intervals of elytra somewhat convex, punctulate *vicarius*.

Clypeus slightly emarginate; prothorax without a longitudinal posterior impressed line; intervals of elytra plane, punctulate *glaber*.

C². Head without horns, tubercles, or transverse carinae.

Clypeus semicircular, slightly emarginate; body black, very shining; intervals of elytra coriaceous *moestus*.

Clypeus semicircular, hardly emarginate; body bronze; intervals of elytra raised, sub-coriaceous.. .. *illotus*.

Clypeus semicircular, slightly emarginate, genæ sub-auriculate; body black; intervals of elytra with two series of granules *inops*.

Clypeus very deeply incised in front with the angles sharp, slightly reflexed; genæ strongly auriculate; body black, with the elytra red *probus*.

Clypeus sharply acuminate and not emarginate at tip, genæ diagonal; body fuscous green; intervals of elytra plane and finely aciculate *litigiosus*.

Clypeus semicircular, not emarginate at tip, genæ diagonal; body black; intervals of elytra convex and having each two series of setigerous granules.. .. *discrepans*.

Clypeus dentate laterally in the middle, deeply incised at tip with the angles dentate, genæ also dentate; body fuscous; elytra with a lateral and an apical testaceous bands *pudens*.

C¹. No cephalic horn, but occasionally a very faint basal tubercle; prothorax with a more or less cuboidal thoracic elevation anteriorly.

a³. A frontal transverse carina.

Prothoracic elevation vertical, projecting and carinate at tip; clypeus recurved in the male (pl. xxxvi., fig. 10) *columella*.

Prothoracic elevation merely indicated by a small impression surmounted by a lateral tubercle *carbonarius*.

a². No frontal transverse carina.

Prothoracic elevation not carinate, but sharply angular on each side (pl. xxxvi., figs. 8, 9) *cresulus*.

Prothoracic elevation compressed anteriorly in a vertical carina aculeate at tip *cupricollis*.

Prothoracic elevation broadly diagonal and sloping on each side, the two tubercles lateral (pl. xxxvi., fig. 6) *plebejus*.

a¹. A basal transverse carina.

Clypeus rounded; carina very high, as high as the median rounded lobe of the anterior part of the prothorax *ferrugineus*.

B¹. Metasternum strongly aculeate at tip. Sexes similar, apical spur of female curved inwardly at tip.

a². Two long decumbent cephalic horns.

Cephalic horn dilated at tip and emitting an inner ramus at some distance from the base; prothorax with two or sometimes four median tubercles, humeral part produced in a sharp tubercle (pl. xxxv., fig. 8) *rangifer.*

Cephalic horns a little thickened at tip, basal part of same produced in two short, incurved horns; prothorax with a small, median tubercle (pl. xxxv., fig. 10).. .. . *rarus.*

Cephalic horns not thickened at tip, basal part produced in two shorter incurved horns; prothorax with a deep anterior excavation having on each side a sub-vertical, conspicuous compressed tooth (pl. xxxv., fig. 9) *furcifer.*

*a*¹. No prothoracic horns, cephalic horn mostly absent, or if present reduced to a short tubercle or carina.

*b*². Prothorax with two longitudinal smooth lines.

Colour totally coppery or occasionally green; prothorax with a deep median sulcus, edged by two broad, raised, smooth lines reaching from apex to base (pl. xxxvi., fig. 7) *bicallosus.*

Colour of head and prothorax greenish coppery; elytra coppery red; clypeus not emarginate; prothorax with two median, slightly raised, smooth lines reaching from apex to median part⁷(pl. xxxvi., fig. 12) *sapphyrinus.*

Colour totally green; clypeus emarginate and with a tooth in the centre of the emargination; prothorax with the two median lines hardly defined (pl. xxxvi., fig. 13) *suspectus.*

*b*¹. Prothorax with one median longitudinal line reaching from apex to base.

Prothorax closely pitted in the central part of the disk and scabrose laterally only; elytra regularly pitted (pl. xxxvi., fig. 15) *aciculatus.*

Prothorax scabrose, pitted only near the base; elytra roughly pitted *optimus.*

*c*². Head with a tubercle or carina on vertex.

Cephalic tubercle or carina small, two small blunt tubercles on anterior part of prothorax] (pl. xxxvi., fig. 11).. .. . *brucci.*

Cephalic carina very high, and long; a faint, smooth longitudinal line in the anterior part of the prothorax beginning near two slightly rounded, small, smooth spaces (pl. xxxvi., fig. 14) *gemmatus.*

*c*¹. Prothorax without any median longitudinal line.

Prothorax finely granulose, colour black *seniculus.*

ONTHOPHAGUS HERUS, n. sp.

Male: Bronze on the upper side, dark cyaneous underneath; clypeus semicircular with the margin slightly recurved, slightly sinuate laterally at the junction with the genæ, and a little emarginate at tip, rugosely plicate, the head is very scabrose, and has an ill-defined, short, frontal carina, the vertex is produced in a short, compressed, truncate median tubercle slightly emarginate in the centre; prothorax ampliate laterally, marginate in front and on the sides as well as in the median part of the base which is slightly aculeate while the sides from the outer angle to about one-third of the width are compressed in such a way that the adjoining part of the disk overhangs it slightly, moderately convex, somewhat declivous in front, but not scooped, depressed longitudinally in the middle from the median part to the base, covered with very closely set granules of equal size, and very briefly pubescent; elytra ampliate below the humeral angle, rounded laterally and gradually attenuate behind, striæ narrow, geminate, remotely punctured, intervals between the striæ plane, filled with very distinct, equi-distant, closely set granules, third interval as broad as the second; pygidium deeply but not closely pitted; legs and metasternum roughly punctured, the latter has a faintly impressed median longitudinal line; anterior tibiæ very distinctly bent inwardly from the penultimate outer tooth, with the apical part dilated inwardly in a tooth nearly as long as the outer apical one, spur somewhat thick, sharp at tip, and nearly straight.

Female unknown.

Length 11 mm.; width 7 mm.

Hab. Southern Rhodesia (Salisbury); found in carrion.

Easily recognisable by the shape of the anterior tibiæ.

ONTHOPHAGUS GAZELLA, Fabric.,

Plate XXXV., fig. 32.

Ent. Syst., i., p. 56.

O. catta, ♀, Fabric, Mant. Ins. i., p. 12; Oliv., Entom., i., 3, p. 125, pl. xxiii., fig. 201.

Head and prothorax bronze or bronze green, the latter with a broad, flavescent band along the sides and the base; elytra pale yellow, under side flavous, maculated with bronze, upper side nearly glabrous; genæ straight, projecting laterally a little beyond the line of the clypeus which is rounded laterally, and emarginate in front,

the clypeus and the frontal part are hardly punctured, but the genae are distinctly granulate; prothorax convex, amplified laterally, marginate all round, covered in the anterior part with scabrose punctures which are not closely set and disappear in the posterior part, median part of the base briefly aculeate; elytra ampliate, ovate, striate, striae punctulate but not distinctly geminate, intervals plane, hardly punctulate, except the two outer ones, second interval broader than the third; pygidium with only a few widely scattered, very shallow punctures; metasternum and legs with only a few punctures; the former has a very faint longitudinal impressed line.

Male: Apical part of clypeus sub-truncate, emarginate at tip; head with two upright, slightly incurving horns between the eyes; prothorax declivous at apex, impressed on each side, and having in the centre two very short tubercles divided by a narrow longitudinal impression; anterior tibiae very long, sub-arcuate, and with the inner angle produced into a diagonal process longer than the apical spur.

Female: Clypeus more rounded laterally than in the male, and more deeply emarginate at tip, frontal carina more developed than in the male, instead of two parallel horns, there is a pre-basal laminate carina; the prothorax has also a moderately deep lateral impression on each side of the anterior part, and the two median tubercles are much more divergent, sharper, and overhang the declivity a little; the anterior tibiae are normal, and there is no inner projection, nor spinose angle.

Length $10\frac{1}{2}$ – $12\frac{1}{2}$ mm.; 6– $7\frac{1}{2}$ mm.

I have seen occasionally examples in which the discoidal part of the prothorax has a slight violaceous tinge, and the median, dorsal part of the elytra is also darker, somewhat bronze in colour, with the base and sides flavous.

Hab. The whole of South Africa, except the extreme south-western districts. It is found in the whole of Tropical Africa, in Madagascar, Arabia, India, and Ceylon.

ONTHOPHAGUS SUBEXTENSUS, Kolb.,

Plate XXXV., fig. 15; Plate XXXVIII., fig. 26.

Stett., Entomol. Zeit., 1895, p. 340; Die Käfer Deuts. Ost. Afrik., 1897, p. 149, pl. ii., fig. 13.

Head, prothorax, and under side bright shining green; elytra flavescent or light chesnut with the suture bright green; head

granular, clothed with flavescent hairs; antennæ flavous; prothorax broad, marginate laterally and in front but not along the base the median part of which is depressed and projects as a broad triangle, it is moderately closely punctate, but the punctuation varies in the sex, the median supra-basal part, however, is smooth in both; elytra broadly ampliate at base, and gradually attenuate from about the median part, the striae are very shallow, but somewhat broad and not geminate, the intervals are covered with very closely set setigerous punctures, the second interval is twice as broad as the third, which is also narrower than the fourth, the humeral callus is very distinct, and the third and fifth intervals are raised; pygidium very closely punctured, pubescent; median parts of metasternum smooth and having a faint longitudinal impressed line; apical spur of anterior tibiae curved inwardly at tip.

Male: Clypeus rounded in front, no trace of frontal carina in the large development, but it can be noticed in less developed males, horn on the vertex upright for half the length, and from there slightly curved backwards and reaching a length of 12 mm. in the curve; prothorax with a deep excavation on each side of the anterior part, and having in front of each excavation a compressed triangular tooth curving backwards, and at the apex of the anterior declivous part two small tubercles, the posterior part is broadly sulcate as far as the basal part, and the excavations as well as the median part of the disk are smooth, in the smaller development the cephalic horn is nearly vertical and only $3\frac{1}{2}$ mm. long, the anterior part of the prothorax is only slightly hollowed, but the two anterior teeth and the two median tubercles are very well defined; inner part of anterior tibiae produced into a distinct, sub-diagonal spine at apex.

Female: Clypeus slightly acuminate at tip; frontal carina very distinct and arcuate, frontal part with a median high carina conical at each end; prothorax covered with closely set punctures except in the supra-basal median part, impressed on each side of the anterior median part, the two impressions are divided by a cuneiform, vertical lobate process, and have on the side a short, vertical, carinate tubercle, the median part of the disk has only an impressed line in the posterior part.

Length 13-16 mm.; width 7-10 mm.

Hab. Southern Rhodesia (Manica).

This species was originally described from German East Africa (Uganda, &c.), and is said by Kolbe to occur also in West Africa (Lunda).

ONTHOPHAGUS LANISTA, Cast.,

Plate XXXV., fig. 16 ; Plate XXXVIII., fig. 25.

Hist. Nat. d. Ins., ii., 1840, p. 84.

O. aulicus, Fähr., Ins. Caffr., ii., p. 266.

Colour, shape, and sculpture of *O. subextensus*, but it is slightly smaller on the average. In the male the length of the cephalic horn is shorter in proportion, but has the same shape ; the prothorax is excavated in the centre of the anterior part, this excavation is abrupt, and has on each side, at the apical part, a nearly vertical, compressed, long, sharp horn, and no tubercle whatever on the top of the anterior declivity which is not divided into two excavate parts as in *O. subextensus*.

As for the female it is almost impossible to distinguish it from that of *O. subextensus* ; the punctures on the sides and in front of the prothorax are, however, a little more closely set.

I have not seen any small development of the male, only of the female ; in the case of the latter the anterior part of the prothorax had hardly any trace of tubercles.

Length 11-15½ mm. ; width 7-9 mm.

Hab. Natal (Durban, Estcourt, Frere), Transvaal (Potchefstroom).

ONTHOPHAGUS TRICORNIGER, Bohem.,

Öfvers. Vet. Ak. Förh., 1860, p. 113.

Male: Æneous green or flavous with the head and median part of the prothorax bronze ; genæ diagonal with their outer angle very sharp, clypeus semicircular, hardly reflexed, no frontal carina, but instead a long, slender, arcuate horn reaching as far as the median part of the prothorax, compressed laterally and distinctly emarginate behind at the base, the head and the basal part of the cephalic horn are distinctly granulose ; the prothorax is declivous in front for two-thirds of the length, it has on each side of the median declivity a deep impression bounded outwardly by a nearly straight, very long, sharp horn on each side ; the prothorax is covered with very closely set granules, except the anterior impressions which are smooth and shining, it is ampliate in the middle, marginate all round, the basal part is not aculeate at middle, and it is slightly impressed longitudinally in the middle in the posterior part ; elytra very little amplified laterally, geminato-striate, intervals plane, closely punctulate, the punctures setigerous, humeral callus not very much marked, second interval broader at middle than the third ; pygidium closely punctured ; metasternum closely punctulate in the middle,

but having a narrow, smooth, median longitudinal line; anterior tibiae non-spinose inwardly, apical spur nearly straight.

The shape of the cephalic and thoracic horns is almost similar to that of *O. lanista*, but the thoracic horns are a little more slender and longer, and the anterior part of the prothorax is divided into two not very deep impressions, the slope is much greater, and the posterior part is not convex.

Female unknown.

Length 8 mm.; width $4\frac{1}{2}$ mm.

I have only seen the flavescent variety of the species from Damaraland (Swakop River).

ONTHOPHAGUS INSIGNIS, Péring.,

Plate XXXV., fig. 17.

Trans. Entom. Soc. Lond., 1896, p. 157.

Dark bronze green, with the elytra light chesnut brown; head granular, genæ rounded; prothorax convex, distinctly marginate all round, basal part slightly arcuate and not at all aculeate in the middle, it is covered with deep, somewhat rough, closely set punctures; elytra ampliate laterally from the shoulder to nearly the median part, and a little attenuate from there to the apex; they are deeply geminato-striate, and the striae are closely punctured, the intervals are filled with deep, closely set setigerous punctures, the humeral callus is not very pronounced, and the second stria is broader at middle than the third, pygidium deeply pitted, briefly pubescent; metasternum covered in the centre with setigerous punctures which are more closely set in the anterior part; inner part of anterior tibiae not spinose, apical spur nearly straight in both sexes.

Male: Clypeus rounded diagonally laterally, a little obtuse, and slightly emarginate at tip; the frontal carina is distinct, and close to this carina there is a long horn straight for two-thirds of the length and slightly curved in the other third, and from 4 to $4\frac{3}{4}$ mm. long in the curve; the prothorax, which is very sloping in front, has a very deep median excavation beginning at a short distance from the base, the ridges of this excavation are produced at middle into a sharply triangular projection, the excavation is quite smooth.

Female: Clypeus more regularly rounded owing to the apical part not being as obtuse as in the male; the frontal ridge is very distinct, and in the middle of the vertex there is a transverse, highly raised ridge, moderately acute at each end; the prothorax,

which is punctured all over, has in the anterior part, which is briefly declivous, a median, sub-laminate ridge, extending to about one-third of the width.

Length 7-9 mm. ; width $4\frac{1}{2}$ -6 mm.

Hab. Southern Rhodesia (Salisbury).

ONTHOPHAGUS LORICATUS, Klug,

Plate XXXV., fig. 18.

Monatsb. Berl. Acad., 1855, p. 653.

O. collaris, Fähr., Bohem., Ins. Caffr., ii., p. 268.

Head and prothorax metallic green, shining, the latter with a broad anterior and lateral flavescent band suffused with green; elytra light chesnut-brown with a greenish tinge, suture green, under side coppery green or flavescent; antennæ flavous; head finely granulose and covered with dense, flavescent hairs; prothorax convex, marginate all round, basal part depressed, smooth, broadly but not sharply aculeate; elytra amplified laterally from the outer angle to a short distance from the middle, and gradually attenuate from there, moderately deeply geminato-striate, and with the intervals plane and filled with very closely set, deep, setigerous punctures; second interval broader than the third to past the middle; pygidium very closely punctured, and very densely pubescent; median part of metasternum punctulate only in the anterior part.

Male: Genæ straight, clypeus semicircular; frontal carina hardly discernible; median part of the vertex produced into a sub-cylindrical long curved horn, flattened towards the tip and bifid there; the prothorax is convex with the sides sub-diagonal, and not very declivous at apex, in the anterior part there is a shallow median sulcus, with a blunt, small tubercle on each side of it at the top, this groove is not always distinct, but it is generally filled with a denser flavescent pubescence; the inner part of the anterior tibiæ is very distinctly spinose.

Female: I have not seen the female, but Klug says that it has a cephalic horn pointed at the tip instead of being bifid; and according to Fähræus the cephalic horn is short, attenuate, and straight, the frontal carina is sub-arcuate and distinct; the prothorax is moderately convex, and the dorsal tubercles are nearer to the anterior margin and more distinct.

Length 12-12 $\frac{1}{2}$ mm.

Hab. Natal (Pietermaritzburg).

Occurs also in German East Africa (Lake Jippe).

ONTHOPHAGUS LEUCOPYGUS, Har.,

Plate XXV., figs. 19, 19a.

Coleopt., Heft. ii. 1867, p. 53.

Green, moderately shining, densely pubescent; elytra flavous or light chesnut-brown; genæ nearly straight, clypeus roughly plicate, frontal part granulate; prothorax covered with very closely set granules, convex, ampliate laterally, marginate all round, basal part rounded in the middle; elytra a little ampliate laterally in the anterior part and gradually attenuate towards the apex; striae shallow, geminate, distinctly punctured, intervals plane, filled with deep, setigerous punctures, second interval not much broader at middle than the third, humeral callus distinct; pygidium very closely punctured and covered with dense, silvery white hairs; metasternum closely punctured; inner part of anterior tibiae not spinose, apical spur long, nearly straight in both sexes.

Male: Clypeus sub-diagonal laterally, obtuse at tip; the frontal carina is distinct, and between the frontal carina and the base there is a long, compressed horn curving a little past the median part, and some $3\frac{1}{4}$ to $3\frac{1}{2}$ mm. in length; prothorax very convex, moderately declivous in the anterior part which is impressed in the middle, this impression is very shallow, and is continued from the apex of the declivity to the base as a narrow, longitudinal line. This shallow median depression is not indicated in the figure 19.

Female: Clypeus more regularly rounded, the frontal carina is arcuate, and between this carina and the base there is a very distinct transverse high lamina truncate at each end; the prothorax is more abruptly declivous in the anterior part, and bears at the apex of the declivity a small triangular lobe, emarginate in the middle, and higher than the plane of the dorsal part of the disk (fig. 19a).

Length $9-9\frac{1}{2}$ mm.; width 5 mm.

Hab. Southern Rhodesia (Buluwayo, Victoria Falls, Salisbury).

ONTHOPHAGUS STENOCERUS, Har.,

Coleopt., Heft. ii., 1867, p. 48.

O. gracilicornis, Fahr., Insect. Caffrar., ii., p. 281.

Male: Green, thickly clothed above and under with a very long, silky white pubescence, shorter on the elytra which are pale flavous and have each five small black round spots, the suture of the elytra is green; clypeus sub-orbicular, somewhat short, hardly sinuate at tip, and with the outer margin reflexed all round, the whole surface

of the head is closely granulose, there is no clypeal carina, and in the posterior part of the head there is a very long, slender curved horn, sub-triangular at base, compressed for half the length and sub-cylindrical from there to the tip; prothorax ampliate and marginate laterally, but not along the base which is distinctly triangular and somewhat sharply produced in the middle, it is very closely granular, sub-retuse in front, has a very well-defined longitudinal median sulcus reaching from base to apex, and a deep elongate, smooth impression on each side above the basal, rounded angle; elytra ampliatio-ovate, slightly geminato-striate with all the intervals plane and filled with very closely set setigerous punctures, second interval broader than the third; pygidium covered with deep, nearly confluent punctures; anterior tibiæ truncate, straight at tip, strongly spinose inwardly, apical spur sub-cylindrical, curving slightly outwards.

Female unknown.

Length 7 mm.; width 4 mm.

A very distinct species, which could only be mistaken owing to the colour of the elytra for *O. præstans* and *O. trinodosus*, which have also some small round spots on the flavous elytra; but *O. præstans*, which is more closely related than *O. trinodosus*, has the apical spurs of the anterior tibiæ thickened and incurved in the male and two prothoracic tubercles entirely wanting in *O. stenocerus*, while *O. trinodosus*, in which the spurs of the anterior tibiæ are similar to those of *O. stenocerus*, has also two distinct, prothoracic tubercles.

I have only seen one of Fähræus' co-type labelled "*Caffraria*."

ONTHOPHAGUS IMPRESSICOLLIS, Bohem.,

Plate XXXV., fig. 24.

Öfvers. Vet. Ak. Förh., 1860, p. 112.

O. amabilis, Péring., Trans. S. Afric. Phil. Soc., vi., 1892, p. 29.

♀ *O. gemmeus*, Péring., Trans. Entom. Soc. Lond., 1896, p. 157.

Head and prothorax metallic green, moderately shining, densely pubescent; elytra flavescent and having the suture dark cyaneous blue and an arcuate band of the same colour reaching from shoulder to shoulder; under side blue-black; pygidium covered with a very dense silky white pubescence; genæ straight, clypeus rounded laterally and with the apical part straight transversely, it is distinctly plicate, and the frontal part scabroso-punctate; antennæ flavous; prothorax ampliate, marginate laterally and in front, but not very distinctly along the base the median part of

which is rounded, it is convex, covered with very closely set granules, is broadly impressed in the dorsal part, and has a fine longitudinal hollow line at the bottom of the impression; elytra ampliato-ovate, finely geminato-striate, and with the intervals filled with scabrose, pubescent punctures, the second interval is not wider than the third; pygidium very finely granulose; median part of metasternum with a distinct median longitudinal line, and having on each side of it some scattered punctures; inner part of anterior tibiæ not spinose at tip; apical spur nearly straight.

Male: Frontal carina indistinct, and as often as not entirely wanting, basal part of vertex with a moderately long, vertical horn, triangular at base, acute at tip, sometimes inclining a little forward; anterior part of prothorax not very declivous at apex, and faintly impressed in the middle there, but not as deeply as in the dorsal part.

Female: Clypeus as in the male, frontal carina distinct, between the frontal carina and the base, but nearer to the base, there is a very distinct, highly raised transverse carina, with the angles sharp but not dentate, and in the anterior part of the declivity of the prothorax are two sub-triangular tubercles coalescing at the base when very prominent.

The colour and shape of the dark aneous, sometimes black arcuate patch on the elytra varies a good deal in width and length; normally it should extend from near one humeral angle to the other, and in the centre from the median part to a short distance from the apex, but it sometimes invades the greatest part of the disk, leaving only a flavescent margin all round, or sometimes it nearly disappears altogether.

Length 6-7 mm.; width $3-4\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Salisbury), Ovampoland (Okovango River), Lake N'Gami, teste Boheman.

ONTHOPHAGUS OPIMUS, n. spec.,

Plate XXXV., fig. 20.

Briefly pubescent; head and prothorax metallic green, moderately shining; elytra flavescent, with the suture green; under side dark-green.

Male: Genæ a little oblique, clypeus rounded laterally, blunt transversely at apex, and hardly emarginate, it is marginate, but the margin is not recurved, and it is plicate, the head is punctulate, has no frontal carina and at a short distance from the base bears a

laminate horn tapering to a point and curving forward; the prothorax is amplified laterally towards the middle, marginate all round, and with the median part of the base rounded, it is convex, covered with closely set granules except along the median part of the base where the granules are replaced by scabrose punctures, is declivous somewhat abruptly in the anterior part, and slightly impressed longitudinally, while the median dorsal part is distinctly impressed lengthways from near the apex of the anterior declivity to the median part of the base; elytra ampliato-ovate, deeply but narrowly geminato-striate, intervals convex and having on each side a series of deep punctures, humeral callus distinct, second interval slightly broader than the third in the basal part only; pygidium clothed with very dense silky white hairs; median part of metasternum entirely covered with deep punctures, and having no trace of a longitudinal impressed line; inner part of anterior tibiæ non-spinose at apex, apical spur curving a little downward but nearly straight; antennæ flavous.

Female unknown.

Length 7 mm.; width $4\frac{1}{4}$ mm.

Hab. Cape Colony (Griqualand West).

This species is very closely allied to *O. leucopygus*, and may prove to be a varietal form of it, distinguished, however, by the cephalic horn bent forward instead of being strongly curved backward.

ONTHOPHAGUS MONODON, Fähr.,

Insect. Caffrar., ii., p. 290.

Male: Very dark greenish blue on the upper side, nearly black underneath; genæ distinctly rounded, clypeus semicircular laterally, and broadly and distinctly emarginate at tip, head covered with deep scattered punctures; there is no frontal carina, but in the middle of the vertex there is a long, sub-cylindrical horn, slightly curved for two-thirds of the length, and with the curve more pronounced in the apical third; prothorax not very convex, moderately declivous in the anterior part, not impressed in the centre of the anterior part, but having there a faint, longitudinal, smooth depression, while the surface is covered with fairly closely set, deep punctures, and is pubescent, especially on the sides, it is marginate laterally but not along the base which is rounded in the centre, and it has a narrow impressed longitudinal line in the posterior part; elytra a little ampliate laterally before the median part, geminato-striate, the striæ punctate, and the intervals sparsely setulose and having each a

double series of scabrose punctures which are very distinct; pygidium deeply and closely punctured, and setulose; median part of metasternum deeply punctate but having a narrow, longitudinal smooth space with a deeply impressed line in the centre; anterior tibiae not spinose inwardly at tip, apical spur straight.

The shape of the cephalic horn is nearly similar to that of *O. mastrucatus*, but it is longer in proportion to the general size, and is more cylindrical.

The female is unknown.

Length 7 mm.; width 4 mm.

I have seen only one male example, and it is quite possible that the length of the cephalic horn may vary.

Hab. Natal (Pietermaritzburg).

ONTHOPHAGUS MASTRUCATUS, n. spec.

Dark bronze brown, shining, very pubescent on the upper side; genae straight, projecting at apex, clypeus semicircular but projecting slightly at apex, and with the edge slightly curved, frontal carina arcuate, the whole head is covered with deep, rugose punctures; prothorax marginate laterally but not along the base the median part of which is rounded, it is sub-canaliculate in the posterior dorsal part, and is covered with very rough, closely set punctures, the sides are almost scrobiculate, and it is clothed with a dense, erect, slightly brownish pubescence; elytra sub-oblongo-ovate, finely but deeply striate, the striae geminate and slightly punctulate; intervals with a double series of deep, broad, irregular rugose punctures; pygidium roughly punctured; metasternum scrobiculate laterally and deeply punctured in the median part; anterior tibiae not spinose inwardly, apical spur nearly straight.

Male: Clypeal carina not much raised; between this carina and the vertex there is a long, sub-recumbent horn sub-cylindrical from the median to the apical part, reaching sometimes as far as the base of the prothorax, and occasionally shorter; the prothorax is sloping in the anterior part but not abruptly, and in the centre of this anterior part, which is only slightly impressed, there is a small longitudinal carina close to the apex.

Female: Clypeal carina very well defined, vertex without any transverse carina, apical part of prothorax with a very small, median longitudinal carina.

Length $3\frac{1}{4}$ –4 mm.; width $2\frac{1}{4}$ – $2\frac{3}{4}$ mm.

In some examples the sides of the elytra turn to dark reddish.

brown. The shape of the cephalic horn is similiar to that of *O. monodon*, but apart from the presence of the small longitudinal carina of the anterior part of the prothorax, it is easily distinguished not only by the size, which is very much smaller, but also by the rough punctures on the thorax and elytra.

Hab. Cape Colony (Graham's Town), Natal (Durban).

ONTHOPHAGUS PUGIONATUS, Fahr.,

Plate XXXV., fig. 21.

Insect. Caffr., ii., 1857, p. 286.

Bronze or aneous on the head and prothorax, elytra black, or dark blue, with the base spotted with testaceous mculæ, which are often absent, briefly pubescent on the upper side, under side piceous red bronze; clypeus sub-plicate, frontal part almost impunctate, genæ scabrose; prothorax moderately convex, marginate all round, median part of the base rounded, ampliatted laterally at middle and covered with closely set scabrose punctures or small granules denser and sharper on the sides, posterior dorsal part with a distinct impressed longitudinal line; elytra ampliatio-ovate, not deeply geminato-striate, intervals plane and covered with closely set scabrose setigerous punctures; pygidium deeply and closely pitted; metasternum vaguely pitted, median longitudinal impressed line distinct; inner part of anterior tibiæ non-spinose, at apex; apical spur long, nearly straight in both sexes.

Male: Genæ rounded, clypeus semicircular, slightly blunt but not emarginate at middle, no frontal carina, in the centre of the vertex a long, upright, or very slightly bent horn, compressed and triangular in the basal half, cylindrical and sharp at tip in the other half; prothorax sharply declivous at tip and with the median part of the anterior part impressed, smooth, and slightly canaliculate longitudinally at middle from the tip of the declivity, but not as strongly impressed as in the fig. given (fig. 21); the median part of the dorsal part is more punctate than granular.

Female: Clypeus very diagonal laterally, sub-aculeate and truncate at tip, frontal carina distinct, and arcuate, vertex, with a sub-basal transverse high carina either tri-dentate or with the median part sub-triangular; prothorax with two small sub-triangular tubercles coalescing so as to form a short transverse ridge in the middle of the anterior part, surface of the prothorax more distinctly granular than in the male.

Length 8-8½ mm.; width 5-5½ mm.

Hab. Natal (Esteourt, Durban, mouth of Umkomas River), Transvaal (Rustenberg). In the Natal examples from the Umkomas River there is no trace of testaceous patches along the base of the elytra.

ONTHOPHAGUS BREVICORNIS, Fähr.,

Insect. Caffr., ii., p. 314.

O. viridicollis (♀), Fähr., loc. cit., p. 315.

Black with the elytra and legs brick-red, moderately shining and briefly pubescent; genæ straight, clypeus semicircular, deeply emarginate in the centre, and with the angles of the emargination moderately blunt; the edge of the clypeus is slightly recurved, the frontal carina is very slight, and the surface is slightly punctate; prothorax moderately convex in the anterior part, deeply but moderately closely punctured, ampliate laterally, marginate all round, the median and part of the base is rounded; elytra slightly elongate, but ampliate laterally past the shoulders, they are finely geminato-striate, the intervals are covered with fine setigerous punctures; the humeral callus is not very noticeable, and the second interval is hardly broader than the third; pygidium closely pitted; metasternum normal; inner part of anterior tibiæ non-spinose.

Male: Frontal carina hardly distinct; in the centre of the vertex there is a very short, conical, tuberculiform tooth, and the anterior part of the prothorax is slightly sloping but convex, and is not impressed.

Female: Similar to the male, but with the head simple. Fähræus' type of *O. viridicollis* is more greenish on the prothorax, but is undoubtedly the female of *brevicornis*.

Length $2\frac{3}{4}$ –3 mm.; width 2 mm.

Hab. Natal (Esteourt, Durban), Damaraland (Nolagi).

ONTHOPHAGUS ALCYON, Klug,

Plate XXXV., fig. 27.

Monatsb. Berl. Ac., 1855, p. 623; Peters' Reis., 1862, p. 233.

Oniticellus splendens, Wallengr., Ent. Tidskr., ii., 1881, p. 20.

Bright green or dark violaceous green, and sometimes, although rarely, coppery-red, very shining; head, prothorax, and anterior part of elytra glabrous; genæ rounded, clypeus semicircular with the margin slightly recurved, the frontal part is nearly smooth, the clypeus is slightly punctate in the male, more densely in the female,

and there is a frontal carina; prothorax elongate, not ampliate laterally, marginate in front and laterally but not distinctly along the base which is arcuate and slightly depressed at middle, it is plane and smooth except for a few lateral punctures on each side of the anterior part; elytra elongate, slightly ampliate laterally near the humeral part, and attenuate from there towards the apex, they are plane, narrowly striate, the striae are not distinctly geminate and are clearly punctured, the intervals are plane, impunctate, and glabrous except at the apical declivity where they are setulose; pygidium with a few scattered, deep punctures; median part of metasternum entirely smooth; inner part of anterior tibiae non-spinose at tip, apical spur nearly straight in both sexes.

Male: Frontal carina only slightly indicated, median parts of vertex provided with a carina extending from eye to eye, sinuate laterally and produced in the centre into a moderately short triangular tooth, compressed at base and sharp at tip; anterior part of prothorax slightly impressed in the centre; in the smaller development the frontal carina is more raised, and the carina on the vertex is sub-dentate in the centre.

Female: Clypeus a little less semicircular at tip; frontal carina very distinct, carina on vertex not dentate.

Length 8-10 mm.; width 5-5½ mm.

Hab. Mozambique (Rikatla, Tette and Sena, teste Klug), Southern Rhodesia (Victoria Falls, Middle Limpopo River), Transvaal (Potchefstroom, Waterberg, Johannesburg); also German East Africa.

This species is easily distinguished from the other South African species by its depressed and elongate form which makes it somewhat resemble *Oniticellus planatus*. The third joint of labial palpi is very minute, almost indistinct.

ONTHOPHAGUS GIRAFFA, Hausm.,

Plate XXXV., fig. 26.

Illig. Mag., vi., 1807.

O. platycerus, Wiedem., Zool. Mag., ii., 1, p. 15.

Black, opaque, very briefly pubescent on the upper side; genae rounded, clypeus a little sinuate laterally, head punctate, plicate in the clypeus, and having a frontal carina in both sexes; prothorax marginate laterally, but less distinctly along the base the centre of which is rounded but projects a little, not very convex, covered with closely set punctures which are somewhat scabrose on the

sides, and faintly impressed longitudinally in the centre of the posterior dorsal part; elytra ampliato-ovate, finely striate, the striae finely geminate and punctulate, intervals plane, finely punctulate, and the punctures briefly setigerous, humeral callus not very prominent, second interval a little broader at middle than the third; pygidium closely punctured; metasternum covered with scattered punctures, slightly grooved longitudinally in the centre and having a deep, basal impression; inner angle of anterior tibiae non-spinose, apical spur thickened and turned inwards at tip in both sexes.

Male: Clypeus semicircular, hardly sinuate laterally, frontal carina not much raised, between this carina and the base there is a long, nearly vertical horn, cylindrical except at the base, and rounded at tip; median part of the anterior part of the prothorax a little flattened, and impunctate, the length of the cephalic horn varies from $\frac{2}{3}$ to $2\frac{1}{2}$ mm. In the small development there is no impunctate part in the anterior part of the prothorax.

Female: Clypeus a little more acuminate in the centre than in the male, but not much, frontal carina a little more raised, at a short distance from the base there is a transverse carina only a little more raised than the frontal one, and nearly straight; prothorax not depressed in the anterior median part.

Length $8\frac{1}{4}$ – $9\frac{1}{4}$ mm.; width $4\frac{1}{2}$ – $5\frac{1}{4}$ mm.

Hab. Cape Colony (Cape Town, Worcester, Stellenbosch, Paarl, Tulbagh, Malmesbury, Knysna).

ONTHOPHAGUS LUTULENTUS, Har.,

Coleopt., Heft. ii., 1867, p. 48.

O. lugubris, Fähr., Ins. Caffr., ii., p. 287.

Very closely allied to *O. giraffa* in general appearance, but the head is much more granulose; the prothorax, instead of being covered with punctures, is very closely granulose all over, the apical spur of the anterior tibiae are not as broad and are nearly straight in both sexes. The cephalic horn of the male is not curved, and is more cylindrical.

Length $9\frac{1}{4}$ – $9\frac{1}{2}$ mm.; width $4\frac{1}{2}$ – $4\frac{3}{4}$ mm.

Hab. Natal (Durban).

ONTHOPHAGUS VIGENS, n. spec.

Male: This species is so closely allied to *O. giraffa* that it might be easily mistaken for it. It is, however, a little smaller and not so

broad; the colour, instead of being dull black, is dull bronze; the cephalic horn is a little more curved and the apical spur of the anterior tibiae is not so thick nor does it curve inwardly at tip.

Female unknown.

Length 8 mm.; width $4\frac{1}{2}$ mm.

Hab. Transvaal (Lydenburg).

ONTHOPHAGUS PILOSUS, Fähr.

Plate XXXV., fig. 28.

Insect. Caffrar., ii., p. 294.

O. costipennis, Fähr., loc. cit., p. 294.

Black, with a faint, dull, metallic sheen, and clothed entirely with a long, greyish pubescence; genæ sub-auriculate, clypeus also diagonal laterally, deeply incised in the centre and with the angles of the incision sharply projecting and slightly recurved; the head is closely granular, densely pubescent, and there is no trace of frontal carina in either sex; prothorax ampliate laterally, scarcely convex, covered with very closely set granules, marginate in front and laterally, but not along the base the median part of which is rounded; elytra ampliate past the shoulder laterally, and a little attenuate from past the middle, geminato-striate, very deeply punctured, and the edges of the striae are distinctly raised, the intervals are narrow and granulose, the second one is only slightly wider at middle than the third; the pygidium is deeply and closely pitted and pubescent, and the metasternum, which like the under side is clothed with a long, greyish pubescence, has a very narrow median longitudinal smooth space; inner part of anterior tibiae non-spinose, apical spur not slender, and turning slightly inward at tip in both sexes.

Male: Vertex with a sub-cylindrical horn slightly flattened at base, reclining behind in the large development, when it sometimes reaches the median part of the elytra, and occasionally reduced to a mere sharp tubercle; prothorax impressed longitudinally from the median to the basal part, but not in the anterior part.

Female: Clypeus as in the male, vertex with a slight trace of a short, transverse carina close to the basal margin.

Length $4\frac{1}{2}$ – $5\frac{1}{2}$ mm.; width 3 – $3\frac{3}{4}$ mm.

Hab. Natal (Malvern, Durban), Transvaal (Rustenburg, Potchefstroom), Bechuanaland. Southern Rhodesia (Salisbury).

ONTHOPHAGUS OBTUSICORNIS, Fähr.,

Plate XXXV., fig. 25.

Insect. Caffrar., ii., p. 288.

Black, opaque on the upper part, except the striae on the elytra which are distinctly shining, briefly pubescent on the upper side; head as in *O. pilosus*, but the clypeus is not so deeply incised, and the edges are not quite so sharp, the frontal carina is also wanting, the cephalic horn is not much longer than the head in the male, and is vertical, while in the female the carina on the vertex is a little more discernible than in *O. pilosus*; the shape and sculpture of the prothorax are identical, but the elytra have the geminate striae shining and only slightly raised, and the intervals have each two series of small granules not set very close together; the pygidium is granulose. The pubescence is very much shorter than in *O. pilosus*, the size is also a little larger, and it can be readily distinguished from *O. pilosus* by the non-rugose intervals of the elytra.

Length $6\frac{1}{2}$ – $8\frac{1}{2}$ mm.; width 4–5 mm.

Hab. Cape Colony (Griqualand West), Natal (Estcourt, Durban), Southern Rhodesia (Salisbury), Mozambique (Rikatla).

ONTHOPHAGUS AXILLARIS, Bohem.,

Öfv. Vet. Ak. Förh., 1860, p. 114.

This species is so closely allied to *O. obtusicornis* and *O. pilosus*, especially the former, that it might prove to be only a slight varietal form of it. In the male the cephalic horn is either short, blunt, and truncate at tip, or as long as in *O. obtusicornis*, and in the female the clypeus is incised as in *O. pilosus*, and the angles are therefore sharper and longer than in *O. obtusicornis*; the elytra are sculptured alike, but they have on the shoulder a small testaceous patch.

Length 7– $7\frac{1}{2}$ mm.; width $4\frac{1}{4}$ mm.

Hab. Damaraland (Swakop River, teste Boheman), Ovampoland (Omrumba).

I have seen a male example in which the testaceous humeral patch was entirely absent.

ONTHOPHAGUS PERNICIOSUS, n. spec.

Bronze, a little darker on the elytra, opaque, densely pubescent; elytra with two humeral and three apical testaceous maculae; shape and sculpture of the three preceding species, but the clypeus is more bluntly emarginate at tip, and the genæ are rounded; the

cephalic horn is short and vertical, the shape of the prothorax is the same, and the granules are equally closely packed; the geminate striae of the elytra, however, are not so deeply punctate, and in the intervals the minute tubercles of the double series are set more closely to one another. It is very probable that in some examples the three apical testaceous patches on the elytra coalesce and form an apical band.

Female unknown.

Length 6 mm. : width 4 mm.

Hab. Southern Rhodesia (Salisbury).

ONTHOPHAGUS LUGENS, Fähr.,

Insect. Caffrar., ii., p. 289.

O. piccus, Fähr., loc. cit., p. 301.

O. setosus, Fähr., loc. cit., p. 291.

Bronze black, dark bronze, or bronze, moderately shining, antennae flavescent; clypeus semicircular, slightly blunted at tip, but not emarginate, transversely plicate, vertex smooth, frontal carina very distinct; prothorax not much convex, moderately ampliate laterally and with the median part of the base rounded, covered with equally distant punctures set moderately close to one another, and having in the posterior part a slight longitudinal impressed line; elytra somewhat elongate and not very ovate, finely geminato-striate, with the intervals slightly raised near the base, and filled with three series of briefly setigerous punctures, second interval very slightly broader than the third; pygidium closely punctate, not very pubescent, subaculeate at tip, smooth in the centre, and having a median longitudinal impressed line.

Male: Cephalic horn short, conical in the great development, or flattened, triangular, not as high as the anterior truncate part of the prothorax which is not excavate but bears two small, closely set median tubercles at the top; inner part of anterior tibiae briefly spinose at tip. In the small development the cephalic horn and the thoracic tubercles are rudimentary.

Female: Vertex with a median, transverse ridge, anterior part of prothorax sloping normally, but having close to the anterior margin a short, slightly raised, transverse carina which, however, is often indistinct.

Length 6-7 mm.; width $3\frac{1}{4}$ -4 mm.

Hab. Cape Colony (Kimberley), Natal (Newcastle, Frere, Durban), Transvaal (Potchefstroom, Rustenburg), Southern Rhodesia (Salisbury, Upper Hamyani River, Victoria Falls).

ONTHOPHAGUS CRETUS, n. spec.

Plate XXXV., fig. 22.

Bronze, shining, very pubescent, sometimes black, genæ rounded, clypeus sub-semicircular, a little prolonged and slightly blunted at tip, frontal carina distinct, the clypeus is transversely plicate, and the vertex punctulate; prothorax not very convex, abruptly truncate at tip, and there excavated on each side, the ridge of the excavation has on each side a short, shining tubercle, and in the centre are two projecting tubercles in the male, and a transverse lamina in the female, the upper part is grooved from the middle to the base, which is rounded, and the whole surface, which is densely pubescent, is covered with very deep, irregular, nearly confluent punctures; elytra ampliato-ovate, narrowly striate with the intervals slightly raised in the dorsal part, and filled with deep, irregular punctures similar to those on the prothorax but a little more rugose and bearing long, decumbent greyish hairs; pygidium pubescent, covered with closely set punctures; metasternum punctulate in the centre, and having a very distinct longitudinal median line.

Male: Cephalic horn upright or very slightly curved, sub-cylindrical and sharp at tip: a little flattened at base, and as high as the projecting tuberculated part of the prothorax; inner part of anterior tibiæ spinose at tip, apical spur long, nearly straight.

Female: Vertex with a high transverse laminate ridge extending from eye to eye.

I have seen one small development of the female of this species in which the prothorax is normally sloping, and has no trace of ridge or excavation: this example, however, is black, and might prove to belong to another species; it comes from Ovampoland.

Length 7-7 $\frac{1}{4}$ mm.; width 4 mm.

Hab. Natal (Durban, Umkomas River), Ovampoland (Humbe).

ONTHOPHAGUS SCABROSUS, Fähr.,

Insect. Caffrar., ii., p. 295.

O. pedestris, Fähr., loc. cit., p. 296.

This species might be taken for the small development of *Onthophagus cretus*, and the shape of the cephalic horn and of the anterior part of the prothorax is nearly similar, but the head and prothorax are dull fuscous bronze, the cephalic horn and the transverse carina of the ♂ and of the ♀ respectively are smaller, the

excavation of the anterior part is shallow, and the median tubercles of the upper ridge do not project in the ♂, nor in the ♀ where the median ridge is replaced by two minute tubercles, and the tubercles on each side of the upper ridge of the excavation are wanting, but the distinctive characters are the punctures of the prothorax, which are regular, less closely set and not rugose, and the intervals of the elytra, instead of being conspicuously rugose, have each two series of slightly granulose setigerous punctures; legs and under side as in *O. cretus*.

Length $4\frac{1}{2}$ – $5\frac{1}{4}$ mm.; width $2\frac{3}{4}$ –3 mm.

Hab. Natal (Newcastle, Frere), Transvaal (Potchefstroom, Lydenburg).

ONTHOPHAGUS PARUMNOTATUS, Fähr.,

Plate XXXV., fig. 30.

Insect. Caffrar., ii., p. 279.

Male: Head and prothorax fuscous bronze, elytra darker and less metallic, under side almost black; head closely granular, densely pubescent, frontal carina semicircular, clypeus also semicircular and with the genæ rounded, in the centre of the vertex there is a very short conical horn; antennæ fuscous; prothorax not convex, abruptly declivous in the anterior part which is not excavate, and is surmounted by two bluntly conical tubercles set moderately close to one another,* it is densely but briefly pubescent, and covered with slightly elongate granules set close to one another but not contiguous, the posterior part of the disk has a very slightly impressed smooth line, the median part of the base, which is moderately rounded, is a little depressed; elytra very ampliato-ovate, distinctly geminato-striate, intervals plane and having each two or three series of small, briefly setigerous granules, second interval a little wider than the third, humeral callus hardly prominent, they are darker than the prothorax, opaque, and have on each nine or ten pale testaceous round spots mostly disposed along the outer margin, except two which are in the centre; pygidium deeply and closely pitted, pubescent, median part of pygidium deeply pitted; inner part of anterior tibiæ briefly spinose at apex, apical spur nearly straight.

Female: Entirely like the male; the cephalic horn and the prothoracic tubercles are similar, and the only distinctive character is

* In the figure the clypeus is a little too elongate, and the frontal carina has been omitted.

to be found in the shape of the apical spur of the anterior tibiae which are sharply curved inwardly at tip.

Length 8-9 mm.; width $5\frac{1}{4}$ -6 mm.

Hab. Natal (Durban, Estcourt), Southern Rhodesia (Salisbury Lesapi River), Transvaal (Potchefstroom).

ONTHOPHAGUS TRINODOSUS, Fähr.,

Insect. Caffrar., ii., p. 280.

Quite similar in shape to *O. parumnotatus*, and might at first sight be taken for a variety of it in which the prothorax is light bronze and the testaceous spots have invaded the whole of the elytra leaving only from seven to eight fuscous round spots as a remainder of the original colour, but the granules on the prothorax are finer, and are set so closely as to be almost contiguous, and the intervals on the elytra are filled with more numerous and therefore more closely set setigerous punctures; the pygidium is also more closely punctulate; the number of fuscous round spots on the elytra varies from six to eight. In his original description Fähræus rightly mentions seven spots only on the elytra; in the only example at my disposal, a male, there are eight distinct ones.

Length $7\frac{1}{4}$ mm.; width 5 mm.

Hab. Transvaal (Lydenburg).

ONTHOPHAGUS QUADRINODOSUS, Fähr.,

Plate XXXV., fig. 29.

Insect. Caffrar., ii., p. 307.

O. truncaticornis, Bohem., Öfv. Vet. Ak. Förh., 1860, p. 113.

Testaceous or pale-chesnut and with a lesser or deeper bronze tinge on the head and the median part of prothorax; head granulato-punctate, clypeus rounded, but slightly blunt at tip, frontal carina very distinct, antennæ flavous; prothorax not very convex, amplified laterally, rounded in the middle at base, truncate vertically in the anterior part which is not excavate but is perpendicular and has the upper edge of the truncate part produced into four sharp recurved tubercles, the two median ones of which are a little longer than the two sub-lateral ones,* it is covered with closely set punctures, but the sides are scabroso-punctate, and there is a smooth not very distinct longitudinal line in the middle; elytra elongate,

* In the figure the prothoracic tubercles are not sufficiently in line.

not much ovate, geminato-striate with the intervals plane and filled with moderately dense setigerous punctures, second interval very little broader than the third, humeral callus not very prominent: pygidium very closely punctate; metasternum punctulate but with a median longitudinal smooth space; inner part of anterior tibiae sharp but not spinose, apical spurs long, and curving slightly outward in both sexes.

Male: Cephalic horn short, compressed and triangular at base and from there cylindrical and slightly sharp at tip (*quadrinodosus*) or quadrate at base and truncate (*truncaticornis*).

Female: Vertex with a broad transverse laminate carina instead of a horn, the prothorax is also quadri-tuberculate as in the male, but the anterior part is a little more sloping.

Length 8-9½ mm.; width 4½-5 mm.

Hab. Natal (Durban), N'Gamiland, teste Boheman.

ONTHOPHAGUS OPACUS, Fahr.,

Insect. Caffrar., ii., p. 292.

Black, opaque, very briefly pubescent; head and prothorax sometimes with a slight æneous tinge; antennae piceous, club fuscous; head roughly punctured on the clypeus, and having a few scattered punctures on the vertex, frontal carina distinct, arcuate, clypeus semicircular, not deeply emarginate at tip, genae rounded; prothorax ampliate and rounded laterally, very little convex, but a little retuse in front, marginate all round, rounded at base, having an impressed median longitudinal line in the posterior part of the disk, and covered with round, deep, contiguous, very briefly setigerous punctures; elytra very little ampliate, sub-elongato-ovate, narrowly geminato-striate, striae deeply punctured and shining, intervals plane and having each a double series of more or less regularly arranged, deep, briefly setigerous punctures except near the base where the punctures are more numerous, second interval hardly wider than the third, humeral callus distinct; inner part of anterior tibiae non-spinose at tip: apical spur nearly straight, moderately slender.

Male: Vertex with a conical tubercle, a small tooth, or a triangular vertical horn not reaching quite the height of the apical part of the prothorax which is a little retuse in front and has no tubercle at the tip, or is retuse in front and bi-tuberculate at tip, the tubercles being set close to one another.

Female: Vertex with a sub-median, short, transverse carina; pro-

thorax sometimes bi-tuberculate, and retuse in front, but oftener not.

Length 6-7 mm.; width $3\frac{1}{4}$ -4 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Worcester), Natal teste Fähræus.

ONTHOPHAGUS IMPICTUS, Fähr.,

Insect. Caffrar., ii., p. 293.

Male: Head and prothorax slightly aenescent; elytra fuscous brown or black, under side black; it is very little shining, and briefly but densely pubescent; antennæ piccous red, club fuscous; head scabroso-punctate on the clypeus which is semicircular and slightly emarginate at tip with the genæ rounded, vertex with a few scattered punctures, frontal carina distinct, on the vertex but nearer to the base than to the frontal carina there is a triangular short tooth or sub-conical tubercle; prothorax shaped as in the preceding species, but having two small, nearly contiguous tubercles in the anterior part which is also a little more retuse, and is higher than the cephalic horn, it is covered with moderately closely set, slightly scabrose, setigerous punctures; elytra ovate, deeply geminato-striate, striae deeply punctured, intervals plane, and having each two series of small setigerous granules not set close to one another, second interval a little wider than the third; pygidium deeply but not closely pitted, and clothed with a long pubescence, metasternum deeply but sparsely pitted in the centre, median longitudinal line distinct; inner part of anterior tibiae sharply angular at tip; apical spur long, moderately slender.

Female unknown.

Length $4\frac{1}{2}$ -5 mm.; width 3 mm.

Hab. Cape Colony (Burghersdorp), Natal (Estcourt, Newcastle, Durban).

ONTHOPHAGUS PUSIO, Fähr.,

Insect. Caffrar., ii., p. 311.

Male: Black, shining, very briefly pubescent; head covered with very closely set, small, but deep punctures, genæ rounded, clypeus semicircular, and bi-dentate at tip, but not incised, no frontal carina, in the middle of the vertex a short, tuberculiform conical horn; club of antennæ fuscous; prothorax somewhat convex, moderately ampliate laterally, marginate all round, rounded at base, not impressed longitudinally in the middle, nor retuse in the anterior part, and covered with closely set deep punctures scarcely setigerous;

elytra very ampliato-ovate, geminato-striate, intervals plane and covered with several more or less regular series of minute, scabrose, slightly pubescent punctures; second interval very slightly narrower than the third, humeral callus distinct; pygidium closely and deeply pitted; metasternum punctulate in the middle; inner part of anterior tibiae spinose at tip; apical spur long, nearly straight.

Female: I have not seen the female, but according to Fähræus the vertex of the head is simple, and on the forehead are two transverse, arcuate carinules, the posterior one of which is obsolete.

Length 5 mm.; width $3\frac{1}{2}$ mm.

Hab. Natal (Maritzburg).

ONTHOPHAGUS NASO, Fähr.,

Plate XXXV., figs. 13, 13a.

Insect. Caffrar., ii., p. 271.

Metallic green, moderately shining, and with occasionally a slight coppery tinge on the head and anterior part of the prothorax, very little pubescent; antennae flavescent; head very deeply and closely punctured, genae sub-aculeate at base, diagonally attenuate, clypeus aculeate, obtuse, strongly recurved at apex and with the recurved part emarginate, there is no frontal carina, and the basal part of the vertex is produced into a somewhat short, triangular compressed horn curving a little forward at tip, and not quite as high as the apical part of the prothorax which is moderately convex, marginate in front and laterally, but only indistinctly along the base which is rounded, it is covered with deep, very closely set punctures, which are slightly scabrose on the sides, and is nearly glabrous; elytra moderately ampliato-ovate, narrowly and shallowly geminato-striate, the striae are closely punctate and violaceous, the intervals plane and filled with numerous very closely set punctures, second interval hardly broader than the third, humeral callus distinct; pygidium very closely and deeply pitted; metasternum closely punctate in the centre, and with the median impressed line very distinct; inner part of anterior tibiae not spinose at tip, apical spur moderately slender, nearly straight in both sexes.

Male: Anterior part of the prothorax abruptly declivous and having in the median part two small elongated tubercles.

Female: Clypeal horn rudimentary, anterior part of prothorax not retuse, nor tuberculate.

Length 8–10 $\frac{1}{2}$ mm.; width 5–6 mm.

Hab. Cape Colony (Port St. John), Natal (Durban, Maritzburg).

ONTHOPHAGUS EBENUS, Péring.,

Plate XXXV., figs. 14, 14a.

Trans. S. Afric. Phil. Soc., vol. iv., 1888, p. 97.

Fuscous bronze, with a little brighter sheen on the head and prothorax, briefly pubescent, antennae flavous; head closely punctulate on the clypeus, vertex nearly impunctate, genae sub-angular at about the median part, clypeus aculeate, obtuse at tip, and recurved there but not strongly, frontal carina and suture of genae distinct; prothorax ampliate laterally, distinctly marginate all round, rounded at base, retuse in front in both sexes, although less so in the female than in the male, and more or less strongly bi-tuberculate in the centre of the anterior part, it is very closely scabrose and briefly but deeply pubescent; elytra ampliate, narrowly and shallowly geminate and punctato-striate, intervals plane and filled with closely set minute briefly setigerous granules, second interval not wider than the third, humeral callus distinct; pygidium very closely scabroso-punctate, briefly pubescent: metasternum closely punctate, median longitudinal line distinct; inner part of anterior tibiae non-spinose, apical spur moderately slender, nearly straight in the male, but a little curved in the female.

Male: Basal part of vertex produced in a laminate horn broad at base, gradually attenuate as far as the median part, cylindrical from there and curving forward, this horn may be higher than the apex of the anterior part of the prothorax, or reduced to a triangular carina, the two tubercles in the anterior part of the prothorax, which is abruptly declivous, are not close to one another and are more or less sharply conical.

Female: Vertex with a basal transverse high carina, slightly aculeate at both ends and also in the centre; anterior part of prothorax less retuse than in the male, but with two small tubercles set nearer to one another.

Length 8-10 mm.; width 5-6 mm.

Hab. Natal (Durban, Malvern, mouth of the Unkomas River), Cape Colony (Griqualand West), Southern Rhodesia (Victoria Falls, Salisbury).

ONTHOPHAGUS EQUATUS, n. spec.

A close ally of the preceding species, but the colour is brighter bronze, and the elytra have a humeral and an apical testaceous red patch on each side, the intervals of elytra, which are also geminato-striate with the striae closely punctured, have only two series of not closely set setigerous punctures, and in the male

the genæ are more inflated and rounded, the clypeus is more attenuate laterally and more obtuse at the tip, which is also a little more recurved, the cephalic horn is more broadly laminate, less attenuate towards the median part of the length, and curves more strongly forward from that point; the rest is as in *O. ebenus*.

In both this and the preceding species the punctures or the granules are occasionally less numerous in the second interval than in the others.

Length 10–10½ mm.; width 5¾ mm.

Hab. Southern Rhodesia (Salisbury).

ONTHOPHAGUS PRÆSTANS, n. spec.

Male: Head and prothorax coppery green, shining, briefly pubescent, elytra pale testaceous and having five round black or fuscous spots on each side, under side bronze; antennæ fuscous; head very closely shagreened, genæ rounded, bulging a little; clypeus a little ampliate near the genæ, elongated diagonally, apical part very distinctly recurved and slightly emarginate, no frontal carina, vertex produced at base in a horn broadly laminate at base and cylindrical at tip, vertical, but not rising as high as the anterior apical part of the prothorax which is convex, rounded laterally, marginate all round with the median part of the base rounded, and covered with contiguous granules, it is abruptly retuse in the anterior part, not excavate but has on the top of the declivity two sharp tubercles separated by a moderately deep sinuation, and it is distinctly furrowed longitudinally in the posterior median part of the disk; elytra ampliatio-ovate, narrowly geminato-striate, striæ punctate, intervals nearly plane and filled with closely set setigerous punctures, second interval very slightly wider than the third, humeral callus not very distinct; pygidium very closely punctulate, briefly pubescent; metasternum very closely punctured in the middle, median longitudinal line deep and very distinct; inner part of anterior tibiæ non-spinose inwardly, apical spur produced obliquely inwardly, moderately slender, and curving downward.

Length 6½–7 mm.; width 4–4½ mm.

Hab. Southern Rhodesia (Salisbury).

ONTHOPHAGUS DETERRENS, n. spec.,

Plate XXXV., fig. 23.

Very dark green, nearly black, or bronze green, with a coppery tinge on head and prothorax, moderately shining, and briefly but

densely pubescent, club of antennæ yellow; genæ angular at middle, sub-auriculate, clypeus acuminate and with the apical part sharply recurved, and slightly emarginate, very closely punctate, the punctures along the edge of the clypeus are rugose, and there is no trace of frontal carina; prothorax marginate all round, rounded at base, moderately convex, and covered with nearly contiguous, round, deep punctures; elytra ampliato-ovate, narrowly and not deeply punctato-striate, the striæ geminate and darker than the intervals which are plane and filled with several series of closely set, briefly setigerous punctures, which are sometimes confluent, the second one is a little wider than the third; pygidium very closely pitted; metasternum with a smooth median space and a short impressed line; inner part of anterior tarsi non-spinose, apical spur moderately slender, nearly straight.

Male: Base of vertex with a short, triangular, vertical horn, flat at base, sub-cylindrical at tip, but not reaching as high as the anterior part of the prothorax, which is vertical and has at the top two median tubercles not set close to one another.

Female: Cephalic horn and tubercles on the prothorax quite rudimentary.

Length $5\frac{1}{2}$ – $7\frac{1}{2}$ mm.; width $3\frac{1}{2}$ –4 mm.

Hab. Cape Colony (Stellenbosch, in carrion; Paarl), Natal (Durban), Transvaal (Lydenburg), Southern Rhodesia (Salisbury).

ONTHOPHAGUS DITUS, n. spec.

Male: Bronze or coppery on the head and prothorax, elytra testaceous and having a cruciform infuscate or dark green band dividing the surface in four more or less quadrate testaceous patches; head punctulate, transversely folded along the clypeus, genæ bulging a little, clypeus rounded laterally, acuminate, deeply emarginate and with the angles of the emargination sub dentate and slightly recurved, there is no frontal carina, but at the base there is a triangular lamellate horn not as high as the anterior part of the prothorax, which is convex, ampliate laterally, marginate in front and on the sides but not distinctly along the base which is rounded; it is covered with round, closely set, very briefly setigerous punctures in the median and basal part of the disk, but the anterior part and the sides are scabrose, and the disk is not grooved longitudinally; elytra ampliato-ovate, geminato-striate, striæ shallow and punctulate, intervals plane and having two series of setigerous scabrose punctures, second interval not broader than the third, the suture has a broad greenish fuscous band, and there is a transverse arcuate

one of the same colour extending from side to side a little past the middle, and dilated on the sides and at the junction with the suture, the apical margin, and also occasionally the base, is suffused with fuscous green; pygidium very closely pitted; metasternum punctulate all over, median impressed line very indistinct.

Length 6-7 mm.; width $3\frac{1}{2}$ - $4\frac{1}{4}$ mm.

Hab. Southern Rhodesia (Salisbury).

ONTHOPHAGUS PYRAMIDALIS, Klug,

Plate XXXV., figs. 12, 12a.

Monatsb. Berl. Acad., 1855, p. 652; Peters' Reis., 1862, p. 226, pl. xiii., fig. 11.

Bronze on the upper side, under side darker; head closely and roughly granular and clothed with light bronze hairs, frontal carina distinct, club of antennæ flavous; prothorax either straight laterally in the higher development of the male or ampliate a little past the middle in the lesser, marginate all round and with the median part of the base only slightly aculeate, covered with equidistant, not very closely set granules; elytra somewhat plane, a little ampliate laterally past the shoulders, and gradually attenuate from there to apex, the suture is not much raised, and the supra-humeral callus is distinct, the striæ are fine, geminate, slightly punctate, the intervals are plane, and covered with fine scabrose, slightly setigerous punctures turning to fine granules at the base and on the sides, second interval much broader than the third, except at apex where they are both of equal width; metasternum scabrose and with a distinct, median, longitudinal impressed line; apical spur of tibiæ not thickened, and slightly curved inwardly at apex in both sexes.

Male: Frontal carina arcuate, vertex produced into a very high arcuate lamina emitting two sub-recumbent, arcuate and moderately diverging horns slightly bifid at tip, and not reaching the base of the prothorax in the higher development; prothorax deeply and very broadly excavated in the anterior part, and with the apical part of the median excavation produced as a compressed, sub-horizontal horn, sub-obliquely truncate at tip, and extending as far as the base of the head; the excavation is smooth, but the compressed horn as well as the base of the broad carina on the vertex of the head and also the basal part of the cephalic horns are densely granulose.

Female: Clypeus projecting slightly more than in the male, vertex

produced into a broad, flat lamina emitting two comparatively short, widely divaricating horns sharp at the tip, and nearly similar to the minor male development (fig. 12); median part of the lamina with a sharp, triangular tooth; anterior part of the prothorax excavate, but not very deeply, and having on each side of the excavation a more or less sharp angular tubercle, and in the centre a sharp, more or less highly raised, sub-triangular carina.

Length $15\frac{1}{4}$ –19 mm.; width 9–11 mm.

Hab. Southern Rhodesia (Victoria Falls; Limpopo River, teste Fähræus, Mozambique (Sena and Tette, teste Klug).

ONTHOPHAGUS PANOPLUS, Bates,

Plate XXXV., fig. 11, 11a.

Entom. Monthly Magaz., 1888, p. 203.

O. mashunus, Péring., Trans. Entom. Soc. London, 1896, p. 155.

Dark slightly æneous bronze, opaque on the upper side, moderately shining underneath; clypeus closely granular, frontal carina moderately high; prothorax ampliata laterally but with the median part somewhat straight, marginate all round, convex, and with the median part of the base slightly aculeate, it is closely granulose, and briefly pubescent; elytra narrower than the prothorax at its widest part, not ampliata beyond the shoulder, and attenuate from there towards the apex, not quite plane, shorter than the prothorax, distinctly geminato-striate, intervals plane, filled with closely set, briefly setigerous minute granules, second interval much broader than the third which is of the same width as the fourth, humeral callus distinct; pygidium moderately closely punctured; metasternum scabrose in the centre in front, and punctulate behind; apical spur of anterior tibiæ curved inwards at apex in both sexes, and with the inner angle not spinose.

Male: Genæ and clypeus distinctly recurved, the latter semi-circular, frontal carina very small, vertex produced into a high carina emitting on each side a curved, recumbent compressed horn reaching to a short distance from the base of the prothorax, truncate at apex, in the centre there is a robust, compressed horn deeply emarginate at tip and directed backwards towards the very deep, orbicular cavity of the anterior part of the prothorax which is surmounted by a sub-vertical, long, compressed horn, bluntly bifid at tip, in the small development the shape of the carina and the horns on the vertex is exactly similar to that of the small development of

O. rarus; the prothorax is not excavated in the anterior part, and at the apex of the anterior declivity there is a small tubercle truncate at tip.

Female: Clypeus more acuminate in front than in the male, and with the edge less recurved, frontal carina entire, semicircular, vertex produced as a tri-dentate high carina; prothorax declivous in front, not excavated and having at the top of the declivity two coalescing, flattened tubercles forming a narrow ridge which is emarginate in the centre.

Length 11-14 mm.; width 7-9 mm.

Hab. Southern Rhodesia (Salisbury). Was originally described from German East Africa (Mamboia).

ONTHOPHAGUS MERUS, n. spec.,

Plate XXXV., fig. 38.

Piceous black, shining, very briefly pubescent; head roughly punctulate in the clypeus, and nearly smooth on the vertex, clypeus diagonally elongate, deeply emarginate at tip, and with the angles of the emargination sharp, long, and slightly recurved, no frontal carina; prothorax marginate all round, convex, with the base rounded, a little declivous behind and having at the top of the centre of the declivity a short, longitudinal cariniform tubercle, it is covered with deep, not closely set punctures; elytra ampliato-ovate, finely geminato-striate, intervals plane and having two series of somewhat deep, setigerous punctures; pygidium deeply pitted; metasternum sparsely punctate, basal longitudinal line distinct; inner part of anterior tibiae of male briefly spinose, spur nearly straight in both sexes.

Male: Clypeus more elongate than in the female and with the angles of the incision sharper and more recurved, vertex with a sub-laminate process produced as two divaricating horns slightly curving inwards, and a small inner tooth at the base (not as long as depicted in the fig., but more in the manner of *O. intermedius*, fig. 40a); the prothorax has two impressions in the anterior part.

Female: Vertex of head with a transverse, nearly straight laminate carina truncate on both sides, but placed where the frontal carina should be; prothorax with the same median, cariniform tubercle as in the male, but without any impression.

Length 4-5 mm.; width 3-3½ mm.

Hab. Cape Colony (Kimberley), Southern Rhodesia (Lesappi River).

ONTHOPHAGUS FLAVOLIMBATUS, Klug,

Monatsb. Berl. Acad., 1855, p. 654; Peters' Reis., 1862, p. 237,
pl. xiv., fig. 5.

Glabrous, shining, fuscous bronze on the head and prothorax; elytra fuscous and with a broad flavous band all round except along the base, where, however, there are sometimes a few inconspicuous elongate, slightly rufescent spots; head impunctate, clypeus very elongate, triangular, truncate at tip and slightly emarginate there at middle, genæ oblique and in a line with the clypeus, no clypeal carina, but on each side of the basal part there is a short, conical, upright horn; prothorax convex, finely and densely punctulate, the punctures, however, are not contiguous; elytra ampliate laterally, faintly geminato-striate, striae filled with very deep punctures, intervals impunctate and costate; anterior tibiae of male strongly toothed inwardly, apical spur short, nearly straight; metasternum with a deep, long, sub-median impression.

This description is made from one of the types. The female, which I have not seen, is probably like the male, minus the cephalic horns; but Klug in his short description does not make this clear.

Length 4 mm.; width $2\frac{1}{2}$ mm.

Hab. Mozambique (Sena).

ONTHOPHAGUS BOVINUS, Péring.,

Plate XXXV., fig. 35.

Trans. S. Afric. Philos. Soc., vol. vi., 1892, p. 30.

Black, with a fusco-æneous tinge on the head and prothorax, the latter two parts nearly glabrous; head closely punctulate, genæ rounded, sub-auriculate, clypeus long, rounded laterally, very deeply incised in the middle and with the angles of the incision long, sharp, and strongly curved, two frontal carinae, except in the large male development; club of antennæ fuscous; prothorax convex in the anterior part, but nearly straight laterally, and rounded at base, vaguely sulcate longitudinally near the base and covered with deep, very closely set punctures; elytra moderately ampliatio-ovate, narrowly geminato-striate, striae closely punctate, intervals plane, minutely aciculate and having two series of very briefly setigerous granules not set close to one another, second interval hardly wider than the third, humeral callus distinct; pygidium closely punctulate, nearly glabrous; metasternum punctate, median longitudinal impressed line distinct from the base to the median part; inner part

of anterior tibiæ non-spinose, apical spur nearly straight in both sexes.

Male: No frontal carina in the large development, vertex with two moderately long, upright cylindrical horns not connected at base by a transverse carina; prothorax abruptly declivous in the anterior part, deeply impressed there, and with the top of the declivity carinate and forming a sub-semicircular ridge; in the small development the cylindrical horns are reduced to two conical tubercles similar to those of the female, from which it can hardly be distinguished.

Female: Head with a second arcuate frontal carina very distinct, set close to the first, in the vertex two moderately long, conical horns united at base by a transverse carina; prothorax similar to that of the male.

Length 6-8 mm.; width 4-5 mm.

Hab. Transvaal (no exact locality), Ovampoland.

ONTHOPHAGUS AURICULATUS, Klug,

Monatsb. Berl. Ac., 1855, p. 652; Peters' Reis., 1862, p. 229.

Head and prothorax dark, fuscous green, very briefly pubescent; antennæ flavescent; head roughly punctured on the clypeus and closely punctured on the vertex, genæ rounded, sub-auriculate, a frontal carina uniting the two genæ, which however disappears in the larger development, and close to it another more distinctly raised, clypeus long, very diagonal laterally, deeply and broadly incised at tip and with the angles of the incision long, sharp, and recurved; prothorax ampliate but hardly rounded laterally at middle, and densely covered with broad, deep, closely set punctures and minute ones between the others, the base is rounded, it is marginate all round, and there is no impressed longitudinal line or sulcus in the dorsal part; elytra ampliatio-ovate, distinctly geminato-striate, striæ closely punctate, intervals plane and filled with rugulose punctures similar to those on the prothorax, but rougher, shallower, less regular, and slightly scabrose; second interval not wider than the third, humeral callus distinct; pygidium deeply and irregularly pitted, nearly glabrous; metasternum sub-aculeate at tip, distinctly grooved longitudinally in the middle.

Male: I know only the small development in which the first frontal carina is distinct, the second one a little more raised, and there is no transverse carinate lamina near the base; the prothorax is rounded in the anterior part and not retuse; in the figure given

by Klug, however, the vertex is produced in a raised lamina dentate in the centre and with the two angles produced into a short, dentiform process higher than the median tooth and curving slightly inwards; in all probability the large development will prove to be identical with that of the only female I have seen, and which is easily distinguished by the thick spur of the anterior tibiae strongly curved inwardly at tip.

Female: One frontal carina only, vertex produced at base into two short compressed horns, slightly incurved and slanting a little forward, and not as high as the abruptly slanting anterior part of the prothorax the upper edge of which has a bi-tuberculate carinate median ridge with a small tubercle on each side at a short distance from it.

Length 8 mm.; width $5-5\frac{1}{4}$ mm.

Hab. Southern Rhodesia (Salisbury).

ONTHOPHAGUS VENUSTULUS, Erichs.

Plate XXXV., fig. 41.

Wieg. Arch., 1843, i., p. 234, ♀

Fähr., Insect. Caffrar., ii., p. 305, ♂.

Pale testaceous on the upper side and variegated with patches of bronze or bronze green, under side bronze, legs testaceous; head and prothorax densely pubescent; head somewhat roughly punctulate in the clypeus, sparsely punctured or smooth on the vertex, genae rounded, clypeus elongate, obtuse, and deeply emarginate, almost incised at tip, and with the angles of the emargination sharp and recurved, frontal carina very little distinct in the male, but well defined in the female; prothorax hardly convex, ampliately laterally, finely marginate all round, basal part rounded, it is covered with scabrose punctures set moderately close to one another; elytra ampliately-ovate, narrowly punctato-striate, the striae geminate, intervals plane, and having each two series of small, setigerous punctures; pygidium deeply scabroso-punctate, very little pubescent; metasternum punctulate, median longitudinal line not very distinct; inner part of anterior tibiae briefly spinose at tip in the male, apical spur nearly straight in both sexes.

Male: Vertex produced into a high, laminate carina, having on each side a sharp, vertical, sub-cylindrical horn reaching as high as, or a little higher than the top of the anterior part of the prothorax which is sloping, but is not excavated nor impressed.

Female: Vertex with a basal, arcuate, transverse laminate carina

reaching from side to side; anterior part of prothorax not very sloping, and not excavate nor impressed.

Length 3-5 mm.; width 2-3 mm.

Hab. Cape Colony (Graham's Town, Kowie, Somerset East, East London, Queen's Town, Griqualand West), Natal (Durban, Estcourt), Transvaal (Rustenburg, Potchefstroom), Ovampoland; Southern Rhodesia (Middle Limpopo), Mozambique (Rikatla). It occurs also in Abyssinia, Egypt, Senegal, and Angola.

ONTHOPHAGUS SUGILLATUS, Klug,

Plate XXXV., figs. 40-40a.

Monatsb. Berl. Acad., 1855, p. 654; Peters' Reis., 1862, p. 235.

O. intermedius, Fähr., Insect. Caffrar., ii., 1857, p. 299.

O. hybridus, Fähr., loc. cit., p. 305.

The description of *O. venustulus* applies in all respects to this insect, but the prothorax is not spotted with greenish patches, and is entirely fuscous bronze, and the elytra are more suffused with fuscous longitudinal bands, but the main distinctive character is the shape of the cephalic horns of the male, which, instead of being vertical, curve inwardly and have on each side of the base an inner tooth; in the great development there are also two small but sharp median ones in the centre of the median carina uniting the two horns, and nearly adjoining this carina there is a very minute central sub-conical tubercle, which in the figure is made by error to appear as part of the carina; the prothorax is more retuse than in *O. venustulus*, and impressed on each side. The female, except for the colour, is hardly distinguishable from that of *O. venustulus*.

Length 4-5 mm.; width $2\frac{1}{2}$ -3 mm.

Hab. Cape Colony (Somerset East, Graham's Town), Natal (Maritzburg, Durban, Estcourt), Transvaal (Potchefstroom, Pretoria, Lydenburg), Southern Rhodesia (Salisbury).

ONTHOPHAGUS VERSUTUS, n. spec.

Male: Dark bronze, or sub-anescent, elytra fuscous or black, opaque; legs reddish brown, densely pubescent. Evidently allied to *O. venustulus* and *O. intermedius*; from the former it differs in the shape of the clypeus the genæ of which are not quite as amplified diagonally towards the junction with the clypeus, the

cephalic horn is replaced by a transverse, high laminate carina occupying the half of the vertex; the prothorax is less closely granulose; the elytra are more ampliatio-ovate and have no trace of any testaceous maculae; the size is smaller, and the pubescence is denser.

In spite of these differences, this species might prove to be a mere colour variety of *O. venustulus*. I have had two small developments of the male only at my disposal.

Length 4 mm.; width $2\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Manica).

ONTHOPHAGUS EXIGUUS, Péring.,

Trans. S. Afric. Philos. Soc., vol. vi., 1892, p. 30.

Male: Head, prothorax, and under side bronze, shining, elytra red, shining, with the suture, a basal median patch, two discoidal ones on each side, and occasionally the posterior margin, fuscous; head punctate on the clypeus, nearly smooth on the vertex, clypeus rounded laterally, deeply incised in the centre and with the angles of the incision produced into a triangular, slightly curved tooth, frontal carina very distinct and arcuate, vertex produced into two sharp, vertical horns united by a low, median carina, and having at the base a small, inner tooth; prothorax moderately convex, marginate all round, rounded at base, declivous in the anterior part, and slightly impressed on each side of the anterior part, it is covered with small granules less closely set in the median and anterior parts than on the sides, and replaced above the base by scabrose punctures, the posterior median part has a shallow groove; elytra ampliatio-ovate, deeply geminato-striate with the intervals slightly raised, and having each one series of broad, distant punctures very briefly setigerous, second interval not wider than the third, humeral callus not particularly distinct; pygidium deeply but not closely pitted; metasternum sparsely punctured in the centre, median impressed line not distinct; anterior tibiae non-spinose inwardly at apex; apical spur long, nearly straight.

Length 4 mm.; width $2\frac{1}{2}$ mm.

Hab. Ovampoland (Ojimbora).

The cephalic horns have nearly the same shape as those of *O. venustulus*, and a small inner basal tooth like the one of *O. intermedius*; it is closely allied to *O. rugulipennis*, Fairm., from Somaliland.

ONTHOPHAGUS EMERITUS, n. spec.,

Plate XXXV., fig. 31.

Fuscon bronze, shining, hardly pubescent; genæ rounded but bulging and sub-auriculate, clypeus semicircular, suture of genæ distinctly raised, a frontal carina slightly arcuate and uniting the genæ, and not far from it a second frontal carina very distinct in the female and in the minor development, but less so in the great development, the head is closely granular; prothorax moderately convex, not very ampliate laterally, closely punctulate, not impressed longitudinally in the middle, and with the basal part rounded; elytra not very ampliate laterally, finely geminato-striate, the striae closely punctulate, and the intervals plane and slightly aciculate, second interval very slightly broader than the third, humeral callus distinct; pygidium roughly and closely punctulate; metasternum with a few scattered punctures and with a very distinct median impressed line reaching from the base to the median part; inner part of tibiæ non-spinose at apex, apical spur nearly straight in both sexes.

Male: Vertex with a rectangular lamina developing into a furcate, compressed, divaricating process, deeply incised in the middle and with the angles of the incision acute; in the smaller development the laminate process, instead of being some $2\frac{1}{2}$ mm. in height, is reduced to an arcuate high lamina quadri-dentate but having the external teeth a little higher than the two median ones; the prothorax is declivous in the anterior part, but has no tubercle on the top of the declivity.

Female: Vertex with a high laminate carina slightly bi-sinuate, and with the median part a little more raised than the outer angles; the prothorax is less convex in the anterior part, and has at the top of the declivity two blunt tubercles set at some distance from one another, but in some examples this median part is sub-carinate.

Length 10–10 $\frac{1}{2}$ mm.; width 6–6 $\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Salisbury).

ONTHOPHAGUS CRUCIFER, Klug,

Monatsb. Berl. Acad., 1885, p. 654; Peters' Reis., 1862, p. 237, pl. xiv., fig. 4.

Male: Fuscon bronze, a little lighter on the head, and at times also on the elytra, little shining, densely pubescent; head shining, clypeus elongate, sinuate laterally, deeply emarginate at apex and with the angles of the emargination very distinct and a little reflexed, the genæ are ampliate, and the basal part of the vertex is produced

into a laminate vertical process broadly furcate at tip, and higher than the culminating part of the prothorax; prothorax convex, moderately retuse in front, densely granulose, and having a very distinct, median longitudinal groove reaching from the apex of the anterior declivity to the base; elytra moderately ampliate laterally, geminato-striate, intervals plane, densely pubescent, and having two series of scabrose punctures; pygidium scabroso-punctate; metasternum callose at tip, covered with deep punctures scattered all over the median part which has also a sub-basal impressed longitudinal line; anterior tibiae of male non-spinose inwardly, apical spur nearly straight.

Female: The female differs from the male in the absence of a cephalic horn, and it has instead a short, transverse ridge.

The shape of the cephalic horn in the male is not unlike that of *O. emeritus* (pl. xxxv., fig. 31), but it occupies the whole base of the head, and is thus triangular, then narrow and parallel, and from there broadly bifurcate.

Length $4\frac{3}{4}$ mm.; width 3 mm.

Hab. Mozambique (Sena).

ONTHOPHAGUS INTERSTITIALIS, Fähr.,

Plate XXXV., fig. 36.

Insect. Caffrar., ii., p. 282.

Fusco-æneous, seldom with a greenish tinge on the elytra, head and prothorax hardly pubescent; head closely punctulate, genæ nearly straight, clypeus elongate, rounded laterally, obtuse and slightly emarginate at tip, and with the edge slightly recurved, two frontal carinæ, except in the large development of the male; antennæ flavescent; prothorax moderately convex, marginate all round, slightly sinuate at base near the median part, more or less retuse in front according to sex, closely punctate and having a slight, median impression near the base; elytra a little elongate, narrowly geminato-striate, intervals plane and with three series of not closely set punctures, second interval broader than the third, humeral callus distinct; pygidium deeply punctured; median part of the metasternum almost entirely smooth except in the anterior part, impressed line distinct from base to middle.

Male: A frontal horse-shoe shaped carina abutting on the two horns which are placed near the base, are upright but slightly curved backwards at tip, and are united at the base by a tri-dentate carina; prothorax moderately abruptly declivous in the anterior part, but

not excavated; inner part of anterior tibiæ non-spinose at tip. In the smaller development the cephalic horns are replaced by a sharply tri-dentate basal ridge.

Female: Frontal carina arcuate and reaching on each side to the junction of the genæ with the clypeus, which junction is, however, nearly obliterated, close to this frontal carina there is another one reaching from eye to eye, not quite as arcuate as in the male, and the cephalic horns are replaced by a short, basal, sub-triangular ridge.

Length $9\frac{1}{4}$ –10 mm.; width $5\frac{1}{4}$ – $5\frac{1}{2}$ mm.

Hab. Cape Colony (Burghersdorp), Natal (Durban), Transvaal (Potchefstroom).

It is said to occur also in Abyssinia and the Galla country.

ONTHOPHAGUS BUBALUS, Har.,

Plate XXXV., fig. 33.

Coleopt., Heft. ii., 1867, p. 49.

Bronze green, moderately shining, elytra pale testaceous mottled with fuscous bronze, under side fuscous, glabrous on the upper side; head closely and roughly punctured in the anterior part, scabrose in the frontal part, genæ rounded, sub-auriculate, clypeus elongate, blunt at tip where it is slightly emarginate, edge recurved, a frontal arcuate carina very distinct; antennæ fuscous; prothorax ampliate laterally, moderately convex except in the anterior part, which is declivous, marginate all round, base rounded, covered with slightly scattered elongate granules in the anterior part only, the posterior being impunctate, the base has often a narrow flavescent edge, and there is a faint longitudinal sulcus in the posterior part; elytra elongate, very little ampliatio-ovate, narrowly but deeply striate, the striae are geminate and faintly punctulate, the intervals are raised, sub-rectiform, impunctate and glabrous, the second interval is slightly wider than the third, and the humeral callus is distinct; pygidium aciculate, glabrous; metasternum hardly punctate in the centre, and without any longitudinal impressed line; apical spur nearly straight in both sexes; inner part of anterior tibiæ produced in a long very conspicuous spine in the male.

Male: Vertex produced on each side into a sub-compressed horn curving inward and united at base by a non-dentate ridge; prothorax deeply impressed on each side of the anterior part for the reception of the cephalic horns, and with the central part abruptly declivous and divided into two by a shallow median sulcus uniting behind with the posterior one.

Female: In the female the cephalic horns are replaced by a transverse pre-basal high carina similar to that of the small development of the male; the anterior part of the prothorax is less raised, and the impressions are only faintly indicated. The only distinction between this sex and the minor male development is to be found in the absence of the inner apical spine of the anterior tibiae.

Length $9\frac{1}{2}$ –12 mm.; width $5\frac{1}{2}$ –7 mm.

Hab. Cape Colony (Graham's Town, Uitenhage, Burghersdorp), Natal (Durban, Frere, Newcastle, Estcourt), Transvaal (Potchefstroom).

ONTHOPHAGUS URUS, Harold,

Plate XXXV., fig. 34.

Coleopt., Heft. ii., 1867, p. 49.

Black, opaque, very briefly pubescent; head roughly punctured, slightly plicate transversely on the clypeus which is elongate, not much rounded, laterally obtuse and widely emarginate in front with the apical margin much recurved in the male, but less deeply emarginate and with the margin also less recurved in the female, there is a frontal carina; joints of antennae piceous, club fuscous; prothorax moderately convex, marginate all round, base rounded but slightly aculeate at middle, covered with not closely set small very briefly setigerous granules, and having a longitudinal very shallow furrow in the median part; elytra ampliato-ovate, narrowly geminato-striate, the striae closely punctured and shining, intervals nearly plane and having each two series of minute not very closely set slightly shining tubercles, second interval not wider than the third, humeral tubercle distinct; pygidium deeply and closely pitted; metasternum somewhat closely pitted and having a very distinct, median longitudinal impressed line; apical spur of anterior tibiae nearly straight, inner part of anterior tibiae with a long spine in the male.

Male: Frontal carina very slight in the large development, vertex produced into two nearly upright cylindrical horns curving slightly inwards, obtuse and a little knobby at tip and reaching nearly as high as the top of the anterior part of the prothorax which is declivous, deeply impressed on each side and with the more vertical median part obsoletely bi-tuberculate; in the smaller development the frontal carina is much more raised, and the basal laminate carina is either truncate on each side as in the female, or slightly dentate.

Female: Frontal carina very distinct, vertex with a pre-basal

lamine carina slightly arcuate, extending across the whole width, and not quite truncate laterally; prothorax not quite as retuse as in the male, less deeply impressed laterally in the anterior part, obtusely bi-tuberculate in the centre and with a faint trace of a more obsolete tubercle on each side of the two median ones.

Length 8-10 mm.; width 5-6 mm.

Hab. Cape Colony (Cape Town, Malmesbury, Stellenbosch, Worcester, Namaqualand).

ONTHOPHAGUS VITULUS, Fabr.,

Plate XXXV., fig. 37.

Ent. Syst. suppl., p. 82; Syst. Eleuth., i., p. 48.

O. immundus, Bohem., Res. Eugen., 1858, p. 49.

Black, opaque, briefly but densely pubescent; head roughly punctured on the clypeus, sparsely on the vertex, a frontal carina, which, however, disappears in the large development of the male, clypeus diagonal laterally, emarginate at apex, edge not recurved; antennæ piceous red, club fuscous; prothorax moderately ampliate laterally, marginate all round, basal part rounded, covered with very closely set punctures; antennæ not very ampliate, distinctly geminato-striate, striæ punctured, intervals plane, finely aciculate and having each two series of not closely set, minute, slightly shining setigerous granules, metasternum punctulate in the middle and with a longitudinal impressed line; inner part of anterior tibiæ very briefly spinose in the male, apical spur of anterior tibiæ nearly straight in both sexes.

Male: Vertex produced in two long sub-cylindrical horns, sub-obtuse at tip, a little reclining, and united at base by a carina slightly dentate in the centre in the large development where the horns are higher than or as high as the top of the prothorax which is very deeply excavated and smooth in the centre of the anterior part, the latter having a very long slope; the depth and length of the excavation is in proportion to the length of the cephalic horns, and in the minor development, where the horns are very short and sharp at tip, there is no excavation whatever.

Female: Frontal carina very distinct and arcuate, vertex with a transverse, sub-basal carina not very much more raised than the frontal one; no impression in the anterior part of the prothorax.

Length 4-5½ mm.; width 3-3½ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Worcester, Paarl, Malmesbury).

ONTHOPHAGUS TENUICORNIS, Klug,

Plate XXXV., fig. 39.

Monatsb. Berl. Ac., 1855, p. 654; Peters' Reis., 1862, p. 236.

O. chalcostomus, Fähr., Insect. Caffrar., ii., p. 310.

Sub-coppery bronze, or bronze green, moderately shining, briefly pubescent, but the pygidium is clothed with a dense, conspicuous silky white pubescence; head roughly punctured, genæ rounded, clypeus rounded, but blunt at tip and very slightly emarginate there, frontal carina very faint in the male but distinct in the female; antennæ piceous red, club fuscous; prothorax moderately convex, declivous in the anterior part, ampliate laterally, slightly marginate along the base which is rounded, distinctly depressed longitudinally in the middle in the posterior part, and covered with deep punctures set very close and separated from one another by rugose walls; elytra moderately ampliato-ovate, narrowly but deeply punctato-striate, intervals plane and filled with three series of irregular, nearly confluent, foveolate punctures which are very briefly setigerous, second interval not wider than the third, humeral callus not very prominent; pygidium very closely punctulate and densely pubescent; under side very pubescent; metasternum closely punctured, median longitudinal impressed line not distinct; inner part of anterior tibiæ not spinose at tip, apical spur nearly straight.

Male: Vertex produced into two long vertical horns compressed laterally, and varying greatly in length. They may reach higher than the apex of the prothorax or be reduced to a mere conical tubercle; the prothorax is sloping in the anterior side, and more or less deeply impressed in the centre of the slope according to the development of the cephalic horns.

Female: Vertex produced in a transverse sub-basal, slightly arcuate high lamina the angles of which, in the great development, are sometimes produced in a moderately long horn; prothorax with a median, sub-quadrate, shining tubercle on the top of the anterior declivity.

Length 5-9 mm.; width 3-5 mm.

Hab. Natal (Durban, Estcourt, Frere, Maritzburg); Cape Colony (Griqualand West, Somerset East); Transvaal (Rustenburg); Southern Rhodesia (Salisbury); Mozambique (Rikatla).

ONTHOPHAGUS OBTUSUS, Fähr.,

Insect. Caffrar., ii., p. 313.

Black, but slightly metallic, moderately shining, almost glabrous, elytra chesnut-bronze, very feebly pubescent; antennæ ferruginous,

club fuscous; clypeus semicircular, neither emarginate nor obtuse in front, margin slightly reflexed; head very deeply pitted, almost scrobiculate on the clypeus, it has a very faint trace of a frontal carina, and on the vertex there is a very short horse-shoe-shaped carina with the ends somewhat acute and tubercular; prothorax rounded and ampliate past the middle, marginate along the base, not retuse in front, but having two oblique longitudinal impressions on each side of the median part which unite at about the median part of the disk and are prolonged from there into a median sulcus reaching the base, between the two anterior depressions there is a slightly raised longitudinal, smooth carina, or raised line, and the whole surface is covered with conspicuously foveate punctures which are not contiguous; elytra ampliato-ovate, geminato-striate with the intervals plane and having each one series of broad, slightly asperous punctures; pygidium closely punctate, pubescent; metasternum with a nearly obsolete, median impressed line; prosternum excavate laterally; anterior tibiae quadri-dentate outwardly, straight at tip, apical spur not long, and curving outwardly.

Female unknown.

Length $3\frac{1}{2}$ mm.; width 2 mm.

Not unlike *O. merus*, but less ampliato-ovate and with the clypeus not projecting in front; like the latter it possesses a longitudinal median carina in the anterior part of the prothorax which is, however, not retuse, and this carina is more in the shape of a raised line than of an elongate tubercule as in *O. merus*; the cephalic horns are differently shaped; and the prosternum is more deeply impressed laterally.

The description of the male is made from Fähræus' type labelled "*Caffraria*."

ONTHOPHAGUS CORNICULATUS, Reich.,

Plate XXXVI., figs. 1, 1a.

Voy. Galin. Abyss., p. 235, pl. xix., fig. 8.

O. verticalis, Fähr., Insect. Caffrar., ii., p. 308.

O. haroldi, Péring., Trans. S. Afric. Phil. Soc., 1888, p. 97, pl. i., figs. 5, 8a.

Head and prothorax bronze, shining but very densely pubescent, elytra very pale testaceous with a bronze suture, legs testaceous, under side bronze maculated with testaceous; head deeply and closely pitted along the clypeus, and only slightly on the vertex, genæ straight, projecting beyond the clypeus which is semicircular laterally, but is blunt and more or less deeply emarginate at tip,

and has the margin recurved, the genæ are sometimes a little rounded and sub-auriculate in the great development of the male, and there is a frontal carina which, however, disappears sometimes; prothorax ampliate laterally, distinctly marginate all round, retuse in front in both sexes, and covered with fine, very closely set scabrose punctures, turning to minute granules on the sides; elytra ovate, narrowly striate, striae not distinctly geminate, intervals plane and entirely filled with very closely set, minute setigerous punctures, second interval broader than the third; pygidium very closely punctured and clothed with a long, dense pubescence; metasternum punctulate in the median part, except for a narrow, smooth, longitudinal space in which the impressed line is not very distinct, inner part of anterior tibiae briefly spinose in the male, apical spur long and nearly straight in both sexes.

Male: Vertex of the head either produced at the base into two compressed horns which are vertical for half the length and then curve outwardly and upwardly and have no trace of transverse basal carina, or having a median, not much raised, transverse carina the ends of which project on each side in the shape of a curved, compressed horn; prothorax deeply excavate in the anterior part, and having a horizontal, compressed lamina projecting from the centre of the anterior part and emarginate at tip; in the smaller development this median process of the anterior part of the prothorax is more in the shape of a slightly projecting, transverse, sub-arcuate ridge, and the lateral cavities have a very distinct tooth or tubercle outwardly.

Female: Frontal carina hardly visible, vertex with a high transverse ridge extending from eye to eye, and bent diagonally at right angles above the eye as far as the base; in the large development this lateral carina is sharply dentate, and even produced into a distinct, vertical horn, very much as in the minor development of the male.

The armature of the head of the male and even of the female differs so much that had I not seen a large number of examples of this species, I would still consider my *O. haroldi* as different from *O. corniculatus*. *O. verticalis*, Fahr., is an intermediate development.

Length 6-9½ mm.; width 4-5 mm.

Hab. Natal (Estcourt), Transvaal (Potchefstroom, Rustenburg), Southern Rhodesia (Victoria Falls, Middle Limpopo), Ovampoland (Omrromba).

It was originally described from Abyssinia.

ONTHOPHAGUS VINCTUS, Erichs.,

Wieg. Arch., 1843, i., p. 233.

O. obesus, Fahr., Ins. Caffr., ii., p. 298.

Dark bronze, moderately shining, very briefly pubescent, outer margin of elytra testaceous, humeral part also with a moderately large spot of the same colour; clypeus short, semicircular, a little emarginate or incised at the tip, according to the sexes, frontal carina hardly distinct, clypeus roughly punctured, vertex smooth; antennæ flavescent; prothorax hardly ampliate laterally in the male, but a little more rounded in the female, little convex, marginate laterally and in front, but not along the base, covered with moderately deep punctures moderately closely set, and having almost no trace of dorsal median line; elytra elongate, very little ampliate laterally, narrowly but deeply geminato-striate, intervals plane and having two series of scabrose, briefly setigerous punctures, second interval not wider than the third, humeral callus very distinct; pygidium with a few scattered, setigerous punctures; metasternum punctulate in the central part, impressed median line distinct; inner part of anterior tibiæ more angular than spinose in the male, apical spur long, nearly straight.

Male: Clypeus emarginate; vertex with two basal, conical, short horns reduced in the smaller development to two blunt tubercles, or even disappearing altogether; anterior part of prothorax sub-retuse and with the apical margin distinctly bi-sinuate in the large development and not at all in the smaller.

Female: Clypeus incised; vertex with a faint trace of two tubercles; prothorax simple.

Length $5\frac{1}{2}$ – $6\frac{1}{2}$ mm.; width $3\frac{1}{2}$ –4 mm.

Hab. Cape Colony (Graham's Town, Griqualand West, Port St. John), Natal (Estcourt, Durban).

It is recorded from Zanzibar, Northern Massailand, Gallaland, Guinea, and Senegal.

ONTHOPHAGUS INSULSUS, n. spec.

Male: Black, shining, hardly pubescent; clypeus semicircular, very slightly emarginate at tip and with the edge hardly recurved, covered with deep rugose punctures, the vertex is smooth, the frontal carina is very faint, and in the base are two short conical horns apart from one another; prothorax moderately convex, not ampliate laterally and nearly straight at middle, but rounded in the anterior and posterior parts, not impressed longitudinally at

middle nor depressed in front, marginate laterally and in front, but very slightly along the base which is rounded, and it is covered with moderately closely set punctures; elytra geminato-striate, striae closely punctured, intervals nearly plane and having a double series of shallow, very briefly setigerous punctures, second interval hardly wider than the third, humeral callus distinct; pygidium covered with deep, scattered punctures, metasternum punctured in the centre; apical spur of anterior tibiae very long, nearly straight; inner part of tibiae non-spinose at apex.

Female unknown.

Length 4 mm.; width $2\frac{3}{4}$ mm.

Hab. Natal (Eshowe).

ONTHOPHAGUS FUGITIVUS, n. spec.

Male: Bronze black, densely pubescent; head covered with scabrose punctures, genae rounded, clypeus deeply incised in the centre and with the angles of the incision projecting as a sub-triangular recurved tooth, frontal carina distinct, vertex produced at base into a transverse laminate carina the angles of which are dentate; antennae flavescent, club infusate; prothorax covered with moderately close granules, somewhat convex in the anterior part, retuse in front, but not impressed, moderately ampliate laterally, and marginate all round, the base is rounded; elytra moderately ampliatio-ovate, geminato-striate, with the intervals plane and having a duplicate series of slightly scabrose punctures bearing a long, greyish seta, second stria not wider than the third; pygidium pitted; metasternum deeply but not very closely pitted at middle, longitudinal impressed line very distinct; inner part of anterior tibiae briefly spinose, apical spur nearly straight.

Female unknown.

Length 4 mm.; width $2\frac{3}{4}$ mm.

Hab. Transvaal (Klerksdorp).

ONTHOPHAGUS DECIPIENS, n. spec.

Male: Head, prothorax, and under side æneous black, elytra flavous and with two discoidal round spots on each; head very closely and roughly punctured on the clypeus and part of the vertex, but the basal part is smooth and shining, clypeus rounded laterally, deeply emarginate in the centre, but with the angles of the emargination not very sharp, and not recurved, between this frontal carina

and the smooth space on the vertex are two blunt, very short, tuberculiform conical horns with a very small space between them; antennæ piceous, club fuscous; prothorax moderately convex, somewhat retuse, but not impressed in the anterior part; it is ampliate laterally, rounded at base, marginate all round, has no longitudinal impressed line in the centre, and is covered with scattered, deep, very briefly setigerous punctures; elytra very ampliate, geminato-striate, intervals slightly raised and having on each side a series of punctures distinct from one another and impinging on the stria, these punctures are hardly setigerous except on the sides, the second interval is not wider than the third, and the humeral callus is not more than ordinarily distinct; inner part of anterior tibiæ spinose; apical spur moderately long and nearly straight.

Length $3-3\frac{1}{2}$ mm.; width $2\frac{1}{4}-2\frac{1}{2}$ mm.

In some examples the median part of the base is slightly fuscous, the first discoidal black, round spot varies a little in size, and is found at about one-third of the length on the fourth and fifth intervals, and the second one is placed beyond the middle on the second and third intervals; in one example from Natal the first spot is entirely wanting.

Hab. Mossamedes, Natal (Malvern).

ONTHOPHAGUS TALPA, Fahr.,

Insect. Caffrar., ii., p. 300.

O. guttatus, Bohem., Öfvers. Vet. Ak. Förh., 1860, p. 114.

Male: Dark bronze or sub-coppery bronze, shining, elytra a little darker than the head and prothorax, antennæ sub-flavescent, elytra with a humeral, broad, reddish patch and an apical one on each side, or entirely without them; clypeus semicircular but deeply emarginate at tip and with the sides of the emargination recurved and triangular, there is no frontal carina, the clypeus is scrobiculate and the vertex is roughly punctulate and granular, and on the vertex are two tuberculiform horns nearly equi-distant from the frontal carina and from the apex, and uniting sometimes at the base; prothorax convex, marginate in front and laterally, but not distinctly along the base which is rounded, it is ampliate laterally and is covered with deep, equi-distant, round punctures, and is very briefly pubescent; in the large development the anterior part is slightly bi-sinuate at apex; elytra ampliate, very narrowly striate with the striæ not distinctly geminate, the intervals are convex,

sub-pectiform in the dorsal part, and have two series of broad, deep, slightly setigerous punctures; pygidium deeply and moderately closely punctured; metasternum punctate in the centre, median impressed line little distinct; inner part of anterior tibiae non-spinose at tip, apical spur very long and slender, nearly straight.

Female unknown.

Length $4-4\frac{1}{2}$ mm.; width $2\frac{1}{2}-2\frac{3}{4}$ mm.

Hab. N'Gamiland, teste Boheman, Southern Rhodesia (Salisbury), Limpopo River (teste Fähræus), Natal (Estcourt).

ONTHOPHAGUS AMBIGUUS, n. spec.,

Plate XXXVI., fig. 2.

Head and prothorax bronze or bronze with a greenish tinge, shining, elytra pale testaceous and with fuscous, irregular maculae sometimes suffusing the median part of the disk; head roughly scabrose in the anterior part and clothed with rigid dense setae, smooth in the basal part, clypeus semicircular, slightly emarginate at apex, frontal carina distinct; prothorax ampliate laterally, very little convex, marginate all round although less conspicuously so along the base which is rounded, than on the sides, punctulate but not closely, and hardly pubescent; elytra more elongate than ampliato-ovate, narrowly geminato-striate, intervals plane and having two and one series of scabrose, briefly setigerous punctures not closely set; pygidium with a few scattered setigerous, scabrose punctures; metasternum smooth in the median part except for a few deep punctures in the anterior part, median impressed line distinct; inner part of anterior tibiae non-spinose at tip, apical spur nearly straight in both sexes.

Male: Vertex of head with two sharp, somewhat short, conical horns close to the frontal carina, anterior part of prothorax sloping, deeply impressed, and having in the centre of the apical margin a conical tubercle, and two blunter ones at the top of the anterior declivity, the impression is less impressed, and the anterior tubercle as well as the apical ones are less conspicuous when the cephalic horns are little developed.

Female: There is no carina on the vertex, and the prothorax has merely a small impression and a faint trace of a small tubercle in the anterior part.

Length $7-8\frac{1}{4}$ mm.; width 4-5 mm.

Hab. Natal (Isipongo).

ONTHOPHAGUS VIRESCENS, Har.,
Coleopt., Heft. ii., 1867, p. 48.

O. nitidulus, Klug, Monatsb. Berl. Acad., 1855, p. 654; Peters' Reis., p. 238, pl. xiv., fig. 7.

Black, shining, glabrous, elytra with a pale flavous lateral band, legs piceous red; head smooth except on the clypeus which is sub-punctate, clypeus semicircular, deeply emarginate at tip, the frontal carina is distinct; prothorax a little ampliate laterally but not rounded at middle, convex, marginate all round and with the base rounded, impunctate except for a few fine punctures on the sides in the anterior part; elytra ovate, deeply but narrowly striate, striae not geminate nor punctate, intervals plane, impunctate, second interval not broader than the third, humeral callus not distinct; pygidium deeply but not closely pitted, and slightly pubescent; metasternum quite smooth in the centre, median impressed line hardly distinct except at the base; apical spur of anterior tibiae slender, nearly straight.

Male: Basal part of the head bi-tuberculate, anterior part of the prothorax excavate.

Female: Vertex without basal carina, prothorax neither excavate nor impressed in the anterior part.

Length $4\frac{1}{2}$ mm.

Hab. Southern Rhodesia (N.E. Mashonaland), Mozambique (Sena, teste Klug).

ONTHOPHAGUS PATRICIUS, n. spce.

Shining bronze on the head and prothorax, with sometimes a tinge of bronze green, elytra also bronze, moderately shining and having a broad lateral and posterior flavescent band, and densely pubescent; antennae flavescent, club fuscous; head very rugose; genae angular laterally at middle, clypeus deeply emarginate at middle and with the angles of the emargination sharp and a little recurved, in the male there is no trace of a frontal carina, but in the female this carina is visible, and in the centre of the vertex there is a transverse laminate carina occupying in both sexes about one-half of the width, slightly emarginate in the middle and with the outer angles slightly aculeate in some males; prothorax moderately convex, ampliate laterally, marginate in front and on the sides but not distinctly so along the base, covered with deep punctures divided by raised, rugose walls which impart to it a very roughly shagreened appearance, and densely pubescent, dorsal part with a median longitudinal furrow running from the base to two-thirds of the length; elytra

ampliato-ovate, narrowly but deeply geminato-striate, and with the intervals slightly raised and having each three series of deep, round scrobiculate punctures, second interval not wider than the third, humeral callus distinct; pygidium finely shagreened and covered with a dense greyish pubescence; metasternum deeply punctured in the centre and smooth only in the impressed line which is distinct; inner part of anterior tibiæ non-spinose at the tip and apical spur long, moderately slender and nearly straight in both sexes.

The presence of a slight frontal carina in the female is the only outward character distinguishing it from the male.

Length 5-6 mm.; width 3-3½ mm.

Hab. Natal (Estcourt).

ONTHOPHAGUS DISPAR, n. spec.

Black, sub-opaque, very slightly pubescent; head very rugose, genæ rounded, projecting a little laterally, clypeus semicircular, sub-truncate at tip, and a little emarginate there, no trace of frontal carina, in the median part of the vertex there is a high laminate carina extending transversely over the greater part of the width, truncate and aculeate at both ends and with the median part sub-dentate; antennæ piceous red, club fuscous; prothorax ampliate laterally, rounded at base where it is not distinctly marginate, covered with deep, round, closely set punctures divided by narrow, rugose walls, but granulose on the side, very briefly pubescent and having a faint trace of an impressed longitudinal line in the posterior part of the disk; in the anterior part there are, in both sexes, two median elongate tubercles often coalescing so as to make a short transverse carina; elytra distinctly ampliato-ovate, very narrowly and deeply striate, intervals raised and filled with three series of strongly scrobiculate briefly setigerous punctures which near the base are scabrose, and are replaced by granules on the two first intervals, second interval slightly wider than the third, humeral callus moderately distinct; pygidium deeply and closely pitted and briefly pubescent; metasternum deeply and closely punctured in the middle, in the male there is a basal impression which is absent in the female, and the median line is also more distinct; inner part of anterior tibiæ slightly angular in the male but not spinose; in this sex the apical spur is thick and curved inward at tip, whereas in the female it is slender and nearly straight.

Length 5½-6½ mm.; width 3½-4 mm.

Hab. Natal (Malvern).

ONTHOPHAGUS INCERTUS, n. spec.

A very close ally of the preceding species, from which it differs by the colour of the head and prothorax which are bronze green, and of the elytra, which are also bronze but slightly infusate and have at the base three elongate flavescent patches on each side on the second and fourth and between the sixth and seventh intervals, and a posterior transverse one reaching from the second to the third or fourth intervals at a short distance from the apex, the transverse carina on the vertex is straighter and truncate at both ends in the female, and the bi-tuberculate carina of the anterior part of the prothorax projects more above the retuse part.

Male unknown.

Length 6 mm. ; width $3\frac{1}{2}$ mm.

Hab. Ovampoland (Omiramba).

ONTHOPHAGUS OBTUTUS, n. spec.

Head and prothorax bronze or bronze green, little shining, densely but briefly pubescent, elytra light chestnut brown, slightly infusate in the median part, antennæ piceous red, club infusate ; head roughly punctulate in the female, but nearly smooth in the centre in the male, genæ attenuate diagonally from the base, clypeus acuminate, very slightly blunt at tip, not emarginate and distinctly depressed along the anterior margin which is raised, frontal carina distinct in the female only ; prothorax carinate all round, moderately convex, slightly aculeate in the median part of the base, covered with very closely set, scabrose punctures, clothed with a dense pubescence, and having in the posterior part a longitudinal narrow sulcus and a basal impression ; elytra ampliato-ovate, narrowly and not deeply geminato-striate, intervals nearly plane, and filled with very minute briefly setigerous granules, second interval broader than the third ; pygidium feebly punctulate ; metasternum with a broad, median, longitudinal smooth space without impressed line ; anterior tibiæ briefly spinose inwardly at tip in the male, apical spur moderately slender, nearly straight in both sexes.

Male: Head with an arcuate, highly raised carina nearly equidistant from the base and the anterior part of the clypeus ; anterior part of prothorax vertical, deeply bi-impressed in the centre, having in the middle a blunt, vertical tubercle dividing the two impressions, and a smaller but sharper one on the outer edge of the impressions ; in the minor development the prothorax is hardly retuse, and has four small tubercles in the anterior part, of which the two median ones are set close to one another.

Female: The only distinctive character of this sex is the presence of a frontal carina, the second one on the vertex is situate nearer to the base than in the male; the prothorax has hardly any trace of the anterior tubercles.

Length 9–10 mm.; width 5–6 mm.

Hab. Cape Colony (Burghersdorp), Transvaal (Potchefstroom).

ONTHOPHAGUS BI-PLAGIATUS, Pér.,

Plate XXXVI., fig. 3.

Trans. S. Afric. Phil. Soc., 1888, vol. iv., p. 99.

O. suturalis, Pér., loc. cit., p. 100.

Male: Black, very shining, nearly glabrous, elytra with a basal, pale flavous macula extending from the first to the fourth stria on each side, or entirely pale flavous with the suture, and sometimes part of the apical margin, black; antennæ infusate; head deeply but not closely punctate on the clypeus which is rounded laterally and somewhat obtuse and slightly emarginate at tip, genæ angular at middle, there is a very distinct, arcuate frontal carina, the vertex is smooth, and close to the base there is a transverse, not much raised carina, slightly sinuate in the middle; prothorax very convex, ampliate laterally, marginate all round, very slightly acuminate in the median part of the base, quite smooth in the median and posterior part but having a few scattered deep punctures on the sides of the anterior part, it has a deep, narrow excavation in front, and the upper sides of the excavation are sharply aculeate; elytra ampliato-ovate, narrowly striate, striæ shallow, closely punctate but not distinctly geminate, intervals plane and quite impunctate, second interval not wider than the third, humeral tubercle indistinct; pygidium with deep, scattered punctures very briefly setigerous; metasternum smooth in the median part and having at the base a broad, deep, round impression; anterior tibiæ with a strong inner tooth at tip, apical spur slender.

Female unknown.

Length 7–7½ mm.; width 4–4½ mm.

Hab. Cape Colony (Beaufort West, Worcester, Griqualand West), ? Transvaal.

ONTHOPHAGUS PALLIDIPENNIS, Fähr.,

Insect. Caffrar., ii., p. 303.

Black, shining, nearly impunctate and glabrous, elytra pale

flavous with the suture black, antennæ piceous red, club fuscous; head impunctate in the centre and base, but having a few deep, round punctures on the clypeus which is sub-semicircular, but deeply and narrowly emarginate at tip, genæ rounded and bulging a little, in the centre of the head there is a very well-defined, high, arcuate frontal ridge, and a transverse one not higher than the frontal one along the base; prothorax plane, very little ampliate laterally and not rounded in the middle, impunctate except for a few punctures on the anterior sides, marginate all round and with the base arcuate; elytra elongato-ovate, and having series of fine punctures instead of geminate striæ, intervals plane and impunctate, second interval not wider than the third, humeral callus indistinct; pygidium with a few, deep, scattered punctures; metasternum smooth in the centre, without an impressed line but having a very shallow elongate basal impression; inner part of anterior tibiæ strongly dentate inwardly at tip in the male; apical spur moderately slender, nearly straight in both sexes.

The distinctive characters between this species and *O. bi-plagiatus* consist in the more elongated and more flattened shape of the prothorax which is very faintly punctulate laterally in the anterior part instead of being deeply pitted there as in the latter, and the metasternum has only a slight, elongate basal impression instead of a broad and deep round one.

Length 5-6½ mm.; width 3-4 mm.

Hab. Natal (Durban), Transvaal (Potchefstroom, Pretoria, Rustenberg), Southern Rhodesia (Salisbury, Victoria Falls).

ONTHOPHAGUS SEMIFLAVUS, Bohem.,

Öfv. Vet. Akad. Forhandl., 1860, p. 113.

Dark bronze, nearly black underneath, elytra very pale flavous, nearly ivory white; genæ rounded, auriculate; clypeus short, rounded, a little sinuate laterally before the apical part where it is obtuse, and very distinctly emarginate with the angles of the emargination rounded; it has a few scattered, deep punctures, and there are a few granules in the centre of the vertex, the frontal carina is distinct and arcuate, the juxta-basal one is as high as the frontal, and extends the whole length of the base; prothorax moderately convex ampliate laterally, rounded at base, distinctly marginate all round, and sprinkled with remote, deep punctures all over the surface; elytra finely striate, striæ punctate but apparently not geminate,

intervals smooth, impunctate, suture occasionally suffused with fuscous black; pygidium very closely punctate; inner part of anterior tibiæ produced into a long, dentate spine at tip, apical spur curved outwardly in the male, nearly straight in the female.

Allied to *O. pallidipennis*, but smaller, and with the prothorax a little more convex, and the elytra a little more ovate; the prothorax is deeply punctured all over, the punctures being, however, widely separated, and the shape of the clypeus and genæ is quite different.

Length 4-4½ mm.; width 2¼-2½ mm.

Hab. Damaraland (neighbourhood of River Swakop, teste Bohe-man), Mossamedes.

ONTHOPHAGUS SIGNATUS, Fähr.,

Insect. Caffr., ii., p. 304.

Head and prothorax dark bronze, elytra flavescent, with the base, the suture and a broad dorsal sinuate band fuscous or fuscous bronze; it is moderately shining on the upper side, and densely pubescent; head with a few scabrose, somewhat rough punctures on the side of the clypeus but not in the central apical part, genæ rounded, auriculate, clypeus distinctly sinuate laterally, widely incised in front, and with the angles of the incision somewhat denticiform and recurved, there are two carinæ on the vertex, a frontal and a basal one in both sexes, the frontal carina is a little arcuate, and very distinct, the basal is more raised than the frontal, and transverse; prothorax convex, ampliate laterally, marginate all round, rounded at the base, not impressed in the anterior part, and having a faint median longitudinal sulcus in the posterior part, it is covered in the anterior part with somewhat closely set distinctly scabrose punctures, while in the posterior part the punctures are round and smooth; elytra sub-ampliato-ovate, geminato-striate, striæ moderately deep and punctulate, intervals plane and having each two series of setigerous scabrose punctures, second interval very little broader than the third; pygidium feebly punctulate; metasternum deeply and closely punctured, and having a distinct smooth median longitudinal impressed line running from the base to two-thirds of the length; antennæ flavescent with the club fuscous; inner part of the anterior tibiæ non-spinose in the male; apical spur moderately slender, and nearly straight.

Length 5½-6 mm.; width 3-3½ mm.

Hab. Mozambique (Rikatla).

ONTHOPHAGUS MODESTUS, Har.,

Berl. Zeitsch., 1862, p. 403.

O. pusillus, Fahr., Insect. Caffr., ii., p. 312.

Coppery bronze, shining on the head and prothorax, elytra not duller, surface briefly but very densely pubescent; head deeply and closely punctate, genæ and clypeus rounded laterally, the latter is a little acuminate, and emarginate at tip but not deeply, and the whole margin is slightly reflexed, there is an arcuate frontal carina united laterally with a short, transverse one in the median part of the vertex between the eyes, and there is also a faint trace of a short basal one in the male, and only a frontal one in the female; antennæ with the club fuscous; prothorax somewhat convex, ampliate and rounded laterally, marginate in front and on the sides but not distinctly so along the base which is rounded, it is covered with deep, round punctures closely set, but not rugose; elytra ampliatio-ovate, finely but deeply geminato-striate, intervals raised in the posterior part of the disk and very roughly punctured, intervals between the punctures raised in the anterior part, second interval not broader than the third, humeral callus moderately distinct; pygidium very closely and deeply pitted; metasternum punctulate, median longitudinal line moderately impressed; inner part of anterior tibiæ non-spinose at tip, apical spur slender, curving a little inwardly at tip.

Allied to *O. scabrosus*.Length $3\frac{1}{2}$ mm.; width 2 mm.*Hab.* Natal (Maritzburg), Orange River, teste Fähræus.

ONTHOPHAGUS INCONSPICUUS, Fahr.,

Insect. Caffr., ii., p. 314.

“Body black, with a sub-violaceous tint; head sub-rotund and with the sides sub-angulate in the middle, depressed on the upper side, rugosely punctate everywhere and with the margin of the clypeus slightly reflexed, a little sinuate at apex, and having a frontal transverse, arcuate carinule; antennæ ferruginous, club sericeous; prothorax twice as broad as long, slightly bi-sinuate at apex, little produced sub-angularly at base, and with the sides moderately rounded and ampliate, convex on the upper side, closely and moderately deeply punctate, and obsoletely impressed in the centre of the base; elytra slightly ampliate before the median part, a little broader than the prothorax, and longer by one-half, base emarginate along the latter, obtusely rounded together at apex, finely geminato-striate, and with the intervals almost plane and having each two

series of scabrose, very briefly pubescent punctures; pygidium æneous, closely punctured, pubescent; metasternum deeply and moderately closely punctured, median longitudinal line almost obliterated except in the basal part; " anterior tibiæ quadri-dentate.

Length $3\frac{1}{4}$ mm.; width 2 mm.

This description is partly translated from Fähræus, partly made from the mutilated type in which the head, thorax, and prosternum are missing. It is clearly impossible to recognise this species from the original description alone, which I suspect was made from a female example. Harold gives it as synonymous with *O. fuliginosus*, Roth, from Abyssinia, and includes it in the genus *Caccobius*. He may possibly have seen the type before it was mutilated.

Roth's specific name, however, was used for a species from Tasmania described by Erichson in 1842, while Roth's descriptions appeared in 1851, and I propose to change the name into *O. incertus*.

Hab. Natal, teste Fähræus.

ONTHOPHAGUS INDIGUS, n. spec.

Black, opaque, very densely pubescent, head and prothorax slightly æneous; head roughly granuloso-punctate, genæ rounded or slightly angular at middle, clypeus semicircular, sub-truncate and slightly emarginate at tip, there is a very arcuate frontal carina reaching from eye to eye, and a transverse one of the same height on the vertex, shorter than the frontal one, and equi-distant from it and from the base; antennæ piceous red, clava fuscous; prothorax ampliate laterally, not very convex, carinate all round but less distinctly along the base than on the outer sides, median part of the base a little acuminate, it is covered with not closely set, equi-distant, very distinct granules, and is slightly depressed in the middle of the basal part; elytra a little ampliate, very distinctly geminato-striate, striæ closely punctulate and shining, intervals plane and having two series of very closely set setigerous granules; pygidium very closely punctate and densely pubescent; metasternum aculeate in front, deeply but sparsely punctate, and with the median longitudinal impressed line distinct; inner part of anterior tibiæ a little aculeate at tip in the male, apical spurs slender, curving outwardly in the male, and much less in the female.

Length 5 mm.; width $2\frac{3}{4}$ mm.

Resembles *O. pilosus*, and also *O. perniciosus*, and is as pubescent as these two species; it is, however, smaller even than small examples of the former from which it is at once distinguished by the shape of the clypeus which is hardly emarginate in front, and by the presence

of a frontal carina; from the latter it is also differentiated by the presence of a frontal carina, and the granules of the prothorax are less closely set.

Hab. Southern Rhodesia (Salisbury).

ONTHOPHAGUS LACERATUS, Gerst.,

Die Glied. Faun. d. Sansib. Geb., 1873, p. 132, pl. vii., fig. 2.

O. bituberculatus, Oliv., Boh., Öfv. Vet. Ak. Förh., 1860, p. 112.

Black, not very metallic, with the elytra pale testaceous and with a very broad basal median fuscous patch varying greatly in size, or entirely black; antennæ yellow; head covered with rough punctures along the clypeus and scabrose on the vertex, genæ rounded, bulging a little, clypeus rounded laterally, deeply and broadly incised at tip and with the angles of the incision produced into a sharp recurved tooth; prothorax very convex, covered with small tubercles set moderately close to each other and bearing a squamiform flavescent seta, in the large development of the male there is a median shallow impression in the anterior part which is absent in the intermediate and minor development, as well as in the female, it is marginate all round and the base is rounded; elytra oblongo-ovate, narrowly and not deeply geminato-striate, with the striæ closely punctate, intervals convex, and filled at the base with numerous closely set punctures bearing a squamiform seta, but which in the posterior part are arranged in two series; pygidium vaguely punctulate; median part of prosternum with a broad, smooth space with a basal, short, impressed longitudinal line; inner part of anterior tibiæ very distinctly spinose in the male but not in the female which, but for this character, is entirely like the male; apical spur moderately slender, curving outwardly in the male, and nearly straight in the female.

Length $6-8\frac{1}{2}$ mm.; width $4-5\frac{1}{2}$ mm.

Hab. Natal (Durban, Malvern, Maritzburg), Damaraland (Salem, Kuisip, teste Boheman).

This species, which was first described from examples collected in the island of Zanzibar, occurs also in Massailand and Somaliland. It is evidently very closely allied to, if not synonymous with, *O. bituberculatus* and *O. discoideus*, Oliv., and was considered to be identical with the former by Boheman. All the examples from Natal which I have seen are entirely black.

ONTHOPHAGUS ASIMILIS, n. spec.

Dark metallic green, brighter and somewhat coppery on the head

and prothorax, elytra dark brown or violaceous, and opaque; palpi and antennæ yellow; genæ triangular, clypeus rounded laterally, deeply and broadly emarginate and with the angles of the emargination triangular and slightly reflexed, the head is roughly, although not very deeply, punctured, sub-granulose behind, and a little past the centre of the vertex there is a transverse carina moderately raised and occupying half the width in the male, while in the female this carina, which is similar in height and length to that of the male, is more arcuate; prothorax convex, ampliate, rounded laterally, and very deeply emarginate near the base, it is marginate in front and laterally but not along the base which is slightly aculeate in the middle, has a deep, triangular median posterior sulcus reaching from about the median part of the disk to the base, is covered with very closely set elongate granules, and is briefly but densely pubescent; elytra convex, ampliate, geminato-striate, striæ shallow, not distinctly punctate, intervals filled with briefly setigerous, slightly elongate granules, irregularly tri-seriate in the anterior part, and more regularly bi-seriate in the posterior except on the third interval which is a little narrower than the second, humeral callus distinct; pygidium closely scabroso-punctate; metasternum deeply and closely punctured, median line distinct near the base; anterior tibiae non-spinose in the inner apical part in the male, apical spur long, curving outwardly in the male, and a little more slender and straighter in the female.

Length $5\frac{1}{2}$ –6 mm.; width $3\frac{1}{2}$ mm.

Hab. Bechuanaland.

ONTHOPHAGUS COPTORHINODES, n. spec.

Female: Black, very shining, and extremely briefly pubescent; edge of clypeus and legs piceous red; head roughly punctate in front, genæ very projecting and broadly triangular at middle, clypeus quite diagonal laterally and very deeply and broadly incised in the middle, with the angles broadly triangular, there is a frontal arcuate carina, but none on the vertex or at the base; prothorax convex, straight or very little rounded laterally, marginate all round, but less distinctly along the base which is rounded; there is no median posterior impressed line, and it is covered with deep, not closely set punctures; elytra somewhat convex, ampliate, very narrowly geminato-striate, striæ not closely punctulate, intervals plane, except the first three which are a little raised, they have each two rows of regular, briefly setigerous punctures set at some distance from each other, second interval not wider than the third,

humeral callus indistinct; pygidium punctulate, metasternum sparsely punctate, slightly carinate before the apical part; inner part of anterior tibiae non-spinose; apical spur long, moderately slender, and nearly straight.

Length $3\frac{3}{4}$ mm.; width $2\frac{1}{2}$ mm.

This interesting species has the appearance of a *Coptorhina* of the *C. nana* group, and but for the length of the basal joint of the posterior tarsi and the shape of the metasternum it might be mistaken for a species of this genus.

Hab. Natal (Estcourt).

ONTHOPHAGUS VICARIUS, n. spec.

Black, moderately shining, very briefly pubescent; head very roughly punctured on the clypeus, vertex closely punctulate, genæ rounded but bulging at middle, clypeus slightly sinuate laterally, deeply and broadly emarginate in the centre, and with the angles of the emargination slightly recurved, frontal carina very distinct in both sexes, arcuate and continued laterally as far as the eye, vertex with a sub-basal transverse carina, not much raised, obliterated in the centre, and also reaching the eyes; antennæ flavescent; prothorax ampliate laterally, moderately convex, rounded at base and distinctly marginate all round, it is covered with deep, closely set punctures, and has a deep, narrow sulcus in the posterior part of the disk from the median part to the base; elytra very little ampliate laterally, narrowly geminato-striate, striae punctured, intervals raised, sub-pectiform laterally, and having each two series of more or less evanescent punctures, second interval not much wider than the third, humeral callus not very distinct; pygidium deeply and moderately closely pitted; metasternum punctulate and having a narrow, smooth median space and an impressed longitudinal line in the centre only; inner part of anterior tibiae very briefly spinose at tip in the male, apical spur long, moderately slender, and nearly straight in both sexes.

This species might at first sight be taken for the female of *O. carbonarius* or of *O. interstitialis*. It is, however, distinguished from these two species by the raised intervals of the elytra, and the impressed line on the posterior part of the disk of the prothorax; the clypeus is much more deeply emarginate than in *O. carbonarius*, and the basal carina is different from that of *O. interstitialis* ♀. The two sexes are alike.

Length $8\frac{1}{2}$ –10 mm.; 5 – $5\frac{1}{2}$ mm.

Hab. Cape Colony (Beaufort West).

ONTHOPHAGUS GLABER, Fähr.,

Insect. Caffr., ii., p. 285.

Fuscous bronze and occasionally with a red, ferruginous tinge, shining; antennæ yellow; head very closely and finely punctured equally on the vertex and on the clypeus which is semicircular, a little blunt at tip and slightly emarginate there, that of the female being a little more distinctly emarginate than in the male, there is an arcuate frontal carina extending to a short distance from each eye and continued sub-diagonally above the eye close to the base where there is a sub-basal transverse carina very little raised, and interrupted in the middle, both these carinæ are very little raised, but the frontal one is nevertheless distinct; prothorax moderately convex, a little ampliate laterally, neither impressed nor retuse in front, marginate all round, rounded at base and covered with closely set, very fine punctures which are hardly setigerous; elytra ovate, hardly ampliate, very narrowly striate, striæ geminate and finely punctate, intervals plane and filled with several series of very fine round punctures which are also hardly setigerous, second interval very little wider than the third, humeral callus distinct; pygidium closely aciculate; metasternum entirely smooth in the middle, and having a slightly impressed median longitudinal line; inner part of the anterior tibiæ non-spinose at apex; apical spurs moderately slender, curving a little outwardly in the male, and nearly straight in the female.

Length 8 mm.; width $4\frac{1}{2}$ mm.

Closely allied to *O. moestus* in general appearance, but easily distinguished by the presence of a frontal carina, and the more finely punctured prothorax and elytra, the intervals of the latter are aciculate; it very much resembles the female of *O. interstitialis*, to which Harold erroneously assimilates it, in general facies, but the shape of the cephalic carinæ is different, and the punctuation of the prothorax is finer and more closely set.

Hab. Transvaal (Rustenburg), Cape Colony (Griqualand West).

ONTHOPHAGUS DISCRETUS, n. spec.

Black, shining, very briefly pubescent; antennæ yellow; head covered with deep, closely set punctures, genæ rounded and not projecting beyond the line of the clypeus which is semicircular, and very slightly emarginate in front, there is only a very faint trace of an arcuate frontal carina which is, oftener than not, quite obliterated, vertex simple; prothorax moderately ampliate and not rounded laterally in the middle, moderately convex, marginate all

round, but less distinctly along the base which is rounded and covered all over with deep, moderately closely set punctures; elytra ovate, not very ampliate, narrowly geminato-striate, intervals plane but slightly raised behind, and having each two series of setigerous punctures more or less sub-scröbiculate, or with the space between them sub-rugose, second interval not wider than the third; pygidium deeply and closely pitted; metasternum nearly smooth in the centre and having a median impressed line either faint or well defined; inner part of anterior tibiæ not spinose at tip, apical spur thick, and curving distinctly inward in the male.

Female not known with certainty.

Length $7-7\frac{1}{4}$ mm.; width $4\frac{1}{2}$ mm.

Hab. Transvaal (Rustenburg).

ONTHOPHAGUS ILLLOTUS, n. spec.

Bronze, with a sub-violaceous tinge, moderately shining, very briefly pubescent; antennæ yellow; head covered with closely set punctures evenly distributed, clypeus quite semicircular, not emarginate at tip, there is no trace of any frontal or basal carina, although in the male the median part of the vertex seems to be a little raised; prothorax moderately convex, marginate laterally and in front, but not distinctly along the base which is nearly rounded, it is covered with deep, closely set setigerous punctures; elytra ampliatio-ovate, narrowly geminato-striate, with the intervals slightly raised and having each two series of rough punctures briefly setigerous and deeper in the anterior part, the three first intervals are slightly tectiform, and the second one is wider than the third, humeral callus not very distinct; pygidium deeply and closely punctured, nearly scröbiculate; metasternum almost entirely smooth in the central part, and without any impressed line or basal impression; inner part of anterior tibiæ non-spinose at tip, in either sex, apical spurs long and slender.

No sexual difference.

Length $4-4\frac{1}{4}$ mm.; width $2\frac{1}{4}-2\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Salisbury).

ONTHOPHAGUS INOPS, n. spec.

Male: Black, opaque, pubescent; head very vaguely aciculate, genæ strongly angulate near the apex, clypeus semicircular, slightly emarginate at tip, no trace of transverse carinæ; clava of antennæ fuscous; prothorax ampliatio, very little convex, marginate laterally and in front, but not distinctly along the base which is slightly

acuminate in the middle, it is covered with round, not closely set, moderately deep setigerous punctures; elytra sub-ampliato-ovate, very narrowly punctato-striate, striae not distinctly geminate, intervals plane and having each two series of moderately closely set granules turning to scabrose punctures towards the posterior part; pygidium closely pitted; metasternum slightly acuminate at tip, very closely punctured, median longitudinal line moderately distinct; inner angle of anterior tibiae very briefly spinose.

Length $3\frac{1}{2}$ mm.; width 2 mm.

Resembles a little *O. litigious* in having no trace of cephalic carinae, but the genae are more auriculate, and the clypeus, instead of being acuminate, is semicircular; it is also much more densely pubescent, the prothorax is not so closely punctate, the punctures are much broader, and the sculpturing of the intervals of the elytra differs.

Hab. Southern Rhodesia (Salisbury).

ONTHOPHAGUS PROBUS, n. spec.

Black, shining, briefly pubescent, elytra sub-sanguineous red with the suture and a transverse line along the base black, and with occasionally a lateral transverse patch of the same colour situate past the middle on the three or four outer intervals, antennae black, club fuscous; head and clypeus covered with deep, moderately closely set scabrose punctures, genae distinctly auriculate, clypeus emarginate laterally near the genae, incised triangularly in front and with the angles of the incision sharp and slightly recurved, no frontal carina in either sex, but on the base of the vertex there is a very little raised sinuate one often indistinct; prothorax convex, ampliate laterally, marginate all round, rounded at base and covered with scabrose punctures set moderately close together, but more rounded and less scabrose in the posterior part which has no trace of any longitudinal impressed line; elytra slightly ampliato-ovate, narrowly geminato-striate, intervals plane and having a double series of punctures distinctly scabrose and more closely set in the anterior than in the posterior part, second interval not wider than the third, humeral callus hardly distinct; pygidium very closely punctured; metasternum deeply punctured and having a smooth, distinct median longitudinal impression.

The female differs from the male merely in the absence of a spine in the inner part of the anterior tibiae.

Length $3\frac{2}{3}$ –4 mm.; width 2 mm.

Hab. Cape Colony (Hope Town), Mossamedes.

The varietal form with the black patch on the elytra comes from the Cape Colony, and is the only example of its kind that I have seen.

ONTHOPHAGUS LITIGIOSUS, n. spec.

Fusco-aneous, nearly black, sub-opaque, very briefly setigerous; head very closely punctulate and without trace of carinae, genae slightly diagonal externally, clypeus acuminate and not rounded laterally, briefly obtuse and not emarginate at tip; antennae fuscous; prothorax ampliate but not rounded laterally at middle, very little convex, marginate all round although less distinctly along the base which is slightly aculeate in the centre and covered with closely set, a little elongated punctures; elytra finely geminato-striate, the striae feebly punctate, intervals plane and very vaguely aciculate, the aciculate punctures being very briefly setigerous, second interval not wider than the third, humeral callus distinct; pygidium deeply and closely pitted; metasternum closely punctate all over and having a very faint median longitudinal smooth line; inner part of anterior tibiae aculeate at tip but not spinose in either sex, apical spurs nearly straight, moderately slender.

Length 4 mm.; width $2\frac{1}{2}$ mm.

Hab. Mozambique (Rikatla).

ONTHOPHAGUS DISCREPANS, n. spec.

Male: Black, sub-opaque, with the intervals of elytra moderately shining, dark bronze underneath; head very roughly and closely punctate, genae triangular, clypeus arcuate, not emarginate at tip, no trace of transverse carina; prothorax moderately convex, ampliate, but not rounded laterally at middle, marginate all round, base a little acuminate at middle, it is covered with deep, confluent, round punctures, is very briefly pubescent, and is slightly impressed longitudinally in the middle of the posterior part; elytra very ampliate, very narrowly but deeply geminato-striate, striae seemingly not punctured, intervals a little convex and having each two series of large setigerous granules almost tuberculiform on the three first ones, second interval not broader than the third; pygidium closely punctate; metasternum very closely and deeply punctured in the whole of the median part, which is slightly acuminate at a short distance from the apex, and has a very broad, deep basal depression with the median line distinct for half the length only; inner angle of anterior tibiae rounded, apical spur very short and strongly bent outwardly.

Length $4\frac{1}{2}$ mm.; width 3 mm.

The shape of the valves of the penis is very different from that of the other species of *Onthophagus*, and they very much resemble those of the Oniticellid *Scaptocnemis segregis* (plate xxxviii. fig. 10).

Hab. Natal (mouth of the Umkomas River).

ONTHOPHAGUS PUDENS, n. spec.

Aeneous, with the elytra infusate and having a broad apical, and sometimes a lateral, testaceous transverse band; head very sparingly punctate and six-dentate owing to the genae being very auriculate, the lateral part of the clypeus dentate and the anterior part deeply incised, with the angles of the incision long and sharp, there is no trace of carina on the frontal part or on the vertex; clava of antennae fuscous; prothorax very little ampliate, nearly straight laterally, little convex, marginate all round and with the base not quite rounded in the middle, it is covered with round punctures not closely set, and is very little pubescent; elytra ovate, distinctly geminato-striate, striae shallow and punctulate, intervals plane and having only two series of distant, irregular deep punctures which are slightly setigerous; pygidium punctulate, briefly setigerous; metasternum very sparsely punctulate, and divided from the mesosternum by a fine raised line; inner part of anterior tibiae non-spinose, apical spur slightly curved outwardly in the male, nearly straight in the female, and moderately slender.

This species is easily distinguished from all the other South African ones by the six-dentate head. The carinate frontal edge of the metasternum is not met with in the other South African species, in which the junction is indicated by a more or less impressed, sometimes quite evanescent line, but this is not a sufficiently important distinctive character to justify the removal of this species from the genus *Onthophagus*, much more so that there are some species in which it is difficult to say if the suture is carinate or impressed.

Length 3 mm.; width 2 mm.

Hab. Southern Rhodesia (Salisbury).

ONTHOPHAGUS COLUMELLA, Fahr.,

Plate XXXVI., fig. 10.

Insect. Caffrar., ii., p. 273.

Bronze black, opaque, hardly pubescent; head semicircular, but a little more elongate in the male than in the female, a little

acuminate and reflexed at tip, closely punctulate, slightly plicate on the clypeus, and having a transverse frontal carina which is obliterated in the greatly developed male, and a basal one straight in the middle and a little curved on the sides; prothorax marginate in front and laterally, not much ampliate on the outer sides; covered with very shallow, small punctures set somewhat close to each other, the centre of the basal part is slightly acuminate, and there is a faint median longitudinal impressed line in the posterior part of the disk; elytra very little ampliate, very finely punctato-striate, striae non-geminate, intervals plane and having several irregular rows of shallow punctures which are very briefly setigerous, second interval wider than the third, humeral tubercle distinct; pygidium feebly punctulate; metasternum carinate but not acute at tip, median part smooth but punctulate laterally in front; anterior tibiae non-spinose inwardly at tip, apical spur slender and nearly straight in both sexes.

Male: Prothorax with a sub-lateral deep impression flanking a median vertical lobe transversely carinate at tip and slightly emarginate in the centre, the impressions are smooth, but the dorsal part of the lobe is somewhat rugose, there is no trace of a frontal carina on the clypeus in the large development, but it is still visible in the minor and intermediate ones.

Female: Clypeus less elongate and more semicircular, frontal carina very distinct, carina on the vertex more sinuate in the centre; prothorax only a little retuse and having in the anterior part an arcuate median ridge.

Length 11–12 mm.; width $6\frac{1}{2}$ –7 mm.

Hab. Cape Colony (Worcester, East London, Grahamstown, Uitenhage), Natal (Durban, Estcourt).

ONTHOPHAGUS CARBONARIUS, Klug,

Monatsb. Berl. Ac., 1855, p. 653; Peter's Reis., 1862, p. 233.

Male: Black, with a very faint metallic tinge, moderately shining, hardly pubescent; antennae sub-flavescent; head deeply and closely punctured, rugose on the clypeus which is sub-semicircular, emarginate in front in the male, genae sub-angular, frontal carina a little arcuate, much raised, and continued diagonally on the vertex above the eyes, and there is a very short, sub-triangular tuberculiform basal tooth; prothorax ampliate laterally, moderately convex, marginate all round and covered with deep, closely set, round punctures; it is sub-diagonally retuse in the anterior part, faintly impressed laterally.

and has at the apex of that faint impression a small, slightly conical tubercle, the lateral supra-marginal fovea is quite obliterated; elytra moderately ampliate, narrowly geminato-striate, striae not deeply punctate, intervals plane and filled with minute punctures, second interval not wider than the third; pygidium deeply and closely punctured; metasternum quite smooth in the centre and deeply furrowed longitudinally especially in the centre; apical spur of anterior tibiae very short, inner part sub-spinose.

Female unknown.

Length 9 mm.; width $5\frac{1}{2}$ mm.

Hab. Southern Rhodesia (? Zambesi and Limpopo Rivers), Mozambique (Sena, teste Klug).

The prothorax is not quite as much compressed diagonally in the anterior part as in *O. plebejus*, from which it is easily distinguished by the frontal carina which is entirely absent in the last-named species.

ONTHOPHAGUS CRÆSULUS, Bates,

Plate XXXVI., fig. 9.

Entomol. Monthly Magaz., 1888, p. 238.

O. obtusicollis, Pér., Trans. S. Afr. Philos. Soc., 1888, vol. iv., p. 98.

Male: Coppery, coppery bronze, or fuscous bronze, with the elytra darker than the head and prothorax, very briefly pubescent but shining; antennae flavous; head covered close to the base with very closely set, transverse punctures forming interrupted folds along the margin of the clypeus, genae a little angular, clypeus triangular, with the apical part broadly recurved, but neither emarginate nor incised; there is no frontal carina, but at the base of the vertex there is a very short, triangular horn bending slightly forward, and hardly higher than the recurved part of the clypeus; prothorax highly raised, sloping in front, deeply excavated on each side of the anterior part, thus leaving in the centre a median sloping lobe with a sharp tubercle on each side at the apex, it is marginate in front and laterally, but not distinctly along the base which is rounded, and it is covered with very closely set, very briefly setigerous round punctures slightly scabrose on the sides; in the minor development the anterior part of the prothorax is not so much raised, and the sub-lateral cavities in the anterior parts are not so deep, nor are the tubercles of the median lobe so distinct; elytra moderately ampliate, narrowly and not deeply geminato-striate, intervals nearly plane and having each three series of very closely set, slightly scabrose

setigerous punctures merging into two past the median part; pygidium closely scabroso-punctate, very briefly setigerous; metasternum sparsely punctulate in the centre, median longitudinal impressed line distinct towards the basal part; inner part of anterior tibiæ non-spinose at tip in the male; apical spur long, moderately slender, and nearly straight.

Female not known with certainty.

Length $7\frac{1}{2}$ – $9\frac{1}{2}$ mm.; width $4\frac{1}{2}$ –6 mm.

Hab. Natal (Durban, Maritzburg), Transvaal (Rustenburg, Potchefstroom).

The late Mr. Bates and I described this species at about the same time.

ONTHOPHAGUS CUPRICOLLIS, Péring.,

Trans. S. Afr. Philos. Soc., 1888, p. 98, pl. i., fig. 7.

Coppery on the head and prothorax, not shining, very briefly pubescent, elytra pale yellow, under side and legs bronze or coppery, club of antennæ fuscous; head covered with very closely set, rugose punctures, clypeus strongly acuminate and with the apical part blunt and strongly reflexed, there is no frontal carina, but near the base there is a trace of a small flat median tubercle, genæ distinctly angulate at middle; prothorax ampliate laterally, marginate all round, rounded in the median part of the base and densely covered with closely set, deep, elongate punctures which are not scabrose; elytra not much amplified laterally, very narrowly and not deeply geminato-striate, intervals plane, covered with numerous closely set, round, slightly setigerous punctures, second interval broader than the third, humeral callus moderately distinct; pygidium closely and deeply pitted; metasternum punctulate but having a median smooth space and an impressed line near the base; inner part of anterior tibiæ non-spinose, apical spur moderately slender, somewhat short, and nearly straight in both sexes.

Male: Prothorax strongly impressed laterally on each side in the anterior part, median part produced into a linear vertical lobe sharply acute at tip.

Female: The cephalic, nearly obliterated, tubercle is not set quite so near the base as in the male, and the prothorax is neither retuse nor impressed.

Length 6–8 mm.; width $3\frac{1}{2}$ – $4\frac{1}{2}$ mm.

Hab. Transvaal (Lydenburg).

ONTHOPHAGUS PLEBEJUS, Klug,

Plate XXXVI., fig. 6.

Monatsb. Berl. Acad., 1855, p. 653.

O. stercorarius, Fähr., Insect. Caffr., ii., p. 276.

Head and prothorax bronze green, or sub-cupreous, shining, basal part of prothorax and sometimes also the sides suffused with pale brown, elytra testaceous and having numerous small fuscous maculae; head a little elongate, clypeus sub-semicircular, obtuse at tip and recurved there, the vertex is closely punctured, the genae and the sides of the clypeus have a few rugose punctures, and there is no trace of carina either in the frontal part or on the vertex; prothorax distinctly marginate all round, ampliate and rounded laterally, and covered with shallow moderately close punctures, base very slightly acuminate in the middle; elytra ampliate, narrowly but not deeply punctato-striate, intervals plane and having three series of small, not closely set granules, but only two rows on the third and fifth which are narrower than the second and fourth, humeral tubercle distinct; pygidium vaguely punctulate; median part of metasternum quite smooth except on the sides of the anterior part; inner part of anterior tibiae non-spinose, apical spur moderately thick, nearly straight in both sexes, but curving inward at tip.

Male: Prothorax convex, sloping in front from near the median part, and having two lateral, shallow, broad impressions surmounted by a small tubercle.

Female: Clypeus rounded, not emarginate at tip, head more deeply and more closely punctured, and with a sub-arcuate, slight frontal carina and sometimes a deep impression in the basal part; prothorax simple.

Length 10–11 mm.; width $5\frac{1}{2}$ – $6\frac{1}{2}$ mm.

Hab. Natal (Durban), Southern Rhodesia (Salisbury, Victoria Falls).

Klug described this species from two female examples, one of which I have seen. In some males the prothorax is also simple, and they can only be distinguished from the females by the absence of the frontal arcuate carina, and the punctures on the clypeus and frontal part are much less rugose and more scattered than in the female.

ONTHOPHAGUS FERRUGINEUS, Fähr.,

Insect. Caffr., ii., p. 309.

Chestnut-red, slightly aeneous in the discoidal part of the prothorax and on the head, very little pubescent; head finely punctate, clypeus

semicircular, not emarginate at tip, no frontal carina; prothorax moderately convex, marginate all round, not quite round in the median part of the base, covered with round, very closely set punctures, which are smaller in the centre than on the sides; elytra ampliato-ovate, narrowly geminato-striate, striæ punctulate, intervals plane and very finely aciculate, second interval a little wider than the third, humeral callus very distinct; pygidium vaguely punctulate; metasternum punctate, median longitudinal impressed line distinct.

Male: Posterior part of vertex raised in a high vertical lamina, broadening obliquely from the sides, slightly sinuate in the middle at apex, and reaching as high as the median lobe of the prothorax which projects above the retuse anterior part, is slightly emarginate in the middle, and nearly reaches the cephalic transverse carina; anterior tibiæ nearly straight at apex, angular but not spinose inwardly at tip, and with the apical spur long, straight, slightly curved outwardly, they are strongly quadri-dentate outwardly.

Female: Basal part of the head with a very slightly raised arcuate carina; prothorax not retuse nor lobate in front.

The description of the male is made from one of Fähræus' co-types.

Length $4\frac{1}{2}$ –5 mm.; width $2\frac{1}{2}$ –3 mm.

Hab. Cape Colony (Bechuanaland), British Bechuanaland (Kanye).

Harold, owing to the presence of a lateral cavity on the side of the prosternum, places this species among *Caccobius*. This peculiarity is, however, restricted to the male, and occurs also, although in a more or less distinct form, in other South African Onthophagi (*O. pusio*, *merus*, *obtusus*, &c.), and in a lesser degree in *O. histerinus*, which on account of the peculiar shape of the anterior tibiæ of the male I have, with *O. anomalus* retained in the genus *Caccobius*.

ONTHOPHAGUS RANGIFER, Klug,

Plate XXXV., figs. 8, 8a.

Monatsb. Berl. Ac., 1855, p. 652; Peters' Reis., 1862, p. 228, pl. xiii., fig. 12.

O. bradshawi, Péring., Trans. S. Afric. Phil. Soc., vol. iii., 1885, p. 90.

Glowing coppery red on the upper side, with the legs and under side coppery red with a slight greenish tinge, or entirely metallic green; clypeus covered with fine granules and densely pubescent, the

pubescence silky white, the genæ are nearly straight, but rounded at tip, the clypeus itself is short; prothorax convex, broadly ampliate laterally at middle, and conspicuously emarginate at a short distance from the basal angle, it is closely granulose, very briefly pubescent, has a dorsal, median longitudinal impression, is marginate laterally and in front, but not along the base the median part of which is depressed and produced into a broad and sharp triangle; elytra very little convex, amplified below the shoulder, and very distinctly attenuate from there towards the apex, the striae are not deep, nor distinctly geminate, the intervals are plane, covered with minute, extremely closely set granules which are very briefly setigerous, the suture is smooth and raised; the second interval is more than twice as broad as the third one, and has a trace of a rudimentary stria, and the fourth is also broader than the third; pygidium finely granular and clothed with dense, long, silky white hairs; metasternum with a very broad median smooth longitudinal space, and showing a faint trace of a median, basal groove only near the base.

Male: Clypeus slightly sinuate laterally, nearly straight at tip but showing a slight sinuation, frontal carina very slight, median part of vertex developed as a high transverse ridge with a short triangular spine in the middle and emitting on each side a long, recumbent flattened curved horn reaching further than the base of the prothorax, broadly dilated at tip in a sub-triangular, compressed process, and emitting at about one-third of the length from the base a short, inner ramus; prothorax very sloping in the anterior part, but not excavate, and having a distinct median longitudinal, broad but not deep furrow with a short, sharp tubercle on each side of it in the anterior part, followed by a blunt tubercle, which is not always present; elytra with the humeral angle produced into a vertical, triangular, very high tubercle hollowed inwardly; anterior tibiae with a long, inner spine, a little shorter than the apical spur which is moderately slender and curves slightly outward. In the smaller development (fig. 8a) the cephalic horn varies much in length, and is sometimes reduced to a mere crescent the points of which barely reach the two tubercles in the anterior part of the prothorax; in the intermediate development, the horns which do not reach the base of the prothorax, are not dilated at apex, and the humeral tubercle, although distinct is not so high; in the great development the anterior and median part of the prothorax is less closely granular and sometimes nearly quite smooth.

Female: Clypeus gradually narrowed laterally to the tip which is rounded, frontal carina arcuate, very distinct, carina on the vertex slightly arcuate, much raised and dentate at each end and at middle;

prothorax closely granular except along the base and in the median basal part, and having in the anterior part a narrow median impression with a short, laminate, triangular tubercle in front of it; humeral tubercle of elytra more or less distinct; anterior tibiae without a spinose angle, apical spur compressed, and suddenly incurved at tip.

Length 10–13 mm.; width 7–9 mm.

Hab. Southern Rhodesia (Middle Limpopo, Buluwayo, Enkel-doorn, Salisbury, Victoria Falls).

O. bradshawi, Péring., is only the small development.

ONTHOPHAGUS RARUS, Guér. Ménev.,

Plate XXXV., figs. 10, 10a; Plate XXXVIII., fig. 22.

Iconogr. Règne. Anim. Ins., p. 77, pl. xxi., fig. 6.

Metallic green, not shining, cephalic horns black; clypeus closely granose, genæ nearly straight and rounded at tip, frontal carina slightly arcuate; prothorax ampliate laterally past the median part, nearly straight from a short distance from the median part and having the basal angle very long and sharply spinose, it is nearly plane except in the anterior part, and slightly dehiscent in front, marginate laterally and in front, but not along the base which is depressed, sharply aculeate in the median part which is depressed and has a transverse carinule above the apex of the aculeate part, it is evenly and closely granose, and has a slightly impressed median longitudinal line in the posterior part; elytra plane, moderately attenuate laterally from the shoulder to the posterior part, finely striate, the striæ being narrowly geminate and punctulate at long intervals, instertices plane, covered with very closely set, minute, very briefly setigerous granules, second interval much broader than the third and having a rudimentary stria in the anterior part, fourth interval only a little broader than the third at middle, humeral callus very distinct, but not tuberculate; pygidium finely scabrose; metasternum scabrose and having in the middle a very narrow, smooth longitudinal band grooved slightly at the base; inner side of apical part of anterior tibiae not spinose.

Male: Anterior part of clypeus straight, vertex of the head produced into a high transverse carina having in the middle two slightly recumbent horns reaching as high as the apex of the prothorax, and emitting on each side of the outer part of the base of the median horns a long, thin, flat recumbent horn, thickening moderately before the sharp tip and reaching to beyond the

median part of the elytra; prothorax slightly depressed in the middle in the anterior part and having at the top of the depression a small, bluntly conical tubercle; apical spur of intermediate tibiae curving slightly outwards. In the small development the cephalic horns (fig. 10a) are short and form a sort of crescent the median part of which, however, is produced into a high tri-dentate carina.

Female: Clypeus more sharply aculeate in front, slightly sinuate laterally and with the edge a little more recurved, frontal carina somewhat short and a little arcuate, vertex with a short, conical tubercle at a small distance from the base; prothorax with a short semicircular impression, not broader than the base of the head and surmounted by two blunt tubercles set close to one another; apical spur of anterior tibiae thickened and conspicuously bent inward at right angles at tip.

Length 18–22 mm.; width $10\frac{1}{2}$ –13 mm.

Hab. Southern Rhodesia (Manica), Mozambique (Sena, teste Klug), Ovampoland (Okovango River). The species was originally described from specimens from Senegambia.

ONTHOPHAGUS FURCIFER, Bohem.,

Plate XXXV., figs. 9, 9a; Plate XXXVIII., fig. 24.

Öfv. Vet. Akad. Förh., 1860, p. 111.

O. plato, Bat., Entom. Month. Magaz., vol. xxxi., 1888, p. 203.

Black, opaque; head and prothorax covered with equi-distant, closely set granules, frontal carina slightly arcuate; prothorax amplified laterally from a little past the middle, straight or nearly straight from there to the basal angle which is sharply dentate, plane on the disk, marginate laterally and also slightly along the base the median part of which is not aculeate, and having a faintly impressed longitudinal line in the middle; elytra plane, finely and not deeply geminato-striate and very slightly punctulate at intervals, interstices covered with very closely set, fine punctures very briefly setigerous and somewhat scabrose on the sides in the male, but entirely scabrose in the female, these intervals are plane, the second one is at middle nearly twice as wide as the third which is not narrower than the fourth; pygidium sub-carinate longitudinally in the centre, and covered with small, not closely set granules; metasternum scabrose except in the median part which has a longitudinal smooth band with a median, slightly impressed longitudinal line.

Male: Clypeus almost straight in front, but with a very slight sinuation on each side, frontal carina not much raised, vertex of the

head produced into a carina emitting on each side a long, compressed, recumbent, slightly arcuate horn, reaching beyond the base of the prothorax, and slightly truncate at tip, in the middle of the carina there is on each side near the base of the long horn a very much shorter one also curving slightly backward, and occasionally spinose at a short distance from the apex; the prothorax is broadly and deeply excavate in the anterior part, and on each side of the excavation there is a sharp, compressed, long, slightly curved tooth; apical spur of anterior tibiæ thick and curving slightly outwards. In the small development the cephalic horns are as in *O. varus* (fig. 10a), but the median part of the carina is alone dentate, the prothoracic cavity is reduced to a mere depression, and the two compressed teeth to two short, blunt tubercles set close to one another.

Female: Clypeus sub-triangular and produced in the centre into a slightly recurved, short triangular tooth, frontal carina very distinct, sub-basal one with a moderately long, sub-conical tubercle at middle; prothorax very slightly excavate at middle, and having two small tubercles in the centre of the anterior, declivous part; tip of apical spur of anterior tibiæ bent inwardly at right angles.

Length 18–21 mm.; width 11–13 mm.

O. fureifer is the small development, and the description of *O. plato* was made from a fully developed male.

Hab. Damaraland, Southern Rhodesia (Victoria Falls).

ONTHOPHAGUS BICALLOSUS, Klug,

Plate XXXVI., fig. 7; Plate XXXVIII., fig. 21.

Monatsb. Berl. Ac., 1855, p. 653; Peters' Reis., 1862, p. 232.

O. metallicus, Fahr., Insect. Caffrar., ii., p. 265.

Coppery red, not very shining, turning at times to green; genæ rounded, clypeus semicircular, head deeply and closely punctured, briefly pubescent; prothorax ampliate laterally, convex, marginate in front and on the sides but not along the base the median part of which is sharply aculeate, it is covered with very closely set, elongate granules, and the median part has in both sexes a very broad, median, longitudinal furrow edged on each side by a smooth, round carina, at the apex there is also a minute median, smooth raised line in the centre of the median sulcus; elytra ampliato-ovate, finally striate, the striae are not geminate, the intervals are very briefly pubescent and covered with extremely closely set, elongated granules, the second interval is nearly twice as broad as the third, and has a rudimentary median stria, the suture and the third and

fifth intervals are raised, and the humeral callus is very distinct; pygidium very closely punctured and pubescent; median part of metasternum quite smooth, and slightly grooved in the basal part only.

Male: No frontal carina, vertex also non-carinate; inner part of anterior tibiæ sharp but not spinose, apical spur straight, thick, curving slightly downwards.

Female: Clypeus a little more rounded at tip, a frontal arcuate carina not very much raised, no carina on the vertex; prothorax similar to that of the male; apical spur of anterior tibiæ thick, abruptly truncate at tip and prolonged into a sharp spine inwardly.

Length 12-14 mm.; width 7-9 mm.

Hab. Southern Rhodesia (Victoria Falls, Salisbury, Buluwayo, Mazoe), Ovampoland (Evari River).

This species is also met with in Nyassaland.

ONTHOPHAGUS SAPPHYRINUS, Fähr.,

Plate XXXVI., fig. 12.

Insect. Caffr., ii., p. 278.

Coppery green, with the elytra coppery red, pubescent, moderately shining, antennæ flavous; genæ rounded, clypeus semicircular, but slightly more blunted at apex in the male than in the female, and with the margin slightly curved, it is closely granulose, there is a semiarculate frontal ridge, and on the vertex a slightly raised, smooth line with a very short, indistinct tubercle on each side of the base above the eye in both sexes; prothorax convex, ampliately laterally at middle, marginate in front and on the sides, but not along the base the median part of which is sharply aculeate and depressed, it is covered with very closely set, sharp granules, the posterior part of the disk is smooth in the middle, and from the median part to the apex are two sub-parallel, smooth raised lines; elytra ampliately-ovate, narrowly geminato-striate, intervals very closely and deeply pitted, with the punctures confluent, intervals not quite plane, second one very little broader than the third; pygidium deeply pitted, briefly pubescent and coppery green like the basal part of the elytra; metasternum aculeate and with hardly any punctures in the median part except on the sides of the aculeate part.

I have seen an example from Mozambique in which the elytra are entirely dark blue. The male is distinguished from the female merely in having the inner part of the anterior tibiæ spinose; the apical spur is thick in both sexes, but while it is truncate at apex

and directed outwardly in the male, in the female it is sharply curved inwardly at tip.

Length $8-9\frac{1}{2}$ mm. ; width $5-6\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Salisbury, Victoria Falls, Limpopo River), Ovampoland, (Okovango River, Humbe Omrramba), Transvaal (Rustenburg), Mozambique (Rikatla).

ONTHOPHAGUS SUSPECTUS, Péring.,*

Plate XXXVI., fig. 13.

Trans. S. Afric. Phil. Soc., vol. vi., 1892, p. 29.

Metallic green, briefly pubescent, more shining on the head and prothorax, elytra a little darker green or slightly violaceous, under side dark blue, antennæ flavous; genæ rounded, clypeus semi-circular but deeply emarginate in the anterior part, and having in the centre of the emargination a small, sharp, recurved tooth, it is closely granular, has a very slightly arcuate frontal carina and a faint trace of a basal one; the prothorax is convex, marginate in front and laterally but not along the base which is sharply aculeate at middle, it is covered with closely set, small tubercles on the sides and in front, and with closely set punctures in the median and posterior parts of the disk, and has also two diverging smooth, moderately broad lines more or less conspicuous and enclosing a small impression in the anterior part; elytra ampliato-ovate, narrowly geminato-striate, intervals raised and having a series of moderately deep punctures on each side of the striæ; pygidium closely and deeply pitted; metasternum aculeate, smooth in the median part but pitted along the aculeate part and on the sides.

The female is distinguished from the male by the shape of the apical spurs of the fore tibiæ, which are produced inwardly at tip into a long spine, whereas in the male it is slightly bent outwardly and truncate at tip, and in the latter the inner angle of the tibiæ is strongly spinose.

Length $10\frac{1}{2}-12$ mm. ; width $6-6\frac{1}{2}$ mm.

Hab. Ovampoland (Humbe).

ONTHOPHAGUS ACICULATUS, Fahr.,

Plate XXXVI., fig. 15.

Insect. Caffrar., ii., p. 274.

Bronze, greenish or violaceous blue, not much shining, pubescent; antennæ flavous; genæ rounded, clypeus a little elongated but

* This species might prove to be either identical with or very closely allied to *Onthophagus unidens*, Qued.

rounded at tip and with the margin slightly recurved, frontal carina very slight, between this frontal carina and the vertex there is a smooth, raised, longitudinal, median line, and on each side of the base there is a faint trace of a small tubercle above the eye, the whole head is covered with deep, closely set punctures, somewhat scabrose on the clypeus; prothorax convex, ampliate laterally, not marginate along the base which is strongly aculeate in the middle, it is covered with deep, closely set punctures somewhat scabrose on the sides, and in the centre there is a longitudinal smooth line reaching from apex to base; elytra ampliatio-ovate, narrowly striate, the striae impunctate, intervals plane and covered with deep, very closely set punctures, humeral callus not very prominent; metasternum aculeate, smooth only in the centre.

Female: Apical spur of anterior tibiae bent inwardly at tip.

Length 11-13 mm.; width 7-8 mm.

Hab. Natal (Isipingo, Durban, Esteourt).

ONTHOPHAGUS OPTIVUS, n. spec.

Coppery red, shining, pubescent; shape and size of *O. aciculatus* and very closely allied to it.

Female: Clypeus distinctly sub-aculeate, granular on the vertex and scabroso-punctate on the clypeus; prothorax ampliatio laterally, base not marginate and sharply aculeate at middle, it is convex, depressed behind in the middle above the base, and has there a distinct impressed line in the centre of the depression, it is covered with closely set granules except in the posterior impression which is smooth, and is surrounded by some punctures, from the apex to the impression there runs a slightly raised, smoother line, which is not, however, as distinct as in *O. aciculatus*; the shape of the elytra and also the striae are similar to those of the last-named species, but the intervals instead of being deeply but regularly punctured are extremely rugose, the walls of the punctures being more in relief; the rest as in *O. aciculatus*.

Length $10\frac{1}{2}$ mm.; width $6\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Mtoko).

ONTHOPHAGUS BRUCEI, Reiche,

Plate XXXVI., fig. 11; Plate XXXVIII. fig. 23.

Voyag. Galin. Abyss., 1850, p. 316, pl. xix., fig. 6.

Metallic green, shining, briefly pubescent, head and anterior part of prothorax slightly coppery red; clypeus acuminate, not emargi-

nate at tip, and having no frontal carina, but instead a short, tuberculiform tooth in the vertex which in the female is more truncate and assumes sometimes the shape of a short lamina, the whole surface is distinctly scabrose; prothorax convex, moderately abruptly declivous in front, not marginate along the base the median part of which is sharply aculeate, covered with elongate, very closely set tubercles which are, however, replaced by deep, closely set punctures in the middle of the posterior part, and at the apex of the declivity are two small blunt tubercles which coalesce often in the female but are separate in the male; elytra ampliatio-ovate, narrowly geminato-striate, striæ closely punctured, intervals closely and deeply pitted, plane, second one very little broader than the third, humeral callus distinct; pygidium closely granulose and moderately pubescent; metasternum aculeate at tip and having in the centre a long, triangular smooth space without any longitudinal impressed line; anterior tibiæ of male with a long inner spur of nearly half the length of the apical outer tooth which is nearly straight; the spur of the female is curved inwardly at tip, but not at a sharp angle.

Length 12–15 mm; width 8–10 mm.

In some examples the colour of the elytra is dark blue.

Hab. Cape Colony (Port St. John), Natal (Durban, Frere, Maritzburg, Estcourt), Transvaal (Lydenburg), Southern Rhodesia (Salisbury, Buluwayo).

This species is also met with in Abyssinia and in the Congo Free State.

ONTHOPHAGUS GEMMATUS, n. spec.,

Plate XXXVI., fig. 14.

Female: Head and prothorax coppery red with a green tinge which is darker in the median part of the base, elytra dark green with a bluish tinge; palpi and antennæ flavescent; head granular, genæ rounded, clypeus acuminate, not emarginate at tip, frontal carina distinct, arcuate, vertex with a high transverse, median, laminate carina emarginate in the centre and occupying half the width of the vertex; prothorax convex, declivous in the anterior part, slightly impressed longitudinally in the centre of the disk and having a faint trace in the anterior part of two small smooth prominences and of a median apical smooth line, it is covered on the sides and in front with closely set elongate granules, but from the median part of the disk to the centre of the base, which is not marginate and is sharply aculeate, there is a smooth space surrounded by deep, closely set punctures; elytra ampliatio-ovate, deeply and

narrowly geminato-striate, and with the first and second intervals somewhat raised and all filled with deep but rugose punctures, the walls of which are raised and irregular; the first and second intervals are less pitted than the others in the two examples which I have seen, and the humeral callus is not very prominent; pygidium very closely pitted and not thickly pubescent; metasternum aculeate at tip and quite impunctate in the median part except along the aculeate part, and without a trace of a longitudinal impressed line.

Male unknown, but probably differing from the female in having a more or less blunt tubercle in the centre of the vertex, instead of a high, transverse carina, and two small, rounded tubercles in the anterior part of the prothorax, somewhat as in *O. brucei*.

Length $10\frac{1}{4}$ –11 mm.; width 7 – $7\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Bulawayo, Salisbury).

ONTHOPHAGUS SENICULUS, n. spec.

Male: Black, moderately shining, antennæ yellow; head deeply and somewhat roughly punctured and denser on the clypeus which is semicircular with the genæ gradually rounded and is somewhat broadly but not deeply emarginate at tip, and has the angles of the emargination rounded, there is a frontal arcuate carina very little raised, and a transverse juxta-basal one on the vertex which is also not much raised but is nevertheless higher than the frontal; prothorax moderately convex, marginate all round and slightly acuminate in the centre of the base, it is covered with not very closely set granules and is densely but briefly pubescent, the median, sub-acuminate part of the base which is depressed has no granules; elytra ovate, distinctly geminato-striate, striae narrow, punctulate and with the walls slightly raised, intervals plane and having each two series of setigerous fine granules set moderately close to one another, second interval a little broader than the third, humeral callus distinct; pygidium moderately closely punctured; metasternum distinctly aculeate at tip, nearly quite smooth in the median part but punctulate on the sides of the aculeation and having no median impressed line or basal impression; inner part of anterior tibiae sharp but not spinose in the male, apical spur somewhat thickened and curving outwardly.

Female unknown.

Length 6 mm.; width $3\frac{1}{4}$ mm.

Hab. Ovampoland (Omrumba).

(Species of which only the females are known to me.)

ONTHOPHAGUS IMPORTUNUS, n. spec.

Head and prothorax fuscous bronze green, with the elytra very dark green, nearly black, not shining and very densely pubescent; antennæ rufescent with the clava sub-flavescent; head very rugose, genæ angular at middle, clypeus rounded laterally, distinctly emarginate at tip and with the outer margin very slightly reflexed, there is a short, slightly arcuate frontal carina and a transverse one truncate at both ends on the vertex at nearly the same distance from the frontal carina and the base; prothorax distinctly marginate laterally and in front but not along the base which is rounded; it is covered with very closely set punctures which are very rugose in front, on the sides, and in the median part, but are more round and less confluent along the base; elytra ampliato-ovate, very finely geminato-striate, striæ punctulate at long intervals, intervals scrobiculate, second, third, and fourth raised, second not broader than the third, humeral callus distinct; pygidium very closely and deeply pitted and very densely pubescent; metasternum sparsely punctate but having no distinctly impressed median line; apical spur of anterior tibiæ slender, nearly straight.

Length 6 mm.; width $3\frac{1}{4}$ mm.

Hab. Ovampoland (Hunbe).

Evidently allied to *O. cretus*, and the male will probably prove to have the same cephalic and thoracic armatures; it resembles very much *O. pusillus*, and the sculpture of the elytra is nearly the same, but not that of the prothorax.

ONTHOPHAGUS IMITATIVUS, n. spec.

Black, opaque, very slightly pubescent; head very rugose all over, genæ rounded, bulging, nearly sub-auriculate, clypeus semicircular, hardly obtuse at tip and not emarginate there, no trace of carinæ; prothorax ampliate laterally, moderately convex, marginate in front and laterally but not distinctly along the base which is rounded; it is covered with very closely set, sub-contiguous elongate granules disposed equally all over the surface, and there is a trace of a fine longitudinal median smooth line in the posterior part; elytra ampliate, narrowly but very distinctly geminato-striate, striæ punctulate, intervals plane and having each two series of small, regularly disposed granules, second interval slightly wider than the third, humeral callus distinct; pygidium closely granulose; metasternum deeply and sparsely punctate, median longitudinal line very distinctly

marked; apical spur of anterior tibiæ moderately slender, not much bent inwardly.

Length 8 mm.; width $5\frac{3}{4}$ mm.

Allied to *O. giraffe* and *O. lutulentus*, more especially to the latter from which it is distinguished by the absence of frontal carina, the more elongate and more raised tubercles on the prothorax, and the two series of granules in the intervals of the elytra, which in *O. lutulentus* are filled with numerous, very closely set scabrose punctures.

Hab. Transvaal (Rustenburg).

ONTHOPHAGUS PELLAX, n. spec.

Coppery bronze on the head and prothorax, but opaque underneath, elytra fuscous, densely pubescent; head covered with confluent, large, scrobiculate punctures, genæ rounded, auriculate, clypeus sinuate laterally, very deeply emarginate at tip and with the angles of the emargination strongly reflexed and dentiform, no trace of carinæ; prothorax convex, ampliate laterally, marginate in front and laterally, but not along the base which is rounded, it is covered with very closely set granules large in proportion to the size of the insect; elytra ampliato-ovate, geminato-striate, striæ punctate and with the walls slightly raised above the intervals which are scrobiculate, second interval not wider than the third; pygidium deeply and closely pitted; metasternum impressed at base and with the median impressed line distinct; apical spur of anterior tibiæ sharply inflexed at tip.

Length 4 mm.; width $2\frac{1}{2}$ mm.

Closely allied to *O. pilosus*, but apart from the size, which is very much smaller, it is distinguished by the larger size of the granules on the prothorax, and also by the intervals of the elytra which are scrobiculate instead of being filled with two series of rounded granules.

Hab. Transvaal (Klerksdorp).

ONTHOPHAGUS CONSOBRINUS, n. spec.

Female: Æneous green, shining, very slightly pubescent; head plicate in front, roughly punctato-scrobiculate in the anterior part of the vertex, and more regularly in the posterior part, genæ a little angular at middle, clypeus attenuate diagonally and very slightly sinuate laterally, very deeply emarginate at tip and with the angles

of the emargination as well as the anterior margin strongly reflexed, no frontal carina, but in the centre of the vertex there is a transverse carina nearly obliterated on the sides but transversely tuberculate in the centre, the tubercle being very small; antennæ yellow; prothorax ampliate laterally, not very convex, marginate all round, with the base rounded in the middle, it is covered with deep, somewhat closely set round punctures, has a very short, longitudinal smooth line in the centre, and is very faintly impressed longitudinally near the base; elytra ovate, a little elongate, distinctly geminato-striate, striæ closely punctulate, intervals plane and filled with closely set elongate granules, second interval slightly wider than the third, humeral callus very distinct; pygidium very finely punctured and nearly glabrous; metasternum very sparsely punctulate, median longitudinal line hardly distinct; apical spurs moderately slender and nearly straight.

Length 9 mm.; width 5 mm.

This species will probably come in the vicinity of *O. interstitialis* and *O. bovinus* when the male is known. It differs, however, from both these species, and also from *O. glaber*, in the intervals of the elytra being filled with closely set elongate granules, whereas in *O. bovinus* there are only two rows of smaller granules in each interval, and in *O. interstitialis* and *O. glaber* these intervals are closely punctate.

Hab. Southern Rhodesia (Victoria Falls).

(The following species have not been seen or identified by me.)

ONTHOPHAGUS CRUENTATUS, Klug,

Monatsb. Berl. Ac., 1855, p. 653; Peters' Reis., 1862, p. 235.

"Fuscous bronze, thorax sub-impressed on each side in front, dorsal part bi-tuberculate, elytra punctato-striate, sparsely punctate in the intervals, and maculated with blood-red. Male and female.

Length $3\frac{1}{2}$ lin.

Of the usual shape and size, dark greenish bronze; head and prothorax covered with scattered punctures, the middle part of the latter is nearly smooth, moderately raised, with a tubercle on each side, in front of which occurs a somewhat more strongly punctate excavation, between the eyes on the head there is a curved, transverse ridge; the elytra are striato-punctate, and the intervals are only slightly punctate, and both the base and the apex, but the latter especially are dark red; under side and legs coloured like the upper part of the body. In the female the prothorax has no elevation, and is uniformly punctured throughout. Several examples from Sena."

Hab. Mozambique.

ONTHOPHAGUS IMPURUS, Har.,

Coleopt. Heft. iv., 1868, p. 104.

O. discolor, Klug. Monatsb. Berl. Acad. 1855, p. 653; Peters' Reis., 1862, p. 234.

"Fuscous black, elytra aciculate, punctato-striate; head marginate in front and reflexed and produced behind into a raised tubercle; prothorax obliquely bi-carinate on the upper side; both head and thorax are deeply punctate and dark copper colour.

A single example, apparently a male from Tette, of the usual shape and size. Head and thorax dark copper colour, uniformly and densely covered with tolerably large, deep punctures; clypeus upturned at the apex, vertex free from punctures and armed with a short tubercle, flattened, smooth, excavated behind, and blunt and round at the apex; prothorax feebly excavated at the sides in front, the excavation on each side is edged by a short ridge running obliquely outwards from the middle raised portion; elytra dull black almost without metallic lustre, tolerably densely striate and provided with longitudinal feebly impressed lines; under side with scattered punctures, black, dark coppery, shining, and clothed with a red-brown pubescence; antennæ brown with the club lighter in colour."

Hab. Mozambique.

ONTHOPHAGUS NIGRITULUS, Klug,

Peters' Reis. n. Moss., 1862, p. 237.

"Black, head and thorax very finely punctate, clypeus rounded at apex and not emarginate; elytra striate and obsoletely punctulate in the intervals.

Length 2 lin.

Several examples from Sena. Except for its lesser size, this wholly black species is at first sight very much like the common European *O. ovatus*. It distinctly differs, however, in having the head and prothorax very finely punctate, and not densely granular; the clypeus has no upturned margin nor apical emargination, and the elytra are simply striate and have very fine, scarcely perceptible punctuations in the intervals; under side with fine scattered punctures. No sexual difference. In one example only, possibly a male, the somewhat curved and only slightly raised line between the eyes which is present in the three other specimens is absent."

According to Harold (Col., Heft. ii., p. 16), this species is a *Caccobius*, owing to the lateral prosternal cavity, and a *Caccophilus* according to Jekel. (Rev. Zoolog., 1872, p. 410 *et seq.*)

Hab. Mozambique.

ONTHOPHAGUS MACTATUS, Klug,

,, SUFFUSUS, Klug,

Monatsb. Berl. Acad., 1855, p. 654; Peters' Reis., 1862, p. 236.

"Related to the preceding species (*i.e.*, *P. sugillatus*) are two others, also from Inhambane, one of which is represented by a single example, the other by a few, which are all females. Differential characters could only be taken from the undoubtedly more developed males, and without these it would be useless to give a detailed description. The first species, which might be called *O. mactatus* for the present, is in shape, punctures, and markings exactly as the female of *O. sugillatus*, except that it is once as large again, the clypeus is less deeply emarginate and the ridge of the vertex not curved but straight, equally high throughout, and sharply truncate at the sides in front of the eyes.

The second species, of which there are three examples, named *O. suffusus* for the present, agrees with the first in colour and size, and also in other respects, but the clypeus is, however, emarginate after the manner of *O. sugillatus*; the ridge of the vertex has more the shape of a blunt tubercle, and the elytra are dark blood red almost throughout, and not only at the apex and at the shoulders."

It is probable that these two species are either females or small developed males of *O. sugillatus*.

Hab. Mozambique.

ONTHOPHAGUS (CACCONEMUS) CASTANEUS, Klug,

Monatsb. Berl. Acad., 1855, p. 653; Peters' Reis., 1862, p. 238,
pl. xiv., fig. 6.

"Fuscous brown, shining, sides of elytra broadly chestnut red.

Length $2\frac{1}{2}$ lin.

One example from Sena; characterised by a somewhat elongate shape, a peculiar colouration and a smooth, not punctate surface, in which character this species agrees with the following one (*O. seminulum*). Head dark brown, almost black, the clypeus with small, scattered granules, apex somewhat upturned, emarginate in the middle, between the eyes is a curved, raised line, and on the vertex a complete transverse ridge, and the space between the two is deepened. The prothorax is convex, smooth and shining, dark in the middle, lighter brown on the sides; the elytra also are smooth with very fine longitudinal lines, they are light chestnut brown with a common dark brown median patch; the under side is smooth, dark brown; only the sides of the sternum and apices of the femora are chestnut brown."

This species is a *Cacconemus* according to Jekel.

Hab. Mozambique.

ONTHOPHAGUS SEMINULUM, Klug,

Monatsb. Berl. Acad., 1855, p. 654; Peter's Reis., 1852, p. 239.

"Clypeus bi-denticulate, thorax foveolato-punctate, dark bronze-black; elytra striate, black, feebly blood-red at apex.

Length $1\frac{1}{2}$ lin.

Only one example from Sena. Dark bronze with the exception of the elytra which are black; head with solitary punctures, clypeus produced, emarginate at apex; prothorax densely punctate; elytra smooth and striate, black, dark red at the extreme apex; on the under side which does not otherwise present noteworthy features, are some solitary punctures."

Hab. Mozambique.

ONTHOPHAGUS MINUTULUS, Har.,

Deutsch. Entom. Zeitschrift, 1875, p. 216.

"Briefly ovate, shining, sparsely pubescent, black, clypeus rounded, vertex transversely carinate; frontal part with two transverse carinae, prothorax strongly but little closely punctate, elytra finely striate, intervals with asperous punctures nearly bi-seriate and remote. Length $3\frac{3}{4}$ mm.

Rounded, ovate in shape, flattened on the back, with sparse and short pubescence, shining, black, antennae red-brown with greyish club, legs piceous with reddish tarsi; head rounded in front and having a scattered punctuation, frontal part with the transverse carina obsolete in its middle, giving rise to two small transverse tubercles close together, in front of these a curved ridge on vertex; prothorax with tolerably coarse but scarcely dense punctuation, slightly emarginate behind; elytra with somewhat opaque lustre, finely striated, intervals plane, the punctures on them are somewhat seriate, and some of the punctures are coarse and not closely set; pygidium shining, tolerably coarsely and remotely punctate.

Hab. Kuruman (South Africa).

This species gives one the impression of being a *Caccobius*, but it belongs, however, to the present genus on account of its obliquely truncate anterior tibiae."

ONTHOPHAGUS QUADRATICEPS, Har.,

Coleopt., Heft. ii., 1867, p. 52.

"Male: Sub-elongato-ovate, shining, pilose, green bronze, elytra flavous sometimes with longitudinal brown markings; head densely punctate, oblongo-quadrate, clypeus reflexed, not emarginate, trans-

versely bi-carinate, and with the carinæ connected longitudinally on each side; thorax very densely granulate, but with the granules fine, impressed longitudinally in the middle, basal margin inflexed on each side near the middle; elytra thinly striate, intervals slightly punctate with the punctures sub-seriate; pygidium convex, punctate, clothed with greyish hairs; palpi and antennæ rufous; under side and legs greenish black, metasternum obtusely tuberculate in front.

Length 4–4½ lin.”

Evidently allied to *O. leucopygus*, Har.

Hab. Orange River Colony.

ONTHOPHAGUS DEDECOR, Wallengr.,

Entom. Tydsk., 1880, p. 21.

“Black, sub-opaque, slightly pubescent; head and prothorax closely ruguloso-punctate; in the former the margin is reflexed, it has two carinæ the posterior of which is produced on each side into a sharp horn; the prothorax is impressed in the middle in front, and in the impression is a moderately high tubercle nearly smooth and obtuse at tip; elytra slightly striate, intervals plane, roughly and closely punctate; body underneath sparsely punctate, slightly flavescent on the sides of the pectus, and clothed with long hairs; abdominal segments briefly pilose; anterior tibiæ obtusely quadri-dentate, antennæ piceous.

Length 8 mm. Resembles *O. obtusicornis*.

Hab. Transvaal.”

ONTHOPHAGUS GRAPHICUS, Wallengr.,

Entom. Tydsk., 1880, p. 21.

“Black, head and prothorax with a sub-cæruleous tinge and roughly punctate, the margin of the former is not sinuate, and is reflexed, and bears no transverse carinæ, but is feebly impressed and sub-canaliculate transversely at the base; the prothorax is even, and has no lateral fovea or callus; elytra very obsoletely punctato-striate, intervals sub-remotely punctate, flavous, with the suture, a discoidal ante-median spot and an interrupted transverse posterior fascia as well as a very narrow lateral margin black; pygidium and body beneath more shining; the former also more closely punctate; anterior tibiæ obtusely quadri-dentate.

Length 4–5 mm. Similar to *O. hybridus*.

Hab. Transvaal (Christiana).”

GEN. DIASTELLOPALPUS, Lansb.,

Notes of the Leyden Museum, viii., 1886, p. 91.

Mentum very deeply emarginate at apex; basal joint of labial palpi very broad at the base and narrowed diagonally inwardly, but straight outwardly, second joint a little curved outwardly, truncate at tip, third joint cylindrical and inserted close to the outer edge of the second, this third joint is comparatively long and very conspicuous; labial palpi as in *Onthophagus*, basal joint of the club deeply cupuliform, the other two joints fitting into the cavity of the first, the ultimate one is also cupuliform; head with a frontal carina; prothorax marginate all round; elytra attenuate in the posterior part and having seven striæ on each side; pygidium convex; metasternum conspicuously carinate in the anterior part with the apex of the carina sharp; anterior and intermediate legs as in *Onthophagus*; basal joint of posterior tarsi, not broad, and sharply serrate outwardly.

The characters distinguishing the species included in this genus from *Onthophagus* proper, are: (1) The shape of the basal joint of the labial palpi which is much more dilated at base than in any other South African species, and (2) the cariniform shape of the apical part of the metasternum; the club of the antennæ is also more deeply cupuliform than in the other *Onthophagi*, and the third joint of the labial palpi is very conspicuous, and set on the outer edge of the second one.

The number of species known is now eighteen, and they are all found in tropical Africa. One of them originally described from Mamboia, East Central Africa, occurs also in South Africa.

DIASTELLOPALPUS QUINQUEDENS, Bates,

Plate XXXV., fig. 7; Plate XXXVIII., fig. 20.

The Entom. Monthly Magaz., vol. xxiv., 1888, p. 239.

O. ponderosus, Péring., Trans. Ent. Soc. Lond., 1896, p. 156.

Bronze black, a little lighter in colour, club of antennæ and penultimate joints somewhat flavescent; clypeus acuminate, rounded at tip, closely plicate transversely, the frontal transverse ridge is straight, and there is between the eyes, a high laminate ridge the upper edge of which is slightly five-dentate, the space between the frontal ridge and the laminate process is rugose, and the basal margin is very hairy; prothorax broad, very deeply sinuate laterally behind, covered

with short granules behind and scabrose punctures in front, declivous in the anterior part which is deeply excavate in the middle with the upper ridge carinate for more than half the length, and sinuate in the centre so as to form two small tubercles; elytra a little ampliate laterally towards the middle, and attenuate from there towards the apex, striate with the intervals plane and filled with closely set, very briefly setigerous punctures; pygidium not closely punctured; metasternum closely punctured in the anterior part on each side of the median carina, but at middle and at base the punctures are irregularly and widely scattered.

Length 18–23 mm.; width 12–13 mm.

The only difference between the male and the female is that in the latter the clypeus is slightly more acuminate than in the former.

Hab. Southern Rhodesia (Salisbury).

GEN. PHALOPS, Erichs.,

Naturgesch. d. Insekt. Deutschl. Coleopt., iii., 1848, p. 764.

Lansberge, *Stett. Entom. Zeit.*, 1883, p. 161.

Mentum more or less deeply emarginate at apex, attenuate laterally towards tip; basal joint of labial palpi shorter than the second, and not curved, second joint truncate, occasionally there is a very short, subulate third joint; maxillary palpi as in *Onthophagus*; clypeus of male recurved, rounded or slightly aculeate in the female; prothorax marginate all round; elytra with eight striae on each side, the supra-marginal one reaching from about the median part to the apex; anterior tibiae of male produced inwardly in a short mucro, apical spur short, and not pointing downward; joints of posterior tibiae compressed, dilated, second, third, and fourth somewhat cordiform, broader than long, apical joint sometimes as broad as the two preceding ones.

The real distinctive character of this genus is the presence of an eighth stria on each elytron, this stria, however, is not entire. The characters derived from the dilatation and shortness of the joints of the posterior tarsi, or from the mucro being formed by the inner angle of the anterior tarsi in the male are also found in other species of *Onthophagus*. Yet the species included in the genus form a very homogeneous group, and with the exception of three which inhabit the East Indies, are found in tropical Africa, Senegal, Nigeria, Angola, Abyssinia, Somaliland, the Galla country and Central Africa.

Key to the Species.

A². Vertex of head produced in a long, bifid, laminate process.

B². Prothorax not tuberculate on the disk.

C¹. Lamina slender at tip, the two parts set close to one another.

d³. Clypeus transversely truncate in front in the male, and strongly recurved, second and third intervals of elytra with a few transverse folds, last joint of posterior tarsi narrower than the preceding one.

Prothorax strongly tuberculate on each side of the anterior part *ardea*.

C³. Lamina divided at tip, the two parts apart.

d². Clypeus very elongate, aculeate, slightly recurved at tip; lamina very long ending in two or four sharp spines.

Last joint of posterior tarsi narrower than the preceding one *adspersipennis*.

Last joint of posterior tarsi oblong, as broad as the preceding one *congenitus*.

C². Lamina short, cleft at tip, genæ diagonal.

d¹. Clypeus not much aculeate, very elongate, recurved at tip.

All joints of posterior tarsi equally broad, ultimate one as long as the two penultimate ones put together *tarsatus*.

C¹. Lamina short, aculeate at tip, and not cleft; genæ projecting.

Joints of posterior tarsi, normally decreasing in width, genæ sub-auriculate *flavocinctus*.

A¹. Vertex of head not produced in a laminate process.

B¹. Prothorax bi-tuberculate on the disk.

Lateral part of the head produced in an auriculate process, clypeus having at apex a laminate, quadrate vertical tooth *boschas*.

PHALOPS ARDEA, Klug,

Plate XXXV., fig. 1.

Monatsb. Berl. Ac., 1885, p. 652; Peters' Reis., 1862, p. 229.

P. vanellus, Lansb., Stett. Entom. Zeit., 1883, p. 166.

Coppery red on the upper side and occasionally green, under side and legs dark blue with occasionally a coppery tinge, glabrous above; head covered with very closely set granules, frontal carina conspicuous; prothorax marginate all round, covered with very closely

set granules, amplified laterally, convex; elytra convex, narrowly striate, intervals nearly plane, very closely granulose, second and fourth intervals with a few transverse folds, eighth stria distinct only from the median part to the apex; pygidium very deeply and closely punctured, the punctures somewhat scabrose; metasternum and legs punctured, the former has a deep, round, basal impression, and a slightly impressed longitudinal line; prosternum distinctly carinate, and slightly aculeate.

Male: Clypeus moderately long, apical part truncate and strongly recurved but sinuate laterally, genæ projecting conspicuously at right angles to the lateral line of the clypeus, vertex of the head produced as a long, laminate process tapering to a point which is deeply grooved but not divided, and curves outwards; prothorax deeply excavated in the centre for the reception of the laminate cephalic horn, and having on each side of the anterior part a distinct, round, tubercular prominence; the transverse frontal carina is quite straight.

Female: Clypeus sub-circular, slightly emarginate at tip, genæ rounded, projecting beyond the line of the clypeus, frontal carina arcuate, margin of vertex distinctly carinate in the middle; prothorax not as much amplified as in the male, provided with a small tubercle sometimes slightly bifid, sometimes hardly noticeable in the centre at apex, and impressed longitudinally in the middle.

Length 10–13 mm.; width 6–8 mm.

Hab. British Bechuanaland (Palapye), Southern Rhodesia (Victoria Falls).

I have seen the type of *P. vanellus*, Lansb., in the Oberthür's collection; it is the same species as *P. ardea*, Klug, the type of which has also no lateral tubercle on the prothorax.

PHALOPS ADSPERSIPENNIS, Bohem.,

Plate XXXV., figs. 5, 5a, and 6.

Öfvers. Vet. Ak. Förh., 1860, p. 112.

P. dregei, Har. Coleopt., Heft. ii., 1867, p. 54.

P. wittei, id. ibid., p. 56.

P. boschimanus, Péring., Trans. S. Afric. Phil. Soc., vol. iv., 1888, p. 195.

P. cuplynes, Bates, Ent. Monthly Magaz., 1888, p. 241.

Very dark green, turning almost to black occasionally, elytra dark testaceous green, or quite testaceous; head covered with equi-distant granules, not too closely set, and briefly but densely pubescent;

prothorax also pubescent and covered with small granules not set very closely, being separated from one another by a little wider space than that occupied by each granule, it is marginate all round, and has a distinct longitudinal impression in the centre; the elytra are somewhat elongate, and not much attenuated laterally behind, they are finely but deeply striate, the intervals are nearly plane, and the eighth stria ascends only as far as the median part; pygidium punctulate; metasternum deeply punctured, but smooth in the median part, and having no basal impression; posterior tarsi compressed, second, third, and fourth joints decreasing in size, last one narrow.

Male: Clypeus very long, triangular, and with the apex of the triangle recurved, deeply and broadly impressed in front of the frontal carina which is arcuate, genæ completely in line with the clypeus, the vertex of the head is produced in a broad laminate process as broad as the head itself, and as long, or longer than the head and clypeus, it is slit longitudinally in the middle, rounded laterally towards the tip where it curves forward a little, and ends in two sharp erect spines; the prothorax is deeply scooped for the reception of the laminate cephalic horn.

Female: Clypeus sub-semicircular, a little emarginate at tip, and slightly sinuate on each side, genæ straight, not projecting beyond the line of the clypeus, frontal carina arcuate, vertex produced into a laminate process shorter than that of the male, not rounded laterally, but ending in a sharp outer spine, while the inner part of the median fissure also ends in a spine shorter than the outer one (fig. 6); prothorax also excavate for the reception of the laminate cephalic horn.

In the small development of the male the clypeus is not much more acuminate than in the female, but it is not emarginate at tip, and the cephalic lamina is entirely similar. It is this development which I described under the name of *P. boschimanus*.

Length 12-14 mm.; width 7-7½ mm.

I have a typical example of *P. dregei*, Dej., from Drège's collection, and my examples of *P. wittei* are from the same locality as those described by Harold.

Hab. Cape Colony (Calvinia, Bushmanland, Namaqualand), Ovampoland (Omrramba), ? Southern Rhodesia.

Von Harold states (Coleopt., Heft. x., p. 205) that *O. adspersipennis*, Bohem., ex typ. is the same species as *O. prasinus*, Erichs. I know the latter from description only, and cannot thus decide the point, but it is singular that this author did not recognise in *O. adspersipennis* both his own *P. dregei* and *O. wittei* described five years before.

PHALOPS CONGENITUS, n. spec.

Bronze on the head and prothorax, or sometimes coppery red, elytra metallic but with the intervals having a more or less pronounced testaceous tinge; the general description of *P. dregei* suits this species, but the granulation of the prothorax is a little finer and slightly denser; the elytra are shorter, less parallel, and the striæ are more deeply punctured, the setigerous punctures on the elytra are also deeper, although fine and more distinct, lastly the ultimate joint of the posterior tarsi is oblong, but not quite as wide as the penultimate one; the smooth space in the centre of the metasternum is broad.

Male: In the great development the clypeus and the laminate cephalic horn are, in proportion to the size, similar to that of *P. dregei*, but the apical fissured part is not so strongly divided, while in the smaller development it assumes exactly the shape of that of the female of *P. dregei*.

Female: Clypeus more rounded and very slightly emarginate at tip, cephalic horn in the great development similar to that of *P. dregei*, but a little shorter; in the small development the two little horns on each side of the vertex are only slightly prominent.

Length 9–10½ mm. ; width 5–6½ mm.

The difference between this species and *P. tarsatus*, to which it is closely allied, and which has also the ultimate joint of the posterior tarsi dilated, is that this joint is neither so broad nor so long, and that the tip of the cephalic horn in the male, although apparently fissured in the centre, is not separated.

Hab. Transvaal (Potchefstroom, Lydenburg), British Bechuana-land (Palapye), Southern Rhodesia (Buluwayo).

PHALOPS TARSATUS, Pér.,

Trans. S. Afric. Philos. Soc., vol. iv., 1888, p. 96.

Emerald green, moderately shining, covered with a very brief, silky white pubescence, the green colour turns sometimes to bluish-green, dark blue underneath, elytra often with a moderately broad flavescent lateral band; head covered with moderately closely set granules, larger on the vertex, anterior part of the clypeus cyaneous or black; prothorax convex, covered with very closely set, distinct granules, marginate all round, and with a very distinct median longitudinal groove; elytra attenuate laterally from base to apex, convex towards the posterior part, finely striate, with the striæ punctured and seemingly not geminate; the intervals are plane,

somewhat coriaceous laterally, and have two series of short setigerous tubercles, and the second interval, which has a faint extra longitudinal line is slightly plicate; pygidium closely aciculate and covered with dense silky-white hairs; metasternum with the whole median part finely aciculate, no basal depression; posterior tarsi compressed, third and fourth joints as broad and nearly as long as the second, fifth oblong, as broad as the penultimate one and as long as the two preceding put together.

Male: Clypeus elongate, genæ diagonal from the basal outer angle towards the clypeus which is there produced into a triangle, the apex of which is sharply recurved; it is blunt at tip and has a deep impression on the upper side; the frontal carina is very distinct, and the vertex is produced into a moderately long, laminate process, rounded laterally, cleft in the middle at apex, and produced there into two divaricating sharp spines; in the smaller development the vertex is merely incised with the sides of the incision sharp, or is reduced to a sharp, transverse high carina deeply sinuate at middle.

Female: Clypeus shaped as in the male, but the apical part, which is also recurved, but in a lesser degree, is emarginate, and the vertex is briefly laminate and deeply emarginate in the centre, very much in the manner prevailing among males of small development, from which they can be distinguished by the absence of inner spur in the anterior tibiæ.

Length 9-14 mm.; width $5\frac{1}{2}$ - $7\frac{1}{2}$ mm.

Closely allied to *P. flavocinctus*, from which it is at once distinguished by having the genæ diagonal instead of being very distinctly produced laterally beyond the line of the clypeus, as well as by the shape of the joints of the hind tarsi.

Hab. Transvaal (Potchefstroom, Rustenburg), British Bechuanaland (Palapye).

PHALOPS FLAVOCINCTUS, Klug,

Plate XXXV., fig. 2.

Monatsb. Berl. Ac., 1855, p. 653; Peters' Reis., 1862, p. 230.

O. præustus, ♀, Fahr., Insect. Caffrar., ii., p. 272.

Brassy green, sometimes coppery red, sometimes bronze on the upper part, and with the elytra having a broad, lateral flavescent band, disappearing near the shoulder and occasionally seen along the base, disk of elytra sometimes with flavescent patches in bronze-green examples, under side dark blue; clypeus elongate, genæ produced in an auriculate rounded process projecting much beyond

the lateral line of the clypeus, head very distinctly granular; prothorax marginate all round, convex, very slightly impressed longitudinally in the centre, and covered with small tubercles set very closely, especially in the centre; elytra attenuate laterally from base to apex, distinctly striate, and with the intervals covered with three or four more or less regular series of very closely set small, briefly setigerous tubercles; pygidium closely and finely granulose, clothed with dense and long white hairs; median part of prosternum broadly smooth; the three penultimate joints of posterior tarsi short, gradually decreasing, last one a little narrower than the preceding one.

Male: Clypeus elongate, a little rounded laterally from the auriculate genæ to the apex which is very suddenly recurved at middle and bluntly triangular, the vertex is produced into a long, laminiform, triangular process, very slightly cleft and bifid at tip, the bifid tip not divaricating; prothorax more or less deeply excavate, according to the length and width of the cephalic laminate horn.

Female: Genæ projecting as in the male, but in a lesser degree, clypeus shorter, and deeply emarginate at tip, edge of vertex distinctly carinate, the carina sinuate and incised in the centre, between the frontal carina and the vertex there is another very well defined carina, more raised than the frontal one, shorter and strongly arcuate. This last character is met with in this species only.

Length 11-12 mm.; width $7-7\frac{1}{4}$ mm.

Hab. Transvaal (Potchefstroom, Lydenburg, Rustenburg), Southern Rhodesia (Victoria Falls), Cape Colony (Kenhardt).

PHALOPS BOSCHAS, Klug,

Plate XXXV., figs. 4, 4a.

Monatsb. Berl. Ac., 1855, p. 653; Peters' Reis., 1862, p. 230.

Bronze green, turning to cyaneous on the upper side and occasionally to coppery on the prothorax, briefly pubescent; under side nearly black; head very coarsely punctured in the anterior part and closely granulose on the genæ and the posterior part, genæ projecting considerably in the shape of an auriculate process; prothorax convex, marginate all round, very closely and deeply scabroso-punctate in the centre of the basal part, the punctures replaced by small granules laterally and in front; elytra convex, moderately attenuate laterally from base to apex, deeply striate,

the striae geminate and punctured, intervals closely and deeply punctured; pygidium closely pitted, and nearly glabrous or very briefly pubescent; metasternum deeply impressed at base, and finely aciculate in the centre.

Male: Genæ projecting a little more than in the female, and a little more angular, clypeus straight laterally from the genæ, then produced obliquely and with the apical part raised as a vertical, sub-quadrate laminate tooth (fig. 4); prothorax sharply declivous in the anterior part and having in the centre a vertical lobe distinctly impressed on either side and surmounted by two sharp tubercles united by a strongly arcuate carina, the two tubercles curve slightly backwards, and in the centre of the declivity there is a fine median, smooth line.

Female: The clypeus is nearly rounded in the anterior part from the anterior angle of the genæ, and is slightly sinuate at apex; the genæ do not project quite so much as in the male; the prothorax is convex, not declivous at apex, and has there two rudimentary tubercles connected by an almost obsolete arcuate ridge, and the head has a transverse truncate carina vertical.

Length 10–12 mm.; width 6–7 mm.

Hab. Southern Rhodesia (between the Limpopo and the Zambeze Rivers, Victoria Falls).

It occurs also in Nyassaland.

PHALOPS RUFO-SIGNATUS, Lansb.,

Notes from the Leyden Museum, 1885, p. 19.

“In my monograph of the genus *Phalops* (Stett. Ent. Zeit., 1883, p. 168), I have mentioned a species already noticed by Baron von Harold, which neither he nor I had ventured to describe, because the female only was known. Later on I met with the male in the collection of the Leyden Museum, and I can therefore describe it now. It belongs to that division in which the metathorax has no median impression (fossette).

Bronze black, with the head and prothorax somewhat greenish; under side and legs black, shining, elytra with rufous maculae.

Male: Head ovigal with the clypeus acuminate, but reflexed at the apex into a rounded tooth ciliate inwardly, vertex armed with a bifid lamina the tips of which are smooth; the surface of the head is covered with a squamiform granulation, and the genæ do not project; prothorax convex, densely granulose, and clothed with short greyish hairs, it is excavate in front, has a longitudinal shallow

groove, and the lateral edges are rounded; elytra plane, as broad at the base as the prothorax, feebly granulose and obsoletely striate; the eighth stria does not reach the humeral part, and the apical part is clothed with small greyish setæ; pygidium opaque, plicate, inflexed beneath; abdomen very short; anterior tibiæ elongate, incurved, posterior ones dilated at tip, their tarsi very broad and densely ciliate.

Female: Head semicircular, clypeus short, bi-dentate at tip, divided from the frontal part by a somewhat strong carina, the latter part provided with a small and very short carina, the vertex ends in a rudimentary lamina sinuate in the centre; prothorax less excavate than in the male, not excavate in front; anterior tibiæ short; posterior tarsi narrower and less densely ciliate.

This species, which inhabits South Africa, is closely allied to *P. wittei*, Har., from which it differs especially in the cephalic lamina not being quadri-spinose, and the clypeal tooth is less sharp and more distinctly 'separated.'

Length 8-10 mm."

This species is compared by Lansberge to *P. whitei*, which I consider the same as *P. adspersipennis*, &c., and it will probably prove to be identical with the last-named species, because the main distinctive character indicated by Lansberge, i.e., the non-quadri-spinose cephalic lamina in the male occurs also in the great development of *P. adspersipennis*, *P. congenitus*, and *P. tarsatus*.

Hab. South Africa.

MILICHUS, n. gen.

Buccal organs and general facies of *Onthophagus*, but it is distinguished by the presence of a clypeal transverse carina running parallel to the margin of the clypeus, and by the shape of the metasternum which is not impressed transversely at apex near the suture with the mesosternum, the latter is almost invisible in the anterior part, and is sub-carinate in the middle, owing to the sides being compressed laterally in front.

MILICHUS APICALIS, Fahr.,

Insect. Caffrar., ii., p. 297.

Bronze, shining, very briefly pubescent, elytra a little darker than the head and prothorax and having on each side two basal elongate flavescent maculæ on the third and fifth intervals respec-

tively, and an apical transverse band of the same colour emitting often a longitudinal band on the fifth interval; genæ very small, triangular, clypeus short, rounded laterally for a short distance, then acuminate diagonally, truncate, very slightly emarginate at tip and with the margin slightly reflexed; in the centre of the head there is a laminate, sub-horizontal carina extending from one side to the other, and a clypeal one equi-distant from the apex of the clypeus and from the frontal carina and connected with it by a median longitudinal ridge, the anterior part of the head is sparsely, and the posterior one closely punctulate; prothorax slightly convex, not rounded laterally at middle, marginate in front and on the sides, but not distinctly along the base which is rounded, it is covered with not quite contiguous round punctures, and has no longitudinal median impression; elytra oblongo-ovate, finely and narrowly geminato-striate with the intervals plane and filled with numerous very briefly setigerous rugose punctures, scrobiculate and confluent in the anterior part, and having thus a rough coriaceous appearance; pygidium covered with very closely set round punctures; metasternum closely and equally punctured, median impressed line very distinct for the greater part of the length; anterior tibiæ non-spinose inwardly at tip, apical spur moderately slender, nearly straight. The two sexes are usually alike, but one of my males has at the base of the head a minute tubercle.

Length 6-7 mm.; width 4-4½ mm.

Hab. Cape Colony (no exact locality), Natal (Durban, Estcourt), Ovampoland.

GEN. CACCOBIUS, E. G. Thoms.,

Skandin. Coleopt., v., 1863, p. 34.

Generic characters of *Onthophagus*, but it differs in the shape of the anterior tibiæ, which may be dentate outwardly in the male or not, but they are dilated and truncate at tip, the truncate part is laminate and turned briefly downward, the apical outer part is rounded, and the spur is very small. This difference in the shape of the anterior tibiæ seems to me to be the only one that militates in favour of the retention of the genus; the prosternal differences mentioned by Harold and others (Coleopt., Heft. ii., 1867, p. 1) and Jekel (Rev. et Mag. d. Zool. xxiii., 1872, p. 405) are partly common to many species of *Onthophagus*.

Key to the Species.

Head without frontal carina or cephalic horn.

Body nearly glabrous, sub-elongate, prothorax slightly punctate;
anterior tibiae not dentate outwardly *anomalus*.

Head with two short basal horns.

Body pubescent, much amplified; anterior tibiae very distinctly
bi-dentate *histerinus*.

CACCOBIUS HISTERINUS, Fähr.

Onthophagus histerinus, Insect. Caffr., ii., p. 302.

Male: Intense black, shining, very densely but briefly pubescent; head deeply but not very closely punctured, genæ without trace of suture, but sub-triangular laterally, clypeus semicircular, very slightly emarginate in the centre, there is no frontal carina, but at the base are two supra-ocular conical tubercles; prothorax a little wider at base than at apex, rounded laterally in front, but nearly straight from there to the base which is somewhat rounded in the middle but very arcuate; it is but little convex, yet somewhat retuse in front, a little depressed in the median part of the base, is covered with round, deep punctures not quite contiguous, and is clothed with a dense, short, decumbent greyish pubescence; elytra very amplified, as densely pubescent as the prothorax, narrowly geminato-striate, striae punctured, intervals slightly tectiform and having close to the stria two series of deep, not very regular punctures, second interval as broad as the third, humeral callus moderately distinct; pygidium closely scrobiculate and a little scabrose, densely pubescent; metasternum with a basal, long, and deep ovate depression, impressed line distinct in the middle; antennæ piceous red, clava fuscous; legs piceous red.

In general appearance this insect much resembles *Onthophagus pusio*.

Length $4\frac{1}{2}$ –5 mm.; width $3\frac{1}{4}$ mm.

Hab. Southern Rhodesia (Umcheeki River).

CACCOBIUS ANOMALUS, Klug,

Monatsb. Berl. Acad., 1853, p. 653; Peters' Reis., 1862, p. 235,
pl. xiv., fig. 2.

Onthophagus moestus, Fähr., Insect. Caffrar., ii., p. 284.

Male: Black, head and prothorax shining, elytra a little less shining than the prothorax; head quite impunctate and without trace of any

transverse carina, or even of genal suture, clypeus short, broadly sub-emarginate at tip, genæ in a line laterally with the clypeus; prothorax hardly convex, simple, not marginate along the base, very little ampliate laterally, and covered with equi-distant not closely set shallow punctures which are nearly obliterated in the anterior median part; elytra very little ampliate laterally, and a little elongate, narrowly striate, the striæ are not geminate, and have shallow punctures, the intervals are plane, and have two series of moderately closely set very briefly setigerous punctures, the humeral callus is not very pronounced; the pygidium is slightly bronzy and punctulate; the under side and legs are distinctly metallic, and the metasternum very broadly and deeply excavate in the centre from the base to past the median part and deeply pitted on the sides of the excavation, the punctures bearing a long seta; anterior tibiæ non-dentate outwardly, but slightly sinuate there towards the apex, apical spur very slender and very short.

Length $6\frac{1}{2}$ mm.; width 4 mm.

Female: According to Fähræus, the fore tibiæ are strongly quadridentate in what he thinks is the female, and in the figure given by Klug the fore tibiæ are also distinctly quadridentate.

The description is made from Klug's ♂ type.

Hab. Mozambique (Sena), Natal, teste Fähræus.

GEN. PEDARIA, Cast.,

Annal. Soc. Ent. d. France, 1832, p. 403.

Sarophorus, Erichs.

Mentum gradually attenuate laterally from the base to the tip, moderately deeply emarginate at apex, concave at base; first and second joints of labial palpi nearly equal in length and width, and in the shape of an inverted truncate cone, apical one a little longer than the second, a little inflated outwardly and acuminate at tip, but nearly straight inwardly, and of nearly the same width as the one preceding; maxillæ strong, apical lobe very long and oblong; apical joint of maxillary palpi fusiform inwardly and nearly straight outwardly; basal joint of antennæ as long as the five following, second sub-spherical, third longer than the fourth, fifth and sixth broad, short, and fitting somewhat closely against the first joint of the antennal club, which, like the last one, is very concave; clypeus emarginate at apex, suture of genæ indistinct, no frontal carinæ, eyes showing through a narrow longitudinal slit on the upper side; prothorax nearly straight laterally, rather plane than convex, and

having laterally a small raised spot near the somewhat obsolete supra-marginal fossa; elytra elongate, as broad at base as the prothorax, geminato-striate, and with the supra-marginal interval carinate; epipleura narrow; mesosternum broad, nearly fused with the metasternum, but having still a trace of the suture; anterior tibiae dilated, truncate at tip, apical spur set close to the inner angle, bifid at tip in the male except in *P. costata*, outer part of tibiae distinctly tri-dentate, intermediate and posterior tibiae compressed, dilated triangularly at apex, sharply uni-carinate on the upper side and not serrulate; anterior tarsi slender, intermediate and posterior somewhat short, sub-triangular and decreasing a little in size, basal joint very little wider than the second and third.

The difference between *Pedaria* and *Sarophorus*, apart from the facies, seems to consist only in the elytra being sinuate laterally near the base in the latter; this sinuation is, however, variable in the three species which should, on that account, be included in *Sarophorus*.

The valves of the penis are of two very different types (*vide* pl. xxxviii., figs. 29 and 30), but the last figure is too symmetrical.

Key to the Species.

A². Elytra parallel (*Sarophorus*).

B². Prothorax with shining, smooth flat tubercles or areolets.

Elytra with four series of tubercles on each side *tuberculata*.

Elytra without any series of tubercles *cicatricosa*.

B¹. Prothorax without areolets.

Elytra without any tubercles *costata*.

A¹. Elytra sub-cylindrical (*Pedaria*).

B². Prothorax with a short median basal longitudinal ridge.

α³. Intervals of elytra scrobiculate *cylindrica*.

B¹. Prothorax without any basal ridge.

α². Intervals of elytra granulose.

First and second intervals with three series of granules . . . *aspera*.

α¹. Intervals of elytra punctate.

First and second and fifth intervals with three series of punctures from the base to the median part; clypeus very slightly emarginate *picca*.

First interval with three series of punctures from the base to the median part; clypeus deeply emarginate and with the angles a little recurved *conformis*.

All intervals with two series of punctures; clypeus denticulate *segregis*.

Fourth and sixth intervals only with two series of punctures, ninth interval carinate and tuberculate *alternans*.

Fourth and sixth intervals only with two series of punctures, ninth interval not tuberculate; clypeus distinctly dentiform on each side of the emargination *sobrina*.

PEDARIA TUBERCULATA, Casteln.,

Plate XXXI., fig. 13.

Hist. Natur. d. Insect, ii., p. 88.

Black, opaque; palpi and antennæ reddish, club of the latter fuscous; head covered with broad foveate contiguous punctures, clypeus distinctly bi-sinuate laterally, widely emarginate in both sexes but more deeply in the female than in the male in which sex the angles of the emargination are less dentiform and the anterior impression a little more shallow; prothorax nearly straight laterally, but slightly sinuate there towards the base, not very convex, covered with longitudinal, irregular raised lines forming a sort of elongate scrobiculation, in the middle of the anterior part there is a short longitudinal raised line, and in the median and post-median part of the disk are two transverse rows of smooth, shining, raised areolets; elytra parallel, somewhat convex in the posterior part, outer margin hardly sinuate laterally below the shoulder, suture conspicuously raised; striæ geminate, deep, hardly punctate, first interval very narrow, all the rest with one series of rough, irregular shallow punctures, briefly setigerous, third, fifth, seventh, and ninth with a row of distinct, not closely set elongate tubercles, on the base of the sixth there is one tubercle; pygidium roughly pitted; metasternum covered with elongate, moderately deep, nearly confluent punctures: apical spur of anterior tibiæ moderately long, straight and slightly bifid at tip in the male, acuminate, horizontal and bending downwards in the female.

Length 6-9 mm.; width $3\frac{1}{2}$ - $4\frac{1}{2}$ mm.

Hab. Cape Colony (Somerset East, Graham's Town, East London, Port Elizabeth).

PEDARIA COSTATA, Fähr.,

Plate XXXVIII., fig. 30.

Insect. Caffr., ii., p. 204.

Black, opaque, nearly glabrous; palpi and antennæ piceous red, club of the latter fuscous; head covered with fine, closely set, contiguous round punctures, clypeus broadly and deeply impressed in the anterior part, deeply and widely emarginate with the angles of the emargination not angular; prothorax nearly straight laterally but a little attenuate towards the base, not very convex, covered with fine, very closely set punctures contiguous on the sides, and nearly so in the median part, and having occasionally a faint trace of one or two longitudinal areolets behind the supra-marginal smooth tubercle, there is a slight median longitudinal impressed line in the posterior part of the disk; elytra parallel, outer margin strongly sinuate above the metasternal epimera, little convex except towards the middle of the posterior part which is somewhat aculeate at apex, with intervals moderately costate in the anterior part and distinctly so in the posterior where they overhang the apical part, these intervals are very finely and closely punctate, and the ninth is carinate but reaches only as far as the rounding of the posterior part; pygidium very closely punctured; metasternum scrobiculate in the anterior part, regularly and closely pitted in the centre and base; apical spur of anterior tibiae of the male curved inwardly, short and straight in the female.

Length 8-9 mm.; width 4-5 mm. The figure of the genital armature is not correct.

Hab. Natal (Durban, Maritzburg), Transvaal (Lydenburg, Rustenburg), Cape Colony (Bedford).

The short squamose hairs springing from the punctures are nearly always rubbed off on the upper part, but traces are to be found on the sides of the elytra.

PEDARIA CICATRICOSA, n. spec.

Black, sub-opaque, but with the geminate striae of the elytra shining, palpi and antennæ reddish, club of the latter black; head covered with closely set, almost confluent, deep punctures, clypeus slightly sinuate laterally, broadly and deeply emarginate at apex, the emargination being almost triangular and the angles broadly dentate; prothorax straight laterally but slightly attenuate towards the base, not very convex, deeply and closely foveolato-punctate, the

punctures confluent laterally, in the centre of the disk are two transverse rows of raised, shining, longitudinal irregular areolets, the two median ones of the posterior row being somewhat triangular; elytra nearly parallel, convex from the median to the apical part, outer margin strongly sinuate above the epimera of the metasternum, conspicuously geminato-striate, the thin, slightly raised walls of the striæ interrupted by a transverse puncture at long, equal distance, intervals filled with numerous sub-scribulate punctures, plane but very distinctly costate at apex, the costate part overhanging the outer margin; pygidium and under side as in *P. costata*, of which it is a close ally, but is differentiated by a shorter facies, by the sculpture of the prothorax, and by the shape of the intervals which are not raised except in the posterior part; the apical spur of the anterior tibiae of the male is strongly bifid, with the inner part of the spine longer than the outer instead of being simple and strongly incurved as in *P. costata*.

Length 7 mm.; width $4\frac{1}{4}$ – $4\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Salisbury). Found in carrion, teste G. A. K. Marshall.

PEDARIA CYLINDRICA, Bohem.,

Insect. Caffrar., ii., p. 207.

Dark bronze, not much shining; antennæ flavous; head very closely punctured, punctures nearly contiguous, clypeus slightly but widely emarginate with the angles of the emargination rounded, and having in the centre a deep impression; prothorax convex, nearly straight laterally but slightly sinuate before the median part and near the base, it is covered with deep, round, contiguous foveolate punctures, and in the basal part there is a conspicuous longitudinal median carina projecting on the scutellary part; elytra sub-cylindrical, a little ampliate laterally in the middle, geminato-striate with the intervals filled equally with deep, scribulate irregular punctures each bearing a short, almost squamiform hair, ninth interval costate and serrulate from near the base for more than half the length, seventh and eighth intervals sub-costate at the base; pygidium foveolate; metasternum deeply and roughly foveolate.

Length $6\frac{1}{2}$ – $6\frac{3}{4}$ mm.; width $3\frac{1}{2}$ – $3\frac{3}{4}$ mm.

Male unseen.

Hab. Mozambique (Lourenço-Marquez, Rikatla). Neighbourhood of the Orange River, according to Fähræus.

PEDARIA ASPERA, n. spec.

Bronze, not very shining; head covered with closely set, round punctures, not quite contiguous in the anterior part of the clypeus which is widely but not deeply emarginate, with the angles of the emargination very slightly acute; prothorax nearly straight laterally, covered with deep, round, very briefly setigerous punctures which are deep and very closely set, scrobiculate laterally and also, although slightly, in the median part of the disk, and are broader along the base; elytra sub-cylindrical, a little ampliate laterally in the middle, geminato-striate, the striae are deeply punctate, the first interval and the anterior half of the second are filled with scabrose, briefly setigerous punctures, while the others have two only, the ninth interval does not overhang the outer margin much, and is quite smooth; pygidium very closely and deeply pitted; median part of metasternum and prosternum covered with contiguous foveæ; apical spur of anterior tibiae bluntly bifid in the male.

Length $7\frac{1}{2}$ mm. ; width $3\frac{3}{4}$ mm.

Hab. Cape Colony (Barkly West).

This species is easily recognised from its congeners by the sharply scabrose punctures in the intervals of the elytra.

PEDARIA PICEA, Bohem.,

Plate XXXVIII., fig. 29.

Insect. Caffrar., ii., p. 206.

P. cuprascens, Har., Berl. Ent. Zeitschr., 1859, p. 195.

Fuscous bronze, turning sometimes to black, seldom with a bronzy tinge, little shining; antennæ flavescent; head covered with round punctures closely set but not contiguous, clypeus widely but not deeply emarginate, anterior depression shallow and elongate; prothorax slightly sinuate laterally in the anterior part and very little attenuate towards the base, it is covered with round punctures which are not contiguous and are separated by smooth intervals; elytra sub-cylindrical but a little ampliate laterally at middle, geminato-striate, striae deeply punctate, first, third, and fifth intervals with three series of slightly elongate, very briefly setigerous punctures which on the second and fifth intervals are tri-seriate from the base to about the median part only, the ninth interval is distinctly carinate, but not serrulate; pygidium closely foveolate; metasternum covered in the central part with round punctures not closely set, but denser near the mesosternum, where they are

shallower but broader and confluent; apical spur of anterior tibiae bluntly bifid at tip in the male.

Length 7–8 mm.; width $4-4\frac{1}{2}$ mm.

Hab. Natal (Durban, Frere, Newcastle, Maritzburg), Transvaal (Rustenburg).

PEDARIA SEGREGIS, n. spec.

Black, very little shining; antennæ piceous, club flavescent; head covered with round, equi-distant punctures closely set and nearly contiguous, clypeus very little emarginate in front and with the angles of the emargination distinctly dentate and not impressed in the anterior part; prothorax slightly bi-sinuate laterally and covered with deep, round, almost contiguous foveolate punctures; elytra sub-cylindrical but a little ampliate laterally at middle, geminato-striate, striæ with shallow punctures, intervals with two series of slightly elongate punctures, ninth interval slightly serrulate at middle; pygidium deeply and closely pitted; metasternum very closely pitted, the punctures almost confluent.

This is the only South African species in which the first interval of the elytra has only two series of punctures.

Length 6–8 mm.; width 3–4 mm.

Hab. Mozambique (Rikatla).

PEDARIA CONFORMIS, n. spec.

This species is very closely allied to *P. picca*, and might easily be taken for it. It differs, however, by the more aculeate angles of the emargination of the clypeus, by the finer and slightly more closely set punctures on the head and prothorax, which are in consequence more densely pubescent, and by all the intervals of the elytra, with the exception of the first, having each two series of punctures. The colouration is bronze, or fuscous bronze, and there is a very feeble trace of a slightly raised longitudinal line in the middle of the anterior part of the prothorax.

Length $6\frac{1}{2}-6\frac{3}{4}$ mm.; width $3\frac{1}{2}$ mm.

Hab. Transvaal (Klerksdorp, Potchefstroom), Natal (Durban).

PEDARIA ALTERNANS, Waterh.,

Annals and Magas. Nat. Hist., 1890, p. 378.

Fuscous bronze or bronze; antennæ flavescent; head finely and very closely punctured, clypeus emarginate with the angles of the

emargination distinctly dentiform, anterior impression almost indistinct; prothorax very little sinuate laterally near the base, covered with fine, very closely set setigerous round punctures, more elongate and somewhat scabrose laterally; elytra sub-cylindrical but a little ampliate laterally at middle, geminato-striate, striae rather fine, intervals having on the anterior part three series of slightly confluent punctures, except the fourth and sixth which have each two rows of regular punctures, the ninth costate interval is sub-tuberculate for the greater part of the length, and at the base of the eighth there is a shorter series of similar tubercles as well as small somewhat crenulate costa at the base of the seventh; pygidium, under side, and legs as in the other species.

I know only the male of this species.

Length 7 mm.; width 4 mm.

Hab. Natal (Durban).

PEDARIA SOBRINA, n. spec.

Very closely allied to the preceding species; the colour and shape are identical, but the body is a little more massive, the clypeus is not denticulate on each side of the emargination in either sex, the punctures on the prothorax are slightly broader, but this difference, however, is noticeable only when comparing the two species; the intervals of the elytra have the same series of punctures, but the basal part of the seventh and eighth and the whole of the ninth have no trace of tubercles.

Length 8-9 mm.; width $4\frac{1}{2}$ - $4\frac{3}{4}$ mm.

Hab. Cape Colony (Graham's Town, Port Elizabeth).

GEN. *AULONOCNEMIS*, Klug,

Wieg. Arch., 1838, i., p. 70.

Mentum a little longer than broad, broadly emarginate at tip from angle to angle, and attenuate very obliquely laterally from the median part to the anterior angle; ligula divided into two; mandibles strong, sub-arcuate, horny, sharp at tip, and fringed inwardly with short ciliae; molar tooth strong, striate; labial palpi moderately short, joints quadrangular, nearly equal; apical lobe of maxillae greatly developed; apical joint of maxillary palpi fusiform, not quite acuminate at tip and as long as the three preceding, second one swollen, short; labrum distinct, horny; head rounded laterally in

front and with the anterior part nearly straight and having a very short clypeus marginate all round, no clypeal suture nor distinct genæ, eyes not visible from above; antennæ very short, club large in proportion, first joint a little convex, basal joint very concave; prothorax as broad as long, slightly narrower behind than in front, convex in front, anterior angles very sharp, posterior ones rounded; no scutellum; elytra sub-cylindrical, deeply striate, not covering the pygidium; epipleuræ narrow but distinct for half the length; abdominal segments fused; metasternum very large and long, intermediate coxæ broadly separated, nearly longitudinal; anterior tibiæ broadly dilated from the elbow, truncate at tip and with a short inner spur at the inner angle, armed with three straight teeth outwardly, posterior and intermediate ones, sinuate, ciliate, slightly carinate longitudinally but without any transverse ledge or dentate carinæ; anterior tarsi very short, the posterior ones are slightly longer, and the claws are very small.

In spite of the presence of a labrum and of very well-developed mandibles, this genus should not be included in the *Aphodiineæ*, as Lacordaire and Harold have done. The presence of one distinct apical spur in the posterior tibiæ militates against it. In the three examples at my disposal this spur is very distinct and single, but the shape of the anterior tibiæ, which are dentate as in *Pedaria*, and the great remoteness of the intermediate coxæ, go to prove that the place of the genus is in the *Coprinae*. I am not quite certain that the South African insect which I include in this genus does really belong to it, but the main characters answer very well to the description, although the curious fringe of squamiform hairs on the prothorax seems to be specifically peculiar.

AULONOCNEMIS TORQUATA, n. spec.

Black, moderately shining; palpi and legs piceous red; antennæ flavescent; head twice as broad as long, much rounded laterally in front, nearly straight in the anterior part, distinctly marginate all round, not much convex, without any clypeal transverse impression, but having in the male a frontal, sub-basal transverse raised line, and covered with equi-distant, not very closely set punctures; prothorax somewhat more convex in the anterior part than in the middle, sub-parallel laterally but with the posterior angles more rounded than the anterior, covered with closely set, round, deep, moderately large punctures, and the whole of the basal part as well as the rounded posterior angles have a moderately broad band of fulvous, squamose, sub-lanuginose pubescence; elytra nearly parallel

but with the humeral angle slightly sloping, cylindrical, and not covering the pygidium behind, they are deeply punctato-striate, all the striae reach the base and have one series of elongate, distant punctures, the intervals are convex, costate from the median part, carinate laterally, and have on each side a somewhat irregular row of small punctures; pygidium deeply and closely pitted; metasternum very long and broad, sub-aculeate in front and with the aculeate part clothed with a similar pubescence at the base of the prothorax, it is covered with deep foveate punctures, and has a very deep, elongate impression reaching from the posterior coxæ to the median part; legs deeply punctate; at the base of each dorsal stria on the elytra there is also a small patch of this fulvous squamose pubescence.

Length $4\frac{1}{2}$ mm.; width $2\frac{1}{4}$ mm.

Hab. Natal (Durban).

Nothing is known of the habits of this singular insect, which might easily be mistaken for an *Aphodius*. I believe it to have been caught at the electric light lamps.

GEN. COPTORHINA, Hope,

Trans. Zool. Soc., i., 1830, p. 95.

Mentum triangular, obtuse, rounded at tip, concave in the basal part, not incised or emarginate at tip; maxillary palpi short, basal joint short, club shaped, second also short, moniliform, a little shorter than the basal one, third slightly longer than the second and a little narrower, sub-cylindrical, rounded at tip; ligula long, bi-lobate; maxillæ strong, upper lobe comparatively small; third joint of maxillary palpi strongly fusiform inwardly, straight outwardly where it is deeply grooved; antennæ nine-jointed, basal joint long, thick, very little curved, second moniliform, third cylindrical, half the length of the first, fourth, fifth, and sixth lamellate and fitting closely against each other, first joint of the club concave, apical one convex; head with the clypeus deeply incised or furcate, eyes showing little on the upper side, suture of genæ distinct; scutellum invisible; body very convex; prothorax usually declivous in front; elytra very deeply sinuate laterally above the prosternal epimera, striate, striae not geminate, eighth stria beginning at the lateral situation; epipleura narrow but distinct; pygidium small; metasternum very broad, nearly quadrate between the coxæ, and separated from the mesosternum by a distinct raised line; legs short, strong; anterior tibiæ tri-serrate at base, strongly

tri-dentate at apex, and with the apical part either straight in a line with the base of the outer apical tooth, or truncate below its base, anterior tarsi slender, apical spur strong, thick and curved inwardly nearly at right angles at tip; intermediate and posterior tibiæ broadly dilated and compressed at apex, shallowly grooved on the upper side and with the edges of the groove closely serrulate; tarsi short, triangular, except the fifth which is elongate and a little longer than the other four, which gradually decrease in size; the basal one is very broad in several species but not as long as the two following put together. The two sexes are alike. The last sternite or cylindrical joint of the genital armature of the male is as long, or slightly longer than the valve, the shape of which, although variable in thickness proportionally to the size, remains nearly the same (pl. xxxviii., figs. 31-32).

The lateral emargination of the elytra is strong in six species only; it is less marked in *C. barratti*, and in *C. nana*, *armata*, and *imitativa* it is absent, but in these last three species there is a supra-marginal, longitudinal carina beginning where the emargination occurs in the first-named species, and reaching almost to the rounding of the posterior part; these three species have also tuberculate elytra.

Found either in fungi or sometimes in dung, and the cocoon of the larva is like that of a *Copris*, according to Mr. R. M. Lightfoot.

The genus is represented on the West Coast of Africa (Guinea) and in Eastern Africa (Usagara). One species from Northern India, the clypeus of which is quadri-dentate, has also been described, but it probably belongs to the genus *Delopleurus*.

Key to the Species.

- A². Elytra very deeply sinuate laterally.
- B². Prothorax excavate or retuse in front.
- C³. Striæ of elytra slightly punctate, intervals plane.
- D³. Head with a frontal carina.

Head with a transverse frontal line; prothorax sloping for two-thirds of the length, carinate and with the carina moderately deeply emarginate in the centre with the angles of the emargination not dentate—

Head with a transverse interrupted frontal line .. *klugi*.

Head with a non-interrupted frontal line *vicina*.

Head with the frontal raised line in the shape of a triangle; prothorax sloping for half the length and strongly bi-tuberculate at the top *auspicata*.

C². Striæ of elytra deeply punctate.

D². Head without frontal carina.

Prothorax sloping for two-thirds of the length, strongly impressed on each side of the carinate ridge which is deeply emarginate but not angular in the centre *optata*.

Prothorax retuse in front and bi-tuberculate in the centre of the declivity *nitidipennis*

B¹. Prothorax not excavate nor retuse in front.

Clypeal teeth very short; prothorax simple, equally convex; intervals of elytra plane, punctate *obtusicornis*.

D¹. Head with a frontal tubercle.

Clypeal horns very long and bending upwards; prothorax and intervals of elytra smooth *barratti*.

A¹. Elytra hardly sinuate laterally. .

C¹. Striæ of elytra geminato-striate, intervals tuberculate.

Clypeal teeth triangular, recurved; elytra short, very convex, tubercles of the intervals somewhat closely set *nana*.

Clypeal horns long and straight, or if triangular, nearly straight, intervals of elytra with elongate, carinate tubercles *armata*.

Clypeal horns long, sharply triangular, straight; intervals of elytra with a series of elongate granules obliterated on the two juxta-sutural ones *imitativa*.

COPTORHINA KLUGI, Hope,

Trans. Zool. Soc., i., 1830, p. 96.

Black, sub-opaque, club of antennæ brownish, joints piceous; head covered with very closely set, somewhat rugose, nearly confluent punctures, genæ diagonal from the base to half of the length, and straight from there to the junction with the clypeus where it is slightly angulate, they are marginate like the clypeus which is very broadly and deeply incised, with the angles of the emargination produced into two long, triangular teeth carinate longitudinally in the middle on the upper side, and strongly recurved, these teeth vary in size, but are as a rule less than half the length of the head, and the space between the two carinæ is deeply scooped, in the frontal part there is a transverse impressed line obliterated in the middle; prothorax strongly sloping in front for about three-fourths of the width, anterior angles somewhat blunt, outer margin very slightly sinuate between the anterior angle and the median rounded part, at

the top of the declivity there is a very distinct transverse carinate ridge, emarginate or slightly incised at middle and sinuate laterally above an elongate, lateral, shallow impression extending as far as the lateral supra-marginal fossa, in the great development this carina overhangs the declivity a little, the surface is covered with round, very small, moderately deep punctures almost confluent; elytra very convex, covered with punctures similar to those on the prothorax, very finely striate, striae very finely punctulate and intervals plane, they are very strongly sinuate laterally above the epimera of the metasternum; pygidium closely punctate; metasternum closely punctulate except at the base where the punctures are obsolete, and where there is an elongate, moderately deep impression; apical spur of anterior tibiae bent obliquely inwards at tip in both sexes, and neither angular nor spinose outwardly at the bend.

Length 18–22 mm.; width 9–14 mm.

Hab. Cape Colony (Somerset West, East London, ? Uitenhage), Natal (Durban, Estcourt, Maritzburg, Frere, Newcastle), Transvaal (Potchefstroom).

COPTORHINA VICINA, n. spec.

C. klugi, Bohem. (part).

Closely allied to *C. klugi*; the shape of the head is similar, but the transverse frontal raised line is not interrupted in the centre; the outer sides of the prothorax are straight from the anterior sinuation instead of being amplified past the median part, and the anterior sinuation is shorter and deeper and the margin is distinctly reflexed, the retuse part of the prothorax is similar, but there is a distinctly impressed median longitudinal line in the posterior part of the disk, better defined than in *C. klugi*; the striae of the elytra are much more deeply punctured, and the apical spur of the anterior tibiae is distinctly spinose outwardly at the inwardly bent part; anterior tibiae with the three outer teeth longer and sharper than in *C. klugi*; metasternum distinctly grooved longitudinally for nearly the whole length. In the small development the prothoracic carina is reduced to two median, very small tubercles.

Length 11–16½ mm.; width 7–10 mm.

Hab. Mozambique (Rikatla).

COPTORHINA AUSPICATA, n. spec.

Black, sub-opaque; head closely scrobiculate, genae moderately angular at base and sub-diagonal from there, clypeus in a line with

the genæ but angular close to them, acuminate laterally and produced on each side of the deep, broad, apical impression into two long, sharp, triangular teeth which are carinate longitudinally in the median part, vertex with a carina arcuate towards the base and more raised, even sub-tuberculiform there, in which case the lateral part of the carina is obliterated, basal part of the head punctate instead of being scrobiculate; prothorax obtusely rounded at the anterior angles, distinctly sinuate from there to a short distance from the median part, and gradually but slightly amplified from there to the rounded, basal angle, the outer margin is somewhat broadly marginate; prothorax retuse for a little less than half the width, very slightly impressed on each side of the middle of the retuse part which has at apex two median truncate slightly overhanging tubercles, sometimes truncate at tip and continued as a short carina, curving backwards, the whole surface is very closely and moderately punctulate, the punctures on the sides are rugose; elytra deeply sinuate laterally past the shoulders, covered with closely set, nearly confluent, moderately deep punctures, striæ very fine and hardly punctulate; pygidium very closely punctate; metasternum smooth in the median part, and with a distinct, longitudinal impressed line for nearly all the length; apical spur of anterior tibiae, bent at right angles.

Length $10\frac{1}{2}$ –14 mm.; width 7–9 mm.

Hab. Transvaal (Rustenburg), Southern Rhodesia (Salisbury, Enkeldoorn), Ovampoland (Humbe).

COPTORHINA OPTATA, n. spec.

Black, opaque; head scrobiculato-punctate, except on the vertex which is covered with closely set, deep punctures, genæ sub-diagonal, but in a line with the clypeus, very broadly incised, and with the two apical teeth carinate longitudinally in the middle, the suture of the genæ is continued transversely for a very short distance in the frontal part; prothorax sloping in front for two-thirds of the length, broadly impressed on each side of the sloping part which is distinctly carinate, the carina being emarginate in the centre, the discoidal part is nearly vertical on each side, the lateral carinate part overhanging a little the lateral basal part, and also the lateral fossa, the outer sides are slightly amplified laterally and very slightly sinuate near the anterior angle only, but in the small development the outer margin is more rounded at middle, the whole surface is covered with very closely set, deep, round punctures, turning to

small granules in the lateral, anterior part; elytra deeply and closely punctato-striate, intervals a little convex, especially in the posterior part, and filled with deep, contiguous punctures; pygidium deeply and closely pitted; metasternum nearly smooth for the greater part of the length, and having a basal fossa and a faint longitudinal line in the male, and a broader basal impression and a distinct longitudinal groove in the female; apical spurs of anterior tibiae truncate at tip and produced at right angles into a long, sharp spine.

This species is distinguished from *C. klugi* by the shape of the prothorax, which is distinctly bi-impressed in the median declivous part, and not in the supra-lateral one, the transverse carina extends also more towards the sides, and is more abruptly curved there, it is also more broadly sinuate in the middle, the punctuation both on the prothorax and on the elytra is broader and deeper, and the striae are very distinctly and deeply punctate; from *C. sobrina* in which the striae are as deeply punctured as in *C. optata*, and which has also two median impressions on the sloping part of the prothorax, it differs by the carina extending more towards the sides thus giving the sloping part a more quadrate shape, the anterior bi-impressed part is also broader and more quadrate, and the punctuation on the prothorax and the elytra is a little deeper; the outer angle of the apical spur is not spinose.

Length 12-14 mm.; width $8\frac{1}{2}$ -10 mm.

Hab. Southern Rhodesia (Manica).

COPTORHINA NITIDIPENNIS, Bohem.,

Insect. Caffrar., ii., p. 207.

Black, head and prothorax opaque, elytra shining; head transversely and roughly plicate, genæ diagonally attenuate and in a line with the clypeus which is slightly sinuate next to the apical teeth which are comparatively short, triangular, reflexed, not carinate longitudinally, and separated by a sharp, triangular incision, in a line with the anterior part of the eyes there is a transverse impressed line broadly interrupted at middle; prothorax very slightly sloping in front, and having in the centre of the anterior part at a short distance from the middle two transverse carinate tubercles and a very slight impression on each side of them, the outer sides are very slightly attenuate from the outer angle to a short distance from the middle, and straight from there to the base, the whole surface is

covered with very closely set granules replaced in the centre of the basal part by sub-foveolate punctures, and there is a faint, median, longitudinal impressed line reaching from between the two anterior tubercles to the base; elytra deeply striate, the striae punctate and encroaching on the intervals which are convex from a very short distance from the base, and seemingly impunctate, lateral sinuation above the metasternal epimera strong; pygidium closely and finely pitted; median part of metasternum faintly aciculate and punctulate in the median part, deeply impressed at base and with a longitudinal sulcus stopping beyond the middle; apical spur of anterior tibiae a little curved outwardly, bent at right angles at tip, produced in a sharp inner spine, and with the outer angle of the bent part acute. In the small development the thoracic tubercles disappear completely.

Easily distinguished from *C. auspicata* by the absence of arcuate cephalic carina, the shorter clypeal teeth, the more distinctly granulate prothorax which is scarcely retuse in the anterior part, faintly impressed, and not carinate on each side of the two tubercles, and also by the convex and smooth intervals of elytra.

Length 8-12 mm.; width $5\frac{1}{2}$ - $7\frac{1}{2}$ mm.

Hab. Transvaal (Rustenburg, Potchefstroom), Southern Rhodesia (Salisbury, Manica).

COPTORHINA OBTUSICORNIS, Bohem.,

Ins. Caffrar., ii., p. 209.

"Ob-ovate, strongly convex, black, sub-opaque; head and prothorax finely and closely roughly punctate, the former is slightly emarginate in front, and broadly and obtusely dentate on each side; elytra finely punctato-striate, with the intervals plane and finely but moderately closely punctulate. Equal in size to the small examples of *C. Klugi*, but it is distinguished by the head, the apex of which is only slightly emarginate and very briefly and obtusely dentate, by the shape of the prothorax which is equally convex in front and behind, and by the intervals of the elytra, which are more finely punctulate; antennae piceous black."

The co-type of Boheman, which is the only example of this species I have seen, is equal in size to *C. nitidipennis*, but the prothorax is quite convex.

Length 12 mm.; width 8 mm.

Hab. Neighbourhood of the Limpopo River.

COPTORHINA BARRATTI, Waterh.,

Plate XXXI., fig. 14.

Trans. Entom. Soc. Lond., 1876, p. 22.

Black, very shining on the upper side; club of antennæ flavescent; head smooth in the centre, punctulate laterally, deeply impressed at base and apex, and with a very small median tubercle, genæ very distinctly triangular laterally; clypeus emarginate for nearly all the width and produced on each side of the broad but shallow emargination into two long, curved horns compressed laterally and longer than the head; prothorax simple, sinuate in the centre at apex as well as above the eyes, anterior angles diagonal, sides straight if viewed from above, a little attenuate diagonally towards the base if viewed from the side, smooth and impunctate except on the sides which are slightly aciculate; elytra convex, sinuate above the metasternal epimera, but not as deeply as in *C. klugi*, *C. auspicata*, &c.; elytra convex, finely striate, striæ shallow but distinctly punctulate, intervals plane, impunctate; pygidium closely but not deeply pitted; metasternum smooth and impunctate in the median part; anterior tibiæ serrulate below the three outer teeth, and with a short, small tooth between the two apical large ones; apical spur strongly bifid at tip, outer spine longer than the inner.

Length (exclus. of horns) 13 mm.; width $8\frac{3}{4}$ mm.

Female unknown.

Hab. Transvaal (Lydenburg).

COPTORHINA NANA, Péring.,

Trans. S. Afric. Philos. Soc., iv., pl. ii., p. 95, 1888.

Black, head and prothorax opaque, elytra also opaque but with the elongate tubercles on the elytra moderately shining; head smooth in the centre and at base, and with a very small, sub-triangular tubercle in the centre of the frontal part, granulate on the genæ and on the clypeus, genæ ampliate, sub-auriculate laterally, the median part being slightly aculeate, and the apical bulging a little beyond the line of the clypeus which is produced at apex into two triangular, sharp, slightly reflexed teeth carinate longitudinally at middle, and divided by a broad, triangular incision; antennæ black; prothorax simple, convex, anterior angles moderately sharp, outer sides nearly straight if viewed from above, but deeply sinuate near the base laterally, base moderately arcuate, it is covered with small foveolate punctures, a little elongate in the central part of the disk where the walls separating them are slightly plicate longitudinally,

in the posterior part there is a well-defined impressed longitudinal line reaching from the median part to the base; elytra convex, hardly sinuate laterally above the metasternal epimera, geminato-striate and with the intervals plane and having each in the centre a series of elongate, carinate tubercles except on the juxta-sutural one which is very narrow, as well as a supra-marginal carina formed sometimes by two coalescing, very elongate tubercles, and widely disconnected from both base and apex; pygidium very deeply and rugosely punctured; metasternum impunctate in the whole of the median part; apical spur of anterior tibiæ very distinctly bifid at tip, but the inner tooth is a little stronger than the outer.

Length 6 mm.; width $3\frac{3}{4}$ mm.

Hab. Cape Colony (Cape Town, Stellenbosch). Found in trap-trenches, and in the stem of a very large Agaric mushroom.

COPTORHINA ARMATA, Bohem.,

(*Epirhinus armatus*.) Insect. Caffrar., ii., p. 200.

C. granulifera, Har. Coleopt., Heft. vi., 1870, p. 112.

Black, opaque; head rugose laterally, smooth in the centre, impressed on each side of the ocular carina and also in the base, and having in the centre of the frontal part a very small tubercle, genæ amplified laterally as a more or less sharp triangle, sharper in the male; clypeus produced on each side of the incised apical part into a long, or very long, compressed, recurved horn in the male, and a long triangular, also recurved tooth in the female, and carinate longitudinally in the centre; prothorax simple, slightly emarginate in the centre at apex, and strongly sinuate above the eye, nearly straight laterally if seen from above, but briefly sinuate near the base, covered with very closely set sub-foveolate punctures, and having a very short, basal median impressed line; elytra less convex than in the other species, very slightly sinuate laterally above the metasternal epimera, geminato-striate, striæ not deep and slightly punctate, intervals plane, closely punctulaté, and having each one series of elongate, carinate tubercles, except on the juxta-sutural one, where they are absent, between the outer stria and the outer margin there is a very distinct median longitudinal carina extending for about one-third of the length; pygidium closely and roughly punctured; edges of abdominal segments very deeply crenulato-punctate, last segment foveolato-punctate; metasternum quite impunctate between the coxæ, and without basal impression or longitudinally impressed line; anterior tibiæ pluri-serrate, the

two apical outer teeth with a smaller tooth between them; apical spur of anterior tibiae thick and strongly bifid at tip in the male, more slender, straight and sharp in the female.

Length (horns excluded) 6–8 mm.; width 4–5½ mm.

In the male the clypeal horns vary in length, and they are proportionately more laminate according to the greater length, but when the horns are short they are carinate longitudinally in the middle as in the female; in the latter sex their length does not vary much.

Hab. Natal (Upper Districts, Durban), Transvaal (Lydenburg).

COPTORHINA IMITATIVA, n. spec.

Black, opaque; very closely allied to the preceding species, but larger; head similarly impressed and also with a small median tubercle, clypeus produced into two long, triangular, recurved teeth nearly as long as the head, and sub-carinate longitudinally at middle; prothorax similarly shaped, equally closely punctate, and having in the centre a longitudinal smooth line, very faint in the anterior part, and grooved near the base; elytra moderately convex, very little sinuate laterally above the metasternal epimera, intervals geminato-striate, striae distinctly but remotely punctate, intervals plane, closely punctate, and having each a series of non-elongate, moderately closely set tubercles somewhat evanescent on the second, third, and fourth intervals, and entirely wanting in the first, these tubercles, however, coalesce at the base of the eighth interval, and form there a moderately long, distinct carina; the supra-marginal and median carina, the pygidium, under side and legs are as in *C. armata*.

Female unknown.

Length 9¼ mm.; width 7 mm.

Hab. Transvaal (Lydenburg).

GEN. DELOPLEURUS, Erichs.,

Nat. Ins. iii., 1848, p. 761.

Mentum concave at base, deeply sinuate laterally and strongly attenuate towards the tip which is incised; labial palpi short, first and second joints of nearly equal size, second joint sub-conical, apical one as broad as the second at base, sub-carinate, more rounded outwardly than inwardly; lobes of the ligula membranaceous, narrowly fringed with hairs inwardly; maxillae short, strong, apical joint of maxillary palpi fusiform, as long as the two preceding; antennae of

Coptorhina; clypeus quadri-dentate, eyes showing on the upper side through a narrow longitudinal slit; suture of genæ indistinct; prothorax simple, convex; elytra convex, striate, strongly sinuate above the prosternal epimera; pygidium triangular, not vertical; metasternum very broad between the coxæ, and separated from the mesosternum by a straight transverse line; legs as in *Coptorhina*, but the anterior tibiæ are only tri-dentate outwardly, and not serrate.

The generic distinction between *Delopleurus* and *Coptorhina* is very small, and is mostly based on the shape of the clypeus; the last joint of the maxillary palpi is more fusiform, and the shape of the last joint of the labial palpi differs a little.

DELOPLEURUS PULLUS, Bohem.,

Insect. Caffr., ii., p. 210.

Black, shining; head covered with deep, round, small punctures very closely set, genæ sub-triangular, but with the anterior angle in a line with the clypeus, the latter oblique, dentate at a short distance from the apex which is incised and has on each side of the incision a sharp tooth slightly reflexed, a little longer than the lateral one, and set close to it; the suture of the genæ is nearly obliterated, and there is no trace of transverse carina or raised line on the vertex; prothorax simple, not ampliate laterally, deeply sinuate laterally behind, convex, and covered with closely set, deep punctures which are not, however, quite so close in the supra-basal part which has a short, median, longitudinal impressed line, as on the sides; elytra convex, more shining than the prothorax, very narrowly striate, striæ moderately deep and slightly punctate, intervals plane, impunctate; pygidium directed forward, closely punctulate, and having a faintly raised, median longitudinal line; median part of metasternum smooth, impunctate, and without median line or impression, sides deeply and closely pitted; apical spur of anterior tibiæ straight, bifid at tip.

Length $5\frac{1}{2}$ – $6\frac{1}{4}$ mm.; width $3\frac{1}{2}$ –4 mm.

Hab. Southern Rhodesia (Salisbury).

GEN. XINIDIUM, Har.

Coleopt., Heft. v., 1869, p. 98.

“ This genus comes next to *Cheridium*, and differs from it, among other characters, by having eight striæ to the elytra, and by the position of the apical spur of the anterior tibiæ. Body oblong,

convex; head with the clypeus strongly bi-dentate in the middle, upper part of the eyes convex and ovate; antennæ nine-jointed; labial palpi narrow, sub-cylindrical, third joint distinct; elytra with eight striæ on each side; pygidium free, not contracted; mesosternum short, divided from the metasternum by a straight line; anterior tibiæ quadri-dentate outwardly, truncate, straight at apex with the inner angle acuminate, apical spur situated in the median anterior part above the point of insertion of the tarsi; posterior ones simple, joints of tarsi little dilated, claws normal."

XINIDIUM DENTILABRIS, Har.,

Loc. cit., p. 98.

"Black, moderately shining; head smooth and having a transverse carina abbreviated on each side of the vertex; prothorax regularly punctate, retuse in front and slightly impressed on each side; elytra striate, the striæ filled with transverse, shallow punctures; eighth stria entire, impunctate, intervals convex, slightly punctate, the punctures sub-confluent, pygidium punctate, metasternum smooth.

Length 13 mm.

Hab. Port Natal."

I have not seen this species.

GEN. MACRODERES, Westw.,

Proceed. Entom. Soc. Lond., 1842, p. 59.

Mentum straight laterally at base for one-third of the length, attenuate and deeply sinuate from there to the apex, deeply incised at tip, and quite concave in the middle below the incised part, the anterior angles are rounded; basal joint of maxillary palpi gradually amplified into a club, second shorter than the first, rounded and curved inwardly the inward curve being much less pronounced, sub-obliquely truncate at tip, third joint sub-cylindrical till past the middle, a little swollen before the apex which is somewhat acuminate, and more rounded outwardly than inwardly, it is half the width of the previous one, and of the same length; maxillæ very massive and broader at middle than the ligula, apical lobe short; last joint of maxillary palpi fusiform; lobes of ligula slender, broadly and thickly fringed with hairs; antennæ of *Pedaria*, but the apical joint of the club is much less convex; head with a frontal

carina extending from eye to eye, more transverse in the male than in the female, suture of genæ wholly or partly obliterated, eyes showing very little on the upper side, clypeus semicircular, emarginate at apex; prothorax very convex, somewhat retuse in front, marginate all round, lateral supra-marginal fossa not conspicuous; elytra very convex, as broad as the prothorax at base, ampliate laterally in the middle, deeply striate, striæ not geminate, eighth interval sharply carinate above the outer margin, which it slightly overhangs, no wings, epipleura moderately narrow, in some species there is a supra-marginal stria obliterated in the anterior part, which is apt to disappear wholly or partly, and is called the pseudopleural stria; pygidium sub-vertical; metasternum not very broad between the coxæ, divided from the mesosternum by a slight suture, mesosternum narrow; anterior tibiæ quadridentate externally, the basal tooth small, strongly dentate inwardly at apex in the male, but not in the female; intermediate and posterior tibiæ dilated triangularly at tip, bi-carinate longitudinally on the upper side, but not deeply grooved; tarsi of *Copris*, the basal joint more dilated at apex than the others, and as long as the two following, but the claws are greatly developed; body somewhat spherical. The habits are also those of *Copris*.

In the male the apical spur is straight and slender, but in the female it is thicker and sharply curved inwardly at tip.

This genus is restricted to South Africa.

De Borre and Sharp have published the description of six species, of which I have only been able to identify two with some certainty. Unfortunately these descriptions are based on very few examples (in several cases a single one), the sex of which has not been always ascertained. Von Harold had previously described also one species which, according to him, is found on the western coast of South Africa as far as the country of the Hereros, *i.e.*, N'Gamiland. I have added two species, one of which is very distinct; the other, described from one example only, is also very distinct, but might prove to be malformed.

The shape of the genital armature is the same in all the species I have seen.

Key to the Species.

A². Lateral margin of prothorax not sulcate, crenulate behind.

B². Intervals of elytra granulose.

Prothorax covered with very elongate punctures enclosing a
small granule *greeni*.

A¹. Lateral margin of prothorax sulcate, not crenulate behind.

B¹. Intervals of elytra punctate.

a². Intervals plane.

Prothorax impressed on each side *bias*.

a¹. Intervals convex.

Prothorax deeply impressed on each side, median part sub-lobate, pseudopleural stria absent *spectabilis*.

Prothorax faintly impressed laterally; intervals of elytra sub-pectiform, a pseudopleural stria *politulus*.

Prothorax not impressed laterally, intervals of elytra depressed, the striate parts raised *dubius*.

MACRODERES GREENI, Kirby,

Trans. Lin. Soc., xii., p. 397.

Westw., Trans. Ent. Soc., iv., p. 228, pl. xvi., fig. 4.

Black, opaque; palpi and antennæ reddish, club of the latter flavescent; clypeus covered with elongate, wavy punctures forming a very distinct, unequal plication, posterior part of the head covered with closely set, slightly scabrose punctures, frontal carina slightly arcuate in both sexes, very fine and connected at each end with the basal part of the suture of the genæ which is distinct for about half the length; prothorax convex, but sloping in front for nearly half the length, very slightly depressed on each side in both sexes, and a little depressed also in the median part of the base, in the female this depression has a central longitudinal impressed line reaching to a short distance from the centre, the whole surface is covered with small foveæ enclosing a minute, elongate granule, except along the outer margin where the foveæ are scrobiculate; elytra finely striate, striæ shining and slightly punctate, intervals very finely aciculate, convex, sub-pectiform, and filled with scabrose punctures or granules somewhat closely, although irregularly, set; pygidium deeply but not very closely pitted; the whole metasternum is deeply and closely pitted, the suture with the mesosternum is nearly obliterated.

Length 10–11 mm.; width 7–8 $\frac{1}{4}$ mm.

Hab. Cape Colony (exact locality not recorded).

MACRODERES BIAS, Oliv.,

Plate XXXVIII., fig. 28.

Entom., i., 3, p. 236; pl. xxviii., fig. 248.

Black, sub-opaque; head covered with closely set punctures behind the carina and with elongate transverse ones in front of it;

the clypeus is not deeply nor broadly emarginate at apex, and the frontal carina is nearly transverse in the male, and more arcuate in the female as well as sub-tuberculate in the median part; palpi and antennæ black; prothorax marginate laterally and in front but not along the base which is not arcuate, it is very convex, without any dorsal or basal median impressed line, but the anterior part is distinctly retuse in the large development, but only moderately so in the normal one, and there is on each side of the retuse part a more or less distinct sub-lateral impression not deep enough, however, to make the median part appear lobate; elytra very convex, as long as the prothorax, narrowly striate, the striae punctulate and the intervals plane and filled with closely set, somewhat deep punctures; pseudopleural stria reaching to two-thirds of the length and punctulate; pygidium moderately closely punctured; metasternum nearly impunctate, mesosternum punctulate; along the edge of the outer margin of the elytra there is a more or less distinct punctulate stria beginning near the ampliate part and disappearing at the rounding of the apex.

Length 9-10½ mm.; width 6¼-7¼ mm.

Hab. Cape Colony (Somerset West, Graham's Town).

MACRODERES SPECTABILIS, n. spec.

Female: Black, sub-opaque, antennæ and palpi ferruginous brown; anterior part of the head plicate transversely, somewhat roughly punctured behind the frontal carina which is a little arcuate and of even height; prothorax deeply and very closely punctured, vertical in front and having on each side two impressions so deep that the median part, which is sinuate transversely at tip, is almost lobate, the punctures are equally distant, and there is a faint impression at the base, and a faint, median, very short furrow; elytra deeply striate, with the intervals raised in the basal part, rounded and sub-costate past the middle, but not tectiform, and covered with closely set, irregular deep punctures, there is no trace of pseudopleural stria except near the rounded apical part, and the anterior tibiae have a very distinct basal tooth above the digitation.

The male is unknown.

This species is easily distinguished by the retuse prothorax which is almost lobate in front, and by the absence of pseudopleural stria. It is probable that the prothorax is still more lobate in the male.

Length 12¾ mm.; width 8½ mm.

Hab. Cape Colony (no exact locality).

MACRODERES POLITULUS, Borre,
Annal. Soc. Ent. Belg., 1880, p. xi.

? *M. pilula*, Sharp, Annal. Soc. Ent. d. Belg., 1880, p. xxxviii.

Black, but moderately shining, clypeus deeply emarginate, and with the angles of the emargination a little reflexed and dentate especially in the male, transversely plicate, frontal carina high, transverse, hardly arcuate and reaching the suture of the genæ, posterior part of head deeply punctate; prothorax very convex, a little retuse in front and with two lateral impressions in the anterior part which are hardly distinct in the female, covered with very closely set punctures which are a little shallower and slightly more elongate in the median part of the disk; the impression in the base is very faint; elytra very convex, deeply but finely striate and with the intervals convex, sub-pectiform past the median part, and roughly and irregularly punctate, pseudopileura obsoletely rugose or nearly smooth in some female examples, pseudopileural stria distinct for two-thirds of the length and varying a little in position, but set nearer to the epipleuron than to the carina of the pseudopileuron; under side punctured, the depth of the punctuation variable; anterior tibiæ tri-dentate, and with a moderately distinct basal tooth above the digitation.

Length $10\frac{1}{2}$ –11 mm.; width 6–8 mm.

Hab. Cape Colony (Stellenbosch, Paarl, Worcester, Graham's Town, Somerset East).

I have little doubt of the identity of *M. pilula* with my examples, some of which come from the same locality as Dr. Sharp's female, from which his description was made, but I am not so sure that they are identical with *M. politulus*, Borre, the elaborate description of which, however, corresponds exactly, except that Borre states that the pseudopileural stria does not reach quite to the median part; only in one of my examples does this stria reach the median part.

MACRODERES DUBIUS, n. spec.

Shape, size, and colour of *M. politulus*; the head is similar; the prothorax is more convex, not at all retuse in front, and the lateral impressions there are absent or indistinct, the punctuation is the same, but a little finer, and the impressed line in the posterior part is moderately distinct, the intervals of the elytra instead of being convex and sub-pectiform are plane, but the striate part is sharply costate, the striæ are very fine and punctulate, and the intervals between them are filled with finer and more shallow punctures than

in *M. politulus*; pygidium closely and shallowly punctured; metasternum vaguely punctured, and with a fine, median, very little raised longitudinal carina; juxta-marginal stria distinct in the posterior part only.

Length 11 mm.; width $7\frac{1}{2}$ mm.

It is quite possible that in this species, of which I have seen only one female example, the peculiar form of the intervals of the elytra may be caused by malformation.

Hab. Cape Colony (no exact locality).

(Species non-identified by me.)

MACRODERES NITIDUS, Har.,

Mitth. d. Münch. Ent. Ver., 1877, p. 97.

“Strongly convex, sub-globose, shining black; head rugulate transversely in front, punctulate behind, a frontal transverse carina, clypeus broadly and obtusely bi-dentate; prothorax closely, strongly and equally punctate, immarginate at base, anterior part sub-retuse in the male; elytra slightly crenato-striate, intervals moderately strongly punctate, punctures sub-seriate, eighth stria carinate from the base to a short distance from the apex, pygidium shining, and with large, scattered punctures.

Length 10–12 mm.

Differs from his congeners in being shining and in the elytra having moderately distinct series of punctures.

Hab. Cape of Good Hope.”

MACRODERES WESTWOODI, Borre,

Annal. Soc. Ent. d. Belg., 1880, p. ix.

“Black, moderately shining; head and clypeus equally rugose, the frontal carina not well defined except in the centre and at each end, which makes it appear as if it were almost tri-tuberculate; prothorax broad and convex, with the anterior declivity well rounded and not at all abrupt and without any trace of excavation, anterior margin semicircularly emarginate, while in *M. bias* and *M. greeni* this emargination is formed by a line twice interrupted, and with obtuse angles; ante-scutellary depression very slight; punctuation strong, dense and confluent on the disk, weaker and more scattered towards the sides; elytra with the striae distinctly punctate and with the intervals convex, very rugose and roughly punctate, pseudopleural

stria punctate and ascending from the posterior part to two-thirds of the length, while in the anterior part there are still some ill-seriated punctures, epipleural fold smooth, divided from the pseudepipleura by a carina which is not flexuose as in *M. greeni*; sides of metathorax somewhat punctate; anterior coxæ and metathoracic episterna strongly punctate; metasternum with a fine punctuation noticeable only behind; posterior coxæ with a row of deep punctures on their posterior edge, abdominal segments with similar row of punctures along the suture; anterior tibiæ with four small outer teeth the three apical ones of which are very marked.

Length 10 mm."

Hab. Cape of Good Hope.

MACRODERES UNDULATUS, Borre,

Loc. cit., p. x.

"Black, little shining, except at the apex of the costiform intervals of the elytra; head and clypeus very rugose, and with the anterior emargination not deep, frontal carina still weaker than in *M. westwoodi*, and almost reduced to a strong, transverse, smooth tubercle extending slightly on the right and on the left; prothorax broad, convex, with the anterior declivity as equally rounded as in *M. westwoodi*, but the anterior angles project more and are nearly straight, sides rounded, not sensibly sinuate in front, basal angles completely rounded; punctuation strong, dense, and somewhat confluent on the disk, less strong, and less dense on the sides; no ante-scutellary depression (fossette); elytra with deep, smooth striæ separated by conspicuous intervals forming costæ more or less undulate owing to the irregular incisions on each side imparting to them a very rugose appearance, pseudepipleural stria following the epipleural fold and reaching nearly to the shoulder, pseudepipleura with large, deep punctures; under side nearly smooth with the exception of the episterna of the metathorax; mentum, coxæ, and anterior legs hairy; anterior tibiæ with three moderately strong teeth.

Length 10 mm.

Hab. Cape of Good Hope."

MACRODERES FORNICATUS, Sharp,

Annal. Soc. Ent. d. Belg. 1880, p. xxxvii.

"Sub-hemispherical, black, head and prothorax moderately shining, elytra opaque; prothorax strongly punctate, punctures simple, not

at all ocellate, confluent, intervals broad; elytra finely striate with the interstices slightly convex, sparsely and obsoletely punctate and with the suture conspicuously shining.

Length ? 14 mm. ; width 7 mm.

In this species the punctures on the prothorax are much finer in the centre, and consequently the intervals separating them are there much larger than the punctures; near the sides the punctures are larger and more rounded, but they are not confluent, each puncture being entirely surrounded by a complete interval; the hind portion of the lateral piece of the prosternum has only very much obliterated punctures; the pseudopipleura are dull, not punctate except the stria, which is evidently nearer to the epipleuron than to the pseudopipleural carina; the intracoxal part of the metasternum is somewhat strongly punctate. The example from which this description is made is a well preserved, nearly mature female; the clypeus is emarginate in front with the two sides of the emargination projecting; the prothorax is not much convex, but has in front on each side and near the anterior margin a well-defined circular impression; the three outer teeth of the anterior tibiae are very large, and there is also a well-defined superior small tooth. This species is probably very closely allied to *M. politulus*, but the punctuation of the prothorax seems to be very different."

MACRODERES PRISTINUS, Sharp,

Loc. cit., p. xxxviii.

Sub-hemispherical, transversely convex, nearly opaque; prothorax very closely and deeply punctate; elytra obsoletely striate, strongly punctate, pseudopipleural carina little distinct and much abbreviated behind.

Length $9\frac{1}{2}$ mm. ; width $6\frac{1}{2}$ mm.

The punctures on the prothorax are, in this species; very deep and very similar to one another, the central ones differing little from those on the sides; the striae of the elytra are not very marked, but the punctuation, on the contrary, is very developed; the pseudopipleura are punctate like the other parts of the elytra, and the pseudopipleural stria is very indistinct and set very close to the epipleuron.

The species is easily distinguished by the small development of the pseudopipleura. The example described is a female; the prothorax is not impressed, and the clypeus is deeply emarginate at tip.

Hab. South Africa (Diamond Fields).

GEN. HETEROCLITOPUS, n. gen.,

Plate XXXIX., fig. 31.

Mentum longer than broad, rounded and attenuate laterally towards the tip, not deeply emarginate there, and deeply grooved longitudinally in the centre from apex to base; ligula long but very slender; labial palpi bi-jointed, basal joint turbinate, apical one sub-ovoid, briefly acuminate at tip, and not quite as broad as the basal one; maxillæ strong, apical lobe also long, but moderately narrow; maxillary palpi as in *Copris*; antennæ nine-jointed, basal joint longer than the five following, apical joint of the club scooped out longitudinally; eyes showing very little in a longitudinal slit on the upper side of the head; clypeus with two short, horizontal spines in the middle, suture of genæ highly carinate; prothorax convex, simple; elytra sub-parallel, longer than the prothorax, not much convex, and having on each side seven geminate striæ, outer margin punctulate, epipleura distinct; pygidium large and broad; metasternum moderately broad between the coxæ, and fused with the mesosternum without any trace of suture or raised line; anterior tibiæ truncate at apex, strongly quadri-dentate outwardly, the basal tooth being close to the base; apical spur normal, slender; intermediate tibiæ gradually dilated towards the apex where they are very broad, and strongly bi-sinuate inwardly, compressed and uni-carinate, basal joint of tarsi as long as the four following, produced obliquely at the base and parallel from there; posterior tibiæ short, also uni-carinate, but very broadly dilated at the apex, obtusely denticulate outwardly, and having the inner apical spur much thickened, hollowed inwardly and twisted; all the joints of the hind tarsi are fused together in a sub-ovate very broad patelliform process fringed with dense and long ciliæ, and showing no trace of apical claws (fig. 31); the hind tibiæ are also densely ciliate for half the length.

HETEROCLITOPUS REMIPES, n. spec.

Black, shining, briefly but densely pubescent; head covered with very broad and deep, almost scrobiculate foveæ, genæ very sharply triangular laterally, clypeus rounded laterally but widely incised in the centre and having on each side of the rounded incision two very distinct teeth rounded at tip, the suture of the genæ is much raised and coalesces with a frontal carina arcuate towards the base; prothorax moderately convex, rounded and ampliate laterally, and deeply sinuate there towards the base, marginate in front and on

the sides but not along the base which is arcuate, covered with very closely set, somewhat rugose foveate punctures, and having a faintly impressed median longitudinal line in the basal part of the disk; elytra deeply geminato-striate, striæ impunctate, intervals much raised, tectiform, roughly and deeply punctate on each side along the striæ, and scrobiculate laterally above the outer margin; pygidium covered with very closely set, almost confluent, small but deep punctures, and more briefly pubescent than the upper part of the body; sides of abdomen sub-hirtose; metasternum deeply but not closely punctured, and having a distinct groove reaching from the base to a little past the median part.

Length $6\frac{1}{2}$ –7 mm.; width 4 mm.

Hab. Natal (Durban), Southern Rhodesia (Upper Hamyani River).

The habits of this singular insect are not known. Mr. C. N. Barker writes to me that he has found it only in some ruts or furrows. It is not improbable that it also abides or lives in the dung-heaps of white ants (*Termes* sp.).

SAPRÆCIUS, n. gen.

Mentum rounded laterally, a little sinuate towards the tip where it is also a little attenuate, deeply and broadly emarginate at apex, convex on each side, and having a very broad and deep median longitudinal sulcus; basal joint sub-cylindrical, but a little wider at apex than at base, second joint in the shape of an elongate club nearly twice as long as the basal one, a little obliquely truncate inwardly; third one very short, subulate, apical joint of maxillary palpi sub-fusiform, truncate at tip, and nearly as long as the three preceding ones, maxillæ strong, apical lobe narrow and equal in length to two-thirds of that of the maxillæ; ligula bi-lobate, the lobes moderately long and not very slender; antennæ nine-jointed, basal joint nearly straight, cylindrical, second moniliform, third and fourth in the shape of a truncate cone, but the fourth is broader than the third, fifth and sixth sub-triangular inwardly, the sixth fitting a little closely against the first joint of the club which is very convex; head with a broadly arcuate clypeus armed with two horizontal teeth in the centre in both sexes; eyes not showing much on the upper side; prothorax simple, depressed, not much ampliate laterally, deeply emarginate sub-circularly towards the base which is arcuate, no scutellum; elytra parallel, depressed, and having seven striæ on each side; no wings, pygidium large, sub-triangular,

and a little convex; metasternum plane in the centre, but sub-aculeate towards the apex where it is deeply impressed transversely, and separated from the mesosternum by a transverse impressed line; legs short and massive; anterior tibiæ very strongly and broadly quadri-dentate, truncate at tip, sharply carinate in the middle; apical spur moderately long and slender, and curving a little outwardly; intermediate and posterior much compressed, but broadly ampliate at tip, very faintly grooved longitudinally on the upper side and slightly denticulate; intermediate and posterior tarsi short, the joints are fused, and vary in number from two to five; there is no trace of claws.

This genus is evidently allied to *Dendropæmon* and *Onthocharis*, both American genera. It is also related to *Stiptopodius* from Abyssinia and Somaliland.

Key to the Species.

Intermediate tibiæ tri-jointed, posterior ones bi-jointed *optatus*.

Intermediate tibiæ five-jointed, posterior ones ^{five}~~four~~-jointed *singularis*.

SAPRÆCIUS SINGULARIS, n. sp.

Coppery on the head and prothorax, or sometimes dark bronze and with the elytra very dark blue, or nearly black, under side and legs dark bronze; head closely punctate, and with a faint trace of transverse folds on the clypeus, genæ sharply triangular at base, but in a line with the clypeus which is arcuate, incised in front, and has on each side of the incision a distinct, nearly horizontal tooth, there is a frontal arcuate carina uniting the two genæ, and a sub-basal one more transverse than the first and more raised; prothorax plane but a little dehiscent in front, marginate all round, and covered with deep, closely set punctures in the dorsal part, and deeper and more rugose, almost scrobiculate ones on the sides; elytra nearly parallel, narrowly but deeply geminato-striate, and with the intervals raised, sub-pectiform on the dorsal part, and sparingly punctulate, the punctures on the sides and posterior part being very briefly setulose; pygidium closely and finely pitted; metasternum punctulate, and very faintly impressed longitudinally at middle, sides of pectus slightly pubescent. Intermediate ^{and posterior} tibiæ ~~with~~ five joints, the ultimate ^{ed} one, however, is hardly discernible, posterior ones ~~four-jointed~~, but the joints are not free, and the apical one is obliquely truncate at tip.

Female only known.

Length 6 mm. ; width 3 mm.

Hab. Southern Rhodesia (Salisbury). Caught in sweeping, teste G. A. K. Marshall.

SAPRÆCIUS OPTATUS, n. spec.

Head with a slight coppery bronze tinge, prothorax dark shining bronze, elytra black, under side dark bronze ; a little more massive than *S. singularis*, owing to its being a little wider in proportion to the size ; the sculpture and the shape of the head are similar ; the sculpture of the prothorax is also identical, but the lateral punctures are not quite so rugose ; the striae of the elytra are finer, deep, and not geminate, distinctly but not closely punctate, and the intervals are plane, irregularly but not closely and somewhat deeply punctate ; intermediate tibiae tri-jointed, the apical joint being much narrower than the one preceding, which is so fused with the basal one that there is only an angular projection on the upper side where the junction with the basal joint should have been ; posterior tarsi bi-jointed, the apical joint much narrower than the basal one, which has also three short denticulations on the upper side, but has otherwise no trace of inner or outer suture.

Sexes similar.

Length 8 mm. ; width 4 mm.

Hab. Southern Rhodesia (Salisbury).

GEN. PARAPINOTUS, Har.,

Mith. d. Munch. Ent. Ver., 1878, ii., 1878, p. 43.

Mentum slightly rounded laterally at base, obliquely attenuate from the middle towards the apex, where it is widely and deeply emarginate ; lobes of the ligula long, moderately broad ; labial palpi tri-jointed, basal one sub-conical, somewhat elongate and a little obliquely truncate at tip, second one sub-cylindrical, not longer than the basal one, but a little wider, and straight at tip, third one one-third the width and half the length of the second, and implanted in the centre of the apex, slightly inflated at middle, and rounded at tip ; maxillæ strong, apical lobe moderately narrow and very long ; apical joint of maxillary palpi sub-fusiform, not as long as the two preceding put together ; basal joint of clava long, clubbed at tip, second short, thick, moniliform, third and fourth obconical, fifth and sixth wider and shorter, basal joint of the club convex, apical one

very little convex outwardly; clypeus semicircular, in a line laterally with the genæ, and having at apex two triangular vertical teeth; prothorax more or less retuse in front; no scutellum; elytra elongate, slightly ampliate at middle laterally, convex, and having on each side eight punctate striæ the outer of which is partly hidden by the costate interval, epipleura distinct; pygidium as broad at the base as long, a little convex; metasternum narrow between the coxæ, divided from the mesosternum by a distinct arcuate impressed line; anterior tibiæ quadri-dentate outwardly, straight at apex with a long inner spine in the male, but not in the female, apical spur moderately slender, nearly straight; intermediate and posterior tibiæ triangular at apex, and obsoletely grooved on the upper side, the outer carina alone being crenulate, but not dentate above the apex in either.

The generic characters differentiating this genus from *Copris* are very small; the armature of the clypeus imparts to the only species known a peculiar facies. The valves of the penis of the male (plate xxxviii., fig. 27) are of a shape different from that of *Copris* or *Catharsius*.

PARAPINOTUS DEWITZI, Har.,

Plate XXXIII., figs. 3, 3a; Plate XXXIX., fig. 26.

Loc. cit., p. 44.

Copris curvifrons, Pér., Trans. S. Afric. Phil. Soc., 1885, p. 89

Black, shining, glabrous on the upper side; head impunctate in the male, apical teeth confluent at base and strongly developed, between the eyes there is a transverse, not much raised carina reaching from eye to eye; in the female the head is rugosely plicate in front and punctulate behind, the carina is shorter and very much more raised; prothorax retuse in front, quite vertical in the male and deeply impressed, or almost excavate laterally, and with the median lobe emarginate in the centre, a little sinuate on each side, and with the outer angles moderately sharp; in the female the anterior part is less retuse, the median part is not lobate, the two lateral impressions are feebly indicated, but the anterior part has a median more or less distinct, sinuate carina; the prothorax is covered with closely set punctures which are smaller and shallower in the anterior part in the male; elytra deeply punctato-striate with the intervals closely aciculate; the striæ are very fine, and the punctures are wider, and impinge on each side on the intervals the seventh of

which is much raised, tectiform, and overhangs the eighth stria which is entire and impunctate; metasternum nearly smooth in the central part, and with a slight longitudinal carina in the median part.

Length 9–11½ mm.; width 5–7 mm.

Hab. Natal (Durban, Estcourt), Southern Rhodesia (Victoria Falls).

GEN. HELIOCOPRIS, Hope,

Plate XXXIX., fig. 24.

The Coleopt. Man., i., 1837, p. 23.

Mentum incised for two-thirds of the length, outer part attenuate obliquely towards the tip which is sharp; basal joint of labial palpi very broad, sub-ovoid but more inflated inwardly, second one hardly more than one-half the length of the basal one, and only half its width, arcuate inwardly, obliquely truncate outwardly at tip, third joint very slender and rod-like, about 2 mm. long, and planted at the base of the outer truncate part of the second; maxillary palpi long, slender, basal one longer than the second which has the shape of a very elongate cone very slender at base, apical one longer than the first, slender, straight outwardly and rounded inwardly, maxillæ long, robust, upper lobe moderately short, antennæ nine-jointed, club tri-foliate, first joint of club concave, glabrous and shining, the other two opaque and briefly pubescent; head large but a little longer than broad; eyes large, showing nearly as much on the upper as on the lower side, and divided briefly in front by the canthus of the genæ, the latter are broadly lanceolate or a little ampliate at base, and often dentate at apex; clypeus more or less deeply bi-sinuate laterally, obtuse or emarginate, and sometimes dentate in front; prothorax broad, convex, retuse in front, more or less deeply excavate laterally in the male; elytra ample, convex, sometimes nearly tectiform (*H. gigas*), suture raised, they have on each side seven striæ the outer one of which is edged by a very distinct carina reaching from the shoulder to the rounding of the apical part, and another fine one beginning at some distance from the base and reaching the apex, this last carina is really the outer margin which is quite obliterated in the anterior lateral part, while the fold of the epipleura has been increased in proportion, and may be taken in the anterior part as the margin proper; pygidium triangular, rounded at apex, hardly convex; metasternum narrowed in the median part, deeply impressed at base, and having a not very

well-defined, sub-basal, longitudinal line, and separated from the mesosternum by a distinctly impressed, transverse line, mesosternum having a smooth, median, slightly raised space, broad, and in the shape of a truncated pyramid; anterior legs very strongly tridentate outwardly, and having a long, thin inner spur, intermediate and posterior ones pluri-dentate outwardly.

The sexual differences are found in the armature of the head and of the thorax in the male, but there is another one which holds good for the South African species with the exception of *H. gigas* : *i.e.*, in the male the apical outer spine of the fore-tibiae is less curved outwardly than in the female, is truncate at tip, and is often provided there with a vertical spine or mucro, which is the continuation of the upper carina.

The genus is represented in Asia, but the greatest number of species are found in Africa.

Like *Catharsius* and *Copris* they produce a feeble stridulating noise by rubbing the propygidium against the elytra.

They are the largest of COBRINÆ and they are far from rare in some localities. The late Dr. Bradshaw told me that when on the Zambesi River (Victoria Falls) and neighbourhood, he was in the habit of digging them out in kaffir cattle kraals, where they were found in plenty.

I have received a ball made by *H. pimal*, and containing a withered pupa. This ball, which was found on the banks of the Vaal River, is a perfect sphere, 88 mm. in diameter; there is round the cavity a coating of vegetable matter 11 mm. thick; covering this herbaceous zone there is another coating of hardened reddish ground forming the outer rind, and the outer part of it has been thoroughly well masoned by the clypeus and rake, or trowel-like forelegs, of the parents, and it bears their distinct imprint; on one side there is a round spot, not covered with clay, and filled with herbaceous matter which, on a section of the "ball" being made, is seen to pass through the layer of earth, and abut in the cavity. This tunnel is the weak part of the sphere, which the imago attacks in order to break loose when the summer rains have sufficiently relaxed or softened this way of exit.

I have received two male examples of *Helicopris gigas* found dead in the veldt, and brought to me with the cephalic and thoracic horns still locked. One of the examples had been overturned and was lying belly uppermost. I have also been told that other *Helicopris* have been found *in situ*, in the same position.

The shape of the valves of the penis, which are almost symmetrical, is of two sorts; they are either moderately curved at apex

(plate xxxix., figs. 32, 33), or in the group of *H. eryx*, *H. jupiter*, *H. marshalli*, &c., the apical part is nearly vertical, and sharper and narrower than in fig. 33.

Key to the Species.

3. Elytra of male without any basal tubercles.

Clypeus truncate and emarginate at tip, elytra very distinctly shagreened; clypeus of ♂ concave, basal angle of clypeus produced into two long or very long horns in the great and medium development, anterior angles of prothorax very long and angular, median part of prothorax produced into a long, sub-horizontal horn (pl. xxxii., figs. 7, 7a) *gigas*.

Clypeus of ♂ with four strong teeth, the lateral ones shorter than the apical; prothorax with a five-horned process, the lateral horns short, and the median one long and truncate at tip . . . *dilloni*.

Clypeus semicircular in the ♂, and with the base of the clypeus produced in a sharp, short, triangular process; anterior part of head with a short or moderately long horn; prothorax with a median process furcate at tip, directed downwards, and having a sharp, angular tooth on each side of it; ♀ clypeus acuminate, obtuse at tip, head with a transverse, post median laminate carina; prothorax with a strong, bi-sinuate transverse ridge (pl. xxxii., fig. 2) *pirmal*.

Clypeus semicircular, bi-sinuate laterally, a little obtuse at tip, slightly emarginate there, basal angle distinct but not dentate; elytra smooth; prothorax of ♂ with a sharp transverse carina overhanging a little the retuse part, as well as the lateral excavation, head with a distinctly tri-dentate transverse lamina; ♀ carina on the head not tri-dentate, prothorax not excavated laterally, and having in front a distinct, sinuate ridge (pl. xxxii., figs. 6, 6a) *anterior*.

A². Elytra of male with a sub-basal, short, longitudinal carina on the fifth interval of the elytra.

Head of ♂ straight laterally, clypeus a little elongate, slightly blunt at tip, angle of genæ with clypeus not prominent, head with a transverse, laminate carina with the angles sharp; prothorax deeply excavate, sharply carinate in the anterior part, carina deeply emarginate laterally and bi-dentate above the excavation, anterior part vertical in the middle, and having under the apical carina two very distinct, triangular, sub-horizontal teeth; ♀ clypeus elongate, head with a sub-median transverse, laminate carina, anterior part of prothorax with a bi-sinuate transverse carina (pl. xxxii., fig. 8) *japetus*.

Genæ diagonal, with the anterior angle sharply toothed; ♂

clypeus acuminate, angular laterally at middle, slightly emarginate at tip, a curved, hamate tooth in the anterior part of the clypeus; prothorax excavate on each side, and produced in the middle in a triangular sub-horizontal lobe with two sharp sub-horizontal horns at tip *marshalli*.

A¹. Elytra of male with small basal tubercles.

Clypeus sub-acuminate not sinuate laterally, blunt at tip in the male, rounded in the female, head with a median transverse laminate carina, in both sexes; median part of prothorax produced in a long, broad, triangular process sharply dentate at base; ♀ prothorax transverse and carinate in front (pl. xxxii., figs. 1, 1a) *hamadryas*.

Clypeus bi-sinuate laterally, very deeply emarginate at tip and with the angles of the emargination dentate in both sexes, head with two vertical horns in the male, and a transverse carina in the female; prothorax of ♂ and ♀ as in *hamadryas* *faunus*.

Clypeus slightly bi-sinuate laterally and semicircular at tip in the male, acuminate in the female and slightly obtuse at tip; prothorax of ♂ deeply excavate laterally, and having in front a median strongly quadri-dentate lobe *atropos*.

Genæ sinuate, sharply angular at base; ♂ with a long cephalic horn, prothorax with three horizontal horns in the median part; ♀ with a transverse carina on the head, prothorax with a sharp, bi-sinuate carina (pl. xxxii., fig. 5) *eryx*.

Clypeus slightly bi-sinuate on each side, and a little emarginate at tip with the angles of the emargination a little sharp; ♂ anterior part of the head with a short, slightly emarginate horn, prothorax produced into the middle into a very long horizontal process with a vertical tooth underneath at about the median part (pl. xxxii., fig. 4) *hamifer*.

HELIOCOPRIS GIGAS, Linn.,

Plate XXXII., figs. 7-7a.

Mus. Lud Ulr., p. 16 ♀.

H. isidis, Latr., Mém. Mus., v., 1819, p. 249.

H. Andersoni, Bates, Coleopt., Heft. iv., 1868, p. 88.

Piceous or piceous red, not much shining, glabrous on the upper side except in the anterior part of the prothorax which is clothed with long, dense, fulvous hairs; head plicate transversely, and closely scrobiculate on the vertex and genæ; prothorax very convex, beset with closely set, large granules in the anterior part, scrobicu-

late in the posterior part; elytra very convex and tectiform owing to the suture and adjacent parts being more raised than the median part of the disk, and sloping towards it, they are moderately deeply geminato-striate, and the intervals are filled with a shallow scrobiculation, giving them a very coriaceous and distinct appearance; pygidium faintly punctate; metasternum with a conspicuous basal impression; apical outer tooth of the anterior tibiæ not truncate at tip, curving outwardly in both sexes, and without an inner apical mucro.

Male: Clypeus very deeply concave in the anterior part, diagonal laterally and with the anterior part deeply emarginate with the angles of the emargination sharp, the base of the clypeus and the apex of the genæ, which are quite straight, are produced on each side into a compressed bi-sinuate horn either sub-vertical or directed backwards, and the length of which varies from 9 to 18 mm.; prothorax vertical in front and with the outer anterior angles produced into a very long, aculeate process, while the median part of the disk is in the shape of a triangular long process beginning at or near the posterior angles and ending in a flat, sub-horizontal long horn truncate or emarginate at tip, this median dorsal part is closely scrobiculate and has on each side a smooth elongate patch near the base. In this large development the anterior part of the disk of the elytra slopes towards the base. In the small development the clypeus is deeply impressed, but not concave, the apex of the genæ has only a very small tooth, and there is on the vertex a transverse, slightly tri-dentate laminate carina resembling that of the female; the triangular process of the prothorax is comparatively short, sub-bifid at tip, and has a small tooth on each side, thus resembling very much that of *H. hamadryas* and *H. satyrus*.

Female: Clypeus distinctly bi-sinuate on each side, truncate and very slightly emarginate at tip, genæ straight, angular at apex, cephalic transverse carina very distinctly tri-dentate, median tooth longer and stronger than the two lateral ones; prothorax sub-vertical, apical part very distinctly carinate, the carina is strongly sinuate on each side and has a conspicuous lateral triangular tooth; this carinate process slightly overhangs the retuse part in the large development which often resembles the minor male one, but the median part of the prothorax is not produced into a triangular lobe.

Length 44–59½ mm.; width 26–34 mm.

Hab. Cape Colony (Griqualand West), Transvaal (Rustenburg, Lydenburg, Potchefstroom), Southern Rhodesia (Victoria Falls, Buluwayo, Mazoe, Salisbury), Damaraland, Ovampoland.

HELIOCOPRIS DILLONI, Guér. Men.,

Voy. Lefèvr. Abyss., p. 308, pl. iv., fig. 1.

Bohem., Insect. Caffrar., ii., p. 211.

“Convex, piceous black, shining; head large, sparingly punctulate, moderately closely, irregularly aciculate transversely, and having three strong corniform teeth in front, lateral teeth sharp, short, apical ones larger and obtuse; prothorax closely and roughly granulate, finely and sparingly punctate in front and behind, impressed transversely behind the apex which is clothed with long, ferruginous hairs, and armed there with five horns the lateral ones of which are short and acuminate, while the median one is long and truncate at apex; elytra dark chestnut-brown, moderately deeply striate, with the intervals sparingly and finely punctulate.

Length 66 mm.; width 44 mm.

Hab. “Interior of Caffraria, very seldom met with,” according to Boheman.

I have not as yet seen any example of this species from South Africa, but Boheman records it.

HELIOCOPRIS PIRMAL, Fabr.,

Plate XXXII., fig. 3.

Syst. Eleuth., i., p. 38.

Burm., Gen. Insect., i., pl. iv., figs. 1, 2.

Black or piceous black, elytra shining; head transversely plicate on the clypeus as far as the cephalic horn or transverse carina, and more or less transversely scrobiculate behind; prothorax scrobiculate in the anterior and median parts, the scrobiculation giving way to a rough granulation on the sides and along the base; elytra very narrowly punctulato-striate, striae not geminate, intervals slightly raised; pygidium vaguely and somewhat closely punctate; metasternum with a deep, broad, basal impression.

Male: Clypeus sub-semicircular, but a little angular laterally at middle, junction of genae and clypeus distinctly triangular, on the head an ante-median, short, narrow, laminate horn, emarginate at tip; prothorax vertical in the anterior part and not excavated there but having the lateral angles long and sharply acuminate, two supra-lateral triangular teeth and a median projecting lobe, ending in two long corniform teeth curving downward, and projecting beyond the base of the head; the anterior part is clothed with dense, long, fulvous hairs, and the median part of the disk is slightly, yet broadly depressed.

Female: Clypeus elongate, acuminate and truncate at tip, genæ straight; a little past the middle there is a transverse, high laminate carina truncate on each side and very slightly bi-sinuate at the top; prothorax retuse, not excavate in front, and with the upper part edged by a transverse carinate ridge sinuate on each side and not reaching the lateral fovea.

Length 48–52 mm.; width 29–31 mm.

Hab. Cape Colony (Griqualand West); Orange Free State; Transvaal (Lydenburg); Southern Rhodesia (? Buluwayo).

HELIOCOPRIS ANTENOR, Oliv.,

Plate XXXII., figs. 6 and 6a.

Entomol., i., 3, p. 97, pl. vi., fig. 42, *a b*.

Black, or black with the elytra reddish brown; clypeus not elongate, a little angular laterally at middle, either transverse at tip or slightly emarginate, genæ sinuate at middle, the head is transversely plicate, and scrobiculate behind the cephalic carina in the male, but not in the female; prothorax closely scrobiculate; elytra narrowly punctulato-striate, striæ non-geminate, intervals plane, almost impunctate in the male, and very slightly and sparsely aciculate in the female; pygidium closely punctulate, the punctures not well defined; metasternum with a broad, deep, basal impression.

Male: Head with a median, much raised transverse laminate carina truncate and sharply dentate on each side, and having in the centre a tooth longer and sharper than the lateral ones; anterior part of the prothorax vertical, deeply excavate laterally above the outer angles which are not acuminate, and having the apical anterior part ridged with a sharp, slightly projecting carina straight for the greater part of the width, then briefly sinuate, sharp at both ends and suddenly deflexed obliquely above the anterior impressions and sharply aculeate there; the scrobiculation gives way on each side of the base to more regularly rounded foveæ.

Female: Head with a transverse, laminate carina the base of which slopes more in front than behind, and which is truncate on each side and is neither sinuate nor dentate at tip; the anterior part of the prothorax is retuse and edged on the upper part by a bi-sinuate, very distinct carina stopping at a short distance from the lateral fovea.

Length 56–57 mm.; width 32–33 mm.

Hab. Southern Rhodesia (Victoria Falls).

HELIOCOPRIS JAPETUS, Klug.,

Plate XXXII., fig. 8.

Monatsb. Berl. Acad. 1855, p. 655; Peters' Reis., 1862, p. 239,
pl. xiii., figs. 3, 4.

H. bicarinulatus, Bohem., Öfv. Vet. Ak. Förh., 1860, p. 108.

Piceous black, elytra occasionally dark brown; head plicate transversely in front, transversely scrobiculate behind, and having in both sexes a high transverse laminate carina; prothorax scrobiculate in the anterior as well as in the median part, granular in the supra-basal part which is slightly depressed, and also on the sides, but punctate on each side of the posterior depression; elytra convex, not deeply striate, striae slightly punctulate, intervals plane and very slightly punctate; pygidium faintly punctate; metasternum with a deep, broad, basal impression and a short, impressed, longitudinal line.

Male: Genæ straight outwardly, narrow and very elongate, clypeus elongate, diagonal or very slightly sinuate laterally, truncate at apex and hardly sinuate there, in the anterior part of the head, but very close to the median part, there is a very high laminate carina truncate on each side, slightly bi-sinuate at tip, sub-dentate in the centre, and with the outer angles strongly dentate; prothorax vertical in front and having a very deep, smooth excavation on each side, the upper part has a strong, sub-arcuate carina extending over half the width, and sharply but briefly dentate on each side of the deflexed part, close to the apex of the lateral excavations which are also carinate and have each a very conspicuous dentate, triangular process pointing a little downwards in the inner part, and a smaller, yet very distinct, triangular tooth in the upper part, the anterior angles are sharp, but do not project much; on the fourth stria of the elytra there is a sub-basal, short, conspicuous longitudinal ridge about 4 mm. long.

Female: Genæ also elongate, but not quite so straight laterally, clypeus elongate, acuminate, nearly diagonal laterally for the greater part of the length, and slightly sinuate near the tip which is truncate with the edge slightly reflexed, the transverse, laminate carina is truncate on each side, has the angles sharp, is nearly straight at tip and is sinuate past the middle; prothorax retuse in front and edged by a bi-sinuate ridge reaching close to the lateral fovea; elytra without a short longitudinal carina on the fourth stria.

Length 49-54 mm.; width 28-32 mm.

Hab. Southern Rhodesia (Victoria Falls, Salisbury, Buluwayo), Ovampoland (Humbe).

HELIOCOPRIS MARSHALLI, n. spec.

Male: Head and prothorax black, opaque, elytra black, shining; head strongly plicate in front, scrobiculate behind, genæ emarginate laterally and dilated at apex where they form a triangular strongly developed tooth, base angular, clypeus aculeate laterally at about the median part, a little emarginate, margin slightly reflexed, in the anterior part of the head is a short, sub-cylindrical, hook-like horn, vertical for two-thirds of the height and curved behind from there, behind this hook-like horn are three raised carinæ arranged in the shape of a triangle, the wide part of it reaches the base; prothorax deeply and confluent scrobiculate, truncate in front, deeply but narrowly excavate laterally, and with the anterior angles not projecting, these lateral excavations are smooth, and reach the outer angles, and the median part is produced into a broadly triangular lobe carinate laterally, somewhat similar in shape to that of *H. satyrus* and *H. hamadryas*, but instead of the apex of the triangle being sharp or obtuse, it is divided into two sharp sub-horizontal, sub-cylindrical, parallel horns, 4 mm. long; elytra narrowly but deeply striate, intervals slightly punctulate, punctures numerous and somewhat close to each other, no basal tubercle on the intervals; pygidium closely but not deeply punctate; metasternum with a deep, broad, basal impression and a short, median sulcus.

Female unknown.

Length 36 mm.; width $22\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Salisbury).

HELIOCOPRIS HAMADRYAS, Fabr.,

Plate XXXII., figs. 1, 1a; Plate XXXIX., fig. 32.

Syst. Eleuth., p. 22.

Oliv., Entom., i., 3, p. 98, pl. x. and xxii., fig. 92, *a. c.*

Piceous black, with the elytra dark brownish-red, shining; head transversely plicate in front, transversely rugose behind, both sexes with a high transverse laminate carina truncate on each side; prothorax transversely scrobiculate in the anterior part, and covered with elongate granules in the posterior part, which granules are replaced on the sides by scrobiculate very irregular punctures; elytra narrowly punctulato-striate, intervals aciculate; pygidium closely punctulate; metasternum with a deep, broad basal impression, and a short, faint longitudinal impressed line.

Male: Genæ lanceolate, clypeus a little concave in front, elongate, moderately acuminate, a little rounded laterally and slightly sinuate

near the tip which is truncate and slightly emarginate; the transverse carina is very high, situated in the centre of the head, and the two angles are produced into a sharp, not very long, vertical tooth; prothorax vertical in front, deeply excavated laterally near the anterior angles which are produced into a long process outwardly triangular, the central part of the anterior part projects sub-horizontally as a long triangular lobe the base of which occupies the greatest part of the width and which is dentate on each side at about the median part of the length, and ends in a sharp point, slightly overhanging the base of the head, the upper outer side of the anterior excavations is connected with the apical ridge by a vertical carina, third, fourth, and fifth intervals of the elytra with a basal elongate tubercle, the first of which is sometimes wanting. Although the long, triangular process in the anterior part of the prothorax is generally constant, I have seen large males in which this median process is reduced to a short carina slightly tuberculate at middle and on each side.

Female: Genæ a little rounded and ampliate, clypeus a little less elongate than in the male, more broadly truncate at tip, and with the whole margin more reflexed, anterior part also depressed, but less than in the male, the transverse carina is situated nearer the base, is less raised, and is slightly tri-dentate; anterior part of prothorax retuse, sub-vertical, apical part very distinctly carinate for nearly all the width, this carina is bi-sinuate, and the anterior angles are moderately rounded and do not project.

Length 39–52 mm.; width 24–33 mm.

This species is met with in the whole Cape Colony except the South-West Coast Districts, from Mossel Bay to Clanwilliam; also in the Orange Colony, Transvaal, Southern Rhodesia, and Natal; it occurs along the Eastern African region as far as Somaliland.

HELIOCOPRIS FAUNUS, Bohem.,

Plate XXXIX., fig. 33.

Insect. Caffr., ii., p. 216.

♂ *H. satyrus*, Bohem., Öfvers. Vet. Akad. Förh., 1860, p. 109.

♂ *H. operosus*, Waterh., Annals and Mag. Nat. Hist., 1891, p. 508.

Piceous black, with the elytra piceous red, hairs underneath fulvous; head and prothorax moderately, elytra distinctly shining; head plicate transversely and transversely scrobiculate behind, clypeus moderately depressed, slightly bi-sinuate laterally, incised at

apex and with the angles of the incision triangularly dentate and slightly recurved in both sexes; prothorax convex, transversely scrobiculate in the anterior part, covered with large granules in the posterior part and with roughly scabrose punctures laterally; elytra narrowly sub-punctulato-striate, intervals aciculate; pygidium very closely, but not very deeply punctate; metasternum very densely hairy and with the usual broad, basal depression, and a short, smooth longitudinal carina.

Male: Genæ attenuate obliquely from the base, but also slightly rounded there, at about the median part of the head the transverse carina, which is but slightly raised, emits at each angle a straight horn varying in length from 3 to $4\frac{1}{2}$ mm.; the prothorax is shaped like that of *H. hamadryas*, except that the apical part of the sub-horizontal lobe is not as sharp, and is even occasionally truncate at tip; the supra-basal lateral fold, or elongated callus above the humeral part of the elytra is also more pronounced than in *H. hamadryas*, the lateral excavations are smoother, and the anterior angle is sharp at tip, and not truncate and triangular laterally; third, fourth, and fifth intervals of elytra with a basal tubercle.

Female: Clypeus of the same shape as the male, head with a post-median highly raised transverse carina truncate at each end, very slightly raised in the middle and occasionally distinctly dentate at each end; prothorax vertical in front, not so much raised there as in the male, distinctly carinate at the top of the declivity for nearly the whole of the width, and with the carina bi-sinuate.

Length 32-38 mm.; width 20-23 mm.

This species might at first sight be mistaken for a small example of *H. hamadryas*, but both sexes are distinguished from the latter by the incised or deeply emarginate clypeus, and the male is especially distinguished by having two long, straight horns on the head instead of a transverse laminate carina; the genital armature is also different.

Hab. Damaraland, Ovampoland. I was not aware of this species having been met with east of these two localities until I saw the unique type from which Boheman made his description, and which is labelled "Caffraria."* Later on he described *H. satyrus* from Damaraland.

No little speculation has been indulged in with regard to the identity of *H. satyrus*, Boh.; this point can now be set at rest, because through the courtesy of Professor Chr. Aurivilius I have been able to examine the unique type of *H. faunus*, Boh.

* I have since these lines were written received this species from Southern Rhodesia.

HELIOCOPRIS ATROPOS, Bohem.,

Plate XXXI., fig. 3.

Öfvers. Vet. Ak. Förh., 1860, p. 109.

Black, or piceous black, shining; head transversely plicate even on the genæ which are also slightly granulose; prothorax very closely granulose in the dorsal and also in the anterior part, although in the large development this anterior part is roughly plicate transversely; elytra narrowly punctato-striate, intervals deeply and somewhat closely punctate; pygidium very closely and deeply pitted; metasternum with a moderately broad, sub-basal impression, and a median, deep sulcus.

Male: Clypeus elongate, sub-semicircular, genæ in a line with the clypeus, in the median part of the head there is a semicircular ridge abutting on each side on a vertical cephalic sub-cylindrical horn, varying in length from $2\frac{1}{2}$ to $4\frac{1}{2}$ mm., the frontal carina varies much in shape, semicircular normally, it is sometimes triangular, and it may be altogether absent, in which case the two vertical horns are replaced by an arcuate, very highly raised carina the outer angles of which are sharp, and slightly dentate; prothorax nearly vertical in front, very deeply impressed laterally, the impression extending to a short distance from the base, and bounded by a slightly raised ridge, while the median part is produced into a vertical lobe, very strongly emarginate in the centre, and still more so laterally, the outer part being in the shape of a very broad, triangular tooth overhanging laterally the lateral impression; elytra with two large basal tubercles on the fourth and fifth intervals; in the small development the median lobe of the prothorax is carinate, very slightly emarginate at middle and bluntly dentate laterally, the lateral anterior excavations being somewhat shallow, and the basal tubercles on the elytra are very small.

Female: Clypeus more acuminate than in the male, and more obtuse in front; past the median part there is a transverse moderately highly raised carina, more or less distinctly dentate laterally; prothorax carinate transversely for three-fourths of the width, and slightly sinuate laterally; no basal tubercles on the elytra.

Length 32-44 mm.; width 20-27 mm.

Hab. Ovampoland (Omrramba), Northern Damaraland, Nyassaland, teste Harold.

HELIOCOPRIS ERYX, Fabric.,

Plate XXXII., fig. 5.

Syst. Eleuth i., p. 35.

H. neptunus, Bohem., Insect. Caffr., ii., p. 215.

Black, head and prothorax opaque, elytra shining; head transversely plicate, clypeus acuminate, briefly bi-dentate laterally, emarginate at the apex where the margin is a little reflexed; prothorax retuse, deeply scrobiculate all over; elytra narrowly and moderately deeply striate, intervals faintly and sparingly aciculate; pygidium covered with broad but shallow punctures; metasternum with a deep and broad basal impression, and without any longitudinal impressed line.

Male: Genæ narrow, oblique, outer part of the base very sharply triangular, angle of the suture distinctly dentate, head with a median, sub-compressed horn, truncate, more or less emarginate at tip, and curving slightly backwards; in all the examples that I have seen this horn is as high as the level of the median thoracic one; prothorax sub-vertical in front, very deeply but not broadly excavate laterally and with the median part armed with three horizontal horns extending further than the apical margin of the thorax, the two lateral horns are aculeate at tip, but the median one curves very slightly downward and is truncate and slightly emarginate at tip; second, third, fourth, and fifth intervals of elytra, and occasionally the first also, with a sharp, elongate basal tubercle.

Female: Genæ a little oblique laterally and with the base angular but not dentate, clypeus as in the male; vertex with a highly raised transverse post-median carina, slightly dentate on each side; prothorax retuse, strongly carinate at the top of the declivity, the carina being strongly bi-sinuate.

Length 34-36 mm.; width 20-21 mm.

Hab. Transvaal (Lydenburg), Southern Rhodesia (Mazoe, Buluwayo).

HELIOCOPRIS HAMIFER, Har.,

Plate XXXII., fig. 4.

Mith. d. Munch. Ent. Ver., 1878, vol. ii., p. 39.

H. jupiter, Har., loc. cit., p. 40.

H. selousi, Pér., Trans. Entom. Soc. Lond., 1896, p. 153.

Male: Black, head and prothorax opaque, elytra shining; head transversely plicate, clypeus somewhat acuminate, more so in some

specimens than in others ; genæ sharply angular at base, denticulate laterally ; clypeus slightly bi-dentate laterally, apical part emarginate at tip where the margin is reflexed, in the anterior part of the head there is a short, laminate, vertical horn more or less deeply emarginate at tip, the whole surface of the head is strongly plicate, and the genæ are a little granulose ; prothorax vertical in front but having on each side a very deep but narrow excavation, while the median part, which is broadly triangular, is prolonged at tip as a horizontal compressed horn reaching as far as the cephalic one, and having underneath a long, vertical tooth at about the median part, the anterior part is scrobiculate, and the posterior dorsal one, as well as the horizontal horn, are covered with a granulose transverse scrobiculation, in the minor or perhaps the intermediate development there is no cephalic horn, but instead of it there is a transverse, highly raised, post-median carina, somewhat sharply but briefly dentate at each end ; the prothorax is only moderately impressed laterally, but is not excavate, the median lobe is produced in two short, slightly divaricating horizontal horns, and there is a short, sharp ridge above the impression ; it is this development which Harold described as *H. jupiter*, while I mistook it for the female of *H. selousi* ; elytra with a basal tubercle on the second, third, fourth, and fifth intervals, and occasionally on the first.

Female : Altogether similar to that of *H. eryx*.

The substitution of a post-median cephalic transverse carina for an anterior cephalic horn in the male is very singular, but this occurs also in small examples of *H. gigas* ; this change, however, is also accompanied by a difference in the shape of the prothorax, which then approximates to that of the female.

Length 32–37 mm. ; width 21–22 mm.

Hab. Southern Rhodesia (Mazoe, Manica). Occurs also in Nyassaland.

Harold suggests, loc. cit., that *H. faunus*, Bohem., described from a female example, might prove to be the female of *H. hamifer*. I have ascertained that *H. faunus* is the female of *H. satyrus*.

GEN. CATHARSIUS, Hope,

The Coleopt. Man., i., 1837, p. 21.

Mentum deeply incised, outer part attenuate sub-obliquely towards the tip which is sharp, basal point of labial palpi either broadly quadrate or broadly ampliate inwardly, second broader and shorter than the first, and inserted into the outer angle of the basal one, sub-

quadrate or somewhat ampliato-ovate, apical one planted into the outer angle of the second when this one is obliquely truncate and dilated inwardly, or in the centre in most cases, this apical joint varies in length, but it is always slender, and either sub-fusiform or cylindrical; maxillary palpi as in *Helicopris*; head semicircular, much wider than long, genæ separated by a distinct suture from the clypeus, eyes showing much less in the upper than on the under side, and deeply divided by the genæ, the latter in a line laterally with the clypeus; antennæ nine-jointed, club tri-jointed, the three joints sericeous, opaque, first one not very concave; prothorax broad, convex; elytra very convex, and sub-gibbose at middle along the suture which is raised, they have eight striæ on each side, the outer one being carinate from the base to past a third of the length, outer margin entire, epipleura distinct for half the length; pygidium triangular, rounded at tip, little or hardly convex; metasternum narrow in the centre, projecting as a more or less sharp triangle and divided from the mesosternum at apex by a distinctly carinate line; mesosternum carinate longitudinally under the femora; anterior legs strongly tri-dentate outwardly, and with the inner part strongly oblique and having a long inner spur, or truncate and having a strong spine or acute tooth inwardly; intermediate and posterior tibiæ generally bi-carinate on the upper side and bi-dentate, space between the two carinæ not grooved, or occasionally with the upper carina of the posterior tibiæ scarcely indicated.

The genus is represented in Europe, India, China, Java, and Africa.

This genus can be split into two divisions. The first, which is the most numerous, includes all the species the anterior tibiæ of which are obliquely truncate inwardly, with a non-spinose inner angle, as well as having the median and posterior tibiæ bi-carinate transversely, and the second includes only a few species in which this inner angle is produced in the male into a very distinct acute tooth or sharply curved spine, and in which the upper inner carina of the intermediate and posterior tibiæ is obsolete. Among the species included in this second division are two, *C. anderssoni* and *C. opacus*, in which the apical spur is curved inwardly at tip almost at right angles in the manner of many females of *Onthophagi*, and some species of the genus *Copris*.

The shape of the valves of the penis varies a little, but in most of the species it is of the shape of the fig. 34, plate xxxix. (*O. heros*), but that of *O. ulysses* (plate xxxix., fig. 37), is somewhat distinct, and in *O. pylades*, fig. 33, it is strikingly different.

Key to the Species.

A². Anterior tibiæ oblique inwardly at tip and non-spinose.

B³. Prothorax, not excavate, more or less abruptly truncate and more or less sharply carinate at the upper part of the declivity.

C². Cephalic horn compressed, and situated in the anterior part of the head.

Anterior part of prothorax nearly vertical, carina as broad as the thorax, and sharply angular laterally .. *platycerus*.

Carina bi-sinuate in the middle, dentate above the lateral impression, and produced in a long, aculeate process (pl. xxxii., fig. 10) *bradshawi*.

Anterior part of prothorax excavate, carina conspicuously sinuate laterally, sharply angular at end, outer side with a strong angular process in front of the terminal end of the carina *rhinoceros*.

C¹. Cephalic horn more or less conical, and not situated in the anterior part of the head.

Anterior part of prothorax slightly impressed laterally carina slightly arcuate at middle, denticulate and produced obliquely for a short distance into a very sharp ridge beginning with a short, sharp tooth (pl. xxxii., fig. 9) *heros*.

Anterior part of prothorax impressed but not excavate, carina emarginate at centre, flexuose laterally, and having on each side under the carina a sub-lateral furrow edged by a sinuate smaller ridge *disseptus*.

Carina with three emarginations in the centre, with the angles of each emargination produced into a short tooth; the two central teeth are longer than the sub-lateral ones (pl. xxxiii., fig. 11) *ulysses*.

Carina emarginate at centre, and having a short, sharp, sub-lateral tooth, cephalic horn compressed at base (pl. xxxiii., fig. 25) *pylades*.

B². Prothorax not excavate, not very abruptly truncate at apex, and having two long, diverging horns in the centre.

The two processes long and diverging much; cephalic horn nearly erect (pl. xxxiii., fig. 13) *tricornutus*.

The two processes long and diverging much; cephalic horn directed forward in a sub-horizontal direction (pl. xxxiii., fig. 20) *vitulus*.

Cephalic horn very long, straight for two-thirds of the length, and curving slightly backwards towards the tip (pl. xxxiii., figs. 23, 24) *laticeps*.

Cephalic horn short, laminate and sub-quadrate at base, apical part curving forward; space between the prothoracic horns excavate and smooth *dubius*.

B¹. Prothorax more or less excavate in the middle of the anterior part.

Clypeus with the angles of the median emargination very long and recurved; cephalic horn laminate and quadrate at base, narrowly sub-cylindrical at tip and curving inwards; prothorax with a conspicuous apical tubercle on each side of the excavation (pl. xxxiii., figs. 21, 22) *melancholicus*.

Clypeus with the angles of the emargination not recurved; head and prothorax as in *melancholicus* *marcellus*.

A¹. Anterior tibiae not oblique at tip, and strongly spinose; inwardly in the male.

B. Prothorax not truncate in front, and regularly convex in both sexes.

C². Apical spur of anterior tibiae straight.

Clypeus with the angles of the median emargination very distinct; cephalic horn short, triangular; prothorax abruptly truncate, and with a shallow median impression (pl. xxxiii., fig. 6) *opacus*.

Clypeus slightly emarginate at middle, but not recurved nor angular; prothorax scabrose except for a small punctulate, posterior area *latifrons*.

Clypeus slightly emarginate at middle, but not recurved nor angular; prothorax finely and equally punctured except on the sides *trogodytes*.

Clypeus deeply incised at middle, with the angles very sharp and recurved *exiguus*.

C¹. Apical spur of anterior tibiae curved inwardly.

Clypeus moderately emarginate at middle, prothorax distinctly scabrose, except in the median part of the base; not impressed *anderseni*.

CATHARSIVS PLATYCERUS, Klug,

Monatsb. Ber. Acad., 1855, p. 655, Peters' Reis. n. Mossamb., 1862, p. 240, pl. xiii., fig. 7.

C. obtusicornis, Boh., Insect. Caffr., ii., p. 217.

Piceous black, but having sometimes dark chestnut elytra.

Male: Head semicircular, slightly emarginate in the centre of the clypeus, with the genæ projecting sensibly beyond the lateral part of the clypeus, covered with distinct, small granules, and bearing in the centre of the clypeus a flat, parallel tooth slanting forward, truncate and slightly emarginate at tip, and about 4 mm. long and $2\frac{1}{4}$ mm.

broad; prothorax abruptly truncate in front, the truncate part declivous and edged by a transverse carina slightly emarginate on each side and ending in a lateral angle which does not project beyond the slope, it is in a line with the lateral impression which is elongate and not very deep, the anterior angles are obtuse, and the anterior margin distinctly emarginate in the centre, the whole surface is covered with very closely set granules; elytra as broad as the prothorax at base, convex, somewhat gibbose at middle, the eighth stria is very sharply carinate, and extends from the base to the median part, the intervals are smooth, but a little coriaceous at base, and the striae are very faintly punctulate.

In the very large development, of which I have seen several examples collected by Mr. F. C. Selous, in Manica, the colour is quite black, the cephalic horn is 5 mm. long and 3 mm. broad, and is rounded at tip, the lateral angle of the prothoracic carina is strongly developed; in the small development from the same locality the horn is reduced to a sharp, conical tubercle, hardly 2 mm. high, quite vertical, and situated nearer to the base than to the apical part; the prothoracic carina is hardly angular laterally and nearly straight.

Female: The shape of the head is similar to that of the male, but instead of a slanting horn it has a short carina bearing a small sharp median tooth about $1\frac{1}{4}$ mm. long, and the edges of the carina, which is about 4 mm. broad, are sharp; the prothorax is also declivous at apex, and the declivity is bounded by a carina, but the carina is placed much more forward than in the male, occupies only the centre of the disk, and is in a line with the lateral impression which is transverse, instead of being longitudinal as in the male; the granular surface is identical, and the sculpture of the elytra exactly similar to that of the male.

Length 32-39 mm.; width 19-22 mm.

Hab. Southern Rhodesia (Victoria Falls), Ovampoland.

CATHARSIVS BRADSHAWI, Lansb.,

Plate XXXII., figs. 10, 10a.

Notes from the Leyden Museum, ix., 1887, p. 107.

C. insignis, Péring., Trans. S. Afric. Philos. Soc., vol. ix., 1892, p. 27.

Black shining, slightly opaque at the base of the elytra.

Male: Head semicircular, not emarginate in front, genæ flush with the lateral part of the clypeus which is distinctly plicate transversely

and bears in the anterior part a sharp, erect horn, about 7 mm. long, triangular, flat in the anterior part, and carinate in the middle behind; prothorax abruptly declivous in front, the declivity bounded by a sharp ridge, slightly emarginate in the centre, sinuate on each side, produced into a sharp point above the lateral impression, and from there into a long, triangular, sharp process directed backwards, the anterior angles are obtuse, the sides are not excavate, and the impression is elongate, the anterior margin is slightly emarginate in the centre, the whole surface is finely granular, but there are two smooth spaces on the posterior part, one on each side of a very distinct, median impressed line; elytra as broad as the prothorax, convex, sub-gibbose at middle, finely striate with the intervals vaguely punctulate; the supra-marginal carina reaches from the base to a third of the length; the basal joints of the intermediate and posterior tarsi are very broadly dilated, and as broad as long.

Female: The shape and sculpture of the head is similar to that of the male, but instead of having an erect tooth in the anterior part, the head slopes from a transverse carina joining the two genæ towards the edge of the clypeus, this carina is not much more raised than the suture of the genæ, and is hardly sinuate; the prothorax is very little declivous in front, and the declivity is bounded by a nearly obsolete, short transverse ridge, not much more than 6 mm. in length, the impressed line in the centre of the posterior part of the disk is very well defined, the two smooth spaces are larger than in the male, the lateral impressions are deep and not in a line with the transverse ridge, the surface is as granular as in the male, and the elytra and legs are similar.

Length 36-39 mm.; width 20-22 mm.

Hab. Ovampoland (Omrumba), Zambesi River, teste Lansberge.

CATHARSIVS RHINOCEROS, Klug,

Monatsb. Berl. Acad., 1855, p. 655; Peters' Reis. n. Mossamb., 1862, p. 239, pl. xiii., figs. 5, 6.

Black, quite opaque.

Male: Clypeus emarginate in the centre, genæ projecting a little beyond the sutural part of the clypeus; the apical part of the head bears a vertical compressed tooth about 5 or 6 mm. in height, laminate towards the end, and ending in a sharp point in the middle at tip, the anterior part is transversely plicate and the genæ granular; prothorax strongly declivous in the anterior part, and deeply excavated there on each side, the upper part of the declivity

is carinate, the carina is slightly emarginate in the centre, conspicuously sinuate laterally, and ends in a sharp angle, the outer margin itself being strongly angular in front of the terminal end of the carina; the anterior angle of the prothorax is very sharp.

Female: Head with the clypeus semicircular, but with the genæ more amplified than the clypeus, and less angular behind than in the other South African species of the genus, it is very closely granular, and bears in the centre a short conical horn, sharp at tip, and about 2 mm. in height; prothorax abruptly declivous in front, apex of the declivity bounded by a ridge slightly emarginate at centre, rounded on each side, and slightly sinuate from there to the lateral part which is sharply angular with the angle standing above the lateral impression, but not overhanging it, the sides are not excavated, and the anterior angles are very sharp, the surface is covered with very fine and very closely set granules, the posterior part of the disk has no impressed line; elytra as broad as the prothorax at base, convex, but not quite sub-gibbose at middle, very finely striate with the intervals coriaceous, eighth stria conspicuously carinate, the carina reaching from the base to two-thirds of the length.

Length 21-22 mm.; width 17-18 mm.

Hab. Southern Rhodesia (Manica).

CATHARSIVS HEROS, Bohem.,

Plate XXXII., figs. 9, 9a; Plate XXXIX., fig. 34.

Öfvers. Vet. Ak. Förh., 1860, p. 109.

Piceous black on the upper side, piceous brown beneath; head semicircular, not emarginate in the centre, but a little aculeate at the junction of the genæ with the clypeus, and covered with very closely set, transverse raised folds, but the genæ are covered with closely set, sub-conical, small tubercles; in the male the centre of the head is produced into a sharp vertical tooth with a very broad base, and a sloping fine ridge behind on each side; in the female the centre of the head is produced into a sloping, shield-like process, sinuate laterally on the upper part and slightly bi-dentate at tip; the prothorax is covered with very closely set granules, and is very abruptly declivous in the anterior part in both sexes, and the top of the declivity is carinate and bi-sinuate; in the male the declivity is more abrupt, the edge is sharper, the median part is crenulate and has a sharper and longer tubercle on each side, and the lateral impression above the anterior angle is quite smooth; in the female

the declivous part is short, the upper edge is slightly emarginate in the centre, there is no deep lateral impression in front, and the edge of the carina is situated in front of the lateral fossa; the head and prothorax are fringed with dense rufous hairs; elytra with a sub-basal carina, gibbose in the anterior part, strongly sloping behind, strongly callose at base on the fifth and sixth intervals, striate with the striæ punctulate and the intervals finely plicate diagonally, the supra-marginal carina is very conspicuous, reaching from the base to a very short distance from the rounding of the apical part, this carina is more developed than the marginal one, and very distinctly sinuate under the humeral callus; under side deeply and closely punctured, and clothed with long rufous hairs.

Length 41-46 mm.; width 25-29 mm.

Hab. Damaraland; Ovampoland (Evvari River, Omrramba).

CATHARSIVS DISSEPTUS, n. spec.

Black, shining.

Male: Clypeus semicircular but somewhat distinctly emarginate in the centre, a little sinuate on each side of the median emargination, and also a little emarginate laterally at the junction with the genæ, the whole head is covered with elongate foveæ divided by short, transverse folds, except the genæ which are granular, in the centre is a short, vertical, conical tooth 2 mm. high in the large development, broadly triangular at base and rugose except near the tip; the prothorax is nearly vertical in front, the apical part of the declivity is not sharp in the centre which is deeply emarginate, but it is distinctly sinuate laterally, and ends in a distinct although not much raised carina interrupted in front of, but above the lateral round impression, beneath this apical lateral carina, and running parallel to it, is another transverse, sinuate carina deeply emarginate, sometimes interrupted at middle, and enclosing with the apical ridge a shallow furrow about $3\frac{1}{2}$ mm. wide and $1\frac{1}{4}$ mm. broad, the posterior part is deeply furrowed longitudinally in the middle, the whole surface is closely granulate, but there is on each side of the discoidal longitudinal furrow a very conspicuous transverse triangular smooth space; elytra sub-gibbose at middle, punctato-striate, eighth stria carinate from the base to one-third of the length.

Female: Clypeus semicircular and emarginate like that of the male, but not so broad, the head has a very short, triangular tooth, scarcely $0\frac{3}{4}$ mm. high, the sculpture is nearly the same, except that the short transverse folds dividing the elongate foveæ are less

defined; the anterior part of the prothorax is less declivous, and there is at the top of the declivity, which is very short, a slightly sinuate rounded ridge about 6 mm. long; the posterior part has a distinct median longitudinal groove, but the whole surface is granulose without any trace of smooth areolets or patches; elytra as in the male.

The male resembles *C. ulysses*, but is at once distinguished, by the sub-lateral furrow below the anterior transverse carina of the prothorax which, although emarginate in the centre, is not toothed on each side of the emargination; the smooth patch on the posterior part of the prothorax also adjoins the carina on each side, whereas in *C. ulysses* that patch does not adjoin the carina, and is much more diagonal; the female differs from that of *C. tri-cornutus*, in the absence of smooth patches on the posterior part of the prothorax, and also from that of *C. ulysses* in having the clypeus emarginate in the centre as in the male.

Length 20-27 mm.; width 16 mm.

Hab. Transvaal (Potchefstroom), Southern Rhodesia (between Limpopo and Zambesi Rivers).

CATHARSIVS ULYSSES, Bohem.,

Plate XXXIII., figs. 11, 11a; Plate XXXIX., fig. 37.

Insect. Caffrar., ii., p. 223.

Black, shining; elytra sometimes dark brown.

Male: Clypeus not quite rounded in front and not emarginate, genæ projecting a little beyond the lateral part of the clypeus, the head is covered with elongate foveæ separated by short, raised folds, it bears in the middle a short, conical tooth about 2 mm. high; the prothorax is very declivous in the anterior part, the declivity is bounded by a small carina emarginate in the centre, bi-sinuate on each side, and ending at a short distance from the lateral impression, this carina does not overhang the anterior declivity, and is produced into a more or less sharp tubercle, one on each side of the median emargination and another a little further towards the sides, the anterior part is not excavated, and the posterior part has a distinct impressed line from near the two median tubercles to a short distance from the base, it is finely granulose all over, except for a diagonal smooth space on each side of the median part of the disk; elytra narrowly striate with the intervals finely and closely punctulate, eighth stria carinate from the base to a little past the median part.

Female: Head shaped and sculptured as in the male, but instead of bearing a short, conical tooth it has a distinct transverse lamina with the angles acuminate, and a minute sharp tooth in the centre, this lamina unites the two genæ; prothorax very little declivous in the anterior part, but having a short, median transverse ridge, slightly sinuate on each side, and extending to about one-third of the length, the median part has a median narrowly impressed line reaching from near the transverse ridge to a short distance from the base where the impression broadens, the whole surface is closely granular, without any smooth space in the posterior part of the disk; the elytra are as in the male.

Length 23–27 mm.; width 14–16 mm.

Hab. Transvaal (Rustenburg, Lydenburg).

CATHARSIVS PYLADES, n. spec.,

Plate XXXIII., figs. 25, 25a; Plate XXXIX., fig. 38.

Black, shining.

Male: Head semicircular, broadly but not deeply emarginate at centre, genæ projecting a little beyond the lateral part of clypeus, it is covered with shallow foveæ separated by short, transverse folds, and bears near the base an erect horn, $4\frac{1}{2}$ mm. long in the large development, compressed and broadly triangular at base, and narrowly cylindrical for half the length; prothorax declivous in the anterior part, emarginate in the centre of the apex, and having on each side of the emargination a sub-lateral, conical short tooth with a slight impression under it, it is very finely and closely granose, and there is a median longitudinal not deeply impressed line on the posterior part of the disk; in the small development the cephalic horn is very short, hardly more than $1\frac{3}{4}$ to 2 mm. high, and sharply triangular; the prothorax is hardly declivous in front, but there is a slight median impression in the dorsal part, and a tiny, sub-lateral tubercle; elytra finely striate, the striæ punctulate, and the intervals sparsely aciculate; eighth stria finely carinate from the base to about one-quarter of the length. The shape of the forceps of the armature differs from that of any other South African species (*vide* plate xxxix., fig. 38).

Female: Head with a very short, triangular tooth slightly blunted at tip; prothorax with a short carina 4 mm. wide in the anterior part and slightly sinuate at middle, it is finely granulate and has a very fine, median, longitudinal line; elytra as in the male.

The male of this species very much resembles *Copris urus*, Boh.
Length 19–23 mm ; width 12–14 mm.

Hab. Natal (Durban, Frere), Southern Rhodesia (Salisbury).

CATHARSIUS TRICORNUTUS, De Geer.

Plate XXXIII., figs. 13, 13a.

Mém. Ins., vii., 1752, p. 637, pl. xlvii., fig. 16.

C. nemestrinus, Fab., Ent. Syst., i., 41 ; Herbst, Käf., ii., p. 6,
pl. vii. ; Oliv., Entom., i., iii., p. 104, pl. xlvii., fig. 16.

C. arcolatus, Boh., Insect. Caffr., ii., p. 222.

Black, shining.

Male : Head semicircular, clypeus emarginate, genæ not projecting beyond the edge of the clypeus, it is covered with very short, raised, closely set, transverse folds, and bears at a short distance from the base an erect horn tapering from the base, where it is from 3 to 5 mm. high, this horn tapers to a sharp point which curves slightly outwards ; prothorax declivous in the anterior part, and having in the centre two conical horns projecting forward, but not diverging much at tip, and with the anterior basal part somewhat excavate outwardly, the surface is covered with a fine, closely set granulation, but the anterior part, including the excavated part, is smooth, and there is also a smooth patch on the upper part of the base of each horn ; elytra as broad as the prothorax, convex, but not gibbose, finely punctato-striate with the intervals smooth or very vaguely aciculate ; eighth stria carinate from the base to about one-third of the length.

Female : Head a little more circular than in the male, and with the clypeus not emarginate at tip ; the sculpture is similar, but instead of an erect horn it has a short, not much raised, transverse tri-sinuate carina the median part of which is slightly bi-tuberculate ; prothorax not very convex, a little declivous close to the anterior margin, the short declivity is bounded by a short, distinct, transverse ridge $4\frac{1}{2}$ mm. across, and emarginate in the centre, the anterior sides are very sloping, the posterior part of the disk has a distinct median longitudinal impression reaching from a short distance from the transverse sinuate ridge to near the base, it is covered with closely set granules, and on each side of the posterior longitudinal impression there is a round, smooth space ; elytra as in the male.

Length 26–27 mm. ; width 15–18 mm.

Hab. The whole of Cape Colony, Natal, Transvaal, Damaraland, Orange Free State, Southern Rhodesia (Mazoe Buluwayo).

I have seen the type of *C. areolatus*, Bohem., which is a ♂, and not a ♀, as that author believed; but I can only consider it as a stunted example with a small horn development, which, however, seems to be fairly common in Natal; the smaller size may be due to seasonal causes.

CATHARSIVS DUBIVS, n. spec.

Very closely allied to *C. tricornutus*; the facies and the sculpture are identical, but the shape of the cephalic horn is different. It is produced in a somewhat quadrate lamina sharply carinate laterally, the carina being the continuation of the suture of the genæ, and narrowed at about half the length into a round process, sharp at tip and curving inwardly; the shape of the forward horn is not unlike that of *C. melancholicus*; the two horns on the prothorax are shorter and more erect, and the space between them is excavate and smooth, like the anterior part of the prothorax.

Female unknown.

Hab. Transvaal (Rustenburg), Southern Rhodesia (Zambesi River), Ovampoland (Okovango River).

CATHARSIVS VITVLVS, Bohem.,

Plate XXXIII., figs. 20, 20a.

Insect. Caffr., ii., p. 223.

C. camillus, Har. Mitt. d. Munch. Ent. Ver., 1877, p. 97.

Black, shining.

Male: Head broadly emarginate in the anterior part of the clypeus which is also slightly sinuate laterally, genæ projecting beyond the lateral edge of the clypeus, it is covered with elongate punctures separated by very short transverse raised folds, and bears in the anterior part a moderately compressed tooth leaning forward, triangular at base and tapering towards the tip which is sharp, this tooth varies in length from 3 to 4½ mm.; prothorax similar in shape to that of *C. tricornutus*, but the anterior part is more excavated laterally, the two horns of the ridge are more widely separated at base, diverge more at tip, and are also shorter, the median impression is better marked, and the whole of the posterior part, and also the horns, are closely granular, while the whole of the anterior part is quite smooth; elytra finely punctulato-

striate with the intervals very closely and deeply punctured, eighth stria carinate from the base to one-third of the length. The typical form is smaller than the great development, the cephalic horn is very short and sharply conical, and the two horns of the prothorax are also much less developed.

Female: Head not emarginate in front, and with a very small conical tubercle in the centre; prothorax with a short, not very pronounced transverse ridge, posterior part with a median longitudinal impressed line not very well defined, the whole surface is covered with closely set granules without any smooth area; elytra as in the male.

Length 19–25 mm.; width 12–15½ mm.

The ♂ of this species is differentiated from that of *C. tricornutus* and *C. dubius* by the cephalic horn slanting in a much more horizontal direction, and being placed in the anterior part of the head; the horns of the prothorax are much more apart at base, shorter and more diverging, and the posterior part has no smooth space; the intervals of the elytra are very closely and deeply punctured, and the clypeus is much more deeply emarginate; the ♀ is distinguished by the absence of smooth spaces on the posterior part of the prothorax.

Hab. Transvaal (Pretoria), Natal (Durban), Southern Rhodesia (Zambesi River).

Boheman seems to have had at his disposal only the small development of the male.

CATHARSIVS LATICEPS, Bohem.,
Plate XXXIII., figs. 23, 23a, 24, 24a.
Insect. Caffr., ii., p. 221.

C. harpagus, Har. Mitt. d. Munch. Ent. Ver., 1872, p. 97.

Black, shining.

Male: Head semicircular, clypeus not emarginate in front and covered with closely set, transverse, elongate, shallow foveæ, genæ not projecting beyond the lateral edge of clypeus, in the centre is a long, slender, vertical horn 10 mm. long, straight for three-fourths of the length and curving slightly backwards towards the tip, smooth and rounded in the anterior part, broadly but not deeply grooved, and with the edges of the groove jagged towards the middle in the posterior part, the head is quite smooth, the clypeus and only the edge of the genæ being foveolate; prothorax very sloping in front, strongly and sharply bi-dentate on the upper part of the declivity;

the two teeth are apart and the space between them is not excavate and is quite smooth like the whole anterior sloping part which has a distinct but not deep impression on the outer side of the median dorsal tooth; the elytra are as in *C. vitulus*, but the eighth stria is carinate from the base to nearly the median part.

Female: Scarcely to be distinguished from that of *C. tricornutus* or of *C. vitulus*, except that the head is a little more broadly circular and the cephalic, as well as the median emarginate prothoracic carinae are a little more developed, but the fig. 24a of plate xxxviii. gives a very good idea of what the head and prothorax of the females of these three species are like.

Length 28-30 mm; width 17-18 mm.

Hab. Southern Rhodesia (Enkeldoorn), Transvaal (no exact locality).

CATHARSIVS MELANCHOLICUS, Bohem.,

Plate XXXIII., figs. 21, 21a, 22, 22a.

Öfvers. Vet. Akad. Förh., 1860, p. 110.

? *C. pandion*, Har. Mitt. d. Munch. Ent. Ver., 1877, p. 97.

Black, nearly opaque on the head and prothorax, elytra duller black.

Male: Clypeus produced in the anterior part into two long triangular horizontal teeth, genæ wider laterally than the clypeus, anterior and lateral part covered with short, closely set folds, in the posterior part of the head there is flat laminiform process directed backwards, about 4 mm. broad for half the length, and attenuated there into an erect, cylindriform process hardly 1 mm. wide and 3 mm. long; prothorax deeply excavated triangularly in the centre for the reception of the cephalic process, and sharply aculeate on each side of the tip of the excavation, the anterior sides slope abruptly, the lateral impression is in a line with the sharp edge of the excavation, and the whole surface, including the excavation, is minutely and very closely granulate, the anterior angles are sharply aculeate, and there is in the posterior part of the disk a median, longitudinal impressed line; the elytra are convex, but not subgibbose, they are finely striate, with the striae punctulate, and the intervals finely and closely but not deeply punctulate; the supra-marginal carina reaches to only one-third of the length.

In the intermediate development the long cephalic process is replaced by a short, transverse carina 2 or $2\frac{1}{2}$ mm. high, and surmounted by a short, cylindriform process of about $1\frac{1}{4}$ or $1\frac{1}{2}$ mm.,

in height, the whole being a reduction of the longer process, but owing to its being so short, it does not recline backwards against the prothorax; in some examples, which I shall term the *smallest* development, this transverse carina is reduced to a mere raised line uniting the genæ transversely, and produced in the middle into a very short triangular median point hardly 1 mm. in height; in both these developments the prothorax is not deeply scooped out in the middle and bears a moderately sharp, triangular tubercle on each side of the excavation.

Female: Head shaped as in the male, and having in the centre a conical tooth, the base of which extends as far as the suture of the genæ on each side; this conical tooth is about 2 mm. high, and resembles that of the smallest male development, except that there is no trace of the transverse basal carina; the prothorax is not excavated in the middle, but the two tubercles are very well defined and situated a little more forward, they are also set more closely to each other, and the grooved line in the posterior part of the disk is deeper; elytra and legs as in the male.

Length 23–28 mm.; width 14–16 mm.

Boheman's description was made from a female example.

Hab. Natal (Estcourt, Durban), Transvaal (Boksburg, Lydenburg), Southern Rhodesia (Bulawayo, Salisbury).

CATHARSICUS MARCELLUS, Kolbe,

Sitz.-Bericht. d. Ges. Naturf. Freunde, 1893, p. 142.

Black, shining, especially the elytra, sides of the prothorax slightly dull.

Male: Clypeus very oblique and with an arcuate emargination at the tip the angles of which, however, although prominent, are not recurved; the head and clypeus, except the genæ which are granulose, are covered with transverse, closely set folds extending also on the anterior side of the cephalic horn which is a little higher than the apical part of the prothorax, broadly laminate for two-thirds of the length, directed backwards and narrowed from there into a rounded, somewhat styliform process, curving forward; the prothorax is sub-vertical in front, has there a broad, sub-quadrate impression surmounted at apex by two short tubercles standing at a great distance from one another, the dorsal part is sub-gibbose and has a deep, median longitudinal sulcus, the surface is covered with very distinct and closely-set granules, but the anterior impression is smooth; elytra deeply striate, with the striæ slightly

punctate, intervals hardly convex, and very abundantly punctulate; metasternum with a very distinct median, longitudinal groove.

Length 24–26 mm.; width $14\frac{1}{4}$ –15 mm.

The female has a transverse frontal carina briefly tuberculate in the centre; the prothorax is entirely granulose, there is no median anterior carina, the median longitudinal sulcus is short but distinct, and there is on each side of it near the base a slight elevation not more shining, however, than the rest of the surface.

In general appearance this species much resembles the small development of *C. melancholicus*, the shape of the cephalic horn and of the prothorax being nearly the same, but the clypeus is not bi-lobate and reflexed at apex; the granules on the prothorax are not so asperous, but are more closely set, the elytra are more deeply striate, and are not opaque black.

Hab. Transvaal (Potchefstroom, Zoutpansberg (Mphone), teste Kolbe).

CATHARSIVS OPACUS, Waterh.,

Plate XXXIII., figs. 6, 6a.

Annals and Mag. Natur. Hist., 1891, p. 510.

C. cephalotes, Pér., Trans. S. Afric. Phil. Soc., vol. 1892, p. 27.

Black, quite opaque.

Male: Head nearly twice as broad as long, clypeus deeply emarginate in the centre and with the two angles of the emargination projecting distinctly, sinuate on each side of the emargination and slightly recurved, genæ in a line with that of the clypeus laterally, it is closely granulate and bears a short, sub-conical tooth about 1 mm. high, situated somewhat behind in a line with the suture of the genæ and the clypeus, the suture not being produced into a carina along the cephalic horn, nor behind it; prothorax having in front a shallow, round, median excavation, totally wanting in the small development, it is very closely granulose, the anterior angles are very rounded, and the lateral impression is hardly distinct, or entirely wanting; elytra very convex, punctato-striate, the eighth stria is carinate from the base to the rounding of the posterior part; under side and legs glabrous; club of antennæ flavescent.

Female: Like the male; the head bears also a very short conical tooth, but the prothorax is not impressed in the anterior part.

In some examples from Lower Rhodesia the cephalic horn is a little longer and compressed.

Length 11–14 mm.; width $7-8\frac{1}{2}$ mm.

Hab. Mozambique (Lourenço-Marquez), Ovampoland (Okatchero), Southern Rhodesia (Salisbury).

CATHARSIVS ANDERSENI, Waterh.,

Annals and Magaz. Natur. Hist., 1891, p. 510.

Black, shining; head similar in shape to that of *C. troglodytes*, but the clypeus is a little more deeply emarginate in the centre, the whole surface is scabrose, and there is a slightly curved, inconspicuous frontal ridge, slightly tuberculate at middle in some examples, while in others the tubercle alone is noticeable; the prothorax, instead of being finely and closely punctulate and only slightly scabroso-punctate laterally, is very distinctly granular laterally for one-third of the width, and deeply scabroso-punctate in the middle except above the base where the punctures are less scabrose; in the elytra the intervals are more convex, and have only a few scattered punctures, the striae are much deeper, and the apical spurs of the anterior tibiae are curved inwardly at tip.

Length $10\frac{1}{2}$ – $11\frac{1}{2}$ mm.; width 7–8 mm.

Hab. Ovampoland (Omrramba), Damaraland.

CATHARSIVS LATIFRONS, Har.,

Coleopt., Heft. iv., 1868, p. 81.

Black, shining; head twice as broad as long, clypeus very slightly emarginate in the centre, and with the angles of the emargination rounded, genae in a line with that of the clypeus laterally, the whole surface of the head is covered with elongate granules coalescing transversely in the median part but not on the genae nor on the marginal part of the clypeus, and there is a transverse, arcuate, very little raised carina extending from one cheek to the other in both sexes, and briefly tuberculate in the centre in the male; prothorax convex, simple, very closely scabrose except on the median posterior part of the disk where there is a small punctate transverse area, and there is also a median, very short, impressed shallow line in the posterior part, the anterior angles are rounded, and the lateral fovea, although small, is distinct; elytra convex, not sub-gibbose at middle, finely striate with the intervals faintly punctulate, intervals slightly convex, finely and closely punctate, eighth stria carinate from the base to

three-fourths of the length; under side and legs sparsely hairy; club of antennæ flavous; anterior tibiæ of the male very strongly dentate inwardly at tip, those of the female sharply angular.

Length 15 mm.; width 9 mm.

Hab. Cape Colony (Hopefield, Kimberley, Beaufort West), Transvaal (Potchefstroom), Bechuanaland (Kuruman).

CATHARSIVS TROGLODYTES, Bohem.,

Insect. Caffrar., ii., p. 225.

Similar to *C. latifrons*, and might prove to be after all only a dwarfed race of the same. The difference between the two are: the smaller size, and the non-tuberculate transverse ridge on the head in the male; the sculpture of the head is similar but not quite so deep or so rough, and the punctures on the prothorax are scabrose only on the lateral part, the impressed line in the posterior part of the disk is quite obliterated; the elytra are as convex and similarly striate and punctulate, but the intervals are quite plane; antennæ and legs as in *C. latifrons*.

Length $9\frac{1}{2}$ –11 mm.; width 6–7 mm.

Hab. Mozambique (Delagoa Bay), Transvaal (Potchefstroom), Southern Rhodesia (Buluwayo), Ovampoland (Omramba).

CATHARSIVS EXIGIVS, Bohem.,

Öfvers. Vet. Ak. Förh., 1860, p. 111.

The description of *C. troglodytes* exactly suits this species which differs from it merely in size, being still smaller, and also in the shape of the clypeus which is deeply incised in the middle, and has the two angles of the incision briefly denticulate. This is the only distinction between this minute species and small examples of *troglodytes*.

Length $5\frac{1}{4}$ – $8\frac{1}{2}$ mm.; width 3–5 mm.

Hab. Southern Rhodesia (Limpopo River), Bechuanaland (Kuruman), Cape Colony (Pella).

(Species unseen or non-identified.)

CATHARSIVS PHILUS, Kolbe,

Gesellsch. naturforsch. Freunde, Berlin, 1893, p. 143.

Male: "Similar to *C. pithecius*; black, head and prothorax sub-

opaque, but the latter shining in front and behind; elytra shining, ebony black; median part of clypeus very slightly bi-lobate, frontal horn broad, flat, suddenly attenuate towards the apex, styliform, lateral angles rounded; pronotum finely granulose, with the median part and two round discoidal but posterior spots smooth and nearly impunctate, and having two discoidal ante-median, short, smooth, conical tubercles set close to one another and separated by almost a quarter of the width; elytra punctato-striate, with the intervals sub-convex and punctulate.

Length 19–20 mm.

Female: Very similar, but with the clypeus entire and rounded; there is a slender frontal carina, with two median tubercles now and then united; the prothorax, with the exception of the median anterior carina, is totally granulate and has on each side a smoother median furrow.

Length 18–19½ mm."

Hab. Mozambique (Sena).

CATHARSIVS CALAHARICUS, Kolbe,

Loc. cit., p. 142.

"Black, shining, head and prothorax moderately shining, vertex and posterior part of the latter as well as two discoidal moderately large patches smooth; head broad, clypeus moderately short, rounded in front with the margin not sinuate, transversely rugose, frontal carina transverse, little raised, straight, and produced at middle into a tubercle; prothorax broadest at middle, pronotum finely and closely granulose, and having two discoidal smooth areas, posterior part of the back sub-sulcate, no ante-median transverse carina, but there is still a faint trace of one; elytra finely striate, striae indistinctly punctate, intervals smooth, little convex, sparingly and moderately finely punctate."

Length 23 mm.

The author compares this species with *C. phidias* ♀, from Senegal, of which the nearest ally is *C. melancholicus*, Boh., and adds: "The species also appears to be nearly related to *C. arcolatus*, Boh., which is described from the female only." I consider the latter as identical with *C. tricornutus*, and I have shown that the type is not a female.

Hab. Kalahari Desert.

GEN. COPRIS, Geoffr.,

Plate XXXIX., fig. 25.

Insect. Envir. Paris, i., 1762, p. 87.

Litocopris, Waterh., Annals and Mag. Nat. Hist., 1891, p. 53.

Buccal organs of *Catharsius*; the basal joint of the labial palpi is, however, generally more slender, being more than twice as long as broad; the general facies is the same, but the eighth stria on the elytra is not carinate in the basal part, and occasionally becomes obsolete in the posterior part; the intermediate and posterior tibiae are also bi-carinate, but the intermediate ones, the carinae of which are generally denticulate, have no large teeth; it does happen, however, that the inner upper carina in some species forming a somewhat homogeneous group, *C. bootes*, *pollux*, *filius*, *cornifrons*, is hardly indicated; this occurs also in the genus *Catharsius*, but in the latter the carina is obsolete in both the intermediate and posterior legs; the posterior tibiae have only one supra-apical tooth instead of two; the fore tibiae slant inwardly at tip, but occasionally they are truncate or nearly so, and the apical spur of anterior tibiae is either elongate and curving slightly outwardly, or a little thickened and curving more or less abruptly inwardly.

Waterhouse has separated from the genus, under the name of *Litocopris*, two species which are distinguished by the absence of cephalic horns, and also by the more truncate form of the anterior tibiae. These characters appear to me very slight. I may add that the basal joint of labial palpi of *L. muticus* is broad and subquadrate as in *Catharsius*, but the shape of the labial palpi is often specifically different.

The genus is numerously represented in Africa, and the range of some of the species is very great. I am inclined to believe that many so-called species will prove to be different stages of development of a much smaller number of forms.

The genus is represented in Europe, Asia, Japan, and Ceylon.

The normal shape of the valves of the penis is that of *C. globulipennis* (plate xxxix., fig. 35), and although it varies a little in the greater or lesser lateral sinuation, this difference is too slight to help in determining the species, but in two of them, *C. misellus* and *C. cassius*, the upper edge of the valve is serrate at tip with very distinct, hamate teeth, and in a third species, *C. amyntor*, there is at the base of the valve underneath a membranous vesicular prominence.

Taken as a whole, the South African species have the general facies

of *Copris* from other parts of Africa, with the exception of *C. globulipennis*, which has a very distinct aspect of its own, and perhaps also of *C. bootes*; the latter, however, has allies in *C. plutus*, *C. pollux*, &c., whereas *C. globulipennis* has none known to me. I have divided the genus into two sections according to the cephalic horn being laminate transversely at base and cylindrical at tip, or not. I have also made use, in one of the sections including species with a vertically truncate prothorax and a median dorsal lobe, of the shape of the apical spur of the anterior tibiae, according to it being normal, *i.e.*, slightly bent outwardly in the same direction as the apical outer tooth and acute at tip, or flattened, straight and curving inwardly at tip. This character helps a good deal in discriminating between species which at first sight seem to be identical, such as *C. orion*, *C. misellus*, &c., from *C. amyntor*, *contractus*, &c. On the whole the genus can be divided into three groups: the first one includes the species with a truncate prothorax lobate in the middle and having on each side of it a deep, sub-lateral excavation flanked or not by a compressed tooth or horn: the second includes such species in which the prothorax is excavate longitudinally: and in the third, which comprises only two species, the prothorax is simple or has a small, median tubercle.

7. *Key to the Species.*

A^f. Prothorax truncate in front, deeply excavated on each side, the median part is lobate and more or less sharply angular.

B. Males with a cephalic horn.

C². Cephalic horn not laminate at base and cylindrical at tip.

D⁵. Apical spur of anterior tibiae not curved inwardly at tip.

a⁴. Median lobe vertical, slightly emarginate in the centre and more or less quadri-dentate, outer teeth not divaricating.

Clypeus deeply incised in the middle and on each side of the median incision, strongly punctured, anterior edges of median lobe sloping and sharply carinate; median part of thorax smooth, median teeth of ridge very small, striae deeply punctured, intervals smooth; size small *macer*.

Clypeus incised in the middle; anterior edges of median lobe straight, sharp, median teeth of ridge very small, and anterior part smooth; striae impunctate; size large (pl. xxxiii., fig. 18) *laticornis*.

Clypeus incised in the middle, anterior edges of median lobe sharply carinate and ending in a small

tooth or protuberance close to the anterior margin,
upper edge of lobe equally bi-dentate, anterior part
scabrose *integer.*

*a*³. Median lobe very deeply emarginate triangularly, not
quadri-dentate, outer teeth divaricating.

*b*³. Cephalic horn curved.

Clypeus impunctate, anterior part of the prothoracic
median lobe and also the excavations almost im-
punctate, striae of elytra moderately deeply punctate,
intervals smooth *orion.*

*b*². Cephalic horn vertical.

*a*². Median lobe not emarginate, slightly bi-sinuate.

Clypeus rugose, anterior part of median lobe and
also excavations punctate, dorsal part punctate
except for a broad, dorsal area *misellus.*

Prothorax covered with closely set, nearly contiguous,
foveolate punctures (pl. xxxiii., fig. 9). *orphanus.* 350

*a*¹. Median lobe absent.

Cephalic horn short, conical, anterior part of pro-
thorax retuse, bi-sinuate at apex *cassius.*

D⁴. Apical spur of anterior tibiae curved inwardly at tip.

*a*³. Median prothoracic part quite vertical, not bi-lobate.

Cephalic horn fairly long, vertical, median lobe
deeply emarginate triangularly, outer teeth divari-
cating; whole surface of thorax closely punctate,
intervals of elytra distinctly punctate (pl. xxxiii.,
fig. 4) *contractus.*

Cephalic horn vertical, short, compressed, median
lobe not much raised, bi-angular on each side of the
emargination; prothorax closely granular *perturbator.*

Cephalic horn long, incurved; head and thorax closely
punctate, median lobe nearly straight, quadri-den-
ticulate *amyntor.*

*a*². Median prothoracic part sloping, not bi-lobate.

Cephalic horn hamate behind, median lobe with four
small teeth of equal size at tip; prothorax and in-
tervals of elytra very deeply and closely pitted
(pl. xxxiii., fig. 8) *victorini.*

Cephalic horn bi-dentate behind at base, median lobe
with four teeth, the two median ones smaller than
the outer, anterior median part of prothorax hardly
punctate, dorsal part closely punctured *subsicens.*

Median lobe moderately broad, nearly straight, only slightly emarginate in the centre, dorsal part smooth, lateral horns of prothorax moderately long *capensis*.

Median lobe broad, slightly tri-sinuate, dorsal part deeply punctured, lateral horns of prothorax very long (pl. xxxiii., fig. 14) *anceus*.

*a*¹. Median part of thorax bi-lobate.

Median lobe broadly incised and bluntly bifid on each side, median, sloping anterior part with a small tubercle in the centre, a lateral, marginal tooth on each side (pl. xxxiii., figs. 15, 19) *elphenor*.

Median part of lobe produced in a long, bifid process slightly dented inwardly at tip, no marginal tooth on each side *jacchus*.

Median lobe arcuate, quadri-dentate, lateral part of excavation strongly dentate at apex; elytra very globose *globulipennis*.

*A*². Prothorax very sloping in the anterior part and not excavate laterally.

B. Males with a cephalic horn.

*C*². Cephalic horn not laminate at base, and cylindrical at tip.

*D*³. Apical spurs of anterior tibiae curving slightly outwards.

Cephalic horn ensiform and with a very distinct median compressed tooth behind; prothorax with two more or less strongly developed, diverging horns beginning at a short distance from the base (pl. xxxiii., figs. 2, 2*a*) *cornifrons*.

*a*². Prothorax very deeply excavated longitudinally in the centre, cephalic horn curved and hamate behind.

Cephalic horn with a basal hook behind, clypeus smooth, intervals of elytra covered with deep, very closely set punctures (pl. xxxiii., fig. 7) *plutus*.

Cephalic horn with a sub-median hook behind; clypeus as closely punctured as the rest of the head; intervals of elytra covered with deep, very closely set punctures *mesacanthus*.

Cephalic horn with a sub-median tooth behind; clypeus and head punctured; prothorax very deeply excavate, and with the sides of the excavation produced in front as two conspicuous horns on each side; elytra opaque; intervals impunctate (pl. xxxiii., fig. 5) *bootes*.

Cephalic horn short, thick at base, sharply curved; prothorax deeply excavate, walls of excavation not dentate, truncate at apex, elytra shining *excavatus*.

α^1 . Prothorax neither truncate, retuse in front, nor excavate.

Clypeus very broadly sinuate at apex; prothorax with a small, median tubercle *achates*.

C^1 . Cephalic horn laminate at base and cylindrical at tip.

D^1 . Apical spur of anterior tibiae bent outwardly.

Prothoracic lobe wide, arcuate, hardly sinuate, lateral cavities narrow and shallow, median part of the head and median dorsal part of prothorax impunctate (pl. xxxiii., fig. 10) *urus*.

D^1 . Apical spur of anterior tibiae curved inwardly at tip.

Clypeus deeply incised and sub-lobate at tip; prothorax scrobiculate in front and laterally, and very deeply and closely punctured in the dorsal part *insidiosus*. 366

A^1 . Prothorax simple.

B. Males without a cephalic horn.

D. Inner part of anterior tibiae nearly transverse (*Litocopris*).

Clypeus broadly emarginate at tip; prothorax nearly parallel; elytra deeply punctato-striate (*muticus*.)

L. f. 2 m. 1000

COPRIS MACER, n. spec.

Black, shining; clypeus deeply incised in the centre and less deeply on each side of it, the space between the two incisions forming a short, slightly recurved lobe, the whole head is deeply and roughly punctured, and it bears a strong, compressed, slightly curved horn reaching higher than the prothoracic median lobe, with an angular projection on each side behind near the base; prothorax strongly declivous, lobate in the middle, the upper median part of the lobe incised in the centre, sub-dentate on each side of the incision and with the outer angle strongly dentate, the anterior part of this median lobe is sloping, and it is edged on each side by a sharp, very conspicuous, slanting carina running from the outer tooth of the upper part of the lobe to a short distance from the apical margin where it ends in a sharp angle, on each side of the median part there is a deep excavation reaching as far as the base of the lobe, and bounded on each side by a nearly erect, compressed triangular sharp tooth, there is a distinct, median, longitudinal groove in the dorsal part, and the surface is covered by deep, round, foveolate punctures which are not, however, closely set in the anterior part of the median lobe, and leave on the dorsal part a longitudinal smooth space as wide as the median lobe; elytra a little

elongate, deeply punctato-striate, intervals smooth; apical spur of anterior tibiae bent outwardly.

Length 13 mm.; width 7 mm.

Female unknown.

This species has the facies of a very much reduced example of *C. laticornis* or *C. integer*; it is easily recognised by the perpendicular carinate edges of the median prothoracic lobe which are much more developed than in *C. integer*; in the shape of the upper part of the median lobe it approximates *C. laticornis*, which has also the median dorsal part smooth, but the anterior part of the lobe is smooth in the last-named species and punctate in *C. integer*; from *C. orion* it is at once distinguished by the more slender form.

Hab. Southern Rhodesia (Salisbury).

COPRIS LATICORNIS, Bohem.,

Plate XXXIII., fig. 18.

Insect. Caffrar., ii., p. 226.

C. lunarioides, Waterh., ♂, Ann. and Mag. Nat. Hist., 1891, p. 513.

Black, shining.

Male: Clypeus incised in the middle, head rugose and bearing in the centre an incurved tooth from 4 to 5 mm. in height, sub-carinate laterally in front, and grooved for half the length behind; prothorax nearly vertical in the anterior part, very deeply excavate on each side from the anterior margin to three-fourths of the length, the median part, $4\frac{1}{2}$ or 5 mm. wide, is more or less deeply marginate and either quadri-tuberculate, when not deeply emarginate, or with a slight indication of the two median tubercles and with the outer angles projecting much when deeply emarginate, on each side of the deep sub-lateral excavation there is a sharp, compressed tooth pointing forward, and under that a short sinuate carina with the lateral round impression above it, the anterior declivous part and the posterior one are quite smooth, but the excavation and the sides are roughly punctured and granulose, in the small development the cephalic horn is about $1\frac{1}{2}$ mm. high, the median lobe of the prothorax and the lateral compressed tooth project very little; elytra finely striate with the striæ smooth, intervals also smooth.

Female (fig. 18): Clypeus as much incised as in the male, head rugose and bearing in the centre a laminiform tooth about 3 mm. long, a little narrower at base than at tip where it is emarginate, but the angles are sharp; prothorax having in the central part an obtuse declivous lobe, 4 mm. broad, not unlike that of the male, but

more horizontal, not emarginate, and with the angles nearly blunt, the sub-lateral excavation is well defined, but shallow, and the compressed tooth edging the excavation is either very noticeable or rudimentary, and the posterior part is more rugosely punctate than in the male.

Length 23–26 mm.; width 13–15 mm.

The insect described by Boheman is a female.

Hab. Cape Colony (Albany, Alexandria), Natal (Newcastle), Transvaal (Potechefstroom, Pretoria), Southern Rhodesia (Buluwayo), also Nyassa and Abyssinia, teste Waterhouse.

COPRIS INTEGER, Reich.,

Voyag. Galin. en Abyss., 1850, p. 312, pl. xix. fig. 2.

C. lunarioides, var. *minor*? Waterh., Ann. and Mag. Nat. Hist., 1891, p. 514.

Male: Nearly similar to *C. laticornis*, Bohem., but a little narrower; the shape of the head and prothorax is quite similar, but the anterior part of the lobe of the prothorax instead of being smooth is roughly scabroso-punctate; the two median teeth at the apex of the lobe are set close to one another and are very distinct.

Length 22–23 mm.; width $12\frac{1}{2}$ –14 mm.

Mr. Waterhouse has kindly identified one of my examples as his *C. lunarioides*, var. *minor*? and this example is absolutely similar to one of *C. integer*, Reich., from Shoa, sent to me by Dr. Gestro, of the Genoa Museum.

Hab. Southern Rhodesia (Victoria Falls, Buluwayo).

COPRIS ORION, Klug,

Erman. Reis. Atl., 1835, p. 34.

C. orion, Bohem., Insect. Caffr., ii., p. 240.

Male: Black, shining or piceous red; clypeus incised in front, centre of the head with a moderately long tooth slightly incurved towards the apical part, sharp at tip, and having in the posterior part of the base an angular projection on each side at a short distance from the base itself, the anterior part of the head is smooth, but the edge of the genæ and also of the clypeus is punctulate in some examples; prothorax quite vertical in the anterior part, and having a median lobe broadly emarginate triangularly in the centre, and with the outer angles strongly dentate and divaricating, on each side of the median part there is a

deep excavation reaching as far as the base of the median lobe, and bounded on the other side by a nearly erect, compressed sharp triangular tooth, the supra-marginal lateral impression is oblong and well defined, the truncate anterior part is shining and nearly smooth, except for a few scattered shallow punctures, but the lateral excavations are distinctly punctured except at the base, the dorsal part is also closely punctate all over, and there is a distinct impressed and punctured longitudinal line reaching from near the emargination of the median lobe to the basal part; in the intermediate development, the cephalic horn is straighter, and the median prothoracic lobe is not emarginate, the lobe itself not being much developed, and it is reduced to a mere indication in the small development; elytra distinctly punctato-striate, intervals feebly aciculate.

Female: Size and colour of male; head entirely punctured and bearing a short, sub-quadrate, laminiiform horn, 1 mm. broad and $1\frac{1}{2}$ mm. high, truncate at tip but slightly angular on each side; prothorax retuse in front, and with a transverse, slightly sinuate transverse ridge, dorsal part densely punctured, scabrose laterally in front, the impressed line is more or less distinct, but does not reach the retuse part; elytra as in the male.

Length 16–17 $\frac{1}{2}$ mm.; width 9 $\frac{1}{2}$ –10 mm.

Hab. Cape Colony (Humansdorp, Kowie, East London), Natal (Durban, Esteourt).

COPRIS MISELLUS, n. spec

Black, shining; head smooth, but elypeus and genae covered with interrupted transverse folds; in the centre of the head there is a vertical horn without sub-basal angulations or teeth behind, and which in the great development is as high as the vertical ridge of the prothorax; the latter is not very highly lobate although the lobe is conspicuous, very feebly emarginate in the centre and very slightly sinuate on each side, the excavations are not deep, but the lateral teeth are very well defined, the anterior part, the excavation, and the dorsal part are covered with fine punctures, slightly scrobiculate laterally, but absent in the median dorsal part where the longitudinal impressed line is shallow and not reaching the apex of the median lobe; in the small development the cephalic horn is very short, the prothorax very briefly retuse in front, the punctures there are a little deeper than in the large one, and the situation of the apical part is very slight and similar to that of the female which can only be

distinguished by the slightly bifid and more compressed short horn; elytra distinctly punctato-striate, intervals vaguely aciculate; apical joint of anterior tibiæ turning outwardly.

This species is a little smaller than *C. orion*, and is of the same size as *C. amyntor*, but slightly more slender; from the former, with which it has in common apical spurs of tibiæ outwardly turned, it differs by the punctate clypeus, which is not, however, so distinctly punctate as in *C. amyntor*, but the only outward specific character is the impunctate dorsal area of the prothorax. The shape of the valves of the penis differs much from that of *C. orion*, in being distinctly pluri-hamate on the upper apical edge, quite as much so as in *C. cassius* (*vide* fig. 36, pl. xxxix.); in *C. amyntor*, in which the upper edges of the valve are normally sinuate, as in *C. orion* and *C. contractus*, there is near the base a very distinct process like a vesicular bag.

Hab. Natal (Durban, Estcourt), Southern Rhodesia (Bulawayo, Salisbury), Transvaal (Waterberg, Potchefstroom).

COPRIS ORPHANUS, Guér.,

Plate XXXIII. figs. 9, 9a.

Voy. Lefèv. Abyss. Zool., p. 310, pl. iv., fig. 4.

C. neptis, Reich., Voy. Galin. Abyss., 1850, p. 314, pl. xix., fig. 3.

C. troglodytarum, Roth., Wieg. Arch., 1851, i., p. 124.

C. evanidus, Klug, Monatsb. Berl. Acad., 1855, p. 655.

C. puncticollis, Bohem., Insect. Caffrar., ii., p. 243.

C. gracilis, Waterh., Annals and Mag. Nat. Hist., 1891, p. 518.

Male: Black or reddish brown; clypeus incised in front, head punctulate, bearing a slightly incurved horn a little bi-dentate behind at the base, and varying in length from 1 to $2\frac{1}{4}$ mm.; prothorax very declivous in the anterior part, and having a dorsal transverse ridge which is nearly straight in some examples, slightly denticulate at middle in others, and bounded on each side by a depression which does not reach further back than the median ridge, and does not end always in a tubercle in the outer part, the whole surface is covered with closely set punctures; elytra finely punctato-striate, intervals smooth or faintly aciculate.

Female: Head with a short, sub-laminiform tooth truncate at tip; prothorax without any trace of ridge or impression, and with closely set punctures similar to those of the male.

Much smaller and more slender than *C. amyntor*; the prothorax is not lobate in the middle, but only carinate in the South African

examples, the sub-median excavation is usually very shallow or hardly noticeable except in the great development, and the distinctive difference, apart from that in size, is to be found in the much more deeply and more closely punctured prothorax.

The South African examples of this widely spread species are usually smaller than the Abyssinian ones.

In the dorsal view given in plate xxxiii., fig. 9, the edge of the declivous part should be three-dentate in the centre and uni-dentate laterally; the lateral view is correct.

Hab. Southern Rhodesia (Victoria Falls), Mozambique (Lourenço-Marquez).

COPRIS CASSIUS, n. spec.,

Plate XXXIX., fig. 36.

Male: Black or piceous red, shining, antennae ferruginous, club flavous; clypeus slightly emarginate at middle, nearly granular, like the genae and the greater part of the head which has in the middle a short, sub-conical tooth; in some examples the immediate surrounding of the cephalic tooth is smooth, but not in others; prothorax declivous in front, but not vertical; the declivous part is not broad, and has a slightly sinuate median ridge feebly carinate and slightly aciculate on each side, and next to it a sub-lateral impression, while in the minor development the anterior part is very slightly or not at all declivous and quite simple, the anterior part and also the sides are scabrose, and the latter also scrobiculate, but the median dorsal part is covered with closely set, deep punctures, and there is a well-defined median longitudinal impressed line reaching from the base to the median part, the posterior part of the disk has a sub-gibbose appearance owing to the non-lobate, not quite abruptly declivous anterior part; elytra convex, distinctly punctato-striate, intervals slightly convex, vaguely aciculate; apical spur of anterior tibiae bent outwardly; upper edge of valves of penis with four hamate teeth on each side.

Female: Colour of the male; the whole head is covered with scabrose punctures, the anterior edge of the clypeus is somewhat plicate, and there is in the middle a short, arcuate ridge a little angular in the centre; the prothorax is more scabrose than in the male and simple, the impressed line in the posterior part of the disk is very well defined, and the punctate dorsal part is much narrower than in the male

Length 12-14 mm.; width 7-8 mm.

Hab. British Bechuanaland (Kanye).

Allied to *C. misellus*, but differs in the deeper sculpture of the head and prothorax which are scabrose and scrobiculate, and only deeply punctured in the median dorsal part of the prothorax, which cannot be said to be lobate even in the greatest development known to me.

COPRIS CONTRACTUS, Bohem.,

Insect. Caffrar., ii., p. 236.

C. obesus, Boh., loc. cit., p. 237.

The description of *C. orion* applies very well to this species which is, however, usually a little more robust, but the shape of the head, prothorax, and elytra is quite similar; it is, however, distinguished by the cephalic horn which, although long, is nearly vertical and not curved, the whole head is roughly and deeply punctate, the whole of the prothorax is deeply and closely punctured, even in the lateral cavities, the striæ of the elytra are also deeply punctate, but the intervals are very distinctly although not deeply or closely punctate, and lastly the apical spur of the anterior tibiæ is strongly curved inwardly at tip. The female also resembles that of *C. orion*, but there is no trace of the smooth or nearly smooth space in the posterior part of the disk, and the punctures on the head and prothorax are deeper; the intervals of the elytra are punctulate as in the male.

Length 16–19 mm.; width 9–11 mm.

Hab. Cape Colony (Uitenhage, Graham's Town, Humansdorp, East London), Transvaal (Boksburg), Southern Rhodesia (Enkeldoorn, Buluwayo).

I believe that this species is the *C. empedocles* of Dejean's Catalogue. It was labelled as such in Drège's collection. It will be easily distinguished from *C. amyntor*, with which it has in common the apical spur of tibiæ inwardly turned, by the deeply emarginate median prothoracic lobe, and the distinctly punctate striæ.

COPRIS PERTURBATOR, n. spec.

Black or reddish brown, shining.

Male: Clypeus not much rounded in front and not emarginate or incised in the centre, head thickly punctured, edges of the clypeus and genæ sub-foveolate, in the centre of the head there is a short, compressed triangular smooth tooth 2 mm. high; prothorax with a dorsal ridge not sufficiently raised to be lobate, slightly

emarginate in the middle, bi-denticulate on each side, and bounded by a somewhat shallow cavity with a sharp tubercle on the outer side of it, the supra-marginal impression is very distinct, and is edged by a slightly sinuate carina, and the whole surface is punctato-granulose, except a small space behind the dorsal ridge which is closely and deeply punctured; elytra finely punctato-striate, intervals aciculate; apical spur of anterior tibiae bifid, with the inner spine bent at right angles inwardly. This is evidently the small development of a form that I have not yet met with. It is larger than the same development of *C. contractus*, and is easily distinguished from it by the non-incised clypeus, as well as by the roughly punctured, sub-granular prothorax; from the small development of *C. elphenor* it is distinguishable by the nearly equi-distant teeth of the dorsal ridge and of the sub-median cavity, and the striae of the elytra are punctate instead of being smooth.

Female unknown.

Length 17-18 mm.; width 10 mm.

Hab. Ovampoland (Evari River), Southern Rhodesia (no exact locality).

COPRIS AMYNTOR, Klug,

Monatsb. Berl. Acad., 1855, p. 655.

C. modestus, Bohem., Ins. Caffrar., ii., p. 242.

C. confusus, Bohem., loc. cit., p. 240.

Male: Black, or piceous red, shining; clypeus incised in front; head and clypeus thickly and deeply punctured, in the centre of the head there is a curved, long, or moderately long horn, sharp at tip and having in the posterior part and at some distance from the base two sharp teeth somewhat divaricating; prothorax quite vertical in the anterior part with the median lobe a little impressed in front and the upper edge slightly emarginate in the middle, and either sinuate on each side of the emargination or more or less distinctly dentate there, the lateral excavations reach from the anterior margin to a small distance from the base, and they are deeply punctate, the anterior part is closely but not deeply punctate, the dorsal part is very closely punctate, and the median longitudinal groove in the dorsal part of the prothorax is very well defined; elytra smooth, shining, intervals impunctate, striae distinctly punctato-striate; apical spur of anterior tibiae slightly dilated at apex and more or less strongly curved inwardly at tip; the valves of the penis are normally sinuate on the upper side, but there is at the base underneath a membranaceous, fold-like appendage.

Female: Colour and sculpture of the male, but the cephalic horn is compressed, short, and more or less deeply emarginate at tip; the prothorax, which is covered with closely pressed, equal punctures, is either simple or retuse in front, but not lobate, and the upper carinate part is widely tri-sinuate; the apical spur of the tibiae is not as broad at tip as in the male, and is horizontal.

This species is distinguished from *C. orion* by the punctate clypeus and by the evenly punctured prothorax which is not triangularly emarginate in the centre of the lobe, the latter is therefore straighter and is besides often quadri-denticulate; the apical spurs are also directed inwards, which is not the case in *Orion*; from *C. contractus*, in which the apical spur is also directed inwardly, it is distinguished by the shape of the median lobe, which in this last-named species is similar to that of *C. orion*, by the curved cephalic horn, and by the intervals of the elytra which are smooth, whereas in *C. contractus* they are very distinctly punctate.

Length $14\frac{1}{2}$ – $15\frac{1}{2}$ mm.; width $8\frac{1}{2}$ –9 mm.

Hab. Southern Rhodesia (Buluwayo, Victoria Falls), Mozambique (Rikatla), Transvaal (Potchefstroom).

COPRIS VICTORINI, Boheman,

Plate XXX., fig. 8.

Insect. Caffr., ii., p. 234.

Black, sub-opaque or moderately shining.

Male: Clypeus incised in the centre and with the angles of the projection rounded, but projecting, head covered with very closely set, nearly confluent punctures, and having at about the centre a long, thin, incurved horn, varying in height from 4 to 6 mm., and having behind at about one-fourth of the length two hook-like teeth; prothorax not quite vertical in front, the median part quadrate, quadri-denticulate at tip, deeply excavate on each side of the median lobe, and having in the outer angle of the excavation a sharp, triangular erect tooth, the lateral impression is distinct, and there is a sinuate ridge underneath, the entire surface is covered with very closely set, deep punctures which are somewhat rugose in the anterior part; elytra very convex and somewhat short, narrowly striate, the striae are impunctate, and the intervals covered with very closely set and deep, round punctures; apical spur of anterior tibiae bifid at tip and with the inner spine bent at right angles inwardly.

Female: Head as in the male, but bearing, instead of a long

slender incurved horn, a short sub-laminiform tooth, truncate at tip, but slightly emarginate in the centre, and about 1 mm. long, and 1 mm. wide; the prothorax has only a faint trace of a short, transverse carina without any trace of lateral excavation, the supra-marginal impression is as in the male; it is covered with deep, rough punctures, somewhat foveolate in the anterior part, and sub-granulose laterally; elytra as in the male.

Length 14–15 mm.; width 9–9½ mm.

This species is to be distinguished from *C. orion* and *C. amyntor* by the more convex and shorter elytra, the cephalic horn is more slender, more incurved, and the two hook-like teeth are much more distinct and curve towards the horn, but the most distinctive character is the strong and close punctuation of the prothorax and of the intervals of the elytra. One wonders at Boheman describing them as “*crebre mediocriter punctatis*.”

Hab. Cape Colony (Knysna, Seymour), Transvaal (Pretoria, Johannesburg), Natal (Durban), Orange Free State (Parys).

COPRIS SUBSIDENS, n. spec.

Male: Black, shining; clypeus broadly emarginate, incised in the centre and with the angles of the emargination triangular and recurved, head deeply and roughly punctured and bearing in the centre a long horn straight from the base to about half the length, slightly bent in the middle, and having behind a basal median tooth and a sharp lateral one on each side above the basal one; prothorax with the median anterior part sloping a little and very slightly carinate longitudinally in the centre, the upper part of this median lobe is not carinate, but in the centre there are two small teeth, and a longer one at each angle, the excavations are deep and extend to a very short distance from the base, the lateral tooth is very long, compressed, and curves outwardly, the lateral anterior part is obliquely sinuate, the anterior part of the lobe and the lateral cavities are slightly punctate, but the punctures at the apex of the median lobe, on the sides and on the dorsal part are deep and closely set; elytra very convex, deeply striate, striae not distinctly punctate, intervals a little convex, vaguely aciculate; apical spur of anterior tibiae flattened at tip, straight and with the apical part turned downwards rather than inwardly, but in nowise bending outwardly.

Length 18 mm.; width 10 mm.

Female unknown.

Smaller than, but not unlike, *C. capensis*; the median lobe of the prothorax is not so sloping, is a little convex towards the anterior outer margin, and is not scrobiculate as in *C. capensis*, the dorsal median part instead of being smooth is deeply punctured.

Hab. Damaraland.

COPRIS ANCEUS, Oliv.,

Plate XXXIII., figs. 14, 14a, 18.

Entom., i., p. 116, pl. ii., fig. 14.

C. minator, Harold, M. I. Münch. Ent. Ver., iv., 1881, p. 152.

Male (figs. 14, 14a): Black, shining, especially on the elytra; clypeus distinctly incised in the centre, head rugose and having in the centre a curved horn $5\frac{1}{2}$ to 8 mm. long, carinate laterally in front for nearly half the length, but only near the base in the posterior part; prothorax sloping in the anterior part, and having a median transverse ridge 6 to 7 mm. wide projecting a little above the slope, this ridge is slightly emarginate in the centre and the outer angles are sharp, the whole of the very wide median slope is edged by a sharp carina, and there is a long, oblique, lateral sharp tooth on each side above the lateral impression which is hardly distinct, and has a short longitudinal ridge beneath between the lateral tooth and the outer angle of the median lobe, and at the back of them there is a deep sub-lateral cavity nearly reaching the base, the median part of the anterior slope is roughly foveolato-punctate, the sides and the posterior cavity are smooth, and the upper part of the median lobe is punctate, punctulate or sometimes nearly smooth; in the median development the median lobe and the lateral tooth are not much developed (this is *C. minator*, Har.), but in the small development the median lobe is reduced to a carina, and the posterior lateral impression is very little defined; elytra finely striate, striæ distinctly punctate.

Female (fig. 18.): Clypeus as deeply incised in front as in the male, head very rugose and bearing a short, sub-triangular tooth; prothorax with a median, not much raised carina set at a short distance from the apex, and an ill-defined lateral sinuation, the lateral supra-marginal impression is distinct and has a short, sinuate ridge underneath, and the surface is roughly granulose, except the part which is punctulate at middle.

Length 20–25 mm.; width 12–14 mm.

Hab. Cape Colony (Cape Town, Worcester, Seymour, Knysna).

COPRIS CAPENSIS, Waterh.,

Annals and Magaz. of Nat. Hist., 1891, p. 513.

The description of *C. anceus* on the whole is applicable to this species which differs in the anterior part of the prothoracic lobe being narrower (it is very broad in *C. anceus*) and not edged by conspicuous transverse carina above the anterior outer margin, owing to the median lobe being narrower the excavations are not so close to the outer sides, and the lateral horns or teeth are not so much directed outwards, the median dorsal part is smooth and very faintly grooved longitudinally, instead of being deeply punctured and distinctly grooved.

The female, which I do not know with certainty, is, according to Mr. C. O. Waterhouse, less convex; the thorax is strongly rugose at the sides with all the posterior part of the disk smooth, the anterior declivity (which is not separated by any distinct ridge) is transversely rugose.

Length 21–27 mm.; width 13–14 mm.

Hab. Cape Colony (Cape Town, Stellenbosch), Natal (Durban).

COPRIS ELPHENOR, Klug,

Plate XXXIII., figs. 15, 15a, 19, 19a.

Monatsb. Berl. Acad., 1855, p. 655.

Peters' Reis. n. Moss., 1862, p. 241, pl. xiii., figs. 8, 9.

Black, head and prothorax slightly opaque, elytra very shining.

Male (figs. 19, 19a): Head very rugose, clypeus slightly incised; in the middle of the head there is an incurved horn 8 to 9 mm. long in the great development, carinate laterally in front and behind and with the base extending nearly on the whole anterior width of the clypeus; prothorax very declivous in the anterior part, but with the median part of the declivity bulging a little and having a median minute sharp tubercle, upper side produced into a broad, quadrate process 9 mm. wide, broadly emarginate in a semicircular way, and with the angles truncate and slightly emarginate in the centre, the lateral part of the declivity is very deeply impressed on each side of the median lobe, and there is on each side a sharp carina ending in an acute, moderately long erect tooth, set close to the outer margin in some examples, but in others placed slightly above a parallel, short ridge; in the smaller development the clypeus is a little more distinctly emarginate with the angles of the emargination projecting a little, the median dorsal lobe is hardly projecting and the outer angles alone are sharply defined, the anterior part is

much more sloping, there is no small median tooth, and the lateral one is placed at some distance from the lateral impression, which has a short carina running underneath, the anterior part and the sides are very closely and roughly granulose, but the median lobe is closely punctured except the upper part which is roughly granulose; elytra narrowly striate, striæ smooth, intervals finely and closely punctulate.

Female (figs. 15, 15a): Similar to that of *C. jacchus*, the cephalic horn, however, is emarginate at middle at the tip and the outer angles are sharper, the clypeus is more deeply emarginate in the centre; this also holds good for the small development, which greatly resembles that of *C. capensis* and can only be distinguished by the clypeus which is not deeply incised, and by the striæ, which are smooth instead of being distinctly punctate.

Length 20–25 mm.; width $12\frac{1}{2}$ –15 mm.

Hab. Cape Colony (Griqualand West), Transvaal (Rustenburg, Lydenburg, Potchefstroom), Southern Rhodesia (Manica, Mazoe, Buluwayo).

COPRIS JACCHUS, ~~Fabric.~~ *Fabric.*

Plate XXXIII., figs. 12, 12a, 16, 16a, 17, 17a.

~~Fabric.~~ Syst. Ent., p. 20, ♂, p. 21, ♀.

Oliv. Ent., i., 3, p. 105, pl. xxii., fig. 195, ♂; *ibid.*, p. 112, pl. xiii., fig. 121, a b.

Black, head and prothorax slightly opaque, elytra very shining.

Male (fig. 17): Head very rugose, clypeus slightly emarginate, in the middle of the head there is an incurved horn 11 mm. long in the great development, carinate laterally in front and behind and with the base extending on the whole width of the clypeus, this horn is very rugose; prothorax declivous and having in front a quadrate process about 6 mm. wide projecting above the declivity, deeply emarginate triangularly in the centre and with the angles truncate and slightly emarginate at tip, the anterior part has a moderately deep impression under each angle of the median lobe, and there is on each side, close on the outer margin, two short but very distinct ridges running parallel to one another, the anterior part is covered with closely set granules, and so are the sides of the posterior part, but the lobe itself is rugulose and the base slightly shining and very closely punctate; in the median development (figs. 12, 12a) the cephalic horn is only 5 mm. long, and the median lobe very short and not deeply emarginate, while in the smallest development,

which is hardly discernible from that of *C. elphenor*, the cephalic horn is reduced to a compressed triangular tooth 2 mm. long and having a comparatively narrow base, the median lobe is reduced to a sharp carina standing very much in front, and the superior lateral carina is very slightly defined and more distant from the lower one, while the lateral impression is very well defined instead of being obliterated as in the large development; elytra convex, slightly gibbose at middle and very narrowly striate with the intervals very slightly punctulate.

Female (figs. 16, 16a): The clypeus is hardly emarginate in front and bears in the centre a compressed laminate horn 4 mm. broad, and of nearly the same height and having a small tooth in the centre, owing to the angles being sharp, this carina is tri-dentate; occasionally the apical part of the horn expands in a broad, transverse process; the prothorax has a median horizontal lobe slightly arcuate at tip, the anterior part of the prothorax is hollowed under the horizontal median lobe, the lateral impression is very distinct and is edged in the lower part by a sinuate ridge reaching nearly the outer margin; elytra as in the male.

Length 20–25 mm.; width $12\frac{1}{2}$ –15 mm.

Hab. Cape Colony (Cape Town, Uitenhage, Graham's Town, East London), Transvaal (Potchefstroom, Johannesburg, Boksburg), Natal (Durban, Frere), Northern Damaraland.

In the examples from Northern Damaraland the striae on the elytra are more deeply punctured than in those from other localities.

COPRIS GLOBULIPENNIS, Waterh.,

Plate XXXIII., figs. 1, 1a; Plate XXXIX., fig. 35.

Annals and Magaz. Natur. Hist., 1891, p. 512.

Male: Black, sub-opaque, but with the posterior part of the prothorax shining at times; head twice as broad as long, incised in the centre, but not deeply, roughly punctured in the anterior part and with the punctures more regular laterally and behind, genæ in a line laterally with the clypeus, it bears right on in the posterior part a long, compressed horn moderately slender, distinctly incurved, and 8 mm. long in my examples, this horn is smooth in front but rugulose laterally and distinctly carinate on each side behind for a short distance from the base; antennæ flavous; prothorax sloping much in front or sub-vertical, either deeply or moderately deeply excavate laterally and having the apical part of the declivity sub-lobate, broadly emarginate at middle with the sides of the lobe

moderately aculeate and strongly sinuate above the lateral excavation, or with the median lobe distinctly quadri-tuberculate, the lateral excavation very deep and the outer edge of it produced into a triangular, sub-porrect tooth, the posterior part is comparatively short but very convex, closely punctulate, and has a median longitudinal impressed line extending to two-thirds of the length, the anterior excavations are filled with rugose punctures, but the median part is asperous, the lateral foveæ are very distinct and they have underneath a diagonal ridge reaching to the outer margin; elytra very convex, short, very finely striate, the striae are very shallow, the intervals closely punctulate, and the three adjoining the suture are sub-pectiform at the apex of the declivity and roughly punctured there.

Female: Entirely shining; the prothorax is not very convex, but the elytra have the same shape as in the male; head narrowly but deeply incised with the angles of the incision slightly recurved; the sculpture is similar to that of the male, but it bears on the vertex a very short, triangular tubercle; the prothorax is covered with round but not deep punctures which become asperous in the anterior part and on the sides, it has a nearly obsolete obtuse ridge in the anterior part, and a median longitudinal impressed line deeply punctured; elytra a little longer than in the male but equally convex, they are finely and closely punctate, the suture and the two or three intervals adjoining are a little raised and roughly punctured.

Length 19–20 mm.; width 10–11½ mm.

The figure given on plate xxxiii. is that of a small development with not very deep lateral thoracic cavities.

Hab. Cape Colony (Knysna, Sunday River, Oudtshoorn).

COPRIS CORNIFRONS, Bohem.

Plate XXXIII., figs. 2, 2a.

Öfvers. Vet. Ak. Förh., 1860, p. 110.

♀ *C. curvicornis*, Bohem., loc. cit., p. 110.

Male: Black, shining; head twice as broad as long, clypeus broadly emarginate in front and with the edges distinctly recurved, genæ in a line with the lateral part of the clypeus, on the anterior part of the head there is a compressed, ensiform horn with a triangular compressed median tooth in the posterior margin, and behind the base of the horn there is a transverse, slightly quadridentate, little raised carina extending nearly from eye to eye, the

head is impunctate except for a narrow basal space which is closely punctured; the prothorax is sloping for nearly three-fourths of the length in the central part and still more laterally, it has in the centre a broadly emarginate lobe ending on each side in a sharp, triangular tubercle projecting over the sloping part, the sides are impressed from apex nearly to the base, and the posterior part is thus exceedingly narrow, but a little broader behind the median lobe, the supra-marginal lateral impression is broad and very distinct, and the surface is nearly impunctate except in the anterior median part, along the anterior angles, and also along the basal margin; elytra convex, distinctly punctato-striate, intervals very vaguely aciculate.

Female: Head broadly emarginate in front as in the male, also smooth but more broadly punctured in the posterior part along the base, it bears also a horn, but the horn is short, $2\frac{3}{4}$ mm., much curved, and has no trace of a triangular tooth in the posterior part, and is not ensiform; the prothorax is much more declivous in front, the posterior part being as long as the declivous part, which is only slightly impressed and is surmounted by two small median tubercles set close to one another, the supra-marginal impression is broad and deep and the surface is closely and deeply punctured except for a narrow impunctate band running from the anterior angle round the base, this smooth space is a little broader in the median part above the base; elytra as in the male.

Length 18–22 mm.; width 11–12 mm.

Hab. Southern Rhodesia (Victoria Falls), Damaraland.

COPRIS PLUTUS, Fabr.,

Ent. Syst., iv., App., p. 436.

Casteln., Hist. Nat., ii., p. 78.

? *C. calatus*, Fabric., Ent. Syst., App. iv., p. 345.

C. fidius, Oliv., Ent., i., 3, p. 184, pl. xxvii., fig. 237.

Male: Black, sub-opaque on the prothorax, elytra duller black, nearly opaque; clypeus deeply emarginate in the centre and with the angles of the emargination sharp and projecting; genæ in a line with the clypeus laterally; head with a compressed incurved horn varying in length from 3 to $4\frac{1}{2}$ mm. and strongly hamate behind at the base, behind this cephalic horn there is a faint trace of a transverse carina, the sides of the clypeus and the genæ are closely but not deeply punctured, but the anterior part is distinctly smooth;

prothorax broadly and deeply excavated in the centre from apex to base, and with the walls of the excavation forming a sub-triangular longitudinal ridge on each side, the surface is covered with deep, closely set punctures; elytra convex but somewhat elongate, very distinctly striate, and with the intervals plane and covered with very closely set and deep punctures.

Female: Black, sub-opaque on the upper side; head as in the male, the cephalic horn is small, like that of the male in shape, but instead of having behind a hamate tooth at base there is a very short sharp tubercle at a short distance from it; the prothorax has a sub-ovate very shallow median depression in the anterior part, but this impression is never conspicuous, and oftener than not is nearly obsolete; elytra as in the male and with similar punctures.

Length 16–18 mm.; width 9–10 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Worcester, Port St. John).

Voet (Coleopt., pl. xxiii., fig. 6) has given a fairly accurate figure of this insect, which Gemminger and Harold in their Catalogue refer to *C. cælatus*, Fabric., Ent. Syst. Append., iv., p. 435, but Harold in his description of *C. ritsemæ*, published six years after the Catalogue, compares this species to *C. cælatus*, but mentions two lateral horns on the prothorax, as well as a median truncate emarginate lobe; these features are entirely wanting in *C. plutus*.

COPRIS MESACANTHUS, Har.,

Plate XXXIII., figs. 7, 7a.

Mitt. d. Münch. Ent. Ver., 1878, p. 45.

Black, sub-opaque on the prothorax, elytra opaque.

Male: Shape of the head similar to that of *C. plutus*, but instead of the clypeus being smooth in the anterior part, it is closely punctured, the horn in the large development is much longer, reaching a length of 7 mm., it is not so much curved and the hook instead of being at the base is situated at about half the length; the prothorax is broadly and deeply excavated in the middle from apex to base, with the walls of the excavation longitudinally triangular on each side, the excavation in the large development is 4 mm. in width and the walls are $2\frac{1}{2}$ mm. in height and nearly vertical in front, but in the small development they are reduced to a mere sinuate ridge on each side of a median depression, and even disappear entirely, in which case the depression is hardly noticeable; the surface is

covered with deep, closely set punctures equally distributed all over except in the median apical part which is impunctate; elytra convex, but somewhat elongate, very distinctly striate, and with the intervals covered with very closely set, deep punctures.

Female: Head as in the male, but the clypeus is more deeply emarginate and the angles of the emargination are sharper and more recurved, the cephalic horn is reduced to a very short, triangular, compressed, tubercle, and at the back of it there is a not much raised transverse ridge; the prothorax has no trace of median impression or excavation, and the whole surface is punctured; elytra as in the male and similarly sculptured.

Length 14–19 mm.; width 8–11 mm.

Very closely allied to *C. plutus*; the male differs only in the sculpture of the head and prothorax which are entirely covered with closely set punctures, instead of being smooth in the anterior part of the head; the cephalic horn is longer and the hook at the back of it is situated at about the middle instead of at the base; in the small development, however, the only distinctive character is the sculpture of the head. In the female the difference in the shape of the cephalic horn is well marked, it being short, almost tuberculiform, instead of being nearly similar to that of the male.

Hab. Natal (Durban, Lower M'Komas River), Transvaal (Lydenburg, Pretoria), Lower Rhodesia (Salisbury).

The species was originally described from Nyassaland.

COPRIS BOOTES, Klug,

Plate XXXIII., figs. 5, 5a.

Monatsb. Berl. Acad., 1855, p. 655; Peters' Reis., 1862, p. 241,
pl. xiii., fig. 10.

Male: Black, moderately shining on the prothorax, elytra opaque; clypeus broadly emarginate in front, genæ in a line laterally with the clypeus, the whole surface of the head is closely punctured, and in the posterior part there is a strong, much curved horn, 8 mm. in length, compressed laterally, and having behind a minute tooth not quite in the median part; prothorax deeply and broadly excavate in the median part from apex to base, and with the walls produced into front on each side in a vertical horn-like process as high as the tip of the cephalic horn and having in front a very distinct horizontal tooth, the cavity and the outer part of the walls are punctured as well as the base, but there is on each side a broad, supra-marginal smooth space, and the supra-marginal lateral impression is very con-

spicuous; elytra somewhat short, convex, sub-gibbose at middle, narrowly punctato-striate, with the intervals plane and very faintly aciculate.

Length 23 mm.; width 13 mm.

Hab. Lower Rhodesia (Matabeleland), Mozambique (Inhambane, teste Klug).

COPRIS EXCAVATUS, Klug,

Monatsb. Berl. Acad., 1855, p. 655; Peters' Reis., 1862, p. 242.

Male: Black, sub-opaque on the head and prothorax, elytra shining; clypeus very widely emarginate at tip, the emargination being triangular, and very slightly sinuate on each side, genæ projecting slightly beyond the line of the clypeus, the whole head is very deeply and somewhat roughly punctured, and in the centre there is a short, strongly hamate horn, broad and thick at base but very sharp at tip and not higher than the apical truncate part of the walls of the prothoracic median excavation which is deep and slopes from a very short distance from the base to the apical margin; the two walls of this excavation are horizontal except for a slight sinuation near the anterior part, and are abruptly truncate in front, while on each side of them, close to the apical margin, there is a deep, curved emargination, the dorsal part is covered with very closely set foveæ, and so is the median excavation except near the basal part, but round the supra-marginal lateral fossa there is a smooth area; elytra deeply striate, striæ not distinctly punctate, intervals slightly convex and punctulate; anterior tibiæ curved outwardly.

Female unknown.

Intermediate in shape and size between *C. fulius* and *C. bootes*, but easily distinguished from the former by the very widely emarginate clypeus and the not deeply punctured intervals of the elytra; from *C. bootes* it differs in the shape of the cephalic horn which is short, broad and thick at base, and strongly curved and sharp at tip, as well as by the non-opaque elytra.

I have not been able to ascertain by dissection the sex of the type of Boheman's example, but the fact of the elytra being distinctly shining in *C. excavatus*, and opaque in *C. bootes*, would seem to preclude the possibility of the former being the female of the latter, which is, however, not yet known.

Length 20 mm.; width 11 mm.

Hab. Mozambique, teste Klug, Interior of Caffraria, teste Boheman.

COPRIS ACHATES, n. spec.

Male: Black, sub-opaque; clypeus broadly emarginate in front in the same manner as in *C. bootes*, head with a very short tuberculi-form horn with a distinct transverse carina behind it, this carina is angular at each end, only the posterior part of the genæ and the basal space behind the transverse carina are punctulate, the rest of the head is smooth and impunctate; prothorax convex, very slightly declivous for a short distance in the anterior part, and having in the centre a minute tubercle; the surface is deeply and equally punctured, except along the supra-marginal and basal margins where it is smooth and impunctate, the lateral supra-marginal impression is transversely oblong and very distinct; elytra convex, but not sub-gibbose, narrowly punctato-striate and apparently impunctate.

Length 16 mm.; width $9\frac{1}{2}$ mm.

Hab. ? N'Gamiland.

This is evidently a small development of a species in the large development of which the cephalic horn is much longer, and the prothorax probably more declivous, somewhat in the manner of the ♀ of *C. cornifrons*, but my example is a male, and the prothorax has only one median tubercle.

COPRIS URUS, Bohem.,

Plate XXXIII., figs. 10, 10a, 10b.

Insect. Caffr., ii., p. 229.

Black, sometimes dark brown, shining.

Male: Head smooth in the centre and sub-foveolate on the genæ and clypeus, the latter is narrowly but deeply emarginate in the centre and sinuate on each side of the emargination, the genæ are in a line with the lateral part of the clypeus, near the base of the head there is broad quadrate lamina surmounted by an erect, narrow, cylindrical horn, the whole length reaching to about $4\frac{1}{2}$ mm.; prothorax abruptly declivous and having at the top of the declivity a moderately sharp carina occupying about the half of the discoidal part, but deeply sinuate laterally for a very short distance, and with the outer angle of the sinuation sharply tuberculate, the sides of the anterior declivous part are deeply impressed under the lateral sinuate part of the dorsal ridge, the anterior part and the sides of the dorsal part are granulato-punctate, but the greatest part of the disk is smooth, and there is a very fine, median longitudinal impressed line; elytra finely, but deeply striate, intervals very faintly aciculate, nearly smooth.

Female: Head as in the male, but bearing a transverse, lamini-form process 2 mm. wide and 1 mm. high, truncate, but a little emarginate at apex and with the angles sharp; the prothorax has a transverse carinate process close to the anterior part, angular in the middle, and slightly oblique from there towards the outer sides, this process is 5 or $5\frac{1}{2}$ mm. wide, and is not very prominent, on each side of this median carinate process there is a narrow and moderately deep impression with the outer angle slightly tuberculose; the sculpture is the same as in the male, but the anterior part of the upper side is more broadly rugoso-punctate.

Length 22-23 mm.; width 14 mm.

Hab. Transvaal (Barberton), Mozambique (Lourenço-Marquez), Natal (Pine Town).

COPRIS INSIDIOSUS, n. spec.

Male: Black, shining; head scrobiculate, clypeus deeply incised in the centre and with the angles of the incision lobate, projecting much and reflexed, genæ disconnected from the lateral part of the clypeus by a small incision, near the base there is a short, transverse, laminate carina nearly 2 mm. wide and 1 mm. high, produced in the centre into a short, cylindrical obtuse tooth about $1\frac{1}{4}$ mm. high; prothorax closely covered with foveate punctures confluent on the sides, and closely set in the anterior and dorsal parts, it is retuse at apex, bi-sinuate at tip, the ends of the sinuation being slightly tuberculate, and it has a median longitudinal groove reaching only from the base to about the median dorsal part; elytra a little elongate, convex, distinctly punctato-striate, with the intervals smooth and impunctate; anterior tibiae with the apical spur very distinctly curved inwardly at tip.

Female: The female is like the male; the short cephalic horn is replaced by a very small compressed one, slightly bifid at tip; the prothorax is also carinate in the anterior part which, however, is not as much raised as in the male; it might be mistaken for the female of *C. macer*, but in the latter the apical spurs are not curved inwardly at tip. This species resembles a little *C. perturbator*; it is smaller, the clypeus is lobate, which is not the case with *C. perturbator*, the prothorax is not granulose, and the shape of the cephalic horn is different in the male, but not in the female.

Length 13-17 mm.; width $9\frac{1}{4}$ mm.

Hab. Southern Rhodesia (Salisbury).

COPRIS (LITOCOPRIS) MUTICUS, Bohem.,

Insect. Caffr., ii., p. 238.

C. simplex, Har., Coleopt., Heft. iv., 1868, p. 81.

Black or very dark brown, shining; clypeus broadly but not deeply emarginate in front, genæ in a line laterally with the clypeus; the whole head is finely and closely punctured, the suture of the genæ is sometimes ill-defined, and the vertex, although slightly convex in the centre in the male, has no trace of horn or of transverse raised line in either sex; prothorax convex, slightly bi-sinuate in the anterior margin, covered with equally distant, moderately deep punctures, and having no trace of ridge or impression, in the posterior part there is a median longitudinal line, somewhat punctulate and reaching from the middle of the disk to the base which has a series of deep punctures broader than those occurring on the disk; elytra moderately convex and somewhat elongate, deeply punctato-striate with the intervals slightly convex in the lateral and posterior part, the eighth stria is very well defined right to the rounding of the apical part, and distinctly punctured all along, although the punctures are finer; under side glabrous, with the sides of the metathorax and the segments of the abdomen very deeply foveolato-punctate; anterior tibiæ quadri-dentate externally, basal tooth small.

Length 12-14 mm.; width 6-7 mm.

Hab. Cape Colony (Uitenhage, Graham's Town, Stockenström), Natal (Durban), Southern Rhodesia (Victoria Falls).

Boheman in his description says that the head is "postice obsolete trituberculato." The typical example I have seen has no trace whatever of three obsolete tubercles, nor have I been able to detect them in the nine examples which I have examined.

(Species which I have not seen or been able to identify.)

COPRIS SPHEROPTERUS, Har.,

Mitth. d. Münch. Ent. Ver., 1877, p. 98.

"Black, shining; head with an elongate erect horn, recurved at apex; prothorax not very deeply punctate, and with the greater part of the surface obliquely declivous, upper margin obtusely bi-lobate in the centre, the declivous part is roughly punctate in the middle and sub-gibbose longitudinally in front; elytra globose, very finely striate,

eighth stria continued from the base to the third part of the length; intervals plane, very slightly, almost obsoletely, punctate. Allied to *C. sexdentatus*, but differs by the shape of the prothorax and the still shorter elytra."

Length 22 mm.

Hab. Cape of Good Hope.

COPRIS RITSEMÆ, Har.,

Coleopt., Heft. xiv., 1875, p. 137.

"Clypeus rounded, slightly emarginate in the centre, vertex with an elongate horn slightly incurved, acutely dentate above the base; thorax strongly and very densely punctate, moderately shining, and having two lateral horns and a median, truncate, emarginate lobe; elytra shining, intervals convex and sub-rugosely punctate. Allied to *C. calatus*, but very distinct owing to the elytra being shining, and the intervals convex and confluent punctate.

Length 17 mm.

Hab. Basutoland."

COPRIS PUMILIONIS, Wallengr.,

Entom. Tidschr., 1880, p. 20.

"Oblongo-ovate, shining; antennæ flavous; head finely and closely rugosely punctate, marginate, moderately deeply incised in the shape of a triangle at apex, and provided with a transverse carina before the eyes, and with an oblique one on each side, both of these carinæ being very obsolete; prothorax simple, closely and finely rugoso-punctate, dorsal part more sparingly punctured, briefly and obsoletely grooved behind, no lateral foveole, but instead a very minute lateral callus on each side; elytra finely striate, striæ impunctate, intervals broad, plane, extremely finely punctate, the punctures closely set, suture a little deeper towards the base; anterior tibiæ tri-dentate, upper tooth smaller than the others but distinct, the lower customary tooth very little indicated.

Length 8 mm. One example.

Hab. Transvaal (Christiana)."

This species might prove to be identical with *Catharsius troglodytes* or *C. exiguus*, Boh.

SUB-FAMILY APHODIINÆ.

Buccal organs hidden from above by the clypeus; ligula membranaceous, bi-lobate, not always projecting beyond the mentum; maxillary lobes membranaceous but sometimes horny and dentate; antennæ nine-jointed, club thick, tri-jointed; body oblong; elytra covering in nearly all cases the abdomen, which is six-jointed, with the segments sometimes fused (*Harmogaster*) or hardly free (*Liparochirus*, *Sybar*); intermediate coxæ oblique but not far apart in the posterior part; metathoracic epimera not visible; posterior legs with two apical spurs.

In all the South African species the labrum is hidden. I have placed the genus *Aulonocnemis*, which has a short labrum and arcuate horny mandibles not projecting beyond the labrum, in the *Coprina*, owing to the remoteness of the intermediate coxæ, and also other minor characters, and *Chiron* is sufficiently distinct from the *Aphodiina* to become the type of a new sub-family.

The species of *Aphodiina* mostly live in excrements, and deposit their eggs therein. Some are found in vegetable mould, or in sandy spots, but the singular *Coryphoderus marshalli* is found in white ants' nests. The habits of *Notolaucus* are not known, but *Sybar* lives also in dung.

Key to the Species. Genera.

A². Lobe of maxillæ not dentate inwardly.

B³. Prothorax neither grooved, carinate, nor foveate.

C³. Anterior tibiæ obliquely truncate inwardly, and bi-dentate outwardly in the male.

Inner spur of anterior tibiæ set at about the median part of the tibia *Harmodactylus*.

C². Anterior tibiæ obliquely truncate inwardly, and tri-dentate outwardly in both sexes.

D⁴. Apical spur of anterior tibiæ long, curving outwardly in both sexes.

Body oblong, little convex (*Aphodius*), convex (*Am-mæcius*), eighth stria not reaching the base; intervals smooth or convex or sharply carinate (*Oxyomus*); pygidium covered by the elytra, or not entirely (*Colobopterus*) *Aphodius*.

D³. Apical spur curving inwardly in both sexes.

Base of genæ projecting much at right angles with the eye *Aphodobius*.

- D². Apical spur curving inwardly in the male.
- Abdominal segments not free *Harmogaster*.
- Abdominal segments free *Teuchestes*.
- D¹. No apical spur in the male.
- Clypeus deeply incised *Coptochirus*.
- C¹. Anterior tibiæ transversely truncate at tip.
- a². Elytra with nine striæ on each side.
- Anterior tibiæ inflated or laminate internally,
basal joint of intermediate and posterior tarsi
spinose or contorted *Drepanocanthus*.
- Anterior tibiæ and basal joint of intermediate and
posterior tarsi simple *Liparochirus*.
- a¹. Elytra with six striæ on each side.
- Body very depressed ; tibiæ and tarsi simple . . . *Lorditomæus*.
- B². Prothorax grooved or costate.
- Anterior tibiæ very broadly laminate inwardly ; prothorax
with a broad longitudinal furrow having rounded walls *Sybar*.
- Anterior tibiæ simple ; prothorax tri-costate *Notocaulus*.
- B¹. Prothorax covered with transverse folds.
- Clypeus deeply emarginate, the emargination very
areuate and with the angles sharp ; anterior tibiæ as in
Aphodius *Rhyssemus*.
- A¹. Lobe of maxillæ dentate inwardly.
- B². Anterior tibiæ tri-dentate.
- Prothorax with transverse folds ; basal joint of posterior
tarsi short, dilated *Psammodius*.
- Prothorax punctulate and with a longitudinal groove ;
basal joint of posterior tarsi *Pleurophorus*.
- B¹. Anterior tibiæ not dentate outwardly ; prothorax very
gibbose, deeply grooved behind, and having there a deep
excavation on each side *Corythoderus*.

HARMODACTYLUS, n. gen.

Buccal part and general facies of *Aphodius*, from which it differs by the shape of the anterior tibiæ of the male, which instead of

being robust and strongly tri-dentate outwardly, are very slender, distinctly arcuate outwardly, and have a very small sub-apical outer spine and an apical, strongly bifid one, while in the inner part the spur, which is very minute, instead of being apical, is situated at a short distance from the median part, and slightly under the point of insertion of the tarsi; the genæ project considerably beyond the eyes and form with the clypeus a broad obtuse triangle slightly emarginate at apex.

HARMODACTYLUS OSCITANS, n. spec.

Head and prothorax reddish brown, elytra piceous brown, shining, glabrous; antennæ slightly flavescent, club fuscous; head distinctly and closely punctate, genæ produced into a very long triangular process which is slightly sinuate near the junction with the clypeus, and imparts to the head a broadly triangular appearance, the clypeus is blunt at tip and very slightly emarginate there; prothorax sub-parallel, and sub-diagonal laterally towards the basal part, marginate along the base which is sinuate on each side of the median part, little convex, deeply and very closely punctured, except in the middle, from the apex to two-thirds of the length; elytra oblong, slightly ampliate at about one-fifth of the length, deeply and closely punctato-striate with the intervals moderately convex in the dorsal parts, but tectiform and carinate behind and on the outer sides where the striae are crenulate, these intervals are finely but deeply punctured, the sixth and seventh striae reach only the median part of the humeral callus, and the eighth is very little shorter; under side, including abdomen, almost glabrous; metasternum normal, apical spurs of posterior tibiae not quite as long as the basal joint of the tarsi which is straight.

Female unknown.

Length $5\frac{1}{2}$ mm.; width $2\frac{3}{4}$ mm.

Hab. Cape Colony (Cape Town).

GEN. APHODIUS, Illig.,

Die Käf. Preuss., 1798, p. 15.

Colobopterus, Muls.; *Ammoeccius*, Muls.; *Oxyomus*, Muls.

Mentum rounded laterally and a little ampliate before the median part, or sub-quadrate, and more or less thickly fringed with ciliae; ligula narrowly bi-lobate, membranaceous and finely ciliate inwardly,

extending oftener than not beyond the mentum; labial palpi varying in length and thickness; in *Aphodius* the three joints are of nearly equal width and cylindrical, the apical one being, however, a little narrower than the second, or the basal one is swollen at tip, and the second narrower and shorter; in *Oxyomus* the basal joint is short, swollen at tip, the median one is also short and broad, and the apical is longer than the basal, and fusiform but truncate at tip, while in *Ammoeceus* these joints are a little shorter than in *Oxyomus* and a little thicker; maxillæ with two non-dentate membranaceous lobes the inner of which is very small; maxillary palpi with the second and fourth joints of nearly the same length, the former is more or less strongly curved and sometimes swollen, and the apical one is sub-fusiform, slightly truncate at tip and not grooved; eyes slightly incised by the canthus of the genæ, and showing much less above the head than on the under side; clypeus hiding the labrum and the lamelliform mandibles which are membranaceous but more or less horny at base; head diagonally attenuate laterally from the base or the apex of the triangular genæ which may project at right angles beyond the eye, be auriculate or bluntly triangular in a line with the outer angle of the clypeus which is emarginate or sinuate at tip with the outer angles broadly rounded, and the angles of the emargination occasionally dentate, it is plane and has sometimes a sub-median transverse impression or carina, a tubercle or a prominence, as well as a transverse intra-ocular impressed line, it is sometimes tuberculate in the middle and on each side at the junction of the suture of the genæ, which said suture is always distinct; it but seldom bears a small but distinct recurved horn (*A. rhinoceros*), and as often as not is

simple but has always a slight elevation above the impressed median apical part of the clypeus; antennæ nine-jointed, club tri-jointed, ovate, pubescent; prothorax seldom very convex, sub-parallel, more or less obliquely produced laterally towards the base which may or may not be distinctly marginate, and is usually sinuate on each side of the median part; scutellum moderately long, triangular, or ogival, or very long and sharply triangular (*Colobopteris*); elytra elongate, slightly ampliate laterally at about one-third of the length, always convex and covering the pygidium, except in *Colobopteris*, they have each nine punctate striæ and a marginal one, the first five of which reach the base, but not the sixth and seventh, the eighth always stops at a great distance from the base, and the ninth unites oftener than not with the marginal one under the fold of the shoulder the callus of which is always apparent, the intervals are either plane for all the length, or plane in the anterior part and convex in the posterior, convex throughout, or sharply

carinate (*Oxyomus*), and smooth or finely punctulate; the epipleura are narrow; the prosternum is carinate longitudinally at middle and the metasternum is plane in the centre and has a lozenge-shaped impression and a longitudinal median impressed line; abdomen six-jointed, free; femora moderately thick, tibiae slender, anterior ones dilated towards the apex, strongly tri-dentate outwardly and serrate or not above the digits, always more or less obliquely truncate at tip, and having in the inner angle of the oblique part a long spur curving more or less strongly, but always outwards, intermediate and posterior ones dilated, truncate and ciliate at tip, not carinate longitudinally on the upper side but having there two transverse ciliate ridges, and armed with two long apical spurs of unequal size, these spurs vary in length and are oftener than not shorter than the first joint of the tarsi, but they may be as long, and are occasionally longer.

The difference between *Ammocius* and *Aphodius* is in the shape of the labial palpi the joints of which are shorter and thicker; to this must be added a more convex appearance, and occasionally the clypeus is dentate on each side of the emargination, but there are numerous passages bridging over these generic differences.

Oxyomus has the labial palpi intermediate in shape and thickness between those of *Aphodius* and those of *Ammocius*; its main characteristic consists in having ten high, sharply carinate costae on each elytron, the seventh of which reaches the apex, and is sometimes longer than the sixth or the eighth, and also a shorter scutellum; these characters are not restricted to *Oxyomus* only, and there are some species of *Aphodius* and *Ammocius* in which the costae are nearly as sharp as in some species of *Oxyomus*.

Colobopterus is distinguished by the very long scutellum, and also in having the pygidium not wholly hidden by the elytra. The facies is somewhat different owing to the prothorax being broader than the elytra, and the latter are attenuate posteriorly.

The sexual differences are very small, except in *A. rhinoceros*; males and females have the same cephalic armature, the tubercles however are, at times, a little less pronounced in the females; in this sex the intervals, when convex, are sometimes slightly less raised, and in many species the punctures on the prothorax are more numerous on the discoidal part.

All South African species of *Aphodius* live in dung; some *Ammocius* are also found in dung, but in sandy spots.

The genus is represented in the Old and the New World, including Australia, where, however, two widely spread species occurring there have been probably imported.

Several of the species occurring in South Africa have also a very wide range. This adds to the difficulty of identification. A revision of the African species would probably have as a result a great reduction in the number of species recorded from this part of the world.

The genital armature of the males is very similar in all the species (pl. xxxviii., fig. 34), and it has not afforded me much help for the determination.

Key to the Species.

- A⁴. Prothorax broader than the elytra; scutellum very long, sharply acuminate; pygidium vertical *COLOBOPTERUS*

Head faintly tuberculate, clypeus slightly emarginate; elytra with costate very deeply punctured intervals *marginicollis*.

- A³. Prothorax not broader than the elytra; body oblong, little convex, intervals smooth or convex, but not sharply carinate; scutellum moderately long and acuminate *APHODIUS*.

- B⁴. Anterior tibiae not serrate above the outer teeth.

C². Head without tubercle.

D². Clypeus not emarginate.

a³. Intervals of elytra plane, glabrous.

Colour flavous, clypeus slightly sinuate in front; head with a median black patch; prothorax with four discoidal black patches; elytra with a post-median bi-sinuate broad black band and two apical spots *wahlbergi*.

Head and prothorax with similar black patches; elytra black on the whole of the posterior part *holubi*.

Colour fuscous brown, and lighter brown laterally; genae rounded, head without carina or impressed line; prothorax moderately deeply excavate in front *emeritus*.

Colour entirely fuscous brown; genae sharply angular at base and projecting much beyond the eye; prothorax not excavate in front *valens*.

Colour light bronze with a greenish blue iridescence covering the head and prothorax and forming two transverse bands on the elytra; head and prothorax simple *iridescens*.

Colour fuscous brown, a little lighter on the elytra and having there a faint longitudinal, testaceous band running on the second interval, and extending transversely in the posterior part where it is bi-sinuate; head simple; prothorax densely aciculate laterally and nearly smooth in the centre *connexus*.

*a*². Intervals of elytra costate, pubescent.

Head and prothorax deep fuscous brown; elytra fuscous brown and with two ferruginous or reddish patches on each side, as often as not united longitudinally; clypeus with a slight prominence; prothorax with scattered punctures; striæ very deeply punctate, intervals tectiform. *amœnus*.

Olivaceous brown, densely pubescent; head simple, genæ not projecting at base; prothorax deeply and closely punctate; elytra with a somewhat indistinct longitudinal band running on each side on the second interval and produced diagonally towards the outer margin in the posterior part of the disk where it is bi-sinuate; intervals sub-costate, strongly punctate *lanuginosus*.

*a*¹. Intervals of elytra plane, pubescent.

Brownish red, shining, although densely but very briefly pubescent; head simple, smooth; prothorax nearly impunctate except for a slight aciculation on the lateral anterior part; striæ of elytra impunctate; intervals plane and very densely aciculate. *cincrascens*.

*D*¹. Clypeus emarginate.

Brick-red, shining; clypeus a little excavate at apex; prothorax punctulate laterally; intervals of elytra quite plane; striæ very finely punctate; anterior tibiæ emarginate inwardly from a little beyond the middle to the apex *gracilis*.

Colour fuscous brown on head and prothorax; elytra lighter brown; head with a slight median elevation; punctures on prothorax scattered; intervals of elytra quite plane; striæ not deeply punctate; anterior tibiæ normal *lucidulus*.

Colour deeply infusate or piceous red on head and thorax, the latter very closely punctate; elytra reddish brown; striæ deeply punctate; joints of posterior tarsi short except the basal one *brevitarsus*.

Colour piceous red, black on the elytra with the suture and the sides reddish; prothorax deeply but not closely punctate; striæ deeply punctate; intervals convex, impunctate *ditus*.

Brick-red, shining; clypeus a little excavate at apex, a frontal bi-sinuate impressed line on the head; genæ triangular; prothorax punctulate laterally, not in the middle; elytra very finely striate; striæ nearly impunctate, intervals plane *hæmatiticus*.

Brick-red, shining; clypeus slightly excavate at apex, a frontal bi-sinuate impressed line on the head; genæ

rounded, not auriculate; prothorax impunctate; elytra very finely striate, striæ nearly impunctate, intervals plane *genialis*.

Brick-red, shining; clypeus a little excavate at apex, a frontal bi-sinuate impressed line on the head; genæ auriculate, sharply triangular; prothorax punctulate laterally, not in the middle; elytra deeply punctato-striate, intervals convex, especially on the sides . . . *decipiens*.

Brown, with the sides of prothorax and elytra slightly testaceous; clypeus moderately emarginate in front, obliquely attenuate from the apex of the triangular genæ, and with the anterior margin strongly reflexed; prothorax densely covered with deep, contiguous punctures; elytra geminato-striate, intervals filled with contiguous scabrose punctures; head deeply and closely punctured, and having a longitudinal slight elevation; frontal carina distinct *granulatus*.

C¹. Head tuberculate.

α². Clypeus slightly emarginate.

Pale flavous, central part of the head and prothorax with a broad, fuscous patch; prothorax distinctly punctate laterally; intervals of elytra convex, tectiform behind, striæ crenato-punctate *consimilis*.

Head and prothorax fuscous in the centre; elytra pale flavous with a dorsal slightly infusate longitudinal band on each side; prothorax punctate laterally; intervals of elytra sharply tectiform, striæ non-punctate; tibiæ normal *intercalaris*.

Pale testaceous yellow, median part of head and prothorax infusate, elytra with a marginal apical black band; prothorax with a few lateral punctures; intervals of elytra nearly plane but costate behind, striæ deeply punctured; anterior tibiæ with the apical spur situated in the middle of the inner part under the basal outer tooth *anomalipus*.

Head and whole of prothorax fuscous brown, elytra pale testaceous, lighter along the margin and in the posterior part; head tri-tuberculate and with a distinct clypeal carina; prothorax densely and very closely punctulate; intervals of elytra plane, striæ moderately deeply punctate *serenus*.

α¹. Clypeus deeply emarginate.

Testaceous red, a little darker in the centre of the prothorax; head tri-tuberculate but without a clypeal carina; prothorax with deep, large, somewhat scattered punctures; intervals of elytra convex, striæ crenato-punctate *russatus*.

B³. Anterior tibiæ with one serrate tooth above the digits.

C². Head faintly tuberculate, elypeus slightly emarginate.

D². Median part of prothorax fuscous.

Scutellum moderately long and normal; elytra pale flavous, and with two longitudinal black bands on each side, crenato-striate, intervals plane, impunctate, striæ not connected behind and stopping short of the apex *moestus*.

C¹. Head distinctly tuberculate, elypeus very deeply emarginate.

D¹. Whole body ferruginous red.

Clypeus very deeply emarginate; genæ auriculate, triangular; head with a supra-lateral longitudinal earina on each side; elytra very deeply and broadly crenulato-striate, intervals very strongly costate.. . . *bohemani*.

Head without supra-lateral, longitudinal earina; elytra deeply punctato-striate, intervals distinctly costate . . *rubricosus*.

B². Anterior tibiæ bi-serrate above the digits.

C³. Head tuberculate.

D. Clypeus sinuate or emarginate.

Clypeus deeply emarginate, colour of the body black; elytra very deeply punctato-striate, intervals convex, impunctate *impurus*.

Clypeus emarginate; prothorax slightly infusate in the median part; elytra livid, testaceous, very deeply striate, striæ darker than the impunctate intervals and reaching the apex.. . . . *dubiosus*.

Clypeus emarginate, and having on each side a testaceous macula; prothorax broadly fuscous at middle; elytra finely punctato-striate, light testaceous and with the suture and a broad infusate discoidal band on each side; spurs of tarsi normal *lividus*.

Elytra finely punctato-striate, light testaceous and with the suture and a broad infusate band on each side; spurs of tarsi very long *calcaratus*.

Elytra luteous, finely punctato-striate and without infusate suture or discoidal bands.. . . . *dolosus*.

Clypeus slightly emarginate and angular on each side; head piceous red; prothorax marginate at base, deeply infusate for the greatest part of the surface; elytra luteous, finely punctato-striate, intervals plane, punctulate laterally *timidus*.

C¹. Head not tuberculate.

Clypeus emarginate; elytra light testaceous with the suture and the outer margin occasionally dark fuscous, intervals not costate behind, fifth and sixth striae united behind *discoidalis*.

Clypeus emarginate, not tuberculate; elytra light testaceous with a basal triangular patch and the suture fuscous *probes*.

Clypeus emarginate; elytra light testaceous with a dorsal longitudinal darker band, intervals costate behind, striae 7 and 8 united at apex *peregrinus*.

B¹. Anterior tibiae pluri-serrate above the digits.

C¹. Head tuberculate.

Clypeus sinuate in front, head with a curved horn in the centre and a deep excavation in the anterior part of prothorax in the male, and a distinct cephalic elevation and no impression on the prothorax in the female; colour ferruginous red; elytra costate, eighth and ninth stria of equal length *rhinoceros*.

Clypeus moderately deeply emarginate, and with a distinct transverse carina in the middle; head distinctly tri-tuberculate; colour livid testaceous, darker on the prothorax; elytra very elongate, finely punctato-striate, intervals plane *procerus*.

Clypeus moderately emarginate, head with a distinct median tubercle and three smaller ones disposed transversely between the eyes; head and prothorax almost entirely fuscous; elytra lutescent with the suture and outer margin fuscous, punctato-striate, intervals plane, punctulate *productus*.

Clypeus broadly emarginate and angular, sinuate laterally, genae very prominent, head without a median tubercle but with three minute tubercles near the base; head and prothorax almost entirely fuscous; elytra lutescent with the suture narrowly fuscous, intervals plane, aciculate *amabilis*.

C¹. Head not tuberculate.

D³. Clypeus not emarginate at tip.

Clypeus almost straight at tip and with the angles rounded, colour olivaceous with the sides of the prothorax and the outer and posterior margins of the elytra slightly testaceous, intervals of elytra plane, impunctate, but costulate in the posterior part *fugitivus*.

Clypeus almost straight at tip and with the angles rounded; head and prothorax piceous, the latter with a rufescent margin; elytra testaceous red with a broad sutural piceous band, intervals plane throughout, impunctate *dorsalis*.

Clypeus similar to that of *dorsalis*; colour ferruginous red, intervals plane, finely aciculate *mashunensis*.

D². Clypeus with an arcuate deep emargination.

Angles of the clypeal emargination acute; head densely pilose, concolorous like the prothorax and elytra; prothorax punctate, intervals of elytra convex, impunctate *hirticeps*.

D⁴. Clypeus bi-dentate.

Clypeus with a triangular tooth on each side of the emargination; head and prothorax not closely punctate, piceous; elytra red with a sutural and marginal fuscous band, intervals plane, impunctate *adustus*.

A². Body convex, intervals smooth, convex or carinate; scutellum moderately long, acuminate AMMOECIUS.

B². Intervals of elytra not carinate.

a². Clypeus dentate on each side of the emargination.

Intervals of elytra plane, punctate *lugubris*.

Intervals of elytra convex, impunctate *mimus*.

a⁴. Clypeus sharply spinose on each side of the emargination.

Intervals of elytra plane, impunctate *dentinus*.

B⁴. Intervals of elytra carinate.

a². Clypeus bi-spinose on each side of the emargination.

Anterior tibiæ serrulate.

Intervals of elytra tectiform *armaticeps*.

a⁴. Clypeus simply emarginate.

Anterior tibiæ serrulate.

Intervals of elytra tectiform but carinate *spectabilis*.

Intervals of elytra nearly plane but having a fine carina in the centre *carinulatus*.

A⁴. Body a little elongate; elytra with ten sharply carinate costæ; scutellum somewhat small, smaller than in *Aphodius* OXYOMUS.

B². Anterior tibiæ serrate above the digits.

Prothorax very closely aciculate; carinæ of elytra sharp, intervals with a geminate, hardly punctate line { *badius*.
 { *pygmaeus*.

Carinæ of elytra very sharp, and punctate on each side *jucundulus*.

Prothorax deeply and closely punctate all over; carinæ of elytra punctulate, very sharp, striæ with a geminate, distinctly punctate line *sulcipennis*.

Carinæ of elytra sharp only in the anterior half *jugalıs*.

Prothorax not much aciculate, except laterally, intervals moderately sharp, not punctate, striæ geminate, body slightly pubescent *puberulus*.

Prothorax aciculate, costæ tectiform, intervals punctulate, striæ not geminate, body non-pubescent *medioximus*.

B¹. Anterior tibiæ not serrate above the digits.

Intervals of elytra very sharp, striæ filled with a series of broad foveate punctures *costipennis*.

APHODIUS (COLOBOPTERUS) MARGINICOLLIS, Har.,

Berl. Entom. Zeitschr., 1859, p. 204.

Little shining, very briefly and sparsely pubescent on the upper part; head black or deep fuscous; prothorax black, edged with a very broad flavescent lateral margin; elytra brown with the sides somewhat pale testaceous; antennæ flavescent; scutellum black; head slightly aciculate, clypeus very slightly sinuate in front and very slightly marginate, genæ ampliate, rounded, but bulging beyond the line of the clypeus, there is no clypeal or frontal transverse impressed line or carina, and in the male there is in the centre a short tubercle, and behind it, but near the base, a short, transverse impressed line; prothorax moderately convex, a little diagonal laterally in front for about one-third of the length, straight from there if seen from above, slightly notched at the rounded part, slightly yet distinctly marginate along the base which is not sinuate, covered with very closely set, nearly contiguous round punctures, and having a longitudinal, median impressed line running on the posterior part of the disk; scutellum very long, depressed, sharply triangular, and carinate longitudinally in the middle; elytra gradually narrowed from the base towards the apex, moderately plane, extending beyond the pygidium which is vertical and strongly developed, they are geminato-striate, the striæ are impunctate and deep, and the intervals are densely aciculate and sub-TECTIFORM in the dorsal part, the sixth stria reaches the base, the humeral callus is very prominent, and the eighth and ninth striæ, which are of equal length, are obliterated towards the base for one-fourth of the length; under side pubescent; metasternum with a distinct longitudinal impressed line and no depression; anterior tibiæ strongly tri-dentate outwardly, apical spur very long, projecting beyond the apical outer tooth and strongly curved outwardly.

Length $7\frac{1}{2}$ –8 mm.; width $3\frac{3}{4}$ mm.

Hab. Cape Colony (Worcester, Beaufort West, Kimberley,

Knysna, Graham's Town, Somerset East, Bedford, Seymour), Natal (Durban, Frere, Maritzburg, Estcourt), Transvaal (Potchefstroom, Lydenburg), Southern Rhodesia (Buluwayo, Enkeldoorn, Salisbury), Ovampoland and Damaraland.

It occurs also in German East Africa, Abyssinia, and Senegal.

APHODIUS WAHLBERGI, Bohem.,

Insect. Caffrar., ii., p. 350.

Flavous, shining; clypeus rounded from the genæ, which are angular at middle, obtusely sinuate at apex, marginate all round, head impunctate, there is no clypeal carina, but there is a transverse frontal impressed line and a pyriform black patch extending from near the apex of the clypeus to the frontal transverse line; prothorax smooth, impunctate, a little narrowed laterally in front but not sinuate, and with the outer angle rounded, the base is not marginate, and is slightly notched on each side, and there are in the median part of the disk four black patches, the two anterior ones of which are half the size of the posterior; scutellum short, sharply triangular; elytra very finely punctato-striate, the striae being also fine and not deep, the sixth stria reaches the base, and the eighth and ninth are equally long and obliterated for one-third of the length; from near the median part there extends a black bi-sinuate band extending across the elytra and covering about one-third of the whole surface, and at the apex are two small round black spots; under side and legs glabrous; metasternum depressed in the centre and having a longitudinal impressed line; anterior tibiae tri-dentate outwardly.

Length 9-10 mm.; width 5 mm.

Hab. Natal (Durban), Transvaal (Potchefstroom).

APHODIUS HOLUBI, Dohrn,

Stett. Entom. Zeit., 1883, p. 107.

A. nigrosignatus, Péring., Trans. S. Afric. Phil. Soc., vol. iii., 1885, p. 90.

Closely allied to the preceding species; the colour is the same, the clypeus is of similar shape and also marginate, but the genæ are not angular at middle, the cephalic black patch is identical; the prothorax is similar in shape, sculpture, and markings; the elytra are also similar in shape and striation, the eighth and ninth striae are of the same length and also obliterated for the same distance in

the anterior part, but there is a round humeral black patch on the callus, and the whole of the posterior half is black; metasternum with a deep longitudinal impressed line, plane in the female, deeply impressed in the male. In the latter the punctures of the striæ are a little deeper than in the female.

Length 9-11 mm.; width 5-6 mm.

Hab. Southern Rhodesia (Victoria Falls).

APHODIUS EMERITUS, n. spec.

Glabrous, reddish brown with the lateral part of the prothorax and also of the elytra somewhat testaceous or lighter brown; antennæ brownish red, clava sub-infusate; head finely and closely punctulate; clypeus very little sinuate in the male in front, and not at all in the female the genæ of which are nearly straight, but are a little ampliate and bulging beyond the line of the clypeus in the male, in both sexes there is a slight elevation in the centre of the head, and in the male a transverse supra-basal impressed line; prothorax moderately convex, slightly attenuate laterally in front, nearly straight from there towards the base which is distinctly not marginate, but is sinuate on each side of the median part, the surface is impunctate, and in the centre of the anterior part there is a moderately deep impression a little deeper in the male than in the female; scutellum moderately long, lanceolate, and impunctate; elytra oblong, but a little sinuate laterally beyond the humeral part, finely punctato-striate in the male, while in the female the punctuation of the striæ is hardly visible, the intervals are plane and impunctate, the sixth stria reaches the base, but the eighth and ninth are of nearly equal length, and are obliterated towards the base for about one-quarter of the length; metasternum smooth, deeply grooved longitudinally in both sexes, but more depressed in the male than in the female; sides of abdomen slightly pubescent; anterior tibiæ strongly tri-dentate outwardly.

Length 12-14 mm.; width 6-6½ mm.

Hab. Southern Rhodesia (Upper Limpopo, and between the Zambesi and Limpopo Rivers).

APHODIUS VALENS, n. spec.

Fuscous, glabrous, shining, clypeus not sinuate in front, genæ in a line laterally with the clypeus and forming at the base a very sharp

angle above the eye, the head is impunctate, without trace of carina or impressed line, and the clypeus is very slightly emarginate; prothorax nearly parallel laterally, moderately convex, not marginate along the base, which is slightly sinuate on each side, and the whole surface is impunctate; scutellum impunctate, moderately long; elytra oblong, distinctly striato-punctate with the intervals impunctate and somewhat convex, the sixth and seventh striæ reach only to the humeral callus, the eighth becomes obliterated towards the base for about one-sixth of the length, but the ninth reaches the basal part; abdomen pubescent, metasternum grooved longitudinally; anterior tibiæ strongly tridentate.

Length 11 mm.; width 5 mm

Hab. South Africa. Exact locality unknown.

APHODIUS IRIDESCENS, n. spec.

Very light, somewhat flavescent bronze, glabrous, with the head, the prothorax except the moderately broad marginal band, a transverse, slightly diagonal, basal band on the elytra, and a less defined one in the posterior part on each side, and also the sutural part, greenish blue, iridescent; under side glabrous and darker bronze, palpi and antennæ somewhat rufescent; head triangular, owing to the clypeus being much attenuated laterally, nearly in a line with the genæ which do not project much and are nearly straight, and somewhat narrower at the truncate, slightly sinuate apical part which is also very slightly impressed in the middle, there is only an inter-ocular carina broadly interrupted in the centre, and the whole head is very closely aciculate; prothorax a little narrower in the anterior than in the posterior part, but with the sides nearly straight, not marginate along the base, and not very closely punctate; scutellum a little constricted at base and broadly and sharply triangular from a short distance from the base; elytra oblong, finely but somewhat deeply striate, striæ not distinctly punctate, and not reaching quite the apex, eighth stria obliterated for about one-third of the length, marginal stria obliterated or hardly sulcate in the posterior part; anterior tibiæ tri-dentate.

Length 8 mm.; width $3\frac{3}{4}$ mm.

This species is easily distinguished from the other South African ones by its metallic tinge.

Hab. Natal (Isipingo).

APHODIUS CONNEXUS, Klug,

Monatsb. Berl. Acad., 1855, p. 656; Peters' Reis., 1862, p. 245,
pl. xiv., fig. 9.

Fuscous brown, with a light olivaceous tinge, slightly pale testaceous on the sides of the prothorax, and having on each elytron a pale testaceous, sometimes indistinct band running on the second interval from the base to three-fourths of the length, extending transversely there on the two following intervals, then produced longitudinally again on the other two adjoining, and from there curving towards the outer margin; genæ projecting slightly only above the eye and in a line with the lateral part of the clypeus which is straight in the anterior part, without the slightest trace of sinuation, there is an impressed transverse line on the head which is very faintly punctate; prothorax marginate laterally only, sides parallel with the basal angle well defined, base slightly bi-sinuate; it is little convex, densely punctulate laterally, but very little in the median part; striæ of elytra fine, yet deep, with the punctures not very distinct, intervals nearly plane, impunctate; the seventh stria reaches only to the apex of the humeral callus, the eighth and ninth are of equal length and are obliterated at about one-fifth of the length; metasternum normal; anterior tibiæ tri-dentate.

Length $3\frac{1}{4}$ mm.; width $1\frac{1}{4}$ mm.

The general facies and the pattern of the elytra very closely resemble those of *A. lanuginosus*, but it is at once distinguished from it by being glabrous, not deeply punctate on the prothorax, nor on the intervals of elytra.

The type is the only example of this species which I have seen.

Hab. Mozambique (Sena).

APHODIUS AMÆNUS, Bohem.,

Insect. Caffrar., ii., p. 354.

A. vestitus, Bohem., loc. cit., p. 359.

Piceous black, sometimes piceous red, shining, somewhat pubescent, the pubescence is erect and dense on the elytra; the sides of the prothorax are brownish red, and on the elytra there are four elongato-quadrate reddish or testaceous patches nearly always coalescing at about the median part, and often invading nearly the whole of the disk, leaving only a quadrate median black patch and a small basal and an outer marginal black band, the anterior margin of the prothorax is also occasionally reddish; the antennæ are sub-

rufescent; head somewhat deeply punctate along the base and finely aciculate on the clypeus, which is slightly emarginate in front in the male but hardly so in the female, and attenuate diagonally from the genæ which do not project at all beyond the eye, the margin of the clypeus is distinctly reflexed, the median anterior part is depressed, and in the centre of it there is a very slight, sub-conical protuberance in the male only, and a moderately distinct impressed transverse line above the basal part; prothorax sub-parallel laterally at a short distance from the anterior part, not marginate along the base which is only very slightly sinuate on each side of the median part, it is only slightly convex, the sides are deeply punctured, but the punctures are not closely set, and they are only a few of them irregularly scattered over the discoidal part which is nearly impunctate in the centre; scutellum moderately long, impunctate; elytra oblong, very deeply punctato-striate, the punctures in the striæ are strong, deep, and setigerous, the intervals are convex, the sixth stria reaches the base, the eighth and ninth commingle and join the outer margin below the humeral prominence which is here very lateral, but at some distance from the base; under side, especially the abdomen, clothed with a long pubescence, metasternum normal; anterior tibiæ tri-dentate.

The type of *A. vestitus* is a female in which the black colour has entirely disappeared on the elytra, except along the suture, which is fuscous.

Length $4\frac{1}{2}$ –5 mm.; width $2\frac{1}{5}$ – $2\frac{1}{2}$ mm.

Hab. Cape Colony (Griqualand West, Carnarvon), Natal (Pine Town, Estcourt, Durban, Frere), Transvaal (Johannesburg), Southern Rhodesia (Salisbury).

APHODIUS LANUGINOSUS, n. spec.

Light olivaceous fuscous, with the sides of the prothorax, the alternate intervals of elytra in the dorsal part as well as a transverse, bi-sinuate posterior band on each elytron flavous; clypeus not sinuate at apex, and attenuate diagonally laterally from the basal angle of the genæ which project distinctly beyond the eye, and marginate all round, the head is closely and deeply punctured, and clothed with a brief but dense pubescence; prothorax little convex, nearly parallel laterally, bi-sinuate along the base which is not marginate, very closely punctured, and densely pubescent; scutellum moderately long, impunctate except at the extreme base; elytra oblong, but

slightly ampliate laterally below the humeral part, narrowly but deeply striate, the striæ apparently non-punctate, intervals slightly convex, punctate and having each two series of setigerous punctures forming a dense, recumbent pubescence; under side pubescent, metasternum normal; anterior tibiæ tridentate.

The pattern of the elytra is somewhat intricate owing to the pubescence covering it; it consists really of a flavous band running from the base on the first and second intervals for three-quarters of the length, bent there at right angles, and ascending on the third and fourth, descending and curving on the other intervals, and ultimately joining the outer margin at a short distance from the apex, this pattern, however, is complicated by some basal flavous patches. In some immature examples the transverse bisinuate patch is edged by the distinctly fuscous borders of the background which is hardly darker than the bi-sinuate transverse patch.

Length 4 mm.; width 2 mm.

This species is easily recognised by the dense greyish pubescence covering it.

Hab. Natal (Estcourt), Southern Rhodesia (Salisbury).

APHODIUS CINERASCENS, Klug,
Monatsb. Berl. Acad., 1855, p. 656.

Brownish red, shining, with the sides of the prothorax narrowly flavous; head impunctate, simple, without trace of transverse line or impression, genæ oblique, but with the basal part hardly projecting beyond the eye, clypeus slightly attenuate laterally from the apex of the genæ, straight in front and distinctly marginate; prothorax nearly straight laterally, but a little emarginate in the centre, hardly convex, strongly bisinuate along the base, which is not marginate, and almost impunctate, except for a few punctures in the anterior lateral part; scutellum long, impunctate; elytra oblong, with the intervals plane, finely aciculate and very briefly pubescent, striæ very fine and impunctate, sixth and seventh striæ reaching only to the base of the humeral tubercle, eighth interrupted towards the base for about one-fifth of the length, ninth a little longer than the eighth, and uniting with the marginal one under the humeral callus; abdomen slightly and very briefly pubescent; metasternum normal; anterior tibiæ tri-dentate, apical spur thick, strong, curving inwardly.

Length 5 mm.; width 2 mm.

The type of this species is the only example I have met with.

Hab. Mozambique. (Tette, teste Klug.)

APHODIUS GRACILIS, Bohem.,

Insect. Caffrar., ii., p. 343.

Brick-red, glabrous, shining; head finely aciculate, triangularly impressed at the apex of the clypeus which is attenuate laterally, and broadly emarginate in the anterior part with the genæ ampliate, sub-triangular and with the basal part not projecting beyond the eye, there is a distinct, transverse impressed line between the eyes, and a very slight elevation in front of it; prothorax little convex, marginate laterally only where it is sub-parallel, very slightly bi-sinuate along the base, punctulate laterally, but not close to the base, and impunctate in the centre; scutellum somewhat short, impunctate; elytra elongate, oblong, intervals plane, impunctate, striæ finely and moderately deeply punctate, seventh stria reaching only the median part of the humeral callus, eighth and ninth of equal length, obliterated at some distance from the base, ninth not united with the marginal one; abdomen punctulate, briefly pubescent, metasternum not impressed, but with a very distinct median impressed line; anterior tibiæ slender, emarginate inwardly from a third of the length to the apex, apical spur short, slightly curved outwardly, the three outer teeth are short, nearly straight, and the outer edge of the tibiæ from the basal tooth to the articulation is fringed with long, fulvous hairs.

Length 5 mm.; width 2 mm.

The type, which is the only example I have seen, is probably a male. It is a very distinct species easily recognisable, owing to the inner emargination of the fore tibiæ, which are thus narrower for two-thirds of the length than towards the basal part.

Hab. Limpopo River, teste Boheman.

APHODIUS LUCIDULUS, Bohem.,

Insect. Caffrar., ii., p. 340.

Testaceous red, shining, glabrous; head slightly aciculate laterally and along the base, but almost smooth, clypeus broadly but slightly emarginate in the centre, diagonal laterally, genæ ampliate, moderately rounded, but not angular at the base above the eyes, the anterior part of the clypeus is a little impressed, and there is in the centre a slight projection, and between the eyes a transverse impressed line; prothorax nearly parallel laterally, moderately convex, not very distinctly marginate along the base which is hardly sinuate on each side of the median part, it is moderately closely punctate along the sides, but bears only a few scattered

punctures in the median part; scutellum moderately long, impunctate; elytra oblong, finely punctato-striate with the intervals plane, the sixth interval does not quite reach the base, the seventh reaches to only as far as the humeral callus, and the eighth and ninth, which are of equal length, do not coalesce, and become obliterated at about one-sixth of the length from the base; metasternum normal; anterior tibiae tridentate.

Length $5-5\frac{1}{4}$ mm.; width 2 mm.

Hab. Transvaal (Boksburg).

APHODIUS (? AMMOECIUS) BREVITARSIS, n. spec.

Fuscous brown, shining, prothorax deeply infusate, nearly black; head finely and closely punctate, punctures deeper in the posterior part, somewhat evanescent in the anterior part of the clypeus, the latter is broadly emarginate in front with the anterior angles rounded, the genae are auriculate, but rounded laterally, the median part of the clypeus is deeply impressed, and above the depression there is a transverse, moderately distinct ridge, and a frontal, slightly bi-sinuate one not very distinctly connected with the former by a slightly raised line; prothorax sub-parallel if viewed from above, but a little attenuate laterally from the median to the basal part, the outer sides and base are carinate, the base is hardly sinuate, and it is covered with very closely set, deep punctures, which are, however, finer and less deep along the anterior margin; elytra oblong, very convex, deeply punctato-striate, with the intervals slightly convex, except the first two dorsal ones, which are nearly plane, eighth and ninth striae of equal length and obliterated at a distance from the base corresponding to about one-fifth of the length, ninth not merging into the marginal one; legs brownish red or fuscous; anterior tibiae tri-dentate outwardly; posterior tarsi a little shorter than in the other South African species; under side normal.

Length $3\frac{1}{2}$ mm.; width $1\frac{3}{4}$ mm.

Hab. Cape Colony (Cape Town).

APHODIUS DITUS, n. spec.

Piceous red, with the head, the central part of the prothorax, and the whole dorsal part of the elytra piceous black, glabrous, shining; clypeus very diagonal laterally from the outer apical part of the genae, which project slightly above the eye, truncate, very slightly emarginate in the centre, and with the outer angles distinct; there

is a slight elevation in the median part, a very faint transverse inter-ocular line; the whole surface of the head is aciculate, but the space behind the impressed line is somewhat punctate; prothorax subparallel, not marginate along the base, deeply and somewhat closely punctate all over; scutellum impunctate; elytra oblong, and with the suture and the sides reddish brown, deeply striate, striae deeply and closely punctured, all the dorsal ones reaching the apex singly, eighth and ninth of equal length towards the base, and obliterated there for one-fifth of the length, intervals smooth, very convex in the dorsal part, nearly carinate on the sides and in the posterior declivous part; anterior tibiae tri-dentate and very slightly serrulate above the digitation.

Length 4 mm.; width $1\frac{1}{2}$ mm.

Hab. Natal (Durban).

APHODIUS HÆMATITICUS, Bohem.,

Insect. Caffrar., ii., p 349.

Brick-red, shining, glabrous on the upper side, antennæ flavescent; head finely aciculate on the clypeus, punctulate behind, clypeus broadly but not deeply emarginate, somewhat obliquely attenuate laterally and with the anterior angles rounded, genæ distinctly auriculate and in the shape of a moderately sharp, broad triangle; the anterior median part of clypeus is impressed, and immediately behind this impression there is a very slight elevation, the frontal transverse impressed line is very distinct and nearly straight; prothorax slightly ampliate laterally from the anterior angle to past the median part, and obliquely attenuate towards the basal part which is marginate, although not very distinctly, and bisinuate, it is finely punctulate laterally, but the median part is only very obsoletely aciculate, and almost smooth; scutellum somewhat elongate, impunctate; elytra oblong, convex, very finely striate with the striae shallow and apparently impunctate, intervals plane, impunctate, seventh stria reaching only the median part of the humeral callus, eighth interrupted towards the base for about one-fifth of the length, ninth longer than the eighth and uniting with the marginal one under the humeral callus; under side normal; anterior tibiae tri-dentate outwardly, teeth strong, long.

Length 5 mm.; width 2 mm.

I have only seen one of Boheman's types. This author gives as its habitat the whole of Caffraria, which at that time was meant by him to include part of Natal, the Free State, the Transvaal, and a part of

Southern Rhodesia. It is surprising that I should not have met with this species among the many examples received from these parts.

APHODIUS GENIALIS, n. spec.

Brick-red, shining, glabrous on the upper side, antennæ flavescent; head impunctate, clypeus broadly and somewhat deeply emarginate, obliquely attenuate laterally, but with the anterior angles slightly angular, genæ obliquely rounded, not at all angular, median anterior part of clypeus somewhat deeply impressed, median part of the head with a very slight protuberance in the male, hardly distinct in the female, frontal line slightly carinate and moderately distinct; prothorax a little ampliate laterally at middle, but not more attenuate in the posterior than in the anterior part, very little convex, slightly emarginate along the base which is distinctly bisinuate, the whole surface is impunctate; scutellum moderately long, impunctate; elytra oblong, finely striate, striæ not very shallow, but indistinctly impunctate in the dorsal part, and very feebly on the sides, intervals plane, smooth, eighth stria interrupted towards the base for about one-sixth of the length, ninth very little longer than the eighth and uniting with the marginal one, seventh not reaching quite to the base; under side normal, anterior tibiae tri-dentate outwardly, teeth strong, long.

Length 7-8 mm.; width $3\frac{1}{4}$ - $3\frac{1}{2}$ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Worcester, Malmesbury).

Closely allied to the preceding one, but larger, and differentiated by the impunctate head and prothorax, as well as by the shape of the genæ, which are neither auriculate nor triangular.

APHODIUS DECIPIENS, n. spec.

Brick-red, with faint traces of slight infuscation on the sides of the prothorax and elytra, shining, glabrous; antennæ flavescent; head very finely yet distinctly aciculate all over, clypeus broadly and moderately deeply emarginate, with the anterior part not quite rounded, and the lateral quite obliquely attenuate from the apex of the triangle formed by the genæ, the median anterior part of the clypeus is not deeply impressed, and there is no median elevation, the transverse impressed frontal line is slightly arcuate; prothorax nearly parallel if seen from above, but distinctly produced diagonally

towards the base which is only very slightly carinate and sub-sinuate on each side of the median part, it is very little convex, and deeply and fairly closely punctured, except in the median part which is quite impunctate; scutellum moderately long, but more ogival than lanceolate, impunctate; elytra oblong, convex, distinctly punctato-striate with the intervals convex and impunctate, the seventh stria does not reach quite the base, the eighth is obliterated for about one-sixth of the length, and the ninth, which is a little longer than the eighth, unites with the marginal one; anterior tibiae tri-dentate, teeth strong, but not very long; under side normal.

Length 6 mm. ; width $2\frac{1}{2}$ mm.

Hab. Transvaal (Johannesburg).

APHODIUS GRANULATUS, Bohem.,

Insect. Caffrar., ii., p. 342.

Pale brown, a little infusate in the median part of the prothorax and elytra, sides somewhat testaceous, opaque, densely but very briefly pubescent; clypeus broadly but not deeply emarginate in front, sides obliquely attenuate from the apex of the distinct triangle formed by the genæ, the anterior part of the clypeus is slightly impressed, and between this impression and the transverse frontal carina there is a slight longitudinal elevation which is not tuberculate, the whole surface is covered with contiguous, deep punctures; prothorax a little attenuate laterally from the median to the apical part, and sub-parallel from the middle to the base which is marginate, it is very little convex, and covered with contiguous, slightly scabrose punctures; scutellum moderately long, punctate; elytra oblong, striæ shallow, geminate, hardly punctate, intervals filled with contiguous scabrose punctures, sixth and seventh striæ reaching only the humeral callus, eighth reaching very far up towards the base, ninth connected with the marginal one almost at the base; abdomen clothed with a long pubescence, pectus normal; anterior tibiae tri-dentate, teeth strong, very long; antennæ flavous.

Length $7-7\frac{1}{2}$ mm. ; width 3 mm.

Hab. Cape Colony (Worcester, Beaufort West).

APHODIUS CONSIMILIS, Bohem.,

Insect. Caffrar., ii., p. 341.

Pale, flavous, shining, nearly glabrous, with the basal part of the head and the median part of the prothorax more or less deeply

infusate; clypeus more sinuate than emarginate, anterior lateral part rounded, genæ projecting, bluntly triangular, basal angle in a line with the eye which projects beyond it, anterior median part of clypeus impressed, median part of head with an elongate tubercle, or rather elevation, culminating on the median transverse line which is slightly raised on each side near the eye, the surface of the head is very faintly punctulate; prothorax little convex, sub-parallel; base very oblique laterally, distinctly bi-sinuate, and not distinctly carinate, it is very little convex, deeply but not closely punctured on the sides, and has a longitudinal median impunctate space; scutellum moderately long, impunctate; elytra oblong, deeply punctato-striate; the punctures are deep and closely set, the intervals are moderately plane in the dorsal part, but very distinctly convex in the posterior, the sixth and seventh striæ stop at a short distance from the base, the seventh is depressed above the eighth which is obliterated for about one-fifth of the length, and the ninth unite with the marginal one at the apex of the humeral callus; under side normal; anterior tibiæ tri-dentate outwardly, teeth moderately long and strong.

Length $4\frac{1}{2}$ –5 mm.; width $2\frac{1}{4}$ – $2\frac{1}{2}$ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Malmesbury, Worcester), Mozambique (Lourenço-Marquez).

In the examples from Mozambique the intervals of the elytra are convex in the dorsal part.

APHODIUS INTERCALARIS, n. spec.

Resembles very much *A. consimilis* in colour, shape, and sculpture. It is, however, a little larger, the frontal tubercle is much more conspicuous, the punctures on the prothorax are much more numerous, smaller and more shallow, but the main difference is found in the intervals of the elytra, which are strongly costate, sharply tectiform, punctulate, except in the carinate part, while the narrow but deep striæ show no sign of punctures even laterally, the abbreviated striæ are interrupted in the same manner, the head is closely punctate.

I have seen a large example of this species in which the punctures on the prothorax are reduced to a mere aciculation, while in another example from the same locality the punctures are more numerous than in the normal form.

Length 6–7 mm.; width $2\frac{1}{2}$ – $3\frac{1}{2}$ mm.

Hab. Cape Colony (Hope Town, Kimberley, Bushmanland).

APHODIUS ANOMALIPUS, n. spec.

Pale testaceous yellow, shining, glabrous, elytra with the suture and a posterior marginal band nearly black; clypeus punctate, deeply emarginate in front, very oblique laterally, genæ not projecting, rounded, margin slightly reflexed, it is impressed in front, median part of the head with a very distinct, longitudinal tubercle, no transverse line or carina across the eyes, basal part of head impunctate; prothorax very little convex, nearly parallel laterally and produced very obliquely towards the base which is not marginate, impunctate in the middle, and with a few scattered punctures laterally, base strongly sinuate on each side of the median part; elytra oblong, a little ampliate for one-quarter of the length, convex, distinctly punctato-striate with the intervals smooth, somewhat convex, and sub-carinate in the posterior part, sixth and seventh striæ stopping a little short of the base, eighth reaching only from the apex to three-fourths of the length, ninth uniting with the marginal one at a short distance from the base under the humeral callus; anterior tibiæ tri-dentate outwardly, but with the apical tooth very long and nearly straight, the inner part is almost straight, and the spur instead of being apical is set at about the median part in a line with the basal outer tooth, and is very long; metasternum normal; pygidium fringed at apex with very long hairs.

Length 7 mm. ; width 3 mm.

I have seen only two examples of this species, the identity of which can easily be ascertained by the shape of the anterior tibiæ.

Hab. Cape Colony (Kimberley).

APHODIUS SERENUS, n. spec.

Fuscous brown on the head, prothorax, under side, and sides of prothorax narrowly rufescent, elytra pale testaceous and with a discoidal longitudinal broad band slightly infusate; head very closely punctured, clypeus blunt, very slightly emarginate at tip, very oblique laterally from the outer angle of the genæ which project much, and nearly, but not quite, at right angles with the line of the eye, there is a very distinct, arcuate median ridge, and three short but distinct frontal tubercles; prothorax a little attenuate laterally in the anterior part, feebly sinuate a little past the middle, very distinctly oblique towards the basal part which is very sinuate on each side of the median part, and is distinctly marginate; the whole surface is covered with fine, very dense punctures; scutellum

moderately long, distinctly punctured, and with the edges infusate; elytra oblong, a little ampliate from one-third of the length, narrowly but deeply striate, the striae deeply punctate and usually a little darker than the background, intervals plane and not very convex in the posterior part, impunctate on the disk but vaguely aciculate on the sixth, seventh, and eighth, sixth stria sinuose near the base, and nearly uniting with the seventh at a short distance from it, eighth interrupted from the base at a distance corresponding to one-fifth of the length, ninth coalescing with the marginal one under the humeral callus; median impression of the metasternum deep; abdomen pubescent; anterior tibiae tri-dentate outwardly.

Length 8 mm.; width $3\frac{3}{4}$ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Worcester, Malmesbury).

APHODIUS RUSSATUS, Erichs.,

Doubl. Verz. Seneg. Ins., 1842, p. 7.

A. posticus, Fähr., Insect. Caffrar., ii., p. 347.

Brick-red, shining, glabrous; head closely but not deeply punctate and having in the median part a sharp, very distinct elongate tubercle, and a smaller and transverse one on each side at the junction with the genae, clypeus deeply emarginate in front, genae triangular, not projecting; prothorax convex, a little attenuate laterally in front, a little ampliate towards the median part, and obliquely sinuate towards the base which is not marginate, and is distinctly sinuate on each side, the median part of the disk is a little darker than the sides, and the whole surface has numerous very deep punctures somewhat scattered; scutellum punctulate; elytra oblong, slightly ampliate laterally from about one-fourth of the length, crenato-striate with the intervals distinctly convex and impunctate, sixth and seventh striae reaching only to the median part of the humeral callus, eighth obliterated at a distance from the base corresponding to about one-fifth of the length, ninth very little longer than the eighth and uniting with the marginal one; metasternum normal; abdomen hardly pubescent; anterior tibiae strongly tri-dentate.

My examples have no trace of the infuscation on the outer margin mentioned by Fähræus in his description.

In the female the cephalic tubercles are slightly less prominent than in the male.

Length 6-6 $\frac{1}{2}$ mm.; width 3 mm.

Hab. Cape Colony (Carnarvon). It is also found in Senegal and on the Guinea Coast.

APHODIUS MOESTUS, Fabric.,

Syst. Eleut., i., 78, p. 45.

Straw-colour, shining, glabrous, whole posterior part of the head as well as a median patch on the clypeus black, prothorax with a broad median piceous black patch occupying the whole of the median part, scutellum piceous, the suture is also piceous, and there is a longitudinal band of the same colour on the fourth and sixth intervals, which in the case of the former begins at about the median part and does not quite reach the posterior declivity, while on the sixth it begins under the humeral callus and reaches beyond the median part; pectus piceous red; clypeus blunt at tip and hardly sinuate there, very diagonal laterally, genæ auriculate, sub-triangular, in the median part there is a slightly tuberculate elevation and behind it a faintly impressed transverse line between the eyes, the clypeus is not depressed in the anterior part, and the whole surface is closely aciculate; prothorax a little attenuate laterally in front, sub-parallel and not very obliquely produced towards the base, which is distinctly sinuate on each side of the median part and is not marginate, the surface is covered with numerous punctures not much denser on the sides than on the disk, and not very closely set; scutellum moderately long, longitudinally impressed in the centre; elytra oblong, not very sensibly ampliate from before the median part, striate, striæ not deeply punctate, and stopping at a long distance from the apex, eighth very short, the first four from the suture are black from near the base nearly to the rounded posterior part, intervals nearly plane on the dorsal part, but a little convex laterally, sixth and seventh striæ of equal length and reaching just short of the base, eighth obliterated towards the base for about one-third of the length, ninth uniting with the marginal one under the humeral callus; metasternum normal; anterior tibiæ quadridentate and not serrate above the basal outer tooth which is much smaller than the others.

Length $5\frac{1}{2}$ – $6\frac{1}{2}$ mm.; width $2\frac{1}{2}$ –3 mm.

Hab. Transvaal (Potchefstroom, Rustenburg) Mozambique (Rikatla).

This species occurs along the Eastern African Coast, and is found also in Madagascar, India, and Ceylon.

APHODIUS BOHEMANI, Har.,

Berl. Entom. Zeit., 1862, p. 148.

A. ferrugineus, Bohem., Ins. Caffr., ii., p. 331.

Shining, ferruginous red, glabrous, median part of head and prothorax darker than the rest of the body; antennæ flavous; head closely but not deeply punctured, clypeus deeply emarginate in front, sides oblique, genæ triangularly auriculate, projecting much beyond the eye, in the anterior part of the clypeus there is a deep impression bounded behind by a short, transverse carina, and immediately in front of this carina there is a conspicuous longitudinally triangular tubercle, and on each side of it an oblique longitudinal carina reaching from the frontal one to the apex of the clypeus, the tubercle and the transverse line are nearly as conspicuous in the female as in the male; prothorax subdiagonally amplified laterally from the apical angle to the middle, slightly attenuate from there towards the basal part if seen from above, not marginate along the base which is very slightly sinuate on each side, evidently convex, and dotted over with a few, scattered, not deep punctures a little more numerous as is usual on the lateral part, and varying greatly in number in examples and sex from the same locality; scutellum moderately long, impunctate; elytra oblong, but slightly broader at a short distance from the humeral part, very deeply crenato-striate by means of deep, somewhat broad punctures, intervals impunctate, much raised, but rounded, not tectiform even in the posterior part, sixth and seventh striæ reaching a little short of the base, eighth conspicuously short, ninth longer than the eighth but united with the marginal one under the humeral callus by an impunctate line; metasternum normal; anterior tibiæ strongly tri-dentate and with one distinct tooth above the basal digit.

Length $7-7\frac{1}{2}$ mm.; width $3-3\frac{1}{4}$ mm.

Hab. Southern Rhodesia (Salisbury), Mozambique (Lourenço-Marquez), neighbourhood of Orange River, teste Boheman, Senegal, teste Harold.

APHODIUS RUBRICOSUS, Bohem.,

Insect. Caffr., ii., p. 335.

The description of *A. bohemani* suits this species completely, and it can be differentiated by comparison only; it is, however, smaller,

there are no longitudinal, lateral carinae on the clypeus, the striae on the elytra are deeply punctured, but not deeply erenulate as in *A. bohemani*, and the intervals are also a little less raised, and owing to the striae not being so deeply erenulate they do not look as if they were as highly raised as in the latter.

Length 5–6 mm.; width 2–3 $\frac{3}{4}$ mm.

Hab. Cape Colony (Carnarvon, Clanwilliam).

APHODIUS IMPURUS, Roth.,

Wieg. Arch., 1850, i., p. 131.

A. picipes, Klug, Monatsb. Berl. Acad., 1855, p. 656.

Black or piceous black, shining, glabrous, palpi and antennae rufescent, club of the latter flavescent, abdomen slightly pubescent; clypeus deeply emarginate at tip, and with the angles of the emargination somewhat angular, sides very oblique, genae triangular, not very sharp and with the basal part not projecting at right angles above the eye; head closely punctulate, impressed in the anterior part, and bearing in the centre a longitudinal tubercle and a smaller one on each side close to the eye, where the tubercles are not very developed in the male; in the female there is also a more or less well-defined transverse ridge; prothorax sub-parallel, but very oblique laterally towards the base which is not marginate, it is covered with round, deep punctures scattered about the disk, and a little denser on the sides, they are more numerous in the female examples, and in some males are almost entirely absent in the median part; scutellum moderately long, triangular and deeply impressed longitudinally in the centre; elytra deeply striate, striae closely but not very deeply punctate and reaching the apex, intervals smooth, not convex in the anterior part, but distinctly so in the posterior, sixth and seventh striae interrupted near the base, where they reach only the median part of the humeral callus, eighth obliterated at about one-fifth of the length, ninth uniting with the marginal one, but punctulate only as far as the obliterated part of the eighth; under side normal, anterior tibiae with two distinct serrations above the digits.

Length 6–7 $\frac{1}{2}$ mm.; width 2 $\frac{1}{2}$ –3 mm.

Hab. Cape Colony (Somerset East, Beaufort West, Worcester), Natal (Estcourt, Umvoti), Southern Rhodesia (Salisbury).

This species is also met with in Abyssinia, Nubia, Zanzibar, Madagascar, Mozambique, and the Guinea Coast.

APHODIUS DUBIOSUS, n. spec.

Head and prothorax rufo-testaceous, with the sides of the former broadly flavous; elytra light testaceous or livid brown, and with the suture and the posterior outer margin infusate or having occasionally a discoidal infusate band; clypeus deeply emarginate and with the angles of the emargination rounded, oblique laterally, genæ sub-obtusely triangular, the anterior part of the clypeus is impressed, and in the centre of the head there is a longitudinal tubercle and a smaller one on each side near the eye, as well as a faint transverse ridge, both the head and clypeus are moderately closely punctured; prothorax sub-parallel, oblique laterally towards the base which is strongly sinuate on each side of the median part, but is not distinctly marginate, it is moderately closely punctate laterally, but is quite smooth on the disk; scutellum moderately long, smooth; elytra crenato-striate, striæ deep, darker than the intervals which are moderately convex from a short distance from the base, impunctate, and reach the apex, the sixth and seventh striæ reach only to the median part of the humeral callus towards the base, and are of nearly equal length, the eighth is obliterated for a distance equal to about one-fifth of the length, and the ninth unites with the marginal one under the humeral callus; abdomen glabrous, metasternum normal, anterior tibiæ tri-dentate and with two somewhat indistinct serrations above the digits; antennæ flavescent.

Length 6-7 mm.; width $2\frac{3}{4}$ -3 mm.

This species resembles *A. intercalaris*, but is distinguished by the bi-serrate tibiæ, the more deeply sunk striæ, and the more plane intervals which are impunctate, the colour of the elytra is more livid, and the posterior part is infusate, which is not the case in *A. intercalaris*.

Hab. Cape Colony (Kimberley, Carnarvon), Transvaal (Rustenburg, Johannesburg).

APHODIUS LIVIDUS, Oliv.,

Entom., i., 3, p. 86, pl. xxvi., fig. 222.

A. limbatus, Wied., Germ. Mag., iv., p. 129.

Testaceous, glabrous, shining, head fuscous with two slightly rufescent patches, prothorax with a broad infusate median patch; elytra with the suture and a discoidal band extending on five intervals from near the base to the posterior rounded part, more or less deeply fuscous; head closely punctate, clypeus very slightly

emarginate at tip in the middle, and with the angles rounded, oblique laterally, genæ little prominent, obtusely triangular, frontal part tri-tuberculate, the median tubercle being much more developed than the other two; prothorax sub-parallel, moderately oblique laterally towards the base which is not marginate, the discoidal part has only a few scattered punctures, but the sides are more densely punctured; scutellum moderately long, impressed in the middle at base; elytra oblong, striate, striæ not deeply punctured and not reaching the apex, intervals plane, hardly convex in the posterior part and impunctate, the sixth and seventh striæ reach only to the median part of the humeral callus, and the eighth, which is much shorter than the ninth, is obliterated towards the base for about one-quarter of the length, the ninth unites with the marginal one under the shoulder; metasternum normal; abdomen almost glabrous; anterior tibiæ tri-dentate and with two serrate teeth above the digits.

Length $4\frac{1}{2}$ –5 mm.; width 2 mm.

This species occurs in the whole of South Africa as well as in Europe, Central and Eastern Africa, India, Australia, &c.

APHODIUS CALCARATUS, Bohem.,

Insect. Caffrar., ii., p. 353.

Entirely similar to *A. lividus*, and differs only by the great length of the apical inner spurs of the posterior tibiæ. Boheman in his description mentions only a fine transverse groove on the frontal part, but my examples, which are quite similar to the type, have in both sexes three small tubercles as in *A. lividus*.

Length 4– $4\frac{1}{4}$ mm.; width $1\frac{3}{4}$ –2 mm.

Hab. Ovampoland (Omrumba). Neighbourhood of Orange River, teste Boheman.

APHODIUS DOLOSUS, Har.,

Berl. Entom. Zeitschr., 1871, p. 280.

The description of *A. lividus* suits this species in every point, except that the elytra have no trace whatever of a discoidal longitudinal fuscous band; the suture is also either very slightly infusate or not at all, and the head is more deeply punctate.

Length $4\frac{1}{2}$ – $4\frac{3}{4}$ mm.; width 2 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Worcester).

APHODIUS TIMIDUS, Bohem.,

Insect. Caffr., ii., p. 345.

Head infusate with the outer margins of clypeus often piceous red, prothorax very broadly infusate and with a narrow lateral flavescent band, scutellum fuscous, elytra flavous with a narrow sutural band, or slightly infusate laterally; head very closely punctured, broadly but not deeply emarginate at tip, and with the angles somewhat acute, oblique laterally, and with the margins recurved, genæ sharply triangular and somewhat prominent, the anterior part of the clypeus is depressed, in the median part there is a slight elevation and above that three sub-basal tubercles transversely disposed, the median one of which is not much more raised than the other two; prothorax a little attenuate laterally in the anterior part, marginate along the base which is not sensibly sinuate on each side, deeply and closely punctured laterally, and also, but less densely, in the median part of the disk; scutellum fuscous, moderately long, slightly impressed longitudinally in the centre; elytra a little ampliate laterally from one-third of the length, finely striate, the striæ moderately deeply punctate, and not reaching quite the apex, intervals plane, even in the posterior part, and impunctate except laterally, where they are feebly aciculate, sixth and seventh intervals reaching to nearly the base, eighth interrupted for about one-fifth of the length, ninth united with the marginal one below the shoulder; under side normal, abdomen nearly glabrous; anterior tibiæ tri-dentate and with two serrate teeth above the digits.

Length 5-6 mm.; width $2\frac{1}{4}$ - $2\frac{1}{2}$ mm.

Hab. Cape Colony (Graham's Town, Uitenhage), Natal (Estcourt). Boheman's description does not quite agree with the type examined by me.

APHODIUS DISCOIDALIS, Bohem.,

Insect. Caffr., ii., p. 346.

Head infusate with the clypeus rufescent, prothorax either piceous red with a narrow sub-flavescent outer and basal margin, or nearly entirely piceous red, elytra pale testaceous with the suture and a marginal band fuscous; head punctulate, clypeus deeply emarginate at tip and with the angles of the emargination broadly rounded, moderately oblique laterally and with the margins slightly recurved, genæ somewhat sharply triangular but not very prominent, the clypeus is slightly depressed in the anterior part, in the median part of the head there is a slight longitudinal elevation, and

above that a not very distinct transverse impressed line interrupted in the middle; prothorax punctulate all over but with the punctures less numerous in the median part, nearly parallel and slightly marginate along the base; scutellum piceous, impunctate; elytra finely striate, striae finely punctate and reaching nearly to the apex, fifth and sixth united above the apex, sixth and seventh reaching to only the apex of the humeral callus, eighth obliterated towards the base for about one-sixth of the length, ninth longer and uniting with the marginal one under the shoulder, intervals plane, not convex towards the apex, impunctate; metasternum normal, abdomen densely pubescent; anterior tibiae tri-dentate outwardly, and having two serrate teeth above the digits, these two serrate teeth are often indistinct.

Length $6\frac{1}{2}$ mm.; width $2\frac{3}{4}$ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Graham's Town).

In all my examples the outer margin of the elytra is scarcely infusate.

APHODIUS PROBES, n. spec.

The description of *A. discoidalis* applies entirely to this species which is, however, very much smaller, being, with *A. hirticeps*, the smallest species of the first division; the prothorax is a little more distinctly marginate in the centre of the base; the elytra, the striae and intervals of which are similar, have a triangular basal infusate patch along the scutellum, and the suture alone is infusate, the fifth and sixth striae unite also above the apex.

Length 3 mm.; width $1\frac{3}{4}$ mm.

Hab. Natal (Frere).

APHODIUS PEREGRINUS, Bohem.,

Insect. Caffr., ii., p. 352.

Light testaceous on the upper side with the head nearly black, and an almost quadrate, black patch on the median part of the prothorax leaving on all sides a broad luteous band; elytra with a longitudinal dorsal band slightly fuscous, scutellum and suture black; head slightly aciculate, clypeus not deeply emarginate, angles moderately rounded and sides very oblique, genae rounded, hardly projecting, central part of the head with a very slight elevation close to the transverse impressed line which is nearly obliterated; prothorax sub-parallel, not distinctly marginate along

the median part of the base, finely but deeply punctured, the punctures being nearly equally distributed over the whole surface, scutellum moderately long, sharply triangular at apex, punctulate, not impressed; elytra finely and not deeply punctato-striate with the intervals plane, impunctate, and somewhat convex in the posterior part, the seventh and eighth striae are united above the apex, the sixth and seventh reach only to the median part of the humeral callus, and the eighth is interrupted towards the base for about one-quarter of the length; pectus nearly black, abdomen briefly pubescent; anterior tibiae tri-dentate and with two serrate teeth above the digits.

Length $5\frac{1}{2}$ mm.; width $2\frac{3}{4}$ mm.

Allied to *A. discoidalis*, but differentiated by the intervals of the elytra which are costate in the posterior part, by the presence of a discoidal slightly fuscous band, and by the seventh and eighth striae being united behind, instead of the fifth and sixth as in *A. discoidalis*.

Von Harold has evidently made a mistake in considering this species to be identical with *A. hepaticus*, Roth., and the description of the latter as given by him does not in the least agree either with Boheman's description or with Boheman's type.

Hab. Natal (Estecourt). Neighbourhood of the Limpopo River according to Boheman.

APHODIUS RHINOCEROS, Reiche,
Voyag. Galin. Abyss. Ent., p. 343.

A. armatus, Roth., Wieg. Arch., 1851, i., p. 130.

Ferruginous red, shining, glabrous; the two sexes are very distinct, the male is generally smaller, and the armature of the head and prothorax are quite different from that of the female.

Male: Clypeus broadly but very slightly emarginate, lateral part very oblique, genae auriculate, sub-triangular, with the apical part of the triangle obtuse, rounded; head vaguely punctulate, and having in the centre a short, yet very conspicuous recurved horn, the third basal part of which, as usual in *Aphodius*, abuts on a nearly obsolete intra-ocular impressed line; prothorax very convex, sub-obliquely declivous in the anterior part which is deeply impressed, almost excavated, the apical part of the excavation is more or less sharply bi-tuberculate, the sides are sub-parallel, and rounded, not oblique towards the base, the impression is obsoletely punctate, but the sides and dorsal part have a few punctures which are more closely set

laterally; scutellum moderately long, impunctate; elytra oblong, crenato-striate, with the intervals distinctly convex and tectiform laterally and behind, seventh stria reaching only to the median part of the humeral callus, eighth and ninth of equal length and sloping far from the base, the latter is quite disconnected from the marginal stria; metasternum normal; anterior tibiae strongly tridentate and incised above the basal digit.

Female: Shape of head, clypeus and genæ similar to that of the male, but instead of a recurved horn there is a distinct median elevation, and the intra-ocular impressed line is better defined; the prothorax is simple and much more closely punctured; the elytra are less deeply crenato-striate, although the intervals are equally convex, but a little broader, and not tectiform laterally; the anterior tibiae are hardly incised above the basal digit.

Length 8-9 mm.; width 39-41 mm.

Hab. Natal (Durban, Maritzburg), Transvaal (Zoutpansberg), Southern Rhodesia (Buluwayo, Enkeldoorn, Salisbury), Cape Colony (Worcester).

APHODIUS PROCERUS, Harold,

Berl. Entom. Zeit., 1862, p. 168.

Light brown, darker on the discoidal part of the prothorax and also on the basal part of the head, moderately shining on head and prothorax, somewhat opaque on the elytra; antennæ brownish; clypeus broadly emarginate, in the male the emargination is deeper, genæ triangular, with the apical part of the triangle projecting much beyond the eye, the whole head is closely punctulate, and the edge of the clypeus distinctly marginate, there is a transverse, very distinct, clypeal carina extending over one-third of the width, and three transverse equi-distant tubercles between the eyes; prothorax moderately convex, nearly parallel, marginate all round, sinuate in the base on each side of the median part, having a shallow, transverse impression in the anterior, with a very faint impressed line abutting on it and disappearing before reaching the centre, it is irregularly and not deeply punctate; scutellum somewhat short, punctate laterally; elytra very elongate, oblong, but a little sinuate laterally towards the median part, convex, punctato-striate with the punctures deep and contiguous, intervals very slightly convex, sixth stria reaching the base along the humeral callus, eighth slightly shorter than the seventh which reaches only the apical part of the callus, ninth reaching the humeral part where it merges into the margin; abdomen briefly pubescent, pectus

glabrous, metasternum normal; anterior tibiæ strongly tri-dentate outwardly and with fine serrate teeth.

Length $11\frac{3}{4}$ –12 mm.; width 5 mm.

Hab. Cape Colony (Cape Town, Constantia, Stellenbosch, Worcester, Graham's Town).

APHODIUS PRODUCTUS, Bohem.,

Insect. Caffr., ii., p. 329.

Black or deep fuscous, and with the edge of the clypeus and a narrow lateral band on the prothorax occasionally rufescent; elytra testaceous, with the posterior part of the suture and of the outer margin infuscate; head closely punctate, clypeus not deeply emarginate and with the anterior angles somewhat pronounced and a little reflexed, very oblique laterally, genæ triangular and projecting, the anterior part of the clypeus is impressed, although not deeply, in the median part of the head there is a distinct elevation, and beyond it three somewhat distinct tubercles, disposed transversely between the eyes; prothorax sub-parallel, and scarcely oblique laterally towards the basal part which is slightly marginate, and not deeply sinuate on each side, the whole surface is equally covered with closely set, deep punctures; scutellum somewhat short, deeply punctate except at apex; elytra moderately deeply punctato-striate with the intervals plane and finely and sparingly aciculate, the outer stria reaches the suture, the other striæ reach nearly the apex except the fourth and sixth which unite behind under the fifth, while towards the base the sixth and the seventh reach only as far as the apical part of the humeral callus, and the eighth is obliterated at a comparatively very short distance from the base, while the ninth, which is slightly longer, unites with the outer one below the shoulder which is not very pronounced; legs piceous red, abdomen moderately pubescent; anterior tibiæ sharply tri-dentate and pluri-serrate above the outer teeth.

Length 6–8 mm.; width $3\text{--}3\frac{3}{4}$ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Worcester, Malmesbury, Uitenhage, Graham's Town), Natal (Estcourt).

APHODIUS AMABILIS, Bohem.,

Insect. Caffrar., ii., p. 333.

Resembles closely *A. productus*, but it is smaller. The head and prothorax are fuscous or piceous red with the lateral part of

the prothorax redder, the elytra are testaceous with the suture slightly fuscous or ferruginous, and occasionally slightly infuscate longitudinally on each side, and the under side is testaceous; clypeus slightly emarginate, angular on each side and sinuate laterally, while the genæ are sharply triangular and project very much, there is a slight transverse impression in the anterior part of the clypeus, no median elevation on the head which is very closely aciculate, and there are three very minute tubercles between the eyes connected by a slightly raised, sometimes nearly obliterated line; prothorax as in *A. productus*, and equally punctured, but the base is less distinctly marginate at middle; scutellum aciculate; elytra briefly and sparingly pubescent, finely and not deeply punctato-striate with the intervals aciculate, plane, hardly costate behind, the striæ are free and reach close to the apex, but the sixth and seventh are interrupted at the apex of the humeral callus, and the eighth is shorter than the ninth which unites with the marginal one under the shoulder; anterior tibiæ strongly tri-dentate outwardly, and crenulate above the outer teeth.

Length $4\frac{3}{4}$ mm.; width 2 mm.

Hab. Natal (Frere), Transvaal (Pretoria), Southern Rhodesia (? Salisbury).

APHODIUS FUGITIVUS, n. spec.

Head dark olivaceous, prothorax also dark olivaceous with a narrow lateral luteous margin, elytra dark olivaceous with the alternate intervals from the suture occasionally faintly lutescent; clypeus nearly straight in front, hardly sinuate and with the angles quite rounded and the sides very oblique, genæ nearly straight, anterior part of clypeus not impressed, head simple, intra-ocular impressed line slight, whole head smooth; prothorax sub-parallel, hardly convex, not marginate along the base which is sinuate on each side of the median part, moderately closely punctulate on the sides, but very little on the discoidal part; scutellum dark olivaceous, impunctate; elytra finely punctato-striate, with the intervals plane but costulate in the posterior part, striæ not reaching the apex, where the marginal one is also obliterated, sixth reaching the base, seventh reaching only the median part of the humeral callus, eighth interrupted at about one-fourth of the length, ninth uniting with the marginal one and very little longer than the eighth; under side fuscous, legs testaceous, abdomen clothed with a long pubescence; metasternum normal, anterior tibiæ strongly tri-dentate outwardly and pluri-serrate above the outer teeth.

Length $5-5\frac{1}{4}$ mm. ; width $2\frac{1}{5}-2\frac{1}{2}$ mm.

Hab. Natal (Estcourt), Transvaal (Johannesburg), Southern Rhodesia (Enkeldoorn), Cape Colony (Cape Town, Stellenbosch, Paarl).

APHODIUS DORSALIS, Klug,

Monatsb. Berl. Ac., 1855, p. 656; Peters' Reis., 1862, p. 245, pl. xiv., fig. 8.

Glabrous, shining, head and prothorax piceous red with the clypeus, and the sides of the prothorax testaceous red, or sometimes flavous; elytra yellow with a narrow sutural piceous band dilated a little towards the scutellum; clypeus nearly straight at apex, hardly sinuate, and with the angles much rounded, oblique laterally, genæ nearly straight, scarcely bulging, whole surface of head finely and closely punctured; in the median part there is a slight protuberance, and the transverse impressed line between the eyes is slight; prothorax sub-parallel, hardly oblique laterally towards the base which is marginate, finely and closely punctulate on the sides but not in the median dorsal part; scutellum moderately long, impunctate; elytra very finely and not deeply striate, striae slightly punctulate, and obliterated at a short distance from the apex, while towards the base the ninth stria, which is a little longer than the eighth, does not unite with the marginal one, and the sixth and seventh reach only the apex of the humeral callus; the intervals are plane even in the posterior part, and the punctures on the striae are more distinct in the lateral parts; abdomen nearly glabrous; anterior tibiae tri-dentate outwardly and pluri-serrate above the outer teeth.

Length $4\frac{1}{4}$ mm. ; width 2 mm.

Hab. Natal (Frere).

I have not been able to examine Klug's type, and it is quite possible that my example, which is quite similar to Boheman's and agrees with his description, except that it is a little larger, may not prove to be Klug's species. In the figure given by the latter the clypeus is distinctly emarginate, which is not the case in Boheman's type, or in my example.

APHODIUS MASHUNENSIS, n. spec.

Chestnut brown, glabrous, shining; head oblique laterally from the basal angle of the genæ which project very little above the eye and

are in a line with the clypeus, the latter is truncate, very slightly emarginate, and with the outer angles distinct, the anterior margin is very slightly reflexed, the median elevation is very slight, and the intra-ocular impressed line is deep, and distinctly arcuate, the whole surface is very finely and closely punctulate, and the basal part is somewhat fuscous; prothorax sub-parallel, not marginate along the base, and covered with very fine but deep punctures set very close to each other; scutellum impunctate; elytra oblong, finely striate; the striae are not geminate, but are closely punctate, the eighth is very little shorter towards the base than the ninth which unites with the marginal one below the humeral callus, and the dorsal striae reach the apex, the intervals are plane in the dorsal part, but costulate laterally, and they are very slightly punctulate; anterior tibiae tri-dentate and serrulate above the digitation.

Length $3\frac{1}{2}$ mm.; width $1\frac{1}{2}$ mm.

Hab. Southern Rhodesia.

APHODIUS ADUSTUS, Klug,

Monatsb. Berl. Acad., 1855, p. 656.

Ferruginous, with the posterior part of the head, a very broad quadrate patch on the prothorax leaving only a narrow testaceous red lateral band on each side, the scutellum, a broad juxta-sutural band on the testaceous red elytra, and a narrower marginal one, dark fuscous or nearly black; in some examples, such as the type, the whole of the elytra is dark fuscous with only a faint piceous red patch on each side towards the apex; the upper side is glabrous and shining, but the abdomen is briefly yet densely pubescent; head deeply and somewhat closely punctured in the anterior and frontal parts, the punctures being more scattered along the base, the clypeus is deeply emarginate in the centre, distinctly dentate on each side of the emargination, and the genae which are obtusely triangular are prominent; prothorax sub-parallel, not very obliquely produced laterally towards the base which is hardly sinuate and not marginate, and the whole surface is covered with somewhat closely set punctures; scutellum moderately long, impunctate, not impressed; elytra finely punctato-striate with the intervals plane and impunctate, the marginal stria is alone connected behind with the juxta-sutural one, and the fourth and fifth, eighth and ninth are united at a very short distance from the apex, while towards the base the sixth and seventh reach the median part of the humeral

callus, and the eighth is a little shorter than the ninth which unites with the marginal near the fold of the shoulder; anterior tibiæ strongly tri-dentate outwardly, and distinctly serrate above the outer teeth.

Length $4\frac{1}{4}$ mm.; width 2 mm.

Hab. Cape Colony (Carnarvon), Mozambique (Tette, according to Klug).

This species will be easily distinguished by its dentate clypeus; the only other true *Aphodius* known to me in which this character occurs is *A. hirticeps*, but although in this species the angles of the incised clypeus are very sharp, they are not distinctly dentate as in *A. adustus*.

APHODIUS HIRTICEPS, n. spec.

Flavescent, shining, elytra slightly transparent, anterior part of the head clothed with dense erect hairs, posterior part of the head, prothorax and elytra quite glabrous; head very deeply pitted, clypeus rounded laterally and very deeply incised at apex, the incision being arcuate with the angles very sharp and projecting laterally, the clypeus is divided by a slight incision from the apex of the genæ which are quite oblique, straight at base, and project beyond the eye without being sharply angular, the head is simple, and the transverse line between the eyes is fairly well defined; prothorax sub-parallel, very obliquely produced towards the base, which is sinuate on each side of the median part and marginate in the middle, it is covered with very closely set punctures, and has no trace of infusate patches; scutellum short, triangular, impunctate; elytra deeply but narrowly striate and with the striae slightly punctate; the first five dorsal ones, and also the ninth, reach the apex; towards the base the sixth and seventh are interrupted near the humeral callus, and the eighth and ninth are nearly of the same length, the latter not uniting with the marginal one, intervals slightly costate in the anterior part, and more so behind; abdomen very briefly pubescent; anterior tibiæ strongly tri-dentate and crenulate above the outer teeth.

This species, of which I have seen one female example only, is easily distinguished by the semicircular clypeal incision, and the very pubescent head.

Length 3 mm.; width $1\frac{2}{5}$ mm.

Hab. Cape Colony (Hope Town).

APHODIUS (AMMOECIUS) MINUS, n. spec.

Piceous black with the clypeus, anterior part of prothorax and legs piceous red, shining, glabrous, antennæ sub-rufescent; head covered with very closely set and deep punctures, clypeus very briefly and moderately broadly emarginate with the sides of the emargination angular, oblique laterally, and with the margins reflexed, genæ slightly triangular, not prominent, the median part of the clypeus is impressed and equi-distant from the apex and from the intra-ocular ridge which is transverse, arcuate, and distinct; prothorax short, sub-parallel, somewhat rounded laterally towards the base which is marginate in the middle and not sinuate on each side; the whole surface is covered with equi-distant, somewhat closely set, deep punctures; scutellum short, impunctate; elytra slightly gibbose, narrowly striate, but with the punctures somewhat shallow, and the intervals a little costate in the anterior part, but much more distinctly so from the middle to the apex, where they are carinate and impunctate; the striæ reach the apex except the fourth, fifth, and eighth; metasternum normal, abdomen nearly glabrous; anterior tibiæ strongly tri-dentate outwardly and distinctly pluri-serrate above the digits.

Length $4\frac{1}{2}$ mm.; width 2 mm.

This species resembles much *A. lugubris*, but is distinguished by the much less prominent genæ, the absence of cephalic tubercle and the less deeply punctured striæ, the marginal one of which is not distinctly punctured as far as the suture; the intervals are distinctly aciculate, and the tibiæ are crenulate above the digits.

Hab. Cape Colony (Hope Town, Kei Road).

APHODIUS (AMMOECIUS) LUGUBRIS, Boh.,

Insect. Caffr., ii., p. 364.

A. ambiguus, Boh.; *Res. Eugen.*, 1858, p. 51.

Size and shape of *A. minus*, but the colour is piceous red or ferruginous; the clypeus is dentate on each side of the emargination which is not so deep; the sculpture of the head and prothorax is similar, and the intervals of the elytra are plane from the base to the posterior rounded part where they are only very slightly convex, and they are distinctly punctate.

Length $3\frac{1}{5}$ mm.; width $1\frac{1}{5}$ -2 mm.

Hab. Cape Colony (Robben Island, Cape Town).

APHODIUS (AMMOECIUS) DENTINUS, n. spec.

This species differs from *A. lugubris* in the shape of the clypeus which is straight at apex and has on each side two comparatively long, spiniform teeth; the prothorax is a little more finely punctured, and the intervals of the elytra, which are also plane, are impunctate, and the ninth stria is also, as in the two previous species, quite united with the marginal one towards the base; the anterior tibiae are tri-dentate outwardly, and obtusely serrate above the outer teeth.

Length 4-4½ mm. ; width 2 mm.

Hab. Transvaal (Potchefstroom).

APHODIUS (AMMOECIUS) ARMATICEPS, n. spec.

Black, shining, glabrous; edges of clypeus, palpi, and legs piceous red; clypeus straight in front and having the outer angle dentate, as well as a strong and sharply triangular tooth set inwards at a little distance from it, head simple, strongly punctured and with the median part of the clypeus impressed; antennae piceous red; prothorax sub-parallel from the anterior part to the middle, and rounded from there to the basal part which is feebly marginate, it is convex, and very deeply and very closely punctured; scutellum short; elytra sub-geminato-striate, transversely and deeply punctate, and with the geminate line in the striae more distinct and more raised behind, intervals strongly carinate, and stopping a little short of the apex except the first three, the first seven striae reach the base, and the eighth unites with the seventh on the humeral callus, while the ninth, which is hardly longer than the eighth, does not unite with the marginal one; abdomen briefly pubescent; anterior tibiae strongly tri-dentate, simple above the digits.

Length 5 mm. ; width 2 mm.

Hab. Cape Colony (Prince Albert).

APHODIUS (AMMOECIUS) SPECTABILIS, n. spec.

Black, shining, glabrous, palpi and legs piceous red; head punctate and with a transverse, very distinct, hardly arcuate carina, clypeus not deeply emarginate in front, genae sub-obtusely triangular; near the basal part there is a distinctly carinate intra-ocular line; prothorax convex, a little ampliate laterally, produced very obliquely towards the base which is very distinctly marginate, and covered

with deep, irregularly scattered, numerous punctures; scutellum somewhat short, sub-carinate longitudinally in the middle; elytra convex, very deeply geminato-striate, striae filled with deep, slightly transverse punctures, intervals carinate and edged on each side by one of the lines of the geminate striae, only the first, second, third, sixth and ninth reach the apex, the sixth and seventh striae nearly reach the base, the eighth is normally obliterated at the customary distance from it, and the ninth unites with the marginal one, close to the base; abdomen briefly but densely pubescent; anterior tibiae strongly tri-dentate and pluri-serrate above the digitation.

Length 5-6 mm.; width 3 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Malmesbury, Worcester, Knysna).

APHODIUS (AMMOECIUS) CARINULATUS, n. spec.

Black, shining, glabrous; antennae and palpi piceous red, legs piceous; clypeus deeply emarginate in front, very oblique laterally, and in a line with the apex of the genae which are projecting and obtusely triangular; head punctulate and having a very distinct sharp, transverse clypeal carina, and a moderately raised intra-ocular one; prothorax convex, a little ampliate laterally, not very obliquely produced behind towards the base which is distinctly marginate, covered with deep, scattered punctures which are less numerous in the anterior part of the disk; scutellum short, distinctly carinate longitudinally in the middle; elytra narrowly striate, striae moderately deeply punctate, and with the intervals broad and tri-carinate; the median carina is not very much higher in the dorsal part than the other two, which are really the raised geminate line of the stria, and is nearly as slender, but in the lateral part it is thicker and much higher, only the fifth and seventh striae reach the apex, the dorsal striae reach the base, the sixth and seventh reach only the humeral callus, the eighth is very much abbreviated, and the ninth unites with the marginal one near the base under the humeral fold which is not very pronounced; abdominal segments briefly but densely pubescent; anterior tibiae strongly tri-dentate and distinctly pluri-serrate above the digits.

Length $5\frac{1}{4}$ mm.; width $2\frac{3}{4}$ mm.

Hab. Transvaal (? Johannesburg).

This species is easily distinguished by the tri-carinate intervals of the dorsal intervals on the elytra. The male is unknown.

APHODIUS (OXYOMUS) BADIUS, Bohem.,

Insect. Caffrar., ii., p. 357.

A. evanescens, Boh., loc. cit. 358.

This species closely resembles *A. sulcipennis*, but is darker, and the prothorax is infusate, but the sides are ferruginous red; the shape of the head and clypeus and also the sculpture are identical, but it is smaller, the intervals of the elytra are not quite so sharply carinate, and the striæ are not so deeply punctate.

Length 3–3½ mm.; width 1½ mm.

Hab. The whole of the Cape Colony, Natal (Durban, Estcourt, Frere), Transvaal (Boksburg, Johannesburg).

The co-type of *A. evanescens* is identical with *A. badius*, but the elytra are paler or more yellowish.

APHODIUS (OXYOMUS) JUCUNDULUS, n. spec.

Allied to *A. badius*, but with a more slender facies owing to the elytra being a little more acuminate behind; the shape of the head and prothorax is the same, and so is the punctuation, but the costæ on the elytra are still more sharply carinate and have a distinct row of punctures on each side, and the geminate striæ are more deeply punctate, the colour is piceous, and dark ferruginous red on the sides of the prothorax and on the under side.

Length 3½ mm.; width 1½ mm.

Hab. Natal (Durban).

APHODIUS (? OXYOMUS) PYGMEUS, Bohem.,

Insect. Caffrar., ii., p. 357.

This species is very closely allied to *A. badius*; it is pale testaceous, similarly punctured, but the intervals of the elytra are not quite so sharply carinate.

Length 3 mm.; width 1½ mm.

Hab. Natal (Frere).

APHODIUS (OXYOMUS) SULCIPENNIS, Bohem.,

Insect. Caffr., ii., p. 363.

Ferruginous red, or light ferruginous, shining, glabrous; antennæ sub-flavescent; smaller than the preceding species but with the same shape; the punctures on the head and prothorax are finer;

the carinae on the elytra are not quite so sharp, especially on the sides, but all reach the apex, except the ninth, the punctures, which fill the geminate striae, are not so distinctly divided into two, the anterior tibiae are crenulate above the digits, and there is a moderately distinct, although very slight, arcuate impressed line between the eyes.

Length $4-4\frac{1}{2}$ mm.; width $2\frac{1}{2}$ mm.

Hab. Transvaal (Potchefstroom).

APHODIUS (? *OXYOMUS*) *JUGALIS*, n. spec.

Reddish brown, a little darker on the discoidal part of the prothorax, glabrous; clypeus much attenuated laterally from the genae which are a little ampliate but oblique, to the apex which is also rounded and is much narrower in proportion than any of the other South African species of *Aphodius*; the head is somewhat punctulate, and there is a slight elevation in the centre of the head, and a transverse, very slightly impressed line between the eyes; prothorax slightly narrower at apex than at base, not marginate along the base, nearly impunctate in the median part, and having some deep, somewhat scattered punctures on the sides; scutellum faintly punctulate; elytra oblong, intervals impunctate, tectiform, sharply carinate from the base to two-thirds of the length only, striae deep, apparently not geminate, but deeply and closely punctate; eighth and ninth striae of equal length and obliterated towards the base at about one-fifth of the length; all the dorsal striae reach the apex, and none are united behind; anterior tibiae serrulate above the digitation.

Length 4 mm.; width $1\frac{3}{4}$ mm.

Hab. Natal (Durban).

This species is a very good transition form between the *Aphodius* with costate elytra and *Oxyomus*. It will be easily recognised by the anterior margin of the clypeus.

APHODIUS (*OXYOMUS*) *PUBERULUS*, Bohem.,

Insect. Caffrar., ii., p. 360.

Ferruginous red, seldom brick red, sub-opaque, very briefly pubescent; clypeus slightly emarginate in front, broadly rounded laterally, genae ampliate, broadly rounded, basal angle in a line with the eye, clypeus very slightly and narrowly impressed transversely with the margin moderately reflexed, in the central part there is a slight, not tuberculate elevation, and a transverse, arcuate, impressed frontal

line, the whole surface is closely and finely punctulate; prothorax sub-parallel, with the basal angles oblique, base slightly marginate and bi-sinuate on each side of the median part, sides aciculate, median part smooth or very obsoletely aciculate; elytra oblong, very briefly and sparingly pubescent, narrowly striate, the striae geminate, intervals convex, tectiform, slightly aciculate, the seventh stria stops short of the base, the eighth is obliterated for about one-fifth of the length, the ninth is longer than the eighth, and unites with the marginal one at some distance from the base; anterior tibiae strongly tri-dentate outwardly, and quadri-serrate above the digits; under side normal.

Length 5 mm.; width $2\frac{1}{2}$ mm.

Hab. Mozambique (Lourenço-Marquez).

APHODIUS (OXYOMUS) MEDIOXIMUS, n. spec.

Brick-red, nearly glabrous, but with a very slight pubescence in the posterior part of the elytra; it very much resembles *A. puberulus*, but the head has no impressed, transverse line; the prothorax is distinctly aciculate all over, the aciculation being, however, denser and deeper on the sides; the striae on the elytra are much more distinctly geminate and the costae are more sharply carinate and more distinctly punctate on each side.

Length 6 mm.; width $2\frac{3}{4}$ mm.

Hab. Cape Colony (Hope Town).

APHODIUS (OXYOMUS) COSTIPENNIS, Bohem.,

Insect. Caffrar., ii., p. 362.

Black, sub-opaque, very convex, glabrous; antennae black; clypeus a little sinuate in front, and with the sides very oblique, genae auriculate, triangular, head simple but having a slight median impression in the anterior part of the clypeus, and a not well-defined median elevation, it is covered with deep, nearly confluent punctures, and the intra-ocular transverse line is not distinct; prothorax sub-parallel and with the posterior angles very little produced diagonally towards the base which is not marginate, deeply foveato-punctate, and slightly scrobiculate laterally; scutellum somewhat short; elytra very sharply carinate with the intervals moderately broad, and filled with transverse punctures divided into two by a very fine longitudinal impressed line, the carinae reach the apex except the fourth, sixth, and eighth, which are much shorter, and the eighth and

ninth do not reach quite the base; abdomen densely but extremely briefly pubescent; anterior tibiae moderately strongly tri-dentate outwardly, and simple above the outer teeth.

Length $6-6\frac{1}{2}$ mm.; width $2\frac{1}{3}-3$ mm.

Hab. Cape Colony (Cape Town, Paarl, Worcester, Ceres, Somerset East), Natal (Maritzburg, Durban, Frere).

(Species which I have not seen or been able to identify with certainty.)

APHODIUS CRUENTUS, Klug,

Monatsb. Berl. Acad., 1855, p. 656; Peters' Reis., pp. 245, pl. xiv., fig. 10.

"Fuscous black, shining; head and prothorax smooth; elytra striate and blood-red at apex and base.

Length 2 lin.

Like *Aphodius connexus*, but somewhat larger, and relatively broader; dark brown, the elytra almost black. The head and prothorax are smooth and unarmed, the sides of the latter are brownish; elytra finely striate, scarcely punctured in the intervals, red brown at the base, and having a large spot of the same colour at the apex; under side yellowish brown, legs black, femora yellowish. One example from Tette."

Hab. Mozambique.

APHODIUS CIRCUMDATUS, Klug,

Loc. cit., p. 656; loc. cit., p. 246, pl. xiv., fig. 11.

"Oblong, testaceous; prothorax and elytra chestnut brown above, sides broadly fulvous.

Length 5 lin.

A few examples from Sena. Shaped like *A. rufipes*, and belonging to the Section S of Erichson's grouping. Under side pale brownish yellow, the upper side is darker and more shining. The head is feebly punctured, brownish in front and behind, the clypeus is feebly emarginate, the frontal part somewhat raised in the middle, and there is a scarcely raised, brown transverse line between the eyes; prothorax very feebly punctured, almost smooth, brown with a broad, dark yellow border on each side. The elytra are striate, the striae punctate, the intervals smooth. They are brown, but the yellow border of the prothorax is continued upon them right to the

apex, but it is not the same width, and in the median part, where it is narrowest, it reaches from the seventh stria to the outer margin. Legs brown, with yellowish femora."

Hab. Mozambique.

APHODIUS ARDENS, Har.,

Berl. Entom. Zeitschr., 1866, p. 103.

"Sub-elongate, convex, shining, piceous red, elytra brick-red with the margin and the apex infuscate; head obsoletely punctate, frontal part with three raised, transverse carinules and a tubercle situated a little before the median part, genæ moderately prominent; prothorax not equally but moderately densely punctate, the larger punctures mixed with smaller ones; elytra crenato-striate, intervals hardly convex, sparingly but very finely punctulate; palpi and antennæ ferruginous; body and legs obscure rusty red.

Length $2\frac{3}{4}$ -3 lin.

Hab. Cape of Good Hope."

APHODIUS BINODULOSUS, Har.,

Berl. Entom. Zeitschr., 1866, p. 116.

"Slightly convex, sub-elongate, shining, piceous red; elytra chestnut-brown and having a median sub-fuscous longitudinal patch; head punctulate, nearly smooth in front, frontal part tri-tuberculate, median tubercle bi-partite, anterior fold raised, arcuate, clypeus slightly emarginate in front, genæ little prominent; prothorax densely and equally punctate; elytra crenato-striate, with the intervals slightly convex and smooth; palpi and antennæ ferruginous; under side dark rusty red, legs testaceous, anterior ones and also the tarsi rufescent.

Length $3\frac{1}{2}$ - $3\frac{3}{4}$ lin.

Hab. Cape of Good Hope."

APHODIUS CAPENSIS, Har.,

Berl. Entom. Zeitschr., 1866, p. 110.

"Very like *A. letus*, Wied., and perhaps only a varietal form; elongate, convex, shining, obscurely rufous with the elytra brick-red; head not deeply punctate, but more densely punctate on the anterior part, genæ little prominent, frontal part tri-tuberculate, the anterior

tubercle transversal; prothorax short, rounded laterally, densely but not equally punctate and with the larger punctures interspersed with small ones; elytra more than double the length of the prothorax, hardly dilated past the middle, crenato-striate with the intervals slightly convex and finely but distinctly punctate; palpi and antennæ ferruginous; under side ferruginous, metasternum plane, abdomen brick-red; legs also brick-red, the anterior ones, including the tibiæ and the tarsi, rufescent.

Length $3\frac{1}{4}$ lin.

Hab. Cape of Good Hope."

APHODIUS CENTRALIS, Har.,

Coleopt., Heft. iii., 1868, p. 84.

"Shining, somewhat elongate, head nearly smooth, convex, unarmed, clypeus sub-truncate, piceous red; prothorax smooth in the middle, sparsely punctate laterally, non-marginate at base, piceous with the sides and the anterior margin rufescent; elytra with the sides and the posterior part densely set with rufous setæ moderately long, punctato-striate with the intervals slightly convex, and having on each side, especially behind, a single series of punctures, they are brick-red, with the suture and the outer margin infusate, the suture is broader and more piceous from behind the scutellum till the median part, and the outer margin is also broader and more darkly piceous at the middle; legs brick-red, tibiæ piceous red, antennæ brick-red. The colour is similar to that of *A. quadrimaculatus* or *A. vittatus*, but it approximates still more *A. rufopustulatus*.

Length $2\frac{3}{4}$ lin.

Hab. South Africa."

APHODIUS FALLAX, Har.,

Berl. Entom. Zeitschr., 1871, p. 281.

"Elongato-ovate, little convex, shining, ferruginous, elytra testaceous red; head densely punctulate, frontal suture raised but not tuberculate, vertex slightly swollen at middle, clypeus moderately deeply emarginate, rounded on each side, genæ obtusely rounded, moderately prominent; prothorax short, densely and equally punctulate, sides ciliate; scutellum triangular, smooth; elytra slightly crenato-striate, with the intervals convex, obsolete punctulate and pubescent towards the margins; mesosternum non-carinate, meta-

sternum vaguely punctate in centre, apical spur somewhat shorter than the basal joint.

Length 5 mm.

Hab. Cape of Good Hope."

APHODIUS LINEATOSULCATUS, Har.,
Berl. Entom. Zeitschr., 1859, p. 216.

"Reddish, shining, moderately depressed, head punctulate, clypeus emarginate; prothorax red, densely and evenly punctured, base marginate; elytra with raised lines, intervals narrow, strongly convex and rufescent; palpi, antennæ, and legs brick-red.

Length 2 lin.

Hab. Cape of Good Hope."

APHODIUS PRINCIPALIS, Har.,
Berl. Entom. Zeitschr., 1861, p. 100.

"Piceous red, sides of prothorax and elytra testaceous red; head punctate, uni-tuberculate, clypeus strongly reflexed, sides of prothorax and also the base unevenly but closely punctate; scutellum punctate, piceous red; elytra punctato-striate, intervals convex in front, moderately convex behind, densely punctate, first juxtasutural interval carinate. Palpi, antennæ, and legs testaceous red.

Length $5\frac{3}{4}$ -6 lin.

Hab. Cape of Good Hope."

APHODIUS BUXEIPENNIS, Har.,
Berl. Entom. Zeitschr., 1862, p. 384.

"Convex, shining, piceous or obscurely piceous red, anterior angles of prothorax and sometimes the sides rufescent; elytra testaceous, with the suture infusate; head densely punctate, frontal suture moderately raised, not tuberculate, clypeus subtruncate, genæ prominent; prothorax finely punctate with the punctures stronger on the sides, base marginate; scutellum punctate at base; elytra finely punctato-striate, intervals plane, smooth; palpi and antennæ testaceous red; under side and legs chestnut brown, posterior femora testaceous red, dilated, basal joint of hind tarsi shorter than the spurs, mesosternum non-carinate.

Length $5\frac{1}{2}$ mm.

Hab. Cape of Good Hope."

APHODIUS CONCOLOR, Har.,

Berl. Entom. Zeitschr., 1859, p. 215.

"Piceous red, shining, sub-convex, elongate, head sparingly punctate, clypeus truncate in front with the angles obtuse, tuberculate at tip; prothorax densely but not regularly punctate, not marginate behind; elytra a little ampliate towards the apex, crenato-striate, intervals sub-convex, very finely punctulate; palpi, antennæ, and legs chestnut brown.

Length 5 lin.

Hab. Cape of Good Hope.'

APHODIUS DEJEANI, Har.,

Berl. Entom. Zeitschr., 1862, p. 165.

"Strongly convex and short, shining, black, elytra testaceous at apex; head not distinctly punctulate, transversely rugose in the anterior part, frontal part tri-tuberculate, clypeus truncate at apex, genæ little prominent; prothorax sprinkled with a few large punctures, base marginate and sub-sinuate on each side; scutellum elongate, punctulate at base, deeply sulcate in the middle; elytra crenato-striate, posterior striæ disappearing behind, intervals sub-convex; palpi and antennæ reddish, club of the latter dark; legs piceous red.

Length 4 lin.

Hab. Cape of Good Hope.

AMMOECIUS TERMINATUS, Har.,

Coleopt., Heft. v., 1869.

"Somewhat elongate, shining, piceous black; clypeus bi-dentate, rufescent; head roughly punctured, sharply carinate transversely in front; prothorax evenly and moderately densely punctate; elytra slightly punctato-striate, with the intervals plane, but moderately convex at apex, and having sub-seriate, scattered punctures. It differs from *A. lugubris*, Bohem., by the more elongate facies, the stronger punctuation of the head, the clypeal carina, which is more raised and not abbreviated, and the intervals of the elytra, which are less convex at apex.

Length $4\frac{1}{2}$ mm.*Hab.* South Africa.'

APHODOBIUS, n. gen.

Mentum of *Aphodius*, but more amplified laterally and fringed with very few stiff ciliæ, labial palpi cylindrical but thicker than in *Aphodius*, and with the second one half the length of the apical one; maxillary palpi as in *Aphodius*; clypeus straight at tip, obtusely rounded at the angles, and not very diagonal laterally; head, prothorax, and elytra as in *Aphodius*, anterior tibiæ not strongly dentate outwardly in the male, but very slightly obliquely truncate at tip, and with the inner spur short, nearly apical and strongly curved inwardly; female with normal tibiæ.

I propose this genus for *Aphodius misellus*, Bohem., in which the spur of the anterior tibiæ is bent inwardly instead of outwardly, as in *Aphodius*.

Key to the Species.

- Upper side glabrous; intervals of elytra tectiform and impunctate *misellus*.
 Upper side pubescent; intervals of elytra costate and punctate .. *villosulus*.

APHODOBIUS MISELLUS, Bohem.,

Insect. Caffr., ii., p. 356.

Pale flavous, nearly straw-colour, glabrous, shining, head and prothorax a little infuscate in the centre; head closely punctulate, genæ triangular, the apex of the triangle projecting much, and a little sharper in the male than in the female, the clypeus is obliquely attenuate from the genæ, rounded anteriorly, and very little sinuate at apex, it has in the centre a very faint elevation, a very slight transverse line, which in the male ends in a somewhat indistinct tubercle, and it is finely but distinctly and closely punctate; prothorax little convex, little parallel laterally, marginate only along the outer sides, distinctly punctate, the punctures denser laterally than in the median part, and moderately closely set, base very little sinuate on each side of the median part; elytra oblong, convex, deeply striate, punctures of the striæ small and moderately deep, intervals convex, smooth, seventh stria reaching the base, eighth stria interrupted for about one-fifth of the length, ninth sinuate towards the base, but reaching it under the humeral callus; under side glabrous, metasternum very deeply impressed in the centre; anterior tibiæ slender, tri-dentate outwardly, and with the apical spur short and turned downwards in the male, the apical outer tooth is slender and not strongly slanting in the same sex, and

above the basal tooth there is a faint indication of two serrate teeth which are, however, somewhat indistinct in many examples.

In this species the clypeus is very little attenuate laterally, and broader in front in proportion to its length than in any other South African species, and in shape somewhat resembles that of *Coptochirus*, but it is not emarginate at the tip.

Length $4\frac{1}{4}$ –5 mm.; width 2 – $2\frac{1}{2}$ mm.

Hab. Natal (Frere, Estcourt), Southern Rhodesia (Salisbury).

APHODOBIUS VILLOSULUS, n. spec.

Straw-colour, or pale flavous, upper part, especially the elytra, briefly but distinctly pubescent; head diagonal laterally from the base of the genæ which projects at right angle beyond the eye, to the rounded outer, apical part of the clypeus which is quite straight, not emarginate, not impressed at middle, and the margin of which is very slightly reflexed, the whole clypeus is very slightly punctate, there is a frontal, transverse impressed line, and the posterior part of the head is feebly, yet more distinctly, punctulate than the clypeus; prothorax a little obliquely attenuate laterally in the anterior and also in the posterior part, but otherwise straight, not marginate along the base, very closely punctate except for a small, median discoidal area; scutellum short, sharp, feebly punctate; elytra oblong, deeply but finely striate, but with the striae slightly obliterated or shallower in the posterior part, with the eighth and ninth having nearly the same length, and obliterated towards the base only at about one-fifth of the length, intervals costulate, and having a double row of setigerous, distinct punctures; anterior tibiae tri-dentate, the two basal teeth straight.

Length 4 mm.; width $1\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Salisbury).

This species is smaller than *A. misellus*, but the general facies is the same; it is distinguished by the presence of a supra-clypeal impressed line, and the less tectiform and closely punctate and pubescent costae on the elytra.

GEN. HARMOGASTER, Har.,

Berl. Ent. Zeit., 1861, p. 112.

Mentum nearly quadrate, but a little attenuate obliquely towards the apex, broadly and very deeply emarginate at tip, and strongly

bristly; lobes of ligula broad, joints of labial palpi moderately long, apical one a little longer than the basal, sub-fusiform but more swollen outwardly than inwardly; head simple, with a distinct transverse clypeal and frontal carina; prothorax diagonally ampliate laterally from the anterior angle to a short distance from the median part where it is a little rounded, and quite straight from there to the basal angle which is moderately sharp; scutellum short; elytra convex, nearly parallel, segments of abdomen apparently connate, except the last one which is free; metasternum grooved but not impressed; anterior tibiæ strongly tri-dentate outwardly, diagonal at tip, and not thickened inwardly, apical spur strong, with the tip bent slightly inwards in the male, tarsi short, basal joint of intermediate and posterior tibiæ only half the length of the longest apical spur.

The characters distinguishing this genus from some species of *Amnoecius* are, besides the abdominal segments which are not free except the last one, the inwardly bent apical spur of the anterior tibiæ, and the ampliate ante-median part of the prothorax.

The only two species known to me have the same habits as *Aphodius*; the sculpture of the elytra is very singular; in one species the line dividing transversely the punctures on the elytra has become so raised that there are really twenty rows of punctures on each side; in the other it is only on the sides and in the posterior part that this line is well defined.

The genus, so far as is now known, is confined to South Africa.

Key to the Species.

- Elytra with twenty punctured striæ on each side *exarata*.
 Elytra with twelve striæ on each side *transitoria*.

HARMOGASTER EXARATA, Har.,

Berl. Entom. Zeitschr., 1861, p. 113.

Black, shining, glabrous; head closely punctate, clypeus broadly emarginate, genæ in a line with the clypeus but projecting much at right angle with the eye, there is a distinct, transverse, clypeal carina and another one not quite so well defined between the eyes; prothorax diagonally ampliated laterally from the outer angle to a short distance from the median part where it is a little rounded, and nearly straight from there to the posterior angle which is moderately sharp, it is somewhat convex, marginate along the base which is

moderately sinuate on each side, and is covered with deep, closely-set punctures, and in the centre there is a faint trace of a rudimentary groove; scutellum short, punctulate, slightly carinate longitudinally; elytra convex with the humeral angles sharp, very little amplified after the lateral, post-humeral sinuation which is slight, and they have each twenty deeply punctured striae separated by fine costae, the fourth, ninth, and thirteenth of which are slightly more raised than the others, but distinctly so at the base; only the four first costae and the supra-marginal one reach to the apex, and the four lateral striae reach only to the humeral callus which is smooth and very oblique; abdomen and under side very deeply and roughly punctured; the former, and also the pygidium, are briefly setulose; anterior tibiae normally tri-dentate outwardly, and simple above the digits, apical spur strong, a little curved inwards at tip in the male, straight in the female.

Length 5-7 mm.; width $2\frac{1}{2}$ - $3\frac{1}{5}$ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Worcester, Malmesbury).

HARMOGASTER TRANSITORIA, n. spec.

Black, shining, glabrous; head very closely punctured, clypeus deeply emarginate with the emargination sub-arcuate, genae very prominent, projecting at right angle above the eye, head very slightly impressed in front and having a very faint transverse clypeal, and also an intra-ocular ridge; prothorax a little diagonally amplified laterally towards the median part, and straight from there to the base which is marginate, deeply and closely punctured, very convex, and has a slight, somewhat indistinct median basal impressed line; elytra deeply striate, the striae filled with transverse punctures the intervals of which are a little raised, and thus form on the dorsal part a crenulate line, much less conspicuous, however, than the carinate intervals the first, second, and ninth of which reach to the apex, while the third and eighth unite a little above the apex and below the other dorsal ones, the dorsal striae reach the base, and the eighth and ninth are of equal length and reach the base of the humeral callus which is much slanting, but the three outer ones are duplicated; pectus, abdomen, and femora coarsely punctured, the latter with a few scattered, short hairs; anterior tibiae strongly tri-dentate, simple above the digits.

I have seen one female example only; but in spite of the elytra not having ten striae each, the shape of the prothorax and head

is exactly that of *Harmogaster*, and the three lateral striæ are duplicated.

Length 6 mm; width $2\frac{1}{2}$ mm.

Hab. Cape Colony (Port Elizabeth), Natal (Durban).

(Species which I have not been able to identify with certainty.)

HARMOGASTER NASUTA, Har.,

Coleopt., Heft. v., 1869, p. 101.

“Slightly convex, somewhat elongate, little shining, piceous red, margins of prothorax red, elytra fusco-testaceous; head obsoletely punctulate, clypeus moderately emarginate in front, lobate on each side, genæ obtuse; prothorax deeply punctate, the punctures are elongate on the sides and the posterior angles are rounded; elytra with striæ containing twenty punctures, and intervals alternately plane and carinate, the seventh, eighth, ninth, and tenth intervals join and form a humeral callus; under side piceous red, anterior tibiae of male slightly incurved, apical spur incurved.

Length 4 mm.

Hab. South Africa. Xobar.”

HARMOGASTER OPACULA, Har.,

Loc. cit., p. 101.

“Very similar to *H. geminata*, but more densely punctate, and with the intervals more raised and less convex. It is very little shining, black, with the elytra sometimes fuscous reddish; head very finely and very closely punctate, genæ rounded; prothorax very finely and very closely punctate, and having a longitudinal impressed median line, somewhat indistinct; elytra crenato-striate, geminate at bottom, but set near enough to one another to appear double, intervals broader than the striæ, not much raised, slightly convex, and very finely and densely punctulate; legs obscure red.

Length $4\frac{1}{4}$ mm.

Hab. Cape of Good Hope.”

GEN. TEUCHESTES, Muls.,

Lamellic. d. France, 1842, p. 164.

Mentum obliquely attenuate laterally from near the base, deeply

semicircularly incised at tip, hollowed at base and very densely hairy, ligula bifid, greatly developed, membranaceous, labial palpi short, first sub-triangular, second half the length of the first, and transverse, apical one sub-ovate, slightly obliquely truncate at tip, about as long as the first, but not quite so broad; lobes of maxillæ pubescent, not toothed, apical joint of maxillary palpi fusiform, slightly truncate at tip; body very convex; scutellum very long, lanceiform, reaching almost to one-fifth of the length of the elytra the striation of which is similar to that of *Aphodius*; anterior tibiæ tri-dentate outwardly, sub-oblique at tip, and having inwardly an apical, thick incurved spur, and a long straight one in the female; posterior and intermediate tibiæ as in *Aphodius*, but occasionally the former are compressed and slightly excavate outwardly in the male.

The genus is represented in Europe, and is stated by von Harold to occur in the East Indies.

TEUCHESTES SOREX, Fabric.,

Ent. Syst., i., p. 27.

T. caffer, Wiedem., Zool. Magaz., i., p. 27.

Black, shining, but oftener with the elytra light testaceous; head slightly punctulate, especially on the clypeus which has a fine reflexed margin, and is broadly but not deeply emarginate, with the ends of the emargination somewhat angular, genæ strongly auriculate, there is a distinct clypeal carina, and a little past the middle three equi-distant, short, conical horns disposed transversely; prothorax very convex, a little attenuate laterally in the anterior part, nearly straight in the median, deeply emarginate obliquely in the posterior, and with the basal angle sharp, the base is very distinctly bi-sinuate, and the whole surface is covered with deep punctures irregularly disposed and denser in the female than in the male; scutellum very long, parallel for two-thirds of the length, and lanceolate for the other third, it is irregularly but very closely punctured, and somewhat coriaceous; elytra very convex, deeply punctato-striate, intervals convex but not tectiform, smooth, impunctate, sixth stria reaching the humeral callus, eighth stria a little shorter than the ninth, all striæ except the seventh and eighth, which are united, reach the apex; under side glabrous; metasternum with a broad, deep impression, occupying nearly the whole of the median part in the male, with only an impressed line in the female; anterior legs strongly tri-dentate outwardly, apical spur of

the male wide, flat, strongly incurved inwardly, sub-cylindrical and straight in the female.

Length 10–10½ mm. ; width 5¼ mm.

Hab. Cape Colony (Knysna, Somerset East), Natal (Durban). It occurs also in the East Indies, teste Harold.

In the examples with light brown elytra, the punctuation on the prothorax is a little more scattered in the centre of the disk.

GEN. COPTOCHIRUS, Har.,

Berl. Entom. Zeitschr., 1859, p. 202.

Mentum of *Aphodius* but ligula not projecting beyond the mentum, which is densely hairy and sparingly setulose at tip, joints of labial palpi a little thicker than in *Aphodius*, the last one elongato-ovate; last joint of maxillary palpi deeply scooped inwardly from base to apex; clypeus deeply incised and with the angles of the incision sometimes recurved and sub-tuberculate, head simple; prothorax moderately convex, amplified laterally, and a little attenuate towards the base which is sinuate on each side; scutellum long, sharply triangular; elytra oblong, punctato-striate, and with ten striæ on each side as in *Aphodius*; the under side is as in this genus, except that the last abdominal segment is broader than the two penultimate ones; anterior tibiæ of the male bi-dentate outwardly, but occasionally having a third very small tooth, the apical tooth blunt and forming the outer angle of the truncate apical part, inner part obliquely truncate as far as the second outer tooth, slightly angular there, and sometimes sinuate above the angle; intermediate and posterior tibiæ as in *Aphodius*, apical spurs unequal and very long, basal joint of posterior tarsi very long and sometimes dilated; in the female the anterior tibiæ are normally tri-dentate, and the basal joint of the intermediate and posterior ones is simple and shorter than the apical spurs.

The habits are those of *Aphodius*, and the genus has, so far as I know, been met with in Asia Minor only. Some of the species appear in great abundance at the beginning of the spring, but only for a very short period.

Key to the Species.

A². Basal joint of posterior tarsi, compressed, and greatly dilated in the male.

Prothorax deeply punctate basal joint of hind tarsi spatuliform in the male *pteropus*.

Prothorax very slightly punctate laterally; basal joint of hind tarsi laminate and strongly arcuate *cognatus*.

A¹. Basal joint of posterior tarsi normal in both sexes.

B². Anterior tibiæ bi-dentate outwardly.

Prothorax with a faint median fuscous patch; elytra with numerous fuscous maculae *emarginatus*.

Head and prothorax black, the latter with a very narrow sub-flavescent lateral margin; elytra light straw-colour and with a sub-lacteous tinge *pallidipennis*.

B¹. Anterior tibiæ tri-dentate outwardly.

C². Clypeus not tuberculate on each side of the emargination.

Prothorax of male closely punctured; elytra punctato-striate; anterior tibiæ not sinuate inwardly *vulgatus*.

Prothorax of male hardly punctulate in the centre; elytra crenato-striate, with the intervals convex; anterior tibiæ sinuate inwardly *brachypterus*.

C¹. Clypeus tuberculate on each side of the emargination.

Prothorax of male deeply and closely punctate; elytra deeply punctato-striate, with the intervals not much raised; inner angle of anterior tibiæ distinctly triangular *excisus*.

COPTOCHIRUS PTEROPUS, Har.,

Berl. Entom. Zeitsch., 1859, p. 202, pl. v., fig. 1.

Black, with the lateral part of the clypeus, a narrow lateral band on the prothorax, the elytra and legs flavescent, the latter with the discoidal part more or less infuscate; head and prothorax glabrous, but the latter is fringed laterally with long hairs; elytra briefly but densely pubescent; head closely punctate, with the punctures rarer in the anterior part of the clypeus which is broadly incised in both sexes, but more so in the male, and in which also the angles of the incision are more recurved; the genæ project at right angle above the eye, and are in a line with the lateral part of the clypeus; prothorax deeply and very closely punctured, the punctures a little deeper in the female, in which also the sides are distinctly more emarginate past the median part, not very convex, and with the base distinctly marginate and not very sinuate; scutellum short, deeply impressed in the centre, and impunctate; elytra sub-parallel, with the humeral angles rounded, moderately deeply punctato-striate with the internals convex, and minutely aciculate, the first three dorsal striæ and the marginal one alone reach to the apex, the seventh and eighth are of the same length and reach to the apex of the humeral

callus and the ninth is often nearly obliterated ; in the male the basal joint of the posterior tibiæ is inflated into a patelliform process which is not quite symmetrical, the inner part being a little narrower and less rounded than the outer, and the apical spurs are longer than in the female.

Harold figures this patelliform process as symmetrical ; such is not the case with my examples, which, however, may prove to belong to another species.

Length $4\frac{1}{4}$ – $5\frac{1}{2}$ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Malmesbury, Worcester, Caledon, Riversdale).

COPTOCHIRUS COGNATUS, n. spec.

Very similar to *C. pteropus*, but nearly glabrous. In the male, the only sex I know, the clypeus is not more deeply incised than in the female of *C. pteropus*, and the angles of the incision are similar, the head is only slightly punctate, and there is a distinct frontal, transverse impressed line ; the prothorax is very slightly punctate and a little more ampliate laterally in front ; the elytra are similar but nearly glabrous, except in the posterior part where they are extremely briefly pubescent, and the basal joint of the posterior tarsi is moderately dilated and strongly arcuate inwardly.

Length 5 mm. ; width $2\frac{1}{2}$ mm.

Hab. Cape Colony (Cape Town).

COPTOCHIRUS EMARGINATUS, Germ.,

Ins. Spec. Nov., 1823, p. 112.

Pale testaceous, shining but briefly pubescent ; prothorax with a broad lateral lighter band ; elytra with small fuscous maculæ ; clypeus deeply incised in the centre and with the margins strongly reflexed, very little oblique laterally, genæ projecting at right angle above the eye but in a line with the lateral part of clypeus, the head is closely and fairly deeply punctate, somewhat deeply impressed in the anterior part of the clypeus, and has a frontal transverse carina very broadly interrupted in the middle ; prothorax slightly rounded laterally from the anterior to the posterior angle which is somewhat rounded and not emarginate, base hardly sinuate and very slightly emarginate, it is very little convex, somewhat closely punctulate, and is fringed laterally with long hairs ; scutellum short, impunctate ; elytra punctato-striate, striae deep, punctate, the first three dorsal

and the marginal striae alone reach to the apex, while towards the base the six inner striae reach it, the seventh, which is only slightly shorter than the eighth, reaches nearly to the base of the humeral callus, and the ninth is not very distinct, the intervals are convex, and tectiform; basal joint of posterior tibiae straight and as long as the apical spur in the male; under side very briefly pubescent.

Length $4\frac{1}{4}$ –5 mm.; width $2\text{--}2\frac{1}{2}$ mm.

Hab. Cape Colony (Cape Town, Worcester, Stellenbosch, Paarl).

Coptochirus pallidipennis, Har.,

Coleopt., Heft. iv., 1868, p. 84.

Black, shining, glabrous, with a narrow lateral pallid band on the prothorax; elytra pale straw-colour, nearly transparent, and with the lacteous wings underneath giving them a slightly whitish appearance; head closely but not deeply punctulate, clypeus slightly marginate in the centre and with the margin recurved very distinctly on each side of the emargination, oblique laterally, genae projecting at a right angle above the eye and in a line from there with the lateral part of the clypeus, head deeply impressed in the anterior part of the clypeus, and with a faint median elevation; intra-ocular transverse ridge indistinct; prothorax not much convex, ampliate laterally from the anterior angle to past the median part where it is deeply incised and produced straight from there to the basal angle which is distinct, the base is not sinuate on each side, and is slightly marginate; scutellum short, impunctate; elytra punctato-striate, with the intervals convex and the first four striae as well as the outer marginal one reaching to the apex, while towards the base the seventh and eighth striae are of equal size, and reach to near the humeral callus, the ninth is not distinctly punctulate.

Length $3\frac{1}{4}$ mm.; width $1\frac{3}{4}$ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Worcester).

Coptochirus vulgatus, Har.,

Coleopt., Heft. iii., 1868, p. 84.

Black, shining; prothorax with a very narrow sub-flavescent lateral margin; elytra pale testaceous but slightly infusate in the dorsal part; upper side nearly glabrous; similar in all respects to *C. pteropus*, except that it is not pubescent, the prothorax is not fringed with long hairs, and the basal joint of the hind tarsi is cylindrical, and as slender as the others; it is also half the size of

C. pteropus, and the female is differentiated from that of the last-named species by the very slightly punctate prothorax, and also the absence of a fringe of long hairs on the sides of it. In the male the two outer teeth of the anterior tibiae are not quite so much separated as in *C. pteropus*, and there is a faint trace of a third.

Length 4 mm.; width 2 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Worcester).

COPTOCHIRUS BRACHYPTERUS, Har.,

Coleopt., Heft. iii., 1868, p. 85.

Black, with a very narrow sub-flavescens marginal band on the sides of the prothorax; elytra and legs pale testaceous; head very finely punctured but more distinctly in the female than in the male, moderately deeply incised in the male and deeply emarginate in the female with the angles of the emargination rounded and not reflexed in either sex, slightly gibbous in the centre, and with no impressed transverse line; prothorax very feebly punctulate in the male, but distinctly and closely punctured in the female, deeply sinuate laterally in the posterior part in this sex and with the posterior angle strongly defined, sub-rotund laterally in the male and without any posterior angle, base not emarginate in the middle; scutellum impunctate, obsoletely impressed; elytra deeply punctato-striate with the intervals convex, tectiform, carinate behind, impunctate and almost glabrous, they reach to the apex, with the exception of the fourth, sixth, and seventh, and the ninth is more carinate than the others for the whole length; basal joint of posterior tarsi simple, slender very slightly curved, and as long as the outer apical spur in both sexes.

Length $3\frac{1}{5}$ – $4\frac{1}{4}$ mm.; width $1\frac{1}{2}$ –2 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Malmesbury, Paarl).

COPTOCHIRUS EXCISUS, Har.,

Coleopt., Heft. iii., 1868, p. 85.

This species is of the same size as *C. vulgatus*, nearly of the same colour except that the prothorax has a much broader lateral flavescens band; the male is distinguished, however, by the much more deeply incised clypeus the angles of which are distinctly recurved and slightly tuberculate; the prothorax is also much more rounded laterally and sinuate towards the base; the anterior tibiae

are distinctly sinuate inwardly, tri-dentate outwardly, the basal tooth, however, being much smaller than the median one, and the inner apical part of the fore-tibiæ is more dilated; this dilatation of the tibiæ and also the deeply incised and sub-tuberculate clypeus are the two characters distinguishing this species from *C. brachypterus*, in which the anterior tibiæ have also a third, slightly angular projection above the basal digit, but are not quite tri-dentate; the females, however, of these two species are hardly distinguishable, except that the prothorax is more broadly flavescent laterally in *C. excisus*.

Length $3\frac{3}{4}$ – $4\frac{1}{4}$ mm. ; width 2 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Worcester, Bredasdorp, Uitenhage), Transvaal (Potchefstroom).

DREPANOCANTHUS, n. gen.

Buccal organs of *Harmogaster*; clypeus very deeply emarginate, diagonal laterally from the genæ, which are angular, in a line with the eye; prothorax not obliquely attenuate laterally towards the base, and with a median longitudinal basal groove; elytra sharply carinate, with the intervals erenato-punctate; the two basal segments of abdomen carinate in the middle, and not free; anterior tibiæ of male tri-dentate outwardly, truncate, and with the apical spur curved inwardly at tip and set near the inner angle, the inner part of the tibiæ is thickened or laminate inwardly near the apex; the apical inner spur of the posterior tibiæ is very long, and the basal joint of the posterior tarsi is incurved and sharply spinose inwardly; in the female the anterior tibiæ are normal, but the apical spur of the posterior tibiæ is longer than the basal tarsal joint. The insects included in this new genus are generally found covered with mud; they fly at sunset in the autumn or beginning of the spring; I have found *D. intrusus* occasionally under partly dried cow-dung, but they are generally met with in dung.

The genus has no foreign representative.

Key to the Species.

A². Elytra with four carinate costæ on each side.

Clypeus of male broadly and deeply emarginate; basal joint of posterior tarsi in the male very long, strongly arcuate and ending in a very long inner apical spine projecting beyond the apical spur. *acanthotarsis*.

A¹. Elytra with nine carinate costæ on each side.

B³. Intervals of elytra filled with transverse punctures.

Clypeus of male deeply incised; basal joint of posterior tarsi in the male similar to that of *acanthotarsis* *eximius*.

B². Intervals of elytra filled with round punctures.

Clypeus of male deeply incised, and with the angles of the incision sharply recurved; inner spine of the basal joint of hind tarsi half the length of the apical spur *spinitalarsis*.

Clypeus of male deeply incised though less deeply than in *spinitalarsis*, and with the angles of the incision less sharply recurved; inner spine of the basal joint of hind tarsi short *connexus*.

B¹. Clypeus not deeply emarginate; intervals of elytra with a double series of punctures divided by a fine raised line; basal joint of hind tarsi very short. *intrusus*.

DREPANOCANTHUS ACANTHOTARSIS, n. spec.

Black, very briefly pubescent, and with a narrow outer brownish margin on the prothorax; elytra and legs light testaceous brown; antennæ and palpi fuscous; clypeus broadly emarginate in front and with the outer angles rounded, not very oblique laterally, genæ projecting nearly at right angles, but in a line with the sides of the clypeus, the head is very closely punctulate and simple, without any trace of transverse frontal groove; prothorax nearly sub-parallel if viewed from above, but a little ampliate laterally in the anterior part, base slightly bi-sinuate and marginate, upper part slightly convex, covered with very closely set, round punctures which are briefly setigerous, median part with a distinct longitudinal groove beginning near the centre and reaching the base; scutellum ogival, carinate longitudinally in the middle; elytra parallel for four-fifths of the length, attenuate behind, convex, sub-declivous in the posterior part, and having four carinate costæ on each side, the suture itself is carinate, and the intervals are filled with three series of round, somewhat shallow punctures, but the median series of the first and second intervals become sub-carinate at apex; abdomen and pectus very sparingly and briefly pubescent, metasternum finely grooved longitudinally; anterior tibiæ of the male ampliatio-laminate inwardly from the apex to under the outer basal tooth; basal joint of intermediate tarsi a little curved at the base and twice as long as the apical spur, basal joint of posterior tarsi very strongly curved inwardly and continued in a diagonal inner spine reaching further than the apical spur; in the female these basal joints are normal,

and are a little longer than the apical spur, and the anterior tibiae are not amplified inwardly at tip.

Length 4-5½ mm. ; width 2-2¼ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Worcester, Hope Town), ? Southern Rhodesia (between the Zambesi and the Limpopo Rivers).

DREPANOCANTHUS EXIMIUS, n. spec.

Black, briefly pubescent, with the elytra and the legs chocolate-brown; head as in the preceding species, but the clypeus is more deeply incised at apex, and the angles of the incision are sharp and reflexed; the shape of the prothorax is the same, and it is covered with deep, closely set punctures, but there is no marginal paler band and the outer margins have a fringe of moderately dense, long hairs; the median longitudinal groove is a little more shallow, but of equal length; the scutellum has a longitudinal median carina, and the elytra have on each side nine sharp carinae, the first three of which, as well as the fifth and the seventh, reach to the apex; the intervals are filled with transverse punctures the walls of which reach from one carina to the other; under side hardly pubescent; anterior tibiae of the male triangularly dilated inwardly under the second outer tooth, basal joint of intermediate tarsi, nearly straight, and a little shorter than the apical spur, that of the posterior tarsi strongly curved inwardly, and produced in a long, sub-diagonal spine directed towards the apex of the apical spur.

Length 4 mm. ; width 2 mm.

Hab. Cape Colony (Uitenhage).

DREPANOCANTHUS SPINITARSIS, n. spec.

Livid brown, sub-opaque, glabrous, median part of the prothorax broadly infuscate; clypeus very deeply incised, depressed in front, and with the angles of the incision sharp and reflexed in the male, broadly and deeply emarginate in the female, genae projecting at right angles above the eye, and with the angle a little sharper in the male than in the female, head finely punctulate in front, more deeply behind, slightly raised in the middle and having a faint, transverse impressed frontal line in the centre, this frontal line is absent in the female the head of which is also more deeply and equally punctured; prothorax hardly amplify laterally in the middle, little convex, very

slightly bi-sinuate in the base which is not marginate, and covered with very closely set, deep punctures, the median longitudinal groove is nearly obliterated; scutellum small, not carinate longitudinally; elytra very sharply carinate, the first three as well as the fifth, seventh, and ninth carina reaching to the apex, intervals filled with a series of deep, round punctures; under side almost glabrous; anterior tibiae of male broadly dilated triangularly inwardly at apex, basal joint of intermediate tarsi straight, briefly spinose inwardly but shorter even with the spine than the apical spur, basal joint of posterior tarsi slightly inflexed and produced inwardly in a diagonal tooth reaching to about the same length as the apical spur.

Length $3-3\frac{1}{2}$ mm.; width $1\frac{1}{2}-1\frac{1}{3}$ mm.

Hab. Natal (Estcourt, Durban).

DREPANOCERUS CONNEXUS, n. spec.

Very closely allied to *D. spinitarsis*, but the clypeus in the male is not so narrowly and so deeply incised, and the angles of the emargination, although also reflexed, are not sub-tuberculate, the frontal impressed line is not distinct, the shape and sculpture of the prothorax and elytra are identical, but the longitudinal median groove in the former is very distinct, and in the male the basal joint of the posterior tarsi is nearly straight, as long as the apical spur, and is briefly hamate inwardly at apex; the anterior tibiae are not so triangularly dilated inwardly. The female is unknown to me.

Length 4 mm.; width 2 mm.

Hab. Cape Colony (Somerset East, Kimberley).

This species bore in Drège's collection the name of *Oxyomus geminatus* Sturm (in litt.).

DREPANOCANTHUS INTRUSUS, n. spec.

Black, sub-opaque, nearly glabrous, legs piccous red; head closely punctulate, simple, clypeus broadly but not very deeply emarginate in both sexes, and with the angles of the emargination not sharp, slightly sinuate laterally, genæ projecting nearly at right angles above the eyes; prothorax moderately convex, very slightly rounded laterally but not ampliate, marginate along the base the outer angles of which are moderately sharp, deeply and closely punctulate, briefly and not densely fringed with hairs laterally, and with the

median discoidal groove distinct from the median part to the base; scutellum carinate longitudinally in the middle; elytra costate for the greatest part of the length, sharply carinate in the posterior part, and with the intervals filled with transverse punctures divided into two by a fine, raised line; under side nearly glabrous, somewhat roughly punctulate; anterior tibiae of male very slightly amplified inwardly at tip; basal joint of posterior tarsi slightly incurved and produced into a very short, inner tooth, and not longer than the apical spur.

Length $4\frac{1}{4}$ –5 mm.; width $2\text{--}2\frac{1}{2}$ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Worcester, Paarl, Somerset East, Hope Town, Uitenhage, Graham's Town), Natal (Malvern).

This species resembles *Harmogaster exarata* in the shape of the prothorax, and also in the sculpture of the elytra.

LIPAROCHIRUS, n. gen.

Mentum a little attenuate laterally towards the anterior part which is emarginate in the middle at apex, ligula invisible, labial palpi short, basal joint in the shape of an inverted truncate cone, second shorter and a little narrower, apical one sub-fusiform, not acuminate at tip, narrower than the intermediate joint, and nearly twice as long; maxillae and maxillary palpi of *Aphodius*; clypeus quite rounded laterally at tip, genae in a line with the clypeus, and produced in a sharp angle at a short distance from the eye which is large, and the posterior part of which is only very slightly hidden by the prothorax, there is a very slight frontal impressed transverse line; prothorax and elytra of *Ammonoecius*; abdominal segments not free; anterior tibiae nearly straight at tip, with the apical outer tooth also nearly straight, and the short apical spur straight, and forming the inner angle of the truncate part.

This genus is distinguished from *Ammonoecius*, the buccal organs of which are nearly similar, by the shape of the anterior tibiae which are not obliquely truncate at tip, and all the striae on the elytra reach to the base.

LIPAROCHIRUS SIMPLEX, n. spec.

Black, shining; palpi, legs and tarsi piceous red, antennae flavous; head semicircular, not emarginate in the anterior part, genae forming a distinct basal angle at a small distance from the eyes, the margin

of the clypeus is very slightly reflexed, there is a very slight, nearly obliterated transverse impressed line between the genæ, and the whole surface is covered with deep, closely set, round punctures; prothorax slightly ampliate laterally at middle, not obliquely attenuate towards the base the angles of which are sharp, somewhat convex, and covered with round, closely set, deep punctures, a little smaller or more shallow along the anterior than along the posterior margin, it is glabrous, but the lateral and basal margins are ciliate; scutellum very narrow, elongate, impunctate; elytra oblong, with the humeral angles sharp, convex, deeply striate, the striæ filled with a series of deep, somewhat transverse punctures intruding on the sides of the intervals which are strongly costate and smooth, while from each puncture springs a short, whitish hair, forming a very brief pubescence, especially in the posterior declivity, all the lateral striæ reach the base and also the apex, and the intervals are a little more carinate and the punctures in the striæ are deeper and broader on the sides; the abdominal segments are covered with deep, almost confluent foveæ from the intervals of which spring a few lateral stiff ciliæ, but the whole of the apical segment is densely ciliate; mesosternum and metasternum entirely covered with similar, round foveæ; tibiæ also foveate, anterior ones truncate at tip and with a short spur curving slightly downwards, and set in the angle of the inner part, apical outer tooth slightly oblique, the other two teeth straight, and the space between the basal tooth and the elbow bluntly pluri-serrate; anterior tarsi short; basal joint of posterior tarsi longer than the apical spurs.

Length $4\frac{1}{4}$ mm.; width 2 mm.

Hab. Southern Rhodesia (Salisbury).

LORDITOMÆUS, n. gen.

Mentum ampliate and rounded laterally in the median part, deeply emarginate at tip, the emargination being broadly arcuate, the surface is plane, with a few long bristles two of which on each side are very long, and the upper margin has also a few bristles; the ligula is very small, membranaceous, and finely ciliate; the labial palpi are somewhat long, with the basal joint bristly, and the bristles very long inwardly, the apical joint is as long as the basal, and fusiform, but sub-truncate at tip; maxillæ moderately long, robust, apical lobe membranous, longer than broad, inner lobe very slender, membranous, toothless; maxillary palpi long, apical one not so long as the second, sub-fusiform but more swollen inwardly than outwardly, and sub-

acuminate at tip, penultimate joint deeply excavate outwardly; clypeus slightly sinuate at tip, genæ projecting at right angles above the eye and for a long distance; head and prothorax simple, the latter depressed with the sides slightly recurved; scutellum narrow, moderately long, very sharp at tip; elytra depressed, and having on each side seven striae, outer margin depressed; epipleura broad and of nearly equal width for the greatest part of the length; median part of metasternum plane, distinctly grooved in the centre, femora not very robust; tibiae slender, anterior ones moderately thickened towards the tip, straight across at apex and having a moderately long apical spur in the inner angle, and the tarsi inserted therefore in the apical transverse part, the three outer teeth are moderately strong, the last one being in a line with the truncate part, and there is no serration above them; intermediate and posterior tibiae feebly grooved on the upper side and with two transverse teeth.

This name is proposed for *Aphodius deplanatus*, Roth, which differs from *Aphodius* in the shape of the anterior tibiae, the excavation of the second joint of the maxillary palpi which are very long, the seven striated elytra, the broad, somewhat sub-horizontal epipleura which are of the same width for the greatest part of the length, and the depressed facies which is not unlike that of some *Lordites*.

LORDITOMÆUS DEPLANATUS, Roth,
Wieg. Arch., i. 1851, p. 131.

A. opatroides, Klug, Monatsb. Berl. Ac., 1855, p. 656; Peters' Reis., 1862, p. 246, pl. xiv., fig. 12.

Fuscous brown, opaque, with the sides of the prothorax narrowly flavous, legs also pale flavous; body depressed, pubescent; head deeply and broadly punctured along the base, clypeal part impunctate, the genæ are sub-triangular, the base projecting much at right angles above the eyes, the clypeus is very obliquely attenuate from, but not quite in a line with, the apex of the genæ, and it is slightly sinuate in the anterior part; prothorax depressed, especially the sides the outer margin of which is oblique, distinctly broader across the basal part than at apex and reflexed, it is deeply and closely punctured, the punctures are setigerous, the outer sides alone are marginate, the base is deeply sinuate on each side of the median part and setulose; scutellum long, sharp, impunctate except along the base; elytra oblong, depressed, but with the suture raised, narrowly striate but with the striae geminate and distinctly punctate, intervals plane, apparently

impunctate but bearing two or three rows of fine, erect, short, greyish hairs reduced to one setulose row in the posterior part, and often rubbed off on the disk, seventh stria stopping short of the base near the humeral angle; abdomen very briefly pubescent, pectus glabrous, metasternum deeply but finely grooved; anterior tibiæ tri-dentate outwardly, apical tooth not very oblique, all three teeth set moderately close to each other, apical spur slender, moderately long.

Length 7 mm.; width 4 mm.

Hab. Southern Rhodesia (Salisbury). Occurs also in Abyssinia and Senegal.

GEN. SYBAX, Bohem.

Insect. Caffrar., ii., p. 365.

Hypoplatys, Har.

Mentum a little attenuate laterally from the base to the tip, deeply emarginate at apex, somewhat concave in the middle, and densely bristly, labial palpi moderately short, joints of nearly equal length, the two basal ones sub-cylindrical, the apical one sub-fusiform, lobes of ligulæ long, broadly divaricating, upper lobe of maxillæ normal, inner lobe much longer than in *Aphodius* but very slender; joints of maxillary palpi somewhat long, apical one fusiform and slightly truncate at tip; clava of antennæ small; head more or less deeply emarginate in the anterior part of the clypeus, genæ projecting; prothorax convex, very broadly grooved longitudinally in the centre and with the outer margins depressed and marginate; scutellum narrow, sub-oblong; elytra convex, acuminate behind, three or four costate with the intervals plane, epipleura moderately broad and quite distinct right to the apical part; pygidium covered by the elytra; abdominal segments free; prosternum not carinate, metasternum very broad and long, quite plane, grooved longitudinally but not impressed; femora and tibiæ compressed, anterior coxæ very broad, anterior tibiæ broadly dilated internally in the shape of a curved lamina truncate at tip close to the straight, lanceolate apical spur, bi- or tri-dentate outwardly, the two apical teeth being sometimes connate at base, sub-obliquely truncate at apex, intermediate and posterior tibiæ somewhat sinuose inwardly and having two transverse briefly ciliate carinæ *en chevron*; apical spurs of equal length, moderately short, and not equal in length to the basal joint.

This genus includes two singular insects, which are covered with

a thick whitish yellow or pale straw-colour coating over the sculpture. There are sexual differences, and in one the outer teeth of the tibiæ are three in number in the male, the two apical ones being united at base, whereas in the female the basal one is absent; in the other species, the male of which is unknown, the female has three normally disposed teeth.

One of the two species is known to occur in Abyssinia.*

The shape of the valves of the penis differ much from that of *Aphodius*, being quite cylindrical at base, and sub-orbicular at tip.

Key to the Species.

Elytra with four sharp carinæ, of which the third is obliterated at a short distance from the base on each side *sulcicollis*.

Elytra with two sharp carinæ and a slightly raised supra-lateral costa on each side *impressicollis*.

SYBAX SULCICOLLIS, Bohem.,

Insect. Caffr., ii., p. 366, pl. i., fig. D, 1, 5.

Entirely covered with a pale straw-coloured coating hiding nearly the whole sculpture; body glabrous, but with the sides of the head and prothorax fringed with very dense, pallid hairs, outer part of anterior tibiæ and inner part of the intermediate and posterior ones also fringed with short hairs; antennæ ashy grey; in the male the clypeus is deeply impressed in front, broadly emarginate with the angles of the emargination produced in a distinctly recurved tooth, on each side of the central part there is another impression divided by a long, longitudinal tubercle abutting towards the apex on a moderately raised transverse carina ending on each side in a sharp but small tubercle; in the female the clypeus is deeply emarginate, but not toothed, and the central longitudinal tubercle, and also the juxta-ocular apical ones are not so much developed; prothorax deeply sinuate in front, slightly diagonal laterally, but straight from the anterior to the posterior angle which is sharp, the base is marginate, deeply sinuate near the outer angle and less so in the middle, in the median part of the disk there is a broad, deep, longitudinal groove with rounded walls, a broad, transverse impression in the anterior part on each side, and a sub-parallel one at about the median part which is more pronounced in the female, and the fringe of slightly curling hairs is very dense; in the male the whole surface is hidden

* Mr. G. A. Marshall informs me that he has found *S. sulcicollis* fairly common in dung, and on the wing in the daytime.

by the pale coating, but in the female there is a transverse series of deep punctures along the anterior margin, as well as a few scattered ones on the discoidal part, and the walls of the median groove are also finely aciculate; elytra elongate, slightly sinuate laterally near the shoulder where they are a little narrower than the prothorax, sub-parallel for the greatest part of the length, conspicuously attenuate behind, and singly aculeate at apex, the suture is conspicuously raised, and there is on each side four sharp, highly raised ridges, the first and fourth of which reach to the apex, while the second is a little shorter, and the fourth disappears at a short distance from the base, intervals plane and without visible traces of punctuation; under side and legs not visibly punctate; anterior tibiae tri-dentate in the male, the two apical teeth being united at base, and the basal one well developed; in the female the basal tooth has disappeared and the two apical ones are also united at base; in the male the intermediate and posterior tibiae are more swollen inwardly at middle, the outer spur of the intermediate tibiae is obliterated, and the inner one is strong and hamate.

Length 7–11 mm.; width $3\frac{1}{2}$ – $4\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Umfuli River).

SYBAX IMPRESSICOLLIS, Bohem.,

Insect. Caffrar., ii., p. 367, pl. i., fig. D, 6.

Hypoplatys helophoroides, Har., *Berl. Ent. Zeitschr.*, 1859, p. 221, pl. v., fig. 3.

A little smaller than small examples of *S. sulcicollis*; this species, of which the female only is known, differs from that of *S. sulcicollis* in having the clypeus much less deeply emarginate, two fainter impressions on the head, and a transverse, not tuberculate groove on the vertex; the shape of the prothorax is identical, but the longitudinal groove is very shallow with the walls hardly raised, and has a series of punctures in the centre, the lateral margin is not so deeply impressed, the median oblique impression on each side of the disk is replaced by a short, oblique row of punctures, the elytra have the same shape, but instead of having four sharp ridges on each side, there are two dorsal ones distinct, but not so sharp or so much raised as in *S. sulcicollis*, and a very faint supra-lateral one which is hardly discernible past the median part, the intervals are plane, but through the yellowish white coating one can see a row of punctures on each side of the costæ, and the costæ themselves are minutely pubescent; in the only example at my disposal, one of Boheman's

co-types, there is above the carinate outer margin a row of deep punctures not covered by the coating, and which is a little overhung by a slight, costate prominence; abdomen briefly pubescent, pectus not quite glabrous; anterior tibiæ normally tri-dentate, the inner lamina light testaceous as in *S. sulcicollis*.

Male unknown.

Length $7\frac{3}{4}$ mm.; width $3\frac{1}{2}$ mm.

Hab. Neighbourhood of the Orange River (teste Boheman). This species has been met with in Abyssinia and Somaliland.

GEN. NOTOCAULUS, Quedenf.,

Berl. Entom. Zeitschr., 1884, p. 285.

Mentum transverse, slightly sinuate in front, a little pilose; labial palpi very short, maxillary palpi elongate, last joint elongato-ovate, sub-truncate at tip; eyes large, inferior part rounded, superior part a little hidden by the prothorax; antennæ nine-jointed; head large and having on the vertex some tubercles transversely disposed, frontal part briefly carinate longitudinally in the centre, median part of clypeus and also the sides slightly concave, genæ distinctly prominent; prothorax hardly longer than broad, narrowed and sinuate in front, tri-costate on the disk and with the sides excavate and reflexed on the upper part; scutellum small, narrow, moderately conspicuous; elytra a little broader than the thorax and strongly costate; under side densely and roughly punctate, prosternum very narrow and produced in a short carina in front of the coxæ; mesosternum finely carinate, metasternum slightly impressed, and manifestly canaliculate; fore-legs short, base of femora dilated in a strong angle; tibiæ bi-dentate at apex, apical spur short, cylindrical, truncate.

NOTOCAULUS AURICULATUS, Quedenf.,

Loc. cit., p. 287.

“Convex, ovate, opaque, ferruginous; head and pectus dark brown, the former densely punctulate and having on the vertex four tubercles disposed transversely, frontal part briefly carinate longitudinally, clypeus excavate in front of the carina and also on the sides; prothorax equally punctured, the punctures being moderately dense, sinuate and attenuate in front, transversely callous on each side past the apex, tri-costate on the disk with the superior edge of

the sides reflexed but overhanging laterally, the inferior one in an auriculate shape, base bi-sinuate, posterior angles acute; scutellum elongate, triangular; elytra ovate and having eight costæ, costæ 2, 4, 6, and 8 being less raised than the others, intervals transversely crenulate; under side densely punctate, legs short, the four posterior ones bi-carinate and denticulate.

Length 4 mm.

Hab. Port Natal."

GEN. RHYSEMUS, Muls.,

Coleopt. d. Franc. Lamellic., 1842, p. 314.

Mentum very deeply incised at the tip; ligula small, hardly projecting beyond the mentum, basal joint small, second one much broader than long, apical one larger than the other two put together, swollen, sub-acuminate towards the apex, and directed inwardly; apical lobe of maxillæ partly horny, inner one entirely horny; and both ciliate inwardly; apical joint of maxillary palpi strongly fusiform in the inner part, and nearly straight outwardly; mandibles with a horny molar tooth; head convex, upper part of the eyes hidden; prothorax much rounded laterally behind, moderately convex, and having transverse, serrulate ridges; elytra covering almost entirely the pygidium; anterior tibiæ tri-dentate outwardly and obliquely truncate inwardly as in *Aphodius*; abdomen somewhat convex, apical segment separated from the penultimate one by a deeper and broader sulcus; metasternum of *Aphodius*.

The genus is represented in Europe, Northern America, Ceylon, Africa (Senegal, Angola).

The South African species, with one exception, closely resemble *R. germanus* of Europe, which has been met also in Abyssinia, in Gallaland and Massailand according to Kolbe, and is also found in the Cape Colony. The South African species have on the prothorax four transverse crenulate, slightly arcuate ridges, the two posterior of which are interrupted in the centre and united by a longitudinal raised ridge, which is the wall of a posterior sulcus.

Key to the Species.

Elytra with four very sharply carinate costæ, much more raised than the alternate ones *carinatipennis*.

Elytra with all the costæ of equal height, the carinæ made serrate by a series of transverse, deep punctures *atramentarius*.

Elytra with the five dorsal costæ sharply tectiform, and the carinate part not deeply impressed by transverse punctures .. *germanus*.

Elytra with the costæ nearly divided in two by the lateral foveate punctures; transverse carinæ on the prothorax very distinct *promontorii*.

Elytra with the costæ strongly foveolate laterally; transverse carinæ on the prothorax slightly obliterated.. .. *cælatus*.

RHYSSEMUS CARINATIPENNIS, n. spec.

Black; opaque, glabrous, palpi, and legs ferruginous red; head somewhat convex, roughly granulose, clypeus deeply emarginate with the emargination arcuate and sharply angular on each side, genæ broadly triangular laterally, but without any trace of suture; prothorax nearly straight laterally, but very oblique towards the base which is feebly marginate and has a distinct fringe of short, thick bristles, it is not very convex, and beyond the anterior part, which has a somewhat indistinctly transverse row of granules, there are two entire, bluntly serrulate ridges reaching nearly from side to side, and under these are two more which are interrupted in the middle and united with one another by a longitudinal carina, the median space left open representing the basal sulcus, along the base there is also a more or less distinct transverse series of granules; scutellum very small; elytra nearly oblong, but very slightly ampliate laterally past the median part, convex, and with the humeral angles very sharp; they have on each side four very sharp, non-granulose carinate costæ, and the alternate ones are much less raised, and are interrupted by regularly disposed transverse impressions, on the sides these alternate costæ are strongly serrate, the striæ are narrow, rugulose, and the sides of the costæ are punctate, the punctuation is stronger and more visible on the highly carinate ones; under side slightly rugose; basal joint of posterior tarsi slightly longer than the apical spur.

Length $3\frac{3}{4}$ –4 mm.; width $1\frac{1}{5}$ –2 mm.

Hab. Southern Rhodesia (Salisbury).

RHYSSEMUS ATRAMENTARIUS, n. spec.

Colour, shape, sculpture of the head and prothorax as in the preceding species, but the sculpture of the elytra is different; the costæ are tectiform and all of equal height, they bear on the upper side a series of equi-distant, elongate granules separated by

plane transverse intervals, and the striae, which are very narrow, have a series of very small granules running nearly parallel with those on the costæ; the latter are almost always of equal height, but I have seen two examples in which the two dorsal ones were a little higher than the others; the sutural costa is not granulose; basal joint of posterior tarsi slightly shorter than the apical spur.

Length $3\frac{1}{4}$ – $3\frac{3}{4}$ mm.; width $1\frac{1}{2}$ – $1\frac{3}{4}$ mm.

Hab. Cape Colony (Cape Town), Natal (Frere).

RHYSSEMUS GERMANUS, Linn.,

Syst. Natur., i., 2, p. 566.

Resembles closely *R. atramentarius*, but the elytra are a little less parallel, the humeral angles are not so sharp, and the elytra are a little less elongate, the dorsal costæ are also tectiform, but the first four dorsal ones are more distinctly carinate at tip, and the sharp line is hardly punctulate, even the lateral costæ are not deeply punctate, the striae are punctate, not granulose, and the walls of the tectiform costæ are manifestly punctate; the basal joint of the posterior tibiae is a little shorter than the apical spur. In my South African examples (2) the sides of the costæ are not quite as deeply punctate as in the European ones.

Length 3 mm.; width $1\frac{1}{2}$ mm.

Hab. Cape Colony (Hope Town).

RHYSSEMUS PROMONTORII, n. spec.

Head and prothorax fuscous black, elytra dark ferruginous or fuscous brown; the shape and the sculpture of the head and prothorax are similar to those of the preceding species, but the sculpture of the costæ on the elytra is different, these costæ are tectiform, but they have on each side a slanting, deep, foveate puncture impinging on the apex of the costa and making it appear granose, moreover, these punctures in the basal part, and also on the sides are somewhat deeper in proportion near the top of the sides, and the costa seems to be more or less duplicate, the striae are very narrow, and the basal joint of the posterior tarsi is slightly shorter than the apical spur.

Length $3\frac{3}{4}$ mm.; width 4 mm.

Hab. Cape Colony (Hope Town).

RHYSSEMUS CÆLATUS, n. spec.

This species is very much like *R. promontorii*, but it is a little more slender, and the two examples which I have seen are more ferruginous; on the elytra the costæ are more tectiform, much more impressed laterally by the deeper transverse foveæ which fill the whole of the sides, but leave, at least in the dorsal part, a fine, only slightly impressed transversely carinate line; basal joint of posterior tarsi as in *R. promontorii*.

GEN. PSAMMOBIUS, Heer.,

Faun. Helvet., i., 1841, p. 531.

Mentum obliquely attenuate laterally, emarginate at the tip, ligula finely ciliate, bi-lobate, projecting beyond the mentum, labrum hidden by the clypeus, upper lobe of maxillæ partly horny, more or less arcuate and armed inwardly with some small teeth or spines, inner lobe very narrow; labial palpi with the first joint small, second a little longer than the first, obliquely truncate inwardly at tip, apical one large, sub-ovate, but more convex outwardly than inwardly, and truncate at tip; maxillary palpi with the apical joint nearly as long as all the others put together, fusiform in the inner part and sub-fusiform outwardly; head convex, upper part of the eyes nearly hidden; prothorax a little ampliate laterally in the middle, deeply sulcate transversely in front and behind in the South African species, slightly grooved longitudinally in the posterior part, and having laterally a transverse fossa; scutellum very small; elytra covering the abdomen; prosternum as in *Aphodius*; anterior tibiæ tri-dentate outwardly; tarsi short, first joint triangularly dilated, shorter than the longer of the two apical spurs, claws very small.

The genus is represented in Europe, Syria, Arabia, India, Ceylon, Java, Northern America, and Africa (Northern Africa, Abyssinia). There are three in South Africa, one of which, however, might prove to be identical with one of the two new species now described.

Key to the Species.

Prothorax deeply foveato-punctate and with the supra-lateral fovea very long and transverse; intervals of elytra convex, striæ with a series of deep punctures impinging on the intervals *modestus*.

Prothorax irregularly punctate, supra-lateral fovea small, intervals of elytra plane in the dorsal part, punctures of striæ small, not impinging on the intervals *sub-ciliatus*.

Prothorax with only a few punctures in the median part, supra-lateral fovea not very long *evanidus*.

PSAMMODIUS MODESTUS, n. spec.

Head and prothorax piceous; elytra, legs, and under side ferruginous; head convex, covered with deep foveate punctures separated by rugose intervals, somewhat granular on the vertex, the genæ are very prominent and bluntly triangular, the clypeus is moderately oblique laterally, broad at apex, where it is very slightly incised in the centre, and with the outer angles well defined; prothorax broader than long, rounded and slightly ampliate laterally, marginate along the base and covered with broad, deep, irregular scrobiculate punctures, the lateral fossa is transverse and very distinct, and in the median part there is a somewhat ill-defined groove reaching from the middle part to the base; elytra very convex, ampliate laterally from the median to the posterior part, the anterior angles are sharp, the striæ are deep and strongly punctate, the punctures impinging on the costæ, the intervals are convex, a little tectiform laterally, and impunctate, the eighth is strongly carinate and overhangs the ninth stria, which is distinctly punctate; intermediate and posterior tibiæ dilated and triangular at apex, closely serrate on the upper side, spurs of the intermediate tibiæ as long as the two basal joints of the tarsi, the first of which is slightly dilated triangularly at tip, the longest spur of the posterior ones compressed, blunt at tip, a little shorter than the intermediate ones, more robust, and as long as the two basal joints, the first of which is triangular.

Length 3 mm.; width $1\frac{1}{2}$ mm.

Hab. Natal (Frere).

PSAMMODIUS EVANIDUS, n. sp.

Testaceous red, somewhat shining; head and clypeus very convex; both are covered with granules disposed transversely in semicircular series, but the head is smooth in the basal part, clypeus oblique laterally with the outer angles rounded, and deeply and broadly emarginate at apex, genæ prominent but in a

line with the clypeus; prothorax fringed laterally and along the base which is marginate, with a few very short setae, it is smooth, but along the anterior margin there is a deep, transverse sulcus somewhat indistinctly punctured, the lateral transverse fossa is very elongate, there is a median, basal, very short furrow, and on each side of it, but more towards the median part, there are a few round, somewhat closely set foveate punctures, in shape the prothorax is similar to that of *P. modestus*; elytra nearly oblong, hardly amplified laterally past the middle, punctato-striate, but with the punctures moderately deep and the intervals moderately convex; the eighth stria is very short, and the eighth interval overhangs the ninth stria which is not punctate; intermediate and posterior tibiae dilated triangularly at apex, strongly serrate on the upper side; basal joint of intermediate tarsi dilated triangularly from the base, apical spur not long, not compressed, not obtuse at tip, and reaching the base of the fourth joint.

Length 3 mm.; width $1\frac{1}{2}$ mm.

Hab. Natal (? Frere).

PSAMMODIUS SUBCILIATUS, Har.,

Coleopt., Heft. v., 1869, p. 103.

"Shining, elongato-ovate, ferruginous; head roughly asperous; prothorax irregularly punctate and having on each side a transverse, small fovea, anterior margin sulcate transversely behind the eyes on each side, and having an obsolete longitudinal sulcus towards the base, the margins with fine setae not thickened at tip; elytra striate, the striae catenulate, and the intervals convex and smooth; metatarsal joint triangular and with the longest of the apical spurs filiform and obtuse at tip.

Length $3\frac{3}{4}$ mm.

Hab. Interior of South Africa."

I have not seen this species, and I was under the impression that *P. modestus* was identical with it, but Mons. Clouet des Pesruches, who has probably seen Harold's type, corrects the latter's description, which he contends is not very correct (*Annals Soc. Ent.* d. Belg., 1900, p. 11), and assigns to *P. sub-ciliatus* "some elytra with linear striae having small, distinct punctures not intruding at all on the edges of the intervals." Harold, however, uses the words "elytris catenulato-striatis" in his description.

GEN. PLEUROPHORUS, Muls.,

Coleopt. d. Franc. Lamellic., 1842, p. 312.

Mentum rounded laterally in front, nearly straight at tip, ligula hardly projecting beyond the mentum; apical joint of labial palpi oblongo-ovate, rounded at tip, not bent inwards as in *Psammodius*; maxillæ and maxillary palpi nearly similar to those of *Psammodius*, from which genus it is separated owing to the general facies, which is rather depressed, and by the shape of the tarsi, which are not short or triangular; the claws are distinct; the prothorax is nearly parallel, with the posterior angles sharp and the base marginate; it is very depressed, like the elytra, which are slightly narrower than the prothorax, costulate and striate.

Key to the Species.

Head with a lateral, sub-tuberculiform protuberance; prothorax with deep, closely set punctures, and sulcate on the posterior part.. *capicola*.

Head without a lateral protuberance; prothorax very finely and closely punctured, and not sulcate in the posterior part *natalensis*.

PLEUROPHORUS CAPICOLA, n. spec.

Rusty red, shining; head covered with fine but somewhat deep punctures very closely set, frontal part very convex and having on each side at a short distance from the base a transverse tuberculiform swelling, genæ much projecting and truncate at base, clypeus broadly and deeply emarginate, and with the angles distinct; prothorax nearly parallel laterally, if seen from above, and with the posterior angles very sharp, it is covered with fine, yet deep punctures, somewhat closely set and very briefly setigerous, the anterior lateral impression is very deep, the supra-lateral sub-median one is diagonally transverse and very conspicuous, and there is in the centre a somewhat narrow, longitudinal groove filled with a series of punctures; scutellum short, impunctate; elytra oblong, depressed, very slightly narrower than the prothorax, very sharply costate, with the intervals as broad as the costæ and filled with a series of broad punctures; tibiæ obtusely serrate on the upper side, basal joint of posterior tarsi longer than the apical spur which is also elongate.

Length 3 mm.; width 1 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Worcester).

This species resembles *P. casus*, but it is distinguished by the bluntly bi-tuberculate posterior part of the head, the finer and more closely set punctuation of the prothorax, and the more carinate costæ of the elytra.

PLEUOPHORUS NATALENSIS, n. spec.

Size, colour, and shape of *P. capicola*; the head, however, has no lateral protuberance, the clypeus is not so broadly emarginate; the prothorax has no median sulcate longitudinal line, and is covered with a very closely set, fine, but very distinct punctuation, there is no supra-lateral transverse impression, and the elytra are much more deeply striate; the punctures on the striæ are large and impinge distinctly on the intervals which are hardly convex; the basal joint of the posterior tibiæ is shorter than the apical spur which is very long.

Length 3-3 $\frac{3}{4}$ mm.; width 1 mm.

Hab. Natal (Estcourt).

GEN. CORYTHODERUS, Klug,

Symbol. Physic., v., 1845.

Mandibles membranaceous, very much reduced; mentum quadrangular, not emarginate at tip; ligula and labial palpi obliterated; maxillæ very robust and set with very long, stiff, bristly hairs, inner lobe invisible, upper lobe scooped inwardly, the upper side is produced into two very long horizontal parallel spines, and the lower part has three similar spines; maxillary palpi of *Rhyssenus*, but with the apical joint very sharply acuminate; clypeus rounded at tip, margins slightly reflexed, under side of margin with a series of deep foveate punctures bearing each a stiff seta; genæ hardly distinct; eyes somewhat large; antennæ with a robust, densely ciliate club; prothorax very gibbose, constricted laterally and diagonally grooved towards the base which is deeply excavate on each side; scutellum very much raised and hooked downwards; elytra gibbose in the posterior part, oblongo-ovate, barely covering the pygidium, humeral angles blunt; the abdomen is very convex, and the segments are apparently fused; the intermediate coxæ are not very oblique, and are separated by a moderately broad interval, metasternum not grooved; anterior femora armed with a strong, basal spine, anterior tibiæ very obliquely truncate outwardly, the

outer angle of the emargination being formed by the not very oblique apical tooth, which has a very small, almost indistinct one above it, inner spur very slender; intermediate and posterior legs long, femora rounded, inflated at middle, tibiae sinuose, especially the hind ones, not spinose nor transversely carinate, and having the two normal apical spurs; tarsi long, robust, basal joint of the posterior ones much longer than the apical spurs; claws strong.

This genus was founded by Klug for the reception of a very singular insect from Dongola, and figured by him. Dr. H. Brauns has discovered in the Orange River Colony a second species of this interesting insect.* He met with it in a Termite's nest, in the royal cell or chamber. The generic description, which does not entirely coincide with that of Klug, is made from this species.

CORYTHODERUS MARSHALLI, Brauns,

Annal. K. K. Natur. Hofmus. Wien, vol. xv., 1900, p. 164, pl. ix.

Brick-red, very shining; head parallel laterally in front of the eyes, clypeus elongate and rounded at apex with the margin distinctly reflexed all round, it is roughly punctate, while the remainder of the head is finely, but distinctly, punctate, and each puncture bears a short, erect, flavous seta, there is no trace of transverse or impressed line, and the head is slightly convex; prothorax very little sinuate in the anterior part, but with the outer angles very sharp, narrowed laterally before the median part, and amplified from there to the posterior angle which is very much rounded, the median part of the disk is very gibbose, the gibbosity being limited laterally by a deep, diagonal, sinuate furrow beginning at a short distance from the anterior outer angle and ending in a deep ovate cavity abutting on the basal margin, the basal space separating these two excavations is greatly raised, and divided into two by a deep longitudinal furrow, at the end of this furrow, and divided from it merely by a very shallow impressed line, is the scutellum which is considerably raised, being almost in a line with the hind part of the gibbosity, and is somewhat hooked towards the base of the elytra which it overhangs; the sides of the scutellum are fringed with a very dense, and very short, yellowish pubescence not unlike that found in the prothoracic cavities of some *Paussi*, the

* Wasmann has also described and figured an Indian species (*C. gibbiger*), Deutsch. Entom. Zeitschr., 1899, p. 153, pl. i., fig. 4.

surface of the prothorax has numerous punctures not very closely set, and bearing each a short hair; elytra oblongo-ovate, a little depressed in the median basal part, but convex and even gibbose behind, and with the sides nearly vertical, on each side of the suture and under the scutellum there is a sharp, much raised carina not reaching the median part, the space on each side of this anterior carina is excavate, almost midway between this ridge and the humeral angle there is a conspicuous, somewhat sharp tubercle, the suture is raised, and there are on each side three somewhat slanting, deep, smooth striæ with the intervals rounded and costate, these striæ reach from the apex to about two-thirds of the length, the surface is glabrous, but in the striæ there is a series of remote, whitish, very fine, short setæ; abdomen sparsely setulose; legs clothed, especially the tibiæ, with fine, slightly bristly, whitish hairs; intermediate and posterior tibiæ and tarsi compressed, the posterior tibiæ are slightly sinuate, but neither the intermediate nor the posterior ones are inflated at tip, the spine of the anterior femora is very distinct, and sub-basal beneath, and the apical part is very deeply grooved for the reception of the tibiæ.

Length 3 mm.; width $1\frac{1}{2}$ mm.

Hab. Orange River Colony (Bothaville).

This species differs from the figure of *Corythoderus loripes*, Klug, by the more elongate head, which is nearly as long as the lateral part of the prothorax, the three strongly costate intervals of the elytra, and the tibiæ, which are not swollen at apex, nor scooped inwardly at base. I have, however, seen only one example of *C. marshalli*, and there may be some sexual differences similar to those of *C. loripes*, but the length of the head remains a good specific character.

SUB-FAMILY TROGINÆ.

Mandibles robust, not quite covered by the labrum which is vertical; maxillæ robust, corneous, pluri-dentate inwardly; antennæ ten-jointed; eyes not divided by the canthus of the genæ; clypeus more or less sharply triangular, and seldom with a trace of a transverse suture; elytra with distinct epipleura, convex; coxæ almost contiguous; tibiæ without any transverse ciliate ridges, anterior ones pluri-dentate outwardly, last tooth less developed than the second, and set almost at the inner angle of the apex; abdomen with five fused segments.

Key to the Genera.

Prothorax tuberculate, broadly grooved in the centre; elytra with series of tubercles; head only retractile *Trox*.

Prothorax and elytra non-tuberculate; whole body susceptible of contracting into a ball. *Acanthocerodes*.

GEN. TROX, Fabr.,

Syst. Entom., i., 1792, p. 86.

Phoberus, MacLeay; *Omorgus*, Erichs.

Mentum sub-ampliate laterally at middle, but attenuate more or less obliquely towards the anterior angles which are sharp; apical part generally transverse, but also sub-emarginate transversely (*luridus*, *horridus*), usually concave from the base to or past the median part, and with the walls of the concave part more or less sharply carinate, but also slightly concave at base only and distinctly carinate in the middle (*horridus*, *luridus*); ligula slit in the middle, moderately long in most species, but greatly developed in *squalidus* and stiffly ciliate; apical joint of labial palpi sub-fusiform, slightly truncate at tip, nearly as long as the two basal ones put together; maxillæ robust, apical lobe sub-falcate and armed with slightly curved, unguiform, sub-corneous ciliæ, inner lobe stiffly ciliate and armed with two superposed falcate teeth the upper one of which is bifid; apical joint of maxillary palpi longer than the two preceding, fusiform but with the inner part a little more swollen than the outer and slightly truncate at tip; mandibles flat underneath, robust, sharp at tip, not entirely covered by the labrum which is briefly but densely ciliate, and not incised; clypeus small, more or less sharply triangular, retractile, genæ sharply triangular and projecting; eyes moderately large and not divided by the genæ which form a ridge above them; antennæ ten-jointed, basal joint very robust, stiffly bristly in front, and nearly as long as the five following, second one short, cylindrical, broader than the five following which are closely set together; club three-jointed, ovate; prothorax deeply sinuate on each side in front, arcuate laterally, and with the base truncate laterally and triangular, convex, broadly grooved longitudinally in the centre, and with one or more elongate tubercles or impressions on each side of the disk, while the outer sides are plane and serrate; scutellum a little narrowed at base, and expanding into a lanciform shape in the group of *radula*, &c., or not narrowed at base in the

horridus group; elytra fitting against the prothorax, very convex, elongate, but with the humeral angles quite rounded and sloping and covered with series of more or less densely fasciculate tubercles; abdomen five-jointed, joints not flexible; legs moderately robust, anterior femora strong, anterior tibiæ moderately slender, tri-dentate externally, but with the upper tooth situated at the apex of the tibia, and separated from the second by a shallow transverse sinuation, inner angle provided with a strong, slightly incurved spine, these anterior tibiæ are also more or less distinctly pluri-serrate above the digitation; intermediate and posterior tibiæ hardly thickened at tip, quadrangular, or with five ciliate carinæ, and without any transverse ridges, apical spurs slightly unequal, tarsi short, a little compressed on the upper part, more or less bluntly triangular, claws moderately long, and not weak.

The South African species of the genus can be divided into two groups according to the shape of the metasternum which in the first, of which *horridus* is the type, is produced into a triangular elongate process between the intermediate coxæ and nearly meets there the sharp apical point of the mesosternum, or which in the second, of which *incultus* is the type, does not project between the coxæ to any appreciable degree.

The genus *Phoberus* was established by MacLeay for the reception of *Trox horridus*, the main characteristics of which were the absence of wings, and the non-crenulate intermediate and posterior tibiæ having five rows of stiff bristles. Burmeister (Stettin. Entom. Zeit., vol. xxxvii., 1876, p. 264) retains the genus chiefly on account of these characters, and also on account of the arcuate prothoracic base having no median lobe in front of the scutellum. This latter characteristic does not, however, apply to all the species which might be included in *Phoberus* owing to the five carinated tibiæ being ciliate, and which do really form a distinct group of closely allied species peculiar to the western part of South Africa, several of which are wingless.

To the genus *Trox* Burmeister restricts the species with quadrangular serrate hind legs and a triangular or ogival scutellum, and to the genus *Omorgus* the species with quadrangular serrate hind legs and a scutellum strangulated at base and dilated from there in the shape of a lance-head.

It is worthy of note that in the first and second of these divisions the forceps and valves of the genital armature of the male are much more elongate than in the third where they are short and broad and less variable in shape. On the other hand, *T. incultus* has the posterior tibiæ with five non-ciliate carinæ, and the scutellum strongly

lanceolate, and is thus a form of transition between *Phoberus* and *Omorgus*.

The identification of the South African species is extremely difficult owing to the sculpture of the teguments being so very much alike; this difficulty is enhanced by the great variation in size of some of the examples, but the shape of the genital armature of the male gives a very good key to the identification. I regret that I was not able to have all of them figured, but I have endeavoured to give a comparative description of the non-figured ones. I am quite satisfied, from the experience I have gained, that most of the closely allied African forms can be easily identified by means of these organs.

The species found in South Africa are not all winged (*nanniscus*, *horridus*, *nasutus*). They stridulate feebly when captured. They are found, sometimes in great number, under partially dried carcasses or skins of animals, and I have found no fewer than three species together in the western part of the Cape Colony. The range of some of the species in Africa is very great. The wingless species have naturally a much restricted area of distribution, being confined, so far as I know, to the western part of the Cape Colony.

The genus is represented in Europe, America, Asia, Australia, and Africa.

Key to the Species.

A². Mesosternum and metasternum projecting between the intermediate coxæ.

B². Scutellum not narrowed at base, triangular or ogival.

C². Intermediate and posterior tibiæ with five rows of stiff ciliæ, and not denticulate (*Phoberus*).

D². Head with two transverse carinæ and a median longitudinal one.

a². Elytra with four costæ or series of tubercles.

b². Elytra with four nearly continuous sharp costæ.

Clypeus sharply acuminate, head with a median carina reaching the apex of the clypeus *rhyparoides*.

Clypeus not sharply acuminate, head without the median carina *talpa*.

b¹. Elytra with four rows of penicillate tubercles.

c². Anterior tibiæ serrate above the basal tooth.

d². Wings under the elytra.

Clypeus slightly bifid at tip; elytra sub-parallel, tufts of hairs dense, black *fascicularis*.

d¹. No wings under the elytra.

Clypeus sharply acuminate at tip; elytra a little ampliate past the middle, tufts of hairs brownish .. *nanniscus*.

Clypeus somewhat blunt at tip; elytra ampliate past the middle, walls of median furrow not interrupted *horridus*.

Walls of median furrow interrupted *aculeatus*.

c¹. Anterior tibiæ without basal tooth or serration.

Clypeus sharply acuminate; elytra narrowed laterally in front and distinctly ampliato-ovate from before the median part *nasutus*.

C¹. Intermediate and posterior tibiæ serrate, quadrangular (*Trox*).

a¹. Elytra with ten series of tubercles or carinæ, the alternate ones of which are more raised than the others.

Elytra costulate, interstices with a single row of foveæ; costæ with a few small fascicles of hairs .. *penicillatus*.

Elytra with nearly equal series of closely set, not much raised tubercles, interstices with two raised lines interrupted by transverse impressions; anterior tibiæ with a very strong serration *luridus*.

Elytra with alternate series of tubercles not closely set, and much more raised than the others; anterior tibiæ not strongly serrate *sulcatus*.

A¹. Mesosternum and metasternum not projecting between the intermediate coxæ.

B¹. Scutellum narrowed at base, shaped like a lance-head.

C². Intermediate and posterior tibiæ distinctly serrate, quadrangular (*Omorgus*).

D¹. Head with two sub-contiguous tubercles.

a². Prothorax with a longitudinal carina in the median part of the base; elytra elongate.

b¹. Elytra with the tubercles very elongate, and the rows of nearly the same height, third and fourth more costate than the others.

Head with two median tubercles *incultus*.
melancholicus.

Head with two median tubercles and a distinct longitudinal ridge above them *consanguineus*.

a¹. Prothorax without a longitudinal carina in the median part of the base.

b³. Elytra with the alternate rows formed by round tubercles.

Body elongate, tubercles of the alternate rows broadly separated; apical teeth of anterior tibiæ obliquely truncate, second much rounded *tuberosus*.

Body inflated, tubercles of the alternate rows not broadly separated; the three teeth of the anterior tibiæ very sharp *ponderosus*.

- b*°. Alternate rows on elytra sub-costato-tuberculate, but alternate ones formed by slightly larger tubercles.

Elytra elongate, sub-parallel, prosternum transversely nodose, teeth of anterior tibiæ sharp . . *asperulatus*.

Elytra moderately elongate; prosternum aculeate; the two apical teeth of anterior tarsi divided by a small emargination, second tooth rounded . . . *radula*.

Elytra nearly parallel, rows of tubercles more costate laterally, prosternal process sharp *damarinus*.

- c*. Elytra very broad, very little longer than wide.

Elytra with alternate rows of tuberculated costæ of nearly equal height *gravidus*.

Elytra with rows of deep foveæ *foveatus*.

Trox (PHOBERUS) RHYPHAROIDES, Har.,

Plate XXXIX., figs. 14, 14*a*.

Monogr., Coleopt. Heft. ix., x., 1872, p. 32.

Black, opaque, head and prothorax clothed with a greyish or slightly flavescent coating, which is also discernible on the costæ of the elytra; clypeus sharply triangular, head closely pitted and having two transverse parallel carinæ intersected by a longitudinal median one reaching nearly to the sharp apex of the clypeus, the upper transverse carina has a tendency to be separated in the centre in most examples; basal joint of antennæ somewhat rufescent, intermediate joints reddish, club greyish or sub-flavescent; prothorax with two elongate impressions with raised walls in the centre, the anterior one of which is sub-parallel, while the posterior is elongato-ovate, and having on each side a smaller anterior impression close to the median one, and a longer and sub-oblique one beginning near the base and extending almost to the apex, giving thus to the median discoidal part a much raised appearance; the sides of the prothorax are not arcuate, only a little rounded in the anterior part, deeply incised above the basal angle, not serrulate, and fringed laterally and also along the base with short, ciliate hairs; scutellum short, a little cordiform; elytra elongate, distinctly sinuate laterally below the

shoulder at some distance from it, and slightly amplified from there, it has on each side along the sutural part four very distinct costæ the three outer ones of which are transversely interrupted at equal distances, and the intervals are filled with two rows of foveæ divided by a very slightly raised median line, the outer margin is not serrate, and the humeral part is very oblique; the prosternum does not project at apex; the two apical spines of the anterior tibiæ are divided by a distinct sinuation, there is no basal tooth and no serration above it, the intermediate and posterior tibiæ are not very distinctly carinate, and the carinæ are stiffly bristly, but not dentate; wings under the elytra.

Length $6\frac{1}{2}$ – $7\frac{1}{2}$ mm.; width $3\frac{1}{2}$ – $3\frac{3}{4}$ mm.

The shape of the genital armature of the male is strikingly different from that of the other South African species.

Hab. Cape Colony (Cape Town, Stellenbosch, Malmesbury, Worcester, Kimberley, Port Elizabeth, Uitenhage, Somerset East).

Trox (? *Phoberus*) *TALPA*, Fähr.,

Insect. Caffrar., ii., p. 380.

“Oblong, little dilated behind; prothorax narrowed in front, and with the sides nearly straight in the anterior part, obtusely rounded at middle, slightly sinuate before the posterior angles which are somewhat acute, dorsal furrow narrow, and obtusely cristate; elytra not serrate along the outer margin with the exception of a few apical tubercles, the margin being densely setose; on each side are four narrow costæ briefly penicillate with squamules, and not interrupted, the intervals are filled with sub-quadrate punctures with transverse walls; antennæ ferruginous; anterior tibiæ obsoletely denticulate above the basal tooth.”

Length 11– $11\frac{1}{2}$ mm.

Hab. Neighbourhood of the Orange River.

I have seen only Fähræus' type. The species is evidently allied to *T. rhyparoides*, but is easily recognised by the non-interrupted, sharp costæ of the elytra.

Trox (*Phoberus*) *FASCICULARIS*, Wied.,

Plate XXXIX., fig 13.

Germ. Magaz., iv., 1821, p. 129.

Black, opaque; head roughly punctulate, and having two transverse squamulose carinæ united in the centre by a longitudinal one,

and forming thus two somewhat oblong, transverse enclosed spaces, clypeus deeply incised triangularly, and with the angles of the incision sharp; antennæ with the intermediate joints rufescent, and the club ashy grey; prothorax moderately arcuate laterally, slightly emarginate above the outer angle, thickly fringed with black setæ, all the walls of the impressions bearing fascicles of dense, black setæ; scutellum triangular, grooved longitudinally in the middle; elytra elongate, slightly emarginate laterally a little before the median part, not serrate along the outer margin which is fringed with thick black setæ, and having on each side four costæ with equi-distant, somewhat long penicillated tubercles, separated by somewhat broad intervals filled with series of shallow geminate not very deep punctures with slightly raised walls, but not divided by a median costa or raised line; anterior tibiæ with the two apical teeth divided by a shallow emargination; basal tooth ante-median, and followed by a very distinct sharp serration right to the elbow, in most examples, however, this serration is nearly obliterated, but the first tooth above the basal one is nearly always distinct; intermediate and posterior tibiæ with rows of stiff black bristles, but not denticulate; prosternum with a short, acuminate process; wings under the elytra.

Length 7-10 mm.; width 5-6 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Worcester, Malmesbury, Beaufort West, Namaqualand, Prieska), Orange River Colony (no exact locality), Natal (Van Reenen's Pass).

Trox (*PHOBERUS*) *NANNISCUS*, n. spec.

Black, opaque, with all the fascicles of ciliæ light brown; clypeus sharply triangular; head rugose, and with the normal transverse frontal carinæ slightly interrupted in the centre, and the median longitudinal carina very distinct; the transverse carinæ are densely squamose; antennæ sub-ferruginous and with a sub-flavescent club; prothorax only moderately arcuate laterally in front and densely ciliate along the margins; the median longitudinal furrow is twice interrupted, and the walls of it, as well as all the tubercles, are densely squamose, almost cristate; scutellum very small, almost indistinct; elytra sub-elongate, a little sinuate laterally above the median part, not serrate laterally, but somewhat densely ciliate along the outer margins, and having on each side besides the suture which is similarly fasciculate, four tuberculated costæ bearing closely set equi-distant fascicles of dense ciliæ, intervals filled with trans-

verse folds vaguely enclosing transverse, very shallow pits; prosternum simple, anterior tibiae with a faint trace of a basal tooth set not far from the second, which is separated from the apical one by a distinct emargination; intermediate and posterior tibiae stiffly bristly, not dentate; no wings.

Length 5 mm.; width $3\frac{3}{4}$ mm.

This very small species resembles *T. fascicularis* in the disposition of the fascicles of hairs and the general appearance, although the elytra are a little more ampliate from past the middle, but it is easily distinguished owing to the shape of the clypeus, which is very sharply acuminate at tip instead of being strongly emarginate; the shape of the genital armature is nearly similar to that of *T. penicillatus*, but the upper median valve is acutely bifid at tip instead of being nearly transverse, and is also longer in proportion to its size.

Hab. Cape Colony (Port Elizabeth, Graham's Town).

Trox (Phoberus) nasutus, Har.,

Monogr., Coleopt. Heft. ix., x., 1872, p. 34.

Black, but covered with an earthy coating; clypeus very sharply acuminate and with the apex slightly recurved; head rugose, and having a distinct, uninterrupted squamulose ridge while the upper one is divided into two transverse squamose tubercles, and the median longitudinal one is hardly visible; antennae ferruginous; prothorax distinctly arcuate laterally in the anterior part; the walls of the median furrow are twice interrupted on each side, the apical impression on each side of the furrow is not well defined, and the lateral tubercle is divided in two, all the walls and tubercles are densely squamose; scutellum very small, triangular; elytra distinctly ampliato-ovate laterally from before the median part, and with the outer margins not denticulate, but somewhat densely ciliate and fasciculate from past the middle to the apex, they have on each side, exclusive of the sutural part which is also fasciculate, four rows of elongate equi-distant tubercles forming two distinct costae on the disk only, and each bearing a fascicle of dense, earthy brown cilia directed backwards, the intervals are filled with a double series of transverse, shallow pits divided by a fine row of small tubercles; prosternum simple; anterior tibiae without any basal spine, the two apical ones separated by a deep emargination; intermediate and posterior tibiae stiffly bristly, not dentate; no wings under the elytra.

The ampliation of the posterior part of the elytra gives to this species a very distinct facies.

Length 7-10 mm.; width 4-5 $\frac{1}{4}$ mm.

Hab. Cape Colony (Cape Town, Paarl, Malmesbury, Clanwilliam, Knysna).

The shape of the genital armature of the male resembles that of *T. rhyparoides*; but the inner basal part of the forceps is much more sinuate, and therefore much more open, and the median lobe is produced into an elongate sharp process gradually attenuate and projecting between the forceps for a distance equal to the whole length of the latter.

TROX (PHOBERUS) HORRIDUS, Fabr.,

Plate XXXIX., fig. 15.

Syst. Entom. Append., 1775, p. 818.

T. silphoides, Thunb., Mus. Nat. Act. Ups., 1787, iii., p. 38.

Black, opaque, and occasionally covered, especially on the prothorax, with a squamose earthy coating; head very rugose, clypeus not acuminate, feebly emarginate at tip, lower frontal ridge uninterrupted, upper one divided into two transverse tubercles, no median longitudinal carina; antennæ rufescent except the basal joint; prothorax strongly arcuate laterally in the anterior part, not crenulate, but fringed with stiff, dense ciliae, it is very rugose, the median furrow is deep and has thick, rounded walls, the apical impression on each side of the median furrow is not distinct, and the lateral elongate tubercle is non-interrupted, and reaches from the base to two-thirds of the length, the walls of the median furrow and also the lateral tubercle have stiff, cylindrical bristles more or less densely set; scutellum small, triangular; elytra very sloping at the shoulder, rounded at a little distance from there and amplified, the outer margin has a regular series of serrate tubercles, each bearing a stiff fascicle of hairs, and on each side there is in addition to the sutural part, which is also fasciculate, four series of elongate, fasciculate tubercles forming a serrate costa, the intervals are filled by moderately deep transverse foveæ divided into two by a median series of more or less distinct granular tubercles; prosternum sub-nodose; anterior tibiæ with the two apical teeth divided by a very slight sinuation, the basal tooth is situated above the median part and is distinct, and above it and not far removed from it there is another nearly equal in size, and followed by a not very pronounced serration up to the

elbow, intermediate and posterior tibiae stiffly bristly, not dentate; no wings under the elytra.

Length 15–20 mm; width 9–13 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Worcester, Beaufort West, Malmesbury, Namaqualand).

While the species obtained from the neighbourhood of Cape Town usually have the bristles and fascicles of hairs black, and very little squamosity on the prothorax, a very large female example received from Garies, Namaqualand, has the prothorax densely squamose, the fascicles of hairs on the elytra are somewhat flavescent, and the elytra a little more ampliate laterally.

In the figure of the genital armature the outer branch of the forceps has the point turned outwardly; this is a mistake, the apical part should bend downwards.

Trox (Phoberus) aculeatus, Har.,

Monogr., Coleopt. Heft. ix., x., 1872, p. 37.

“Very closely allied to the preceding species, from which it differs by the smaller size, the entirely black antennae, the walls of the median furrow of the prothorax which are divided at base while the lateral ones are bi-partite; the elytra are narrower than the prothorax, oblongo-ovate, there is no alternate tuberculate costae, and the intervals are filled with deeper, excavate foveae separated by transverse folds; mesosternum carinate.”

Length 14 mm.

I have only seen the type of this species in Harold's collection, and it is so closely allied to *T. horridus* that at the time I noted it down as being the same species.

Hab. Caffraria.

Trox penicillatus, Fähr.,

Plate XXXIX., fig. 12.

Insect. Caffrar., ii., p. 383.

Black, opaque, but with the tufts or hairs and squamæ flavescent; head rugulose, clypeus triangular but not quite acuminate at tip; the frontal transverse carinae are somewhat arcuate, and the median longitudinal carina is more in the shape of a tubercle; prothorax arcuate laterally in the anterior part, not serrate, densely ciliate all

round, tubercles on the disk somewhat squamose, and of the same shape as in *T. fascicularis* and *T. nasutus*; scutellum not short, ogival; elytra sub-parallel and having on each side, in addition to the raised sutural part, four carinate costæ bearing series of equidistant, short fascicles of setæ, and much more raised than the alternate costæ which are not sharply carinate and bear no fascicles, the intervals are filled with a series of broad, somewhat deep, round punctures, and the outer margins are densely ciliate, and not serrulate; prosternum with a transverse, nodose projection; apical teeth of anterior tibiæ very distinct, the basal tooth is sub-median and sharp and followed as far as the elbow by strong, sharp, serrate teeth; intermediate and posterior tibiæ serrate.

Length 7–8 mm.; width $4\frac{3}{4}$ – $5\frac{1}{2}$ mm.

Resembles somewhat rubbed examples of *T. fascicularis*, but is easily distinguished by the quadrangular, serrate posterior tibiæ; the shape of the genital armature is also different.

Hab. Cape Colony (Cape Town, Willowmore, Carnarvon, Frasersburg, Prieska), Transvaal (Boksburg, Klerksdorp, Johannesburg).

TROX LURIDUS, Fabric.,

Plate XXXIX., fig. 10.

Spec. Insect., ii., App., p. 496, 1871.

T. caffer, Har., Monogr., Coleopt. Heft. ix., x., 1872, p. 41.

Black, moderately shining, elongate; clypeus acuminate, frontal part with two transverse, parallel, slightly arcuate, briefly pubescent carinæ united in the centre by a longitudinal one; head rugose, fringed with flavescent hairs; basal joint of antennæ fuscous, the others rufescent with the club flavous; prothorax closely but not deeply pitted, strongly serrate laterally and fringed with flavescent, closely set fascicles of hairs, convex, broadly grooved longitudinally in the middle, but with the groove much more shallow in the centre than at the base or in the anterior part, on each side of the base there is an elongate tubercle, and a supra-lateral one longer but divided into two, these tubercles and also the rounded walls have some short flavescent hairs, the outer angles of the base are sharp; scutellum elongate, ogival, deeply impressed at base; elytra elongate, one-third longer than broad, fringed along the base and the outer margins, which are not serrate, with a dense, very short, light, fulvous pubescence, and having on each side ten rows of tubercles

separated by intervals filled with two series of elongate, linear tubercles; the alternate rows consist of small, closely set tubercles, the other rows are formed by stouter tubercles, which are much more raised, each bearing a short fascicle of flavescent hairs and set at some distance from one another; prosternum sharply aculeate; anterior tibiae strongly sinuate at tip and with the second tooth sharp, the basal tooth is sub-median and sharp, and above it are two sharp teeth and a strong serration near the elbow; the intermediate and posterior tibiae have numerous sharp teeth outwardly.

This species is very numerous in the south-western part of the Cape Colony. It does not seem to extend far eastward. Kolbe records it from N'Goro and Victoria Nyanza, but it seems to me that it is *T. sulcatus* and not *T. luridus* which has this extended range.

Length 12-15 mm.; width $7-7\frac{1}{2}$ mm.

Hab. Cape Colony (Cape Town, Malmesbury, Worcester, Paarl, Stellenbosch, Namaqualand, Beaufort West, Kimberley), Orange River Colony.

Trox sulcatus, Thunb.,

Plate XXXIX., fig. 11.

Mus. Nat. Ac. Ups., 1787, iii., p. 38.

T. angulatus, Fähr., Insect. Caffrar., ii., p. 381.

Shape and sculpture of the preceding species, and differs from it merely in the rows of tubercles on the elytra being more costate, and bearing usually longer and thicker pencils of hairs, these tubercles are also more closely set, while those in the intermediate rows are not as closely set as in *T. luridus*, and the interrupted bi-seriate raised lines in the intervals are less deeply interrupted; the anterior tibiae are a little less sharply serrate. On examining plate xxxix. it will be seen that the shape of the genital armature is slightly different, the forcipate outer process is more slender and more sinuate outwardly than in *T. luridus*, and the inner hamate process is also more slender and a little more projecting; I have noticed, however, a slight variation in the length of this inner process.

Length 12-14 mm.; width $7-7\frac{1}{4}$ mm.

Hab. Cape Colony (Uitenhage, Graham's Town, Port Elizabeth, Somerset East, East London), Natal (Malvern, Durban, Frere), Transvaal (Potchefstroom, Pretoria, Johannesburg, Rustenburg) Southern Rhodesia (Salisbury).

TROX (OMORGUS) INCULTUS, Fähr.,

Plate XXXIX., fig. 16.

Insect. Caffr., ii., p. 377.

Black, opaque, but with the tubercles on the elytra shining; antennæ piceous red with the club ashy grey occasionally, but oftener somewhat flavescent, basal joint piceous; body elongate, elytra sub-parallel, one-third longer than broad; head and prothorax covered with deep, round punctures closely set, the two tubercles on the head are sub-conical; prothorax somewhat narrow in proportion to the width of the elytra, somewhat arcuate laterally and deeply sinuate at about the median part, margin not serrate nor dentate, on the disk the walls of the median groove are flat, the groove itself reaches only from the apex to past the median part, and is divided there into two elongate impressions by a median carina reaching the base, the outer walls of this double impression are connected with the walls of the anterior median sulcus, and in most examples there is a thin, earthy coating fitting the intervals of the disk; scutellum lanciform, deeply impressed in the centre from the base to two-thirds of the length; elytra very little ampliate laterally towards the posterior part; the outer margin is simple, sharp, not fasciculate; the rows of tubercles are of nearly equal height, the tubercles are shining, elongate, somewhat depressed, those on the row next to the sutural one are slightly larger than the others, while those on the third row are more or less distinctly carinate, especially towards the base, and the intervals are usually impunctate and not tuberculate except in the retuse posterior part where they are distinctly seriato-punctate; anterior tibiæ with a median, somewhat blunt basal tooth, second and apical one forming a laminate process rounded outwardly and nearly transverse at apex; legs deeply pitted; posterior tibiæ hardly serrate; prosternum with a sharply acuminate triangular process.

This species is easily distinguished among the South African ones by the elongate facies, subparallel in proportion to its size, and the laminate shape of the outer part of the anterior tibiæ, although this latter character is also found in *T. melancholicus* and *T. consanguineus*, in which the median sulcus of the prothorax is divided into two behind by a median carina as in *T. incultus*. Harold (Monogr.) considers the latter as synonymous with *T. squalidus*, Oliv. On the other hand, Kolbe (Käf. D. O. Afrik.) does not adopt this synonymy, but gives the habitat of *T. squalidus* as extending to Natal and the Cape. My examples of *squalidus* from the Boran Galla country are unfortunately females, and thus I cannot compare the shape of the genital organs, but although the general facies is very similar to that

of *T. incultus*, the third and fifth rows of tubercles are not carinate as in the latter, which character is absolutely constant in the fifty odd examples of the South African species I have examined.

The drawing of the clasps of the penis (plate xxxix., fig. 16) requires some explanation. The outer branch of the forceps curves downwards, and the median upper lobe, which should be a little more acuminate at tip, has a deep, median impressed groove, and on each side of it the two sinuate lines, as seen in the figure, are very sharp, the vertical carina forming a high wall and ending at apex in a sharply hooked tooth.

Length 14–18 mm. ; width 9–11 mm.

Hab. Cape Colony (Knysna, Fraserburg, Port Elizabeth, and the whole of the Northern part), Natal (Durban, Maritzburg, Van Reenen's Pass), Transvaal (Pretoria, Rustenburg, Potchefstroom, Lydenburg, Boksburg), Southern Rhodesia (Salisbury, Enkeldoorn, Buluwayo), British Bechuanaland (Kanya), Ovampoland (Okovango River).

Trox (Omorgus) melancholicus, Fähr.,

Insect. Caffr., ii., p. 108.

This species might at first sight be mistaken for small examples of *T. incultus*. It has been considered as such by Harold, and an examination of Fähræus' type seemed to me at first to justify Harold in doing so, but after examining the genital organs of one of my co-types, I have come to the conclusion that it is quite a distinct species, and I found also other specific characters corroborating this. Thus the size varies very little and is constantly smaller than in *T. incultus*, the shape and sculpture of the head, prothorax, and elytra are identical, but the third interval is carinate from the base to past the median part and continued there as elongate, costate tubercles; those in the intermediate rows are much more distant from each other, and less elongate; all of them are squamose and the intervals have a row of fairly distinct punctures; in the genital organs the outer branch of the forceps is declivous, broadly grooved inwardly at the base, the upper median lobe is nearly similar, but the median groove, instead of having a carinate wall running from the base to about two-thirds of the length, is replaced by an auriculate, vertical, arcuate, laminate process not acutely dentate at tip.

This species seems to be rare; I have seen only four examples, three of which are females. Not having examined the genital organs

of Fähræus' type, I cannot definitely state that my examples are identical, but I believe it to be the case.

Length 12-14 mm. ; width 7-8 mm.

Hab. Southern Rhodesia (Salisbury, Zambesi River).

Trox (Omorgus) consanguineus, n. spec.

This species is also closely allied to *T. incultus* and *T. melancholicus*. It is larger than the second, but not quite as large as the first, from which it differs also by the less elongate facies owing to the elytra being distinctly diagonally ampliate laterally past the shoulders, and also much more so in the posterior part; above the two frontal tubercles on the head there is a longitudinal, very distinct, median carina; the lateral margins of the prothorax are very deeply incised at about the median part instead of being sinuate; on the disk the wall of the basal impression divided by the median longitudinal carina is not connected with the anterior one, and the whole surface is covered with a thick, earthy coating; the sculpture of the elytra approximates to that of *T. melancholicus*, but the third row on each side is much more sharply costate, and the intervals are much more deeply pitted, the pits having slightly raised walls; the genital armature resembles more closely that of *T. incultus*, but the outer forceps are not so sharply incurved at tip, and the carinate walls of the upper median lobe are not much raised, are very much shorter, hardly reaching the median part, and are fully dentate at tip, the tooth being nearly horizontal instead of vertical, as in *T. incultus*.

Length 14 mm. ; width 9 mm.

Hab. Southern Rhodesia (Victoria Falls).

Trox (Omorgus) tuberosus, Klug,

Plate XXXIX., fig. 19.

Monatsb. Berl. Ac., 1855, p. 657.

T. rusticus, Fähr., Insect. Caffr., ii., p. 379.

Black, with the tubercles on the elytra moderately shining, and the intervals of the prothorax coated with an earthy substance; joints of antennæ, except the basal one, ferruginous red, club flavescent; head roughly punctured, frontal tubercles normal, prothorax five-dentate laterally, basal tubercle separated from the walls of the longitudinal median sulcus, lateral tubercle bi-partite, another tubercled not always well defined and smaller, is seen near the median part of the

outer margin ; scutellum lanceolate, deeply impressed at base ; elytra nearly parallel with the shoulders moderately sloping, distinctly serrate along the glabrous outer margin from the base to the suture ; intermediate rows consisting of a series of nine or ten round, glabrous tubercles larger and more distinct on the two dorsal rows than on the sides, the other rows consist of more numerous and therefore more closely set, minor tubercles, the second of these rows being distinctly costate, and the intervals are filled with one series of deeply pitted punctures with walls rising laterally to the height of the tubercles of the intermediate rows ; prosternum somewhat nodose at base ; anterior tibiae very rugose, and having a median, rounded, basal outer tooth and two indistinct serrations above it, while the second and apical teeth form a transverse lamina rounded outwardly and quite transverse at tip, in several of my examples this laminate process is, however, worn down obliquely ; intermediate and posterior tibiae distinctly serrate.

Harold (Monogr., p. 76) retains *T. rusticus*, Fähr., as a distinct species. I cannot agree with him. Fähræus' type, which I saw, is absolutely similar to a co-type of Klug's *T. tuberosus*, kindly communicated by Herr H. Kolbe, of the Berlin Museum.

This species can be distinguished from the South African ones of this group with subparallel elytra (*radula*, *damarinus*, *asperulatus*) by the tubercles of the two first alternate dorsal rows, which are more developed and more separated from one another, and stand therefore more boldly out.

Length 12–13 mm. ; width $8-8\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Salisbury, Victoria Falls).

In the figure (plate xxxix., fig. 19) the median longitudinal depression of the upper lobe is not quite sufficiently indicated.

Trox (OMORGUS) PONDEROSUS, n. spec.,

Plate XXXIX., fig. 18.

Less parallel than *T. tuberosus* and with the elytra amplified laterally almost from the shoulder ; the head and prothorax are similar and have a dense terrenous coating, but the sculpture of the elytra differs ; the tubercles are more closely set, setigerous, elongate, and slightly acuminate ; those on the second and third rows are a little more conspicuous than the others, but are not so much separated as in *T. tuberosus*, and the intervals have a row of small tubercles separated by a transverse puncture ; the outer margin is sharply and acutely serrate, and above the serration, and almost adjoining it,

there is a row of closely set, sharp tubercles; prosternum transversely nodose; anterior tibiae with three very distinct sharp teeth, the apical one being separated from the second by a deep emargination, two faint serrate teeth near the elbow; intermediate and posterior tibiae sharply serrate.

This species is nearly as much inflated in proportion to its size as *T. gravidus*. It is, however, distinguished by the more raised tubercles, and also by the shape of the genital armature, the outer forceps of which are not emarginate inwardly towards the apex or angular outwardly.

Length 11–14 mm.; width 8–10 mm.

Hab. Mozambique (Maputa River, Lourenço-Marquez).

This species may perhaps prove to be identical with *T. rusticus*, Har., nec Fähræus.

Trox (OMORGUS) DENTICULATUS, Oliv.,

Entom., i., 4, p. 13, pl. ii., fig. 14 a, b.

Trox asperulatus, Har., Monogr., p. 75.

T. radula, Bohem. nec. Erichs., Öfvers. Vet. Akad. Förh., 1860, p. 157.

Varies much in size and development of the tubercles on the elytra. It is elongate, sub-parallel; the shape and sculpture of the head and prothorax are similar to those of *T. ponderosus*, but the outer margin of the latter part is more serrate, the coating is identical, but the rows of tubercles on the elytra have a more costate appearance owing to their being more equal, less acuminate, and also more closely set, this, however, is not always the case, in some species the tubercles being a little more developed than in others, but always less than in *T. ponderosus*; the prosternum is transversely nodose; the anterior tibiae are similar, but as often as not the second outer tooth is worn out obliquely; the shape of the genital armature is only slightly different, the inner edge of the outer branch of the forceps being a little more deeply emarginate past the middle, and the upper lobe having a median longitudinal raised line.

I can find no difference between *T. asperulatus*, Har., and *T. denticulatus*, Oliv., either in sculpture or in the shape of the male organs; my examples of the last-named species are from Abyssinia.*

Length 13–18 mm.; width 8½–11 mm.

* In the closely allied species, *T. desertorum*, Har., from Egypt, the forceps are quite similar in shape and curve, but the median upper lobe is much more narrowed, and deeply grooved in the centre with the sides raised and rounded.

Hab. Cape Colony (Kimberley, Prieska, Calvinia), Southern Rhodesia (Middle Limpopo), Ovampoland (Okovango River, Okatchero), Transvaal (Rustenburg, Lydenburg, Potchefstroom), British Bechuanaland (Kanya). It is found also in Abyssinia, Shoa, Somaliland, Syria, and Mesopotamia.

Trox (OMORGUS) RADULA, Erichs.,

Wieg. Arch., ix., 1, 1843, p. 235.

T. variolosus, Fähr., Insect. Caffrar., ii., p. 378.

This species can only be compared to very small examples of *T. asperulatus*; the shape and sculpture are identical, but the four dorsal rows of tubercles on the elytra are a little more costate; the anterior tibiae are similar, the second tooth being a little rounded outwardly and separated from the apical one by a strong emargination; the prosternum, however, has a sharply acuminate process instead of a transverse node, and the shape of the genital armature is very different; the inner margin of the forceps is provided in the centre with a sharp tooth, is strongly emarginate from there to the apex where it is much incurved, the curvature being vertically truncate at tip, the upper lobe has on each side a horizontal lamellate process slightly diverging, emarginate outwardly with the outer angle spinose, and sub-truncate at apex, these lamellate processes cover half of the median lobe which is somewhat acuminate towards the apex, where it is slightly reflexed and a little emarginate.

Length 11–12½ mm. ; width 7–8 mm.

Hab. Damaraland (Otjimbingue, Walfish Bay, Northern Damaraland), Ovampoland (Okovango River, Omramba), Cape Colony (Touw's River, Prieska).

Trox (OMORGUS) DAMARINUS, n. spec.

So very closely allied to *T. radula* that the description of the one almost suits the other, but the body is a little more elongate, the dorsal rows of tubercles are still more costate; the prosternal process is longer and sharper, but the most distinctive character is to be found in the shape of the genital armature, the forceps are broader and of nearly equal width, very little sinuate outwardly, bent inwards nearly at right angles at apex where they are sub-diagonally truncate, while the inner part is sharply but briefly dentate at about the middle and emarginate from there to the apical incurved dentate part; the median lobe is narrow, plane at the top, a little knobby and vertically

declivous at some distance from the apex where it is narrower than from the base to past the middle, and very distinctly reflexed at tip.

Length 12–13 mm. ; width 7–8 mm.

This species much resembles *T. geminatus*, Oliv., but the elytra are a little more elongate and appear thus to be more parallel; the rows on the elytra are also more narrowly costate than in *T. geminatus* or *T. radula*. I have not been able to examine the genital armature of the first-named species.

Hab. I have so far recorded this species from Damaraland (Ganap.) only.

TROX (OMORGUS) GRAVIDUS, n. spec.,

Plate XXXIX., fig. 17.

Elytra broadly inflated, the width of the elytra at their broadest part being about equal to four-fifths of the length in large examples; it resembles *T. ponderosus* very closely, but is stouter; the sculpture of the head and prothorax is similar, the clypeus is also slightly emarginate at tip, but the rows of tubercles on the elytra are similar to those of *T. asperulatus*: that is to say, the four or five dorsal rows are of nearly equal height, very closely set, and the granulose tubercles in the intervals are very distinct and regular, and towards the outer margin nearly as high as those on the alternate rows. Apart from the broader, and therefore less parallel, facies, the shape of the genital armature, although not unlike, is however quite distinct. In the figure given (pl. xxxix., fig. 17) the inner part of the forceps is correctly delineated, but the angle of the incurved part is sharply angular in the lower outer margin. The shape of the armature of *T. ponderosus* is almost similar to that of *T. asperulatus*, being mostly differentiated by the median raised longitudinal line of the median lobe which is also present in *T. gravidus*.

Length 15–17 mm. ; width $9\frac{3}{4}$ –12 mm.

Hab. Damaraland and Ovampoland (no exact locality).

TROX (OMORGUS) FOVEOLATUS, Bohem.,

Öfv. Vet. Ak. Förh., 1860, p. 114.

In this species the elytra have a more rounded, ampliate appearance owing to the more obliquely attenuate shoulders, and except for this it resembles *T. gravidus*, but the sculpture of the elytra also is not the same; the head and prothorax are covered with a dense,

squamose, earthy coating; the clypeus is not slightly emarginate, nor yet triangular; the two parts of the divided lateral tubercle of the prothorax are nearly of equal size; the elytra have equal, regular rows of blunt equi-distant tubercles, and the rows are separated by regular series of broad foveate punctures divided by an intervening granular tubercle uniting on the sides the tubercles of the rows which are there very blunt; the outer teeth of the anterior tibiæ are sharp and strong, the second being divided from the apical one by a very deep emargination, but these teeth are often partly worn out; the part above the basal tooth is strongly serrate as far as the elbow; the genital armature is very different from the other allied species; the forceps are as in *T. ponderosus*, but bi-sinuate inwardly and with the apical point sharper, longer, and more incurved at tip, the upper lobe is grooved longitudinally in the centre, the sides are produced into two rounded costæ sharply declivous behind, and the apical part is elongate, horizontal, very much narrowed and reflexed, and emarginate at tip.

Length 13–16 mm.; width 9–11½ mm.

Hab. Damaraland (no exact locality), Ovampoland (Omrumba).

ACANTHOCERODES, n. gen.

Mentum sub-parallel, broadly emarginate at tip, not very convex and bristly, ligula very short, transverse, labial palpi very short, the three joints fitting against one another, apical one as long as the other two together and sub-ovate; maxillæ straight and with the inner lobe quite apical and nearly as long as the maxillæ, inner lobe extremely small, slightly penicillate and not hooked; antennæ ten-jointed, first joint thickened but neither dentate nor dentiform, club large, sub-globose, the two joints preceding it fitting close against one another and much broader than the others, eyes very slightly divided by the canthus of the genæ and showing as much above as under, clypeus produced triangularly from the genæ, carinate and standing high above the labrum and the base of the mandibles, the former is longer than broad and emarginate, the latter are strongly arcuate and dentate at tip only; prothorax straight in front and with the anterior angles long and straight, convex, nearly parallel laterally but with the basal part arcuate; scutellum only moderately long, sharply triangular; elytra globose, striate, epipleura moderately broad but of the same width throughout and with hardly any slope, abdomen contracted and partly hidden by the sub-horizontal epipleura; intermediate and posterior coxæ nearly contiguous; anterior tibiæ not

dilated towards the apex, straight inwardly, strongly serrate externally from the joint to the apex, where the two apical teeth are more developed than the serrate ones, obliquely truncate at apex and with a distinct apical spur in the outer angle, tarsi moderately robust, short, conical, claws small, median and posterior tibiae broadly dilated but hollowed internally, very sharply carinate and closely serrate on the upper and outer side, the posterior ones are sub-arcuate at tip with the outer angle quadrate and projecting.

The insect included in this new genus, which is allied to *Acanthocerus*, is also able to partially roll itself up. It differs from *Acanthocerus* in the shape of the head, the non-emarginate eyes, the shape of the intermediate joints of the antennæ, and also in having a comparatively short scutellum.

ACANTHOCERODES SINGULARIS,

Plate XXXIX., fig. 23.

Black, shining; legs and tarsi piceous; club of antennæ somewhat rufescent; head covered with deep, nearly contiguous, round punctures, genæ very small and without trace of suture, clypeus attenuate sub-triangularly from the genæ, but a little rounded at apex, near the central part of the head there is a sub-elongate, longitudinal tubercle; prothorax moderately convex, grooved all round, a little ampliate diagonally from the anterior angles towards the base and not angular there, with the basal part arcuate and covered all over with fine, deep, contiguous punctures; scutellum moderately long, sharply triangular; elytra globose, and having on each side ten striæ, the outer margin is sharply carinate; the intervals are plane except in the posterior part where the fourth, seventh, and tenth are very distinctly carinate and are filled with seriate shallow foveæ sub-granulose in the anterior part; under side and legs very rugose and very briefly pilose.

Length $5\frac{1}{2}$ mm.; width 3 mm.

Hab. Cape Colony (Kowie), occurs also in Natal.

SUB-FAMILY CHIRONINÆ.

Mandibles greatly developed, reflexed, not covered by the labrum, the latter sometimes quadri-dentate, each labial palpiger developed into a transverse lobe not quite meeting above the mentum; antennæ

ten-jointed; body elongate, cylindrical; abdomen six-jointed; pygidium horizontal, partly or entirely covered by the elytra; anterior tibiæ quadri-dentate.

GEN. CHIRON, McLeay,

Horac. Entomol., i., 1819, p. 107.

Mentum broader at base than at apex, rounded laterally, concave at the base of the outer face and convex towards the apex, slightly rounded at tip, and with a transverse row there of stiff ciliæ; immediately behind the upper margin of the mentum the labial palpigers are produced into a transverse lamina divided in the centre by a very narrow interval; ligula hardly visible, bifid and penicillate; labial palpi long, basal joint cylindrical, half the length of the intermediate one which is a little swollen at tip, the ultimate one is longer than the second, fusiform, slightly truncate at tip; maxillæ moderately thick, upper lobe somewhat short, not much dilated, pubescent and having at apex a fringe of dense, long and stiff incurved ciliæ, inner lobe unciform, long and sharp, horny and with a very slight fringe of very short hairs; maxillary palpi very long, second joint longer than any of the others, straight inwardly, sinuate and broadly swollen outwardly at tip, third strongly clubbed at tip, fourth longer than the third, not quite straight outwardly but a little amplified and curved inwardly; antennæ nine-jointed, club oblongo-ovate, covered with long, dense hairs, basal joint clubbed at tip, as long as the five following joints; mandibles very long, flat, nearly semicircular, bluntly bi-dentate and reflexed at tip; labrum elongate, incised in the centre and sometimes dentate on each side of the incision; head transverse, genæ triangular, projecting beyond the eye; prothorax parallel but not very convex; scutellum long, narrow, sharp at tip; elytra cylindrical but slightly sinuate laterally beyond the humeral part and covering the pygidium which is horizontally declivous, epipleura narrow and distinct only for one-third of the length; coxæ not quite contiguous, prosternum not carinate between the femora, metasternum produced between the intermediate coxæ in a sharp triangular process and grooved longitudinally in the centre; abdomen six-jointed, abdominal segments very narrow in the centre owing to the compression of the long, horizontal pygidium; anterior tibiæ dilated, strongly tri- or quadri-dentate outwardly, oblique at apex and with a long, strong apical spur extending as far as the tip of the apical outer tooth which is not very oblique, intermediate and posterior ones compressed and having three or

four ciliate outer teeth; apical spurs moderately long, slender, of equal length in the posterior legs but unequal in the intermediate; tarsi long, slender, claw also slender.

Although having nine-jointed antennæ like the *Aphodiinæ* this genus, owing to the great development of the mandibles and of the labrum, the shape of the body and also of the pygidium, must be separated from them and form a tribe of its own.

The insects included in this genus are not found in dung like most of the *Aphodiinæ*, but in sandy places under stones or *débris*, generally near the banks of pools or vleis. *C. puncticollis* throws back, when seized, its prothorax to a great angle with the elytra, very much like some carabid beetles of the genus *Scarites* found in the same localities, especially *S. rugiceps*, which it greatly resembles, although it is much smaller.

In the male the horizontal or sub-horizontal pygidium is more convex than in the female, and in the anterior part of the head there are two or more tubercles; in *C. puncticollis* the sheaths of the penis are symmetrical (plate xxxviii., fig 35).

The genus is represented in India, Java, Senegal, and Somaliland.

Key to the Species.

Prothorax covered with deep, moderately closely set punctures less numerous in the centre than on the sides; anterior part of the head with two tubercles in the male *puncticollis*.

Prothorax covered all over with very fine and very closely set punctures; anterior part of the head with three tubercles in the male *gravis*.

CHIRON PUNCTICOLLIS, Har.,

Berl. Entom. Zeitschr., 1862, p. 402.

Piceous black, with the elytra often chestnut-brown; antennæ reddish brown, with the club ashy grey; head deeply and somewhat rugosely punctured and having a clypeal arcuate impression in front of which are two round impressions bearing a strong seta and surmounted by two distinct tubercles in the male, while in the female the impressions and the tubercles are indistinct, labrum deeply incised and tri-dentate on each side of the incision; prothorax nearly straight laterally but slightly narrower at the base than at apex where the angles are very sharp, whereas they are rounded at the base, it is marginate all round, not very convex, and covered with not closely set punctures which are a little less abundant in the

centre than on the sides; scutellum narrow, hardly punctulate; elytra cylindrical but slightly emarginate laterally below the shoulder, deeply punctato-striate, the eighth and ninth striae being of equal length and ending at some distance from the base, while only the sutural and outer striae unite at the apex, and the second and eighth unite above the two above-mentioned ones; anterior tibiae quadridentate outwardly, but with the basal tooth very small; pectus smooth in the centre, punctate laterally; abdomen very deeply and closely pitted and also briefly, yet densely, pubescent; pygidium smooth in the horizontal part which is compressed laterally and is very prominent, and with a row of setigerous punctures round the edge in the male; in the female the pygidium is punctulate, slightly carinate longitudinally in the middle, and being much less swollen is more horizontal with the line of the abdomen, which is also not transversely depressed; legs smooth and reddish brown.

Length 8-11 mm.; width $2\frac{1}{2}$ - $3\frac{1}{4}$ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Worcester).

CHIRON GRAVIS, n. spec.

Black, shining, tarsi and antennae, club included, piceous red; head rugosely and closely punctured and having in the male no transverse clypeal impression, but in the anterior part, which is declivous, three median tubercles nearly equi-distant, the two outer being carinate longitudinally, the labrum is somewhat short, deeply and broadly incised and not dentate on each side of the incision, the mandibles are not so greatly developed nor as much reflexed as in *C. puncticollis*; prothorax nearly cylindrical but with the posterior angles rounded; it is a little narrower at base than at apex, marginate all round and covered with very fine and very closely set punctures equally distributed all over; scutellum long, very narrow, and with a not very distinct median series of punctures; elytra nearly cylindrical but slightly emarginate laterally below the shoulders, deeply crenato-striate and with the striae disposed as in *C. puncticollis*; metasternum smooth but granulate laterally like the mesosternum; abdomen hardly pubescent and impunctate, pygidium short, sub-horizontal, not compressed, punctulate, and with a few setae disposed in a row on the upper margin and two on each side of the apical part; abdomen not sensibly depressed transversely; anterior tibiae quadridentate, basal tooth very small.

Female unknown.

Length $10\frac{1}{2}$ mm; width $3\frac{1}{3}$ mm.

Easily distinguished from *C. puncticollis* by the armature of the head and the short, not compressed, pygidium, as well as by its broader facies.

Hab. Basutoland (Mafeteng).

CHIRON VOLVULUS, Klug,

Monatsb. Berl. Ac., 1855, p. 656.

Klug redescribes as follows in Peters' Reis. n. Moss., 1862, p. 247, another species of *Chiron* of the identity of which he is somewhat doubtful.

"*C.* Head and thorax closely punctate, elytra crenato-striate. Length $3\frac{1}{3}$ lin.

One specimen from Tette, distinguished by a pale chestnut-brown colour, but otherwise so little different from the well-known *C. cylindricus* (*Sinodendron digitatum*, Fab.) of Bengal, which occurs also in Senegal, that I long doubted if one was justified in separating it as a distinct species. What decided me was that the head and prothorax are perhaps somewhat more finely and particularly more densely and evenly punctate everywhere, so that there is no smooth place between the punctures, as is generally the case in *C. cylindricus*, and the punctures filling the striæ on the elytra appear to be somewhat larger and the corresponding intervals narrower. Still all this is scarcely perceptible, and the value of the species can only be decided when more specimens have been examined."

C. digitatus, Fäbr., is closely allied to *C. puncticollis*, Har., and as Klug seems to hint at the possibility of *C. volvulus* being the same species it may be well to mention the difference between *digitatus* and *puncticollis*.

C. digitatus is smaller than the smallest example of *puncticollis* I have met with, and is proportionately more slender; it is equally punctured all over the prothorax, whereas in *puncticollis* the punctures, which are similarly spaced, leave a smooth, impunctate, longitudinal area in the centre; the anterior tibiæ have an additional serrate tooth above the basal one in *digitatus*, but this tooth is not very distinct, and the pygidium in the male is very closely pitted on each side of the sub-carinate median part, whereas in *puncticollis* this median part of the pygidium is more developed, and the whole is impunctate except for a few setigerous pits round the margins.

My examples of *C. digitatus* are from Senegal.

SUB-FAMILY GEOTRUPINÆ.

Maxillary lobes horny, not pubescent, maxillæ uni- or bi-dentate inwardly; mandibles curved, laminate, projecting much beyond the labrum, which is greatly developed and separated from the clypeus by a distinct suture; antennæ eleven-jointed; abdomen very short, segments free; all coxæ oblique, contiguous; elytra covering the abdomen and with distinct epipleura.

GEN. BOLBOCERAS, Kirby,

Trans. Linn. Soc., xii., p. 459.

Mentum sub-orbicular, convex, ligula bi-lobate, long, moderately broad, horny, and densely ciliate inwardly, basal joint of labial palpi short, thick, second elongate, gradually thickened, obliquely truncate at tip, third sub-fusiform; maxillæ thick, not much curved, apical lobe not membranaceous, triangular, and fringed at tip with long, rigid setæ, inner lobe very short, also setulose, but soldered, and having a sharp hamate tooth at base, inner part of the maxillæ with a hamate tooth at tip, close to the first; joints of maxillary palpi moderately long, penultimate one shorter than the second, last one sub-fusiform inwardly, and sinuate for half the length outwardly; antennæ 11-jointed, joints 3 to 6 inclusive, small, closely set, club lenticular, first joint fitting against the last one and enclosing the intermediate one; labrum very well developed but not covering the mandibles, which are circular, laminate, and have the upper outer edge strongly reflexed, clypeus separated from the labrum by a transverse impression or groove, genæ forming a sharp canthus dividing the eyes which are large and show less on the upper part than on the under side, head carinate laterally above the eyes and usually along the clypeus which is obliquely sinuate from the genæ to the apical part, where it is transverse; the head is carinate or tuberculate, and with the angle of the junction of the genæ with the clypeus often prominent or tuberculate, especially in the male; prothorax very broad and convex, declivous, and simply impressed or impressed and tuberculate in the centre, or often simple, it is marginate all round with the base sinuate above the humeral part, attenuate laterally from past the median part towards the apex and very ampliate in the posterior part, supra-lateral impression more or less rounded, deep; scutellum conspicuous, ogival; elytra very convex, not quite as broad as the prothorax, somewhat retuse

behind and having on each side fourteen striæ of seriated punctures, the eighth and eleventh, and sometimes the thirteenth, are obliterated at a great distance from the base, while the outer one runs at a broad distance from the outer carinate margin except in the rounded posterior part; epipleura moderately broad from the base to about half the length, and overhung by the outer margin; under side densely hairy, granulate or scabrose; prosternum strongly aculeate between the coxæ, metasternum more or less transversely lozenge-shaped in the median part which is much reduced, and produced into a more or less lanciform narrow lobe between the median coxæ; femora thick, anterior tibiæ strong, a little inflexed, truncate diagonally at tip, and having a long, horizontal, sharp inner apical spur, pluridentate outwardly, the teeth decreasing in size from the apical to the basal one, and numbering from five to nine,* intermediate and posterior ones arcuate, deeply grooved on the upper part, and having both edges of the groove carinate and multi-serrate above the two apical teeth which are connected on each side of the groove by a transverse ridge; anterior and intermediate tarsi of equal length, posterior ones very little longer, joints sub-cylindrical, claws slender but much developed; pygidium hidden under the elytra, abdominal segments free.

The outer sexual differences in the South African species are sometimes very distinct, owing to the armature of the head and prothorax in the male, but in many cases there is nothing to distinguish the female from the male, the armature being the same. I have found the shape of the valves of the penis of great service in discriminating between some species; in others again, belonging to the seven- and nine-dentate tibiæ group, the difference is not very striking, whereas in others closely allied to one another the dissimilarity is nearly as great as in the genus *Trox* (cf. figs. 2 to 9 in plate xxxvi.).

Bolboceras is often caught flying to the lights; it has been met with under cowdung or deposits of herbivorous animals, in the manner of *Copris*. The distribution in South Africa seems to be restricted to the eastern and northern parts; it has not been met with to my knowledge in the south-western part, or in the Karroo region, Knysna being the most southern and western point at which it is known to occur.

The genus is represented in Eastern, Western, and Central Africa, India, Java, Arabia, Europe, Northern and Southern America, and Australia.

One South African species only (*B. rufotestaceum*, Boh.) is

* This number applies only to the South African species.

recorded as having been met with outside the South African limit, and another (*B. pallens*) from Guinea is recorded by Klug as occurring also at Tete (Mozambique).

Key to the Species.

A⁵. Anterior tibiæ five-dentate.

Clypeal carina transverse, slightly dentate on each side, angles of clypeus recurved, but not dentate; basal part of prothorax with two long lateral teeth, and three shorter median ones in the male; female with a median transverse ridge. *panza*.

Median part of the head with a short, transverse, highly raised non-denticulate carina; prothorax with a median, moderately deep excavation distinctly bi-dentate at tip, and sub-angular laterally *damarinum*.

Median part of the head with a tri-dentate, transverse carina, prothorax with a median, moderately deep excavation neither dentate at tip nor sub-angular laterally *fortuitum*.

A⁴. Anterior tibiæ six-dentate.

B⁴. Prothorax with three impressions in the anterior part.

a². Upper part of impression distinctly sharply bi-tuberculate.

Cephalic carina short, more or less conspicuously bi-dentate, sub-apical, prothoracic excavation sloping . . . *spurium*.

Cephalic carina in a line with the basal angles of clypeus, hardly bi-dentate; prothoracic excavation sub-vertical. . . *indubium*.

a¹. Upper part of impression callose but not tuberculate.

Cephalic tubercle placed close to the apex in the male, bifid and median in the female *capense*.

B³. Prothorax with a triangular median impression.

Labrum distinctly carinate transversely; head with three conspicuous teeth disposed transversely *caffrum*.

Labrum not transversely carinate; head with three teeth disposed transversely *vacivum*.

Labrum not carinate transversely; head with a sub-apical median tubercle *inchoatum*.

B². Prothorax with a short, basal, retuse impression.

Labrum slightly carinate transversely; head with a transverse carina, very distinctly tri-dentate, impression very small, quite basal, slightly bi-dentate at tip *plausibile*.

B¹. Prothorax with a median vertical lobe, a lateral impression and a supra-lateral one on each side.

Clypeus triangular, tuberculate at tip; head with a triangular juxta-apical carina, and a transverse ante-median one *auspicatum*.

A³. Anterior tibiæ seven-dentate.

B³. Prothorax without any median impression.

Head without any tubercle, basal angles of clypeus not raised; prothorax very slightly depressed longitudinally in the anterior part *stercorosum*.

B². Prothorax with a deep, median impression.

Labrum distinctly carinate along the apical margin; head with an anterior median tubercle, and with the basal angles of the clypeus raised; elytra wholly ferruginous *consocium*.

Head with a median clypeal, bifid tubercle and a transverse carina in front of it; posterior part of elytra black *posticatum*.

B¹. Prothorax with an elongate, median impression.

Clypeus with a short, median tubercle, head simple. *pannosum*.

A². Anterior tibiæ nine-dentate.

Head with a tri-dentate median carina; basal angles of clypeus also sharply dentate; prothorax with a slight anterior depression *maculicollis*.

Head with a clypeal, triangular ridge, extending from the sharply aculeate basal angle of the clypeus, and dentate at apex; posterior part with a distinct supra-basal ridge. *ornatellum*.

A¹. Anterior tibiæ ten-dentate.

Head with the clypeal ridge reaching from side to side, anterior part of prothorax very slightly impressed *rufotestaccum*.

BOLBOCERAS PANZA, Péring.,

Plate XXXVI., fig. 27; Plate XXXIX., fig. 2.

Trans. Entom. Soc. Lond., 1896, p. 159.

Brick or ferruginous red, shining; labrum very deeply and broadly emarginate; clypeus sharply carinate diagonally, attenuate laterally, transverse at apex, angular but not dentate laterally close to the canthus, and having a sub-median, transverse, highly raised carina aculeate on each side, and slightly further removed from the apex in the female than in the male; the whole surface of the head is roughly and very closely punctured; prothorax deeply and very closely punctured, strongly sinuate in the anterior part with the

median part very projecting; scutellum sub-serobiculate; elytra very convex, finely punctato-striate, intervals slightly convex, sub-coriaceous; eighth stria obliterated in the basal part for one-third of the length; under side and legs densely pubescent; anterior tibiae strongly five-dentate outwardly.

Male: Prothorax strongly declivous from near the base to the apex the median part of which is much recurved and slightly emarginate in the centre, the plane upper part of the declivity is vaguely punctulate, and there is on each side of the base one strong, triangular, very conspicuous tooth, and three smaller very distinct ones in the median part; in the great development the lateral teeth are produced into a long vertical compressed horn with a triangular lateral projection at the base, behind, and there is only one median tooth, at the base of the lateral tooth or horn there is an inner deep impression.

Female: The transverse cephalic carina is slightly further removed from the apex than in the male; the whole surface of the prothorax is covered with very dense, rugose punctures, the median part of the apex is much less recurved than in the male, and there is a median declivity divided in two by a transverse median smooth ridge one-third of the width in length; the intervals of elytra are more coriaceous.

Length 23-24 mm.; width 16-16½ mm.

Hab. Natal (Durban), Southern Rhodesia (between the Zambesi and Limpopo Rivers).

BOLBOCERAS DAMARINUM, n. spec.,

Plate XXXVI., fig. 4.

Male: Head and prothorax piceous red; elytra dark red, shining; labrum very deeply emarginate, head very roughly punctate, clypeus sinuate laterally, truncate at tip, strongly carinate laterally and at apex, not angular at the junction with the canthus; prothorax sinuate at apex, but with the median part not recurved, it has a round, deep, median impression reaching from near the apex to about the median part, this impression has two somewhat sharp tubercles at the apex, and there is a faint trace of a callus on the sides, the whole of the surface, with the exception of a transverse strip above the basal sulcus, is covered with deep, closely set irregular punctures, denser and serobiculate on the sides, the two upper tubercles, as well as a small area round them, are impunctate; and there is a faint trace of a longitudinal sulcus in the centre of the

posterior part; scutellum with a few hardly discernible punctures; elytra deeply punctato-striate, eighth stria obliterated in the anterior part for one-third of the length, intervals smooth, impunctate; under side and legs densely pubescent; anterior tibiae five-dentate.

Female unknown.

Length 14 mm.; width 9 mm.

Hab. Damaraland.

BOLBOCERAS FORTUITUM, n. spec.,

Plate XXXVI., fig. 23; Plate XXXIX., fig. 8.

Testaceous red, shining; head closely and roughly punctured, clypeus sinuate laterally, truncate at apex, not dentate laterally at base, on the posterior part of the head there is a short, transverse, tri-dentate ridge, similar in both sexes; prothorax not strongly sinuate at apex, and with the median part not recurved, there is a moderately deep, somewhat rounded impression in the anterior part of the disk extending from near the apex to about the median part, and also a distinct transverse impression above the base; at the top of the anterior impression there is a faint trace of two ill-defined, rounded tubercles, the impression is deeply and closely punctured, the sides are very distinctly scrobiculate, but the upper part of the impression and a broad transverse band above the basal sulcus are smooth, the median longitudinal band in the posterior part is not very distinct, and does not reach the base; elytra deeply punctato-striate, intervals smooth, impunctate, eighth stria obliterated in the anterior part for one-third of the length; anterior tibiae five-dentate.

Both sexes are alike.

Length 12–12½ mm.; width 7 mm.

Hab. Transvaal (Lydenburg).

BOLBOCERAS SPURIUM, n. spec.,

Plate XXXVI., fig. 18; Plate XXXIX., fig. 5.

Head and anterior part of prothorax dark, ferruginous, elytra brick-red, shining, or entirely light brick-red; head closely and roughly punctured, labrum transverse, not emarginate, clypeus not sinuate laterally, truncate at tip, in the anterior part and nearly equi-distant

from the apex and the median part there is a short, transverse, very highly raised carina distinctly bi-tuberculate at tip, in the male, less so in the female, basal angle of clypeus slightly raised; prothorax sinuate in front, and with the median apical part not recurved, it is retuse in front for about half the length, has three deep excavations, the median of which is the deepest, and also on each side of the upper part two broad, triangular, sharp teeth, and the space between these two teeth is deeply incised and continued as a deep, median sulcus reaching the basal margin, the excavations are irregularly punctate, the sides are more densely punctate, but the posterior dorsal part has only a few punctures near the declivous part, and the basal one is smooth and nearly impunctate; scutellum very closely and very finely aciculate; elytra deeply punctato-striate, eighth stria obliterated in the anterior part for about one-quarter of the length; under side and legs densely pubescent; anterior tibiae six-dentate.

Both sexes similar.

Length 14–22 mm.; width $8\frac{1}{2}$ –10 mm.

Hab. Cape Colony (East London), ? Ovampoland.

I thought at first that the large example from East London might prove to be identical with *B. coryphæus*, Fab., but the figure of the latter, as given by Westwood (Trans. Linn. Soc., vol. xxi., 1842, p. 19) shows that it is quite a different insect, and one which I think is erroneously alleged to be from the Cape.

BOLBOCERAS INDUBIUM, n. spec.,

Plate XXXVI., fig. 20.

Female: Very similar to *B. spurius*; it differs, however, in having the cephalic carina situated nearly in the median part in a line with the basal angles of the clypeus, the angles of the carina are also less sharp, and the transverse carina is longer; the tri-impressed excavation of the anterior part of the prothorax is less deep, less sloping, the median incision is less pronounced owing to the two tubercles being less prominent, and the posterior median part of the disk is distinctly more closely punctulate; the disposition of the striae of the elytra is similar.

Male unknown.

Length 14 mm.; width 9 mm.

Hab. Southern Rhodesia (Salisbury).

BOLBOCERAS CAPENSE, Klug,

Plate XXXVI., figs. 16 and 17; Plate XXXIX., fig. 4.

Abhandl. Berl. Acad., 1843, Monog., p. 49.

♀ *B. batesi*, Dist. Natur. in Transv., p. 191, pl. i., fig. 5.

Male: Sub-ferruginous red, shining, head darker; labrum emarginate, head roughly punctured, nearly scrobiculate, clypeus truncate at tip, obliquely attenuate laterally, strongly carinate and with the basal angle produced into a distinct, sharp tooth, at the very apex there is an aculeate, median tubercle; prothorax with the anterior part retuse, tri-impressed at the top of the declivity where the impressions are divided by four rounded, callose prominences the two median ones of which are more developed than the lateral, the apical margin is strongly sinuate, but not recurved, and the anterior and lateral parts are very closely punctate, the punctures are more scattered in the middle of the posterior part which has a very distinct median, longitudinal groove reaching close to the basal margin; elytra punctato-striate, the punctures are deep and closely set, and the eighth reaches the humeral callus; intervals impunctate; scutellum very closely and deeply punctate; under side and legs densely pubescent; anterior tibiae six-dentate.

It is seldom that the thoracic impressions of the male are as much developed as in the figure given; the normal shape is more like that of the female as given in figure 17.

Female: Facies of the male, from which it is easily distinguished by having a small marginal tubercle at the apex of the clypeus and two more developed ones close to the median part of the head and not in a line with the aculeate basal angles; the prothorax is slightly tri-impressed, usually a little less deeply than even in the normal males.

Length 11–13 mm.; width 6–8½ mm.

Hab. Natal (Durban, Frere), Mozambique (Lourenço-Marquez), Cape Colony (Knysna).

Herr H. Kolbe has kindly compared my examples with Klug's type.

BOLBOCERAS CAFFRUM, Bohem.,

Plate XXXVI., fig. 24.

Insect. Caffrar., ii., p. 371.

Male: Ferruginous red, infusate on the head and prothorax, but occasionally brick-red; labrum slightly emarginate, and with a dis-

tinct transverse sub-apical carina extending over the whole width, clypeus truncate at tip, short, slightly emarginate laterally, head broadly impressed in the basal part and having in the anterior a transverse, not much raised carina which is equi-distant from middle and apex, and sharply dentate in the middle and on each side at the basal part of the clypeus, the anterior part is roughly but not closely punctate, and the posterior part is impunctate; prothorax retuse in front and with the apical margin bi-dentate at middle, the retuse part is deeply impressed for more than half the width, the impression being continued at tip as a triangular excavation reaching nearly to the base, and very acutely angular on each side at the top of the declivity, the surface is smooth except at the base of the impression and along the median excavation as well as on a small area above the lateral fossa where there are some round, shallow, not very closely set punctures; elytra punctato-striate, punctures very closely set, eighth and ninth striae of equal length and reaching well on to the humeral callus; scutellum impunctate; anterior tibiae six-dentate.

Female: Resembles the male, from which it can hardly be distinguished; the three cephalic teeth are, however, much less raised; the impression of the prothorax as well as the upper excavation are less deep, and the latter is not aculeate at the base.

Length 10-12 mm.; width 6-7 mm.

Hab. Southern Rhodesia (Salisbury, Manica).

BOLBOCERAS VACIVUM, n. spec.,

Plate XXXIX., figs. 6, 6a.

This species might easily be mistaken for a small example of *B. caffrum*, but it differs in the labrum not being transversely carinate; the three teeth on the head are similarly disposed, but not united by a transverse carina; the impression on the prothorax, although aculeate at apex in both sexes, is not so deep, and the shape of the valves of the penis is different; the colour is brick-red and very shining.

Length 8 mm.; width $5\frac{1}{4}$ mm.

Hab. Southern Rhodesia (Salisbury).

BOLBOCERAS INCHOATUM, n. spec.

Female: Brick-red, head and prothorax ferruginous; head very roughly punctured, almost scrobiculate; labrum slightly emarginate,

clypeus transverse, sinuate laterally and a little angular at base, close to the apical margin there is a median, bluntly bifid tubercle; prothorax covered in the anterior and lateral parts with very densely set punctures coalescing on the sides, but the median posterior part of the disk, as well as a narrow transverse strip along the basal margin, is impunctate, the apical margin is sinuate but not recurved in the middle, and there is a narrow, triangular impression beginning close to the apex and reaching beyond the median part where it is continued in a shallow sulcus which disappears near the base; scutellum short, nearly triangular, deeply and moderately closely punctured; elytra punctato-striate, eighth stria disappearing at a short distance from the humeral callus; anterior tibiae six-dentate; legs and under side densely pubescent.

Length $12\frac{1}{2}$ mm.; width $7\frac{1}{2}$ mm.

Male unknown.

This species closely resembles the male of *B. capense*, but the cephalic horn is not placed quite so near the apex, and is more upright, and there is only one deep, triangular impression in the median part of the prothorax; the eighth stria does not ascend quite so near to the humeral callus.

Hab. Mozambique (Lourenço-Marquez).

BOLBOCERAS PLAUSIBILE, n. spec.,

Plate XXXVI., fig. 22; Plate XXXIX., fig. 8.

Brick-red, shining, head ferruginous; labrum widely but not broadly emarginate, and transversely carinate close to the apex, clypeus very short, truncate at tip, slightly sinuate laterally, head with a transverse, very slightly raised carina reaching from one side of the base of the clypeus to the other, and strongly dentate in the centre as well as on each side of the clypeal base, the median part of the head is somewhat depressed, and the surface is covered with closely set, round punctures, which, however, are widely scattered in the posterior part; prothorax covered with not closely set, round punctures, which are very little denser in the posterior part than on the sides, but are a little more closely set in the impression which is shallow and retuse, does not reach the apex, and is very slightly bi-aculeate, or rather angular on each side at tip (in the figure given in plate xxxvi. this aculeation is not sufficiently shown); this impression does not extend to more than one-third of the length, there is a slight longitudinal, median groove reaching from the top

of the impression to a very short distance from the base, and the anterior margin is slightly sinuate at middle, but not recurved; scutellum closely and deeply punctate in the anterior part only from base to middle; elytra punctato-striate, eighth and ninth striae of equal length and reaching the base of the humeral tubercle; anterior tibiae six-dentate; legs and under side very densely pubescent.

Female unknown.

Length 11 mm.; width $7\frac{1}{2}$ mm.

Hab. Natal (Newcastle).

BOLBOCERAS AUSPICATUM, n. spec.,

Plate XXXVI., fig. 21; Plate XXXIX., fig. 3.

Light testaceous red, shining; labrum transverse, not emarginate; clypeus short, transverse, sharply tuberculate at tip, head sharply and strongly carinate laterally and having a widely triangular carina, tubercular at base and at apex, and extending from the basal angles of the clypeus to the apical marginal tubercle, in the posterior part, and in a line with the median part of the eyes, there extends a highly raised sharp carina reaching from side to side, the head is somewhat pubescent, impressed in the median part, and is not very closely punctate; prothorax vertical in front, deeply and moderately broadly excavated vertically on each side of the perpendicular median lobe which is transversely carinate at tip, but with the upper part of the excavation sinking deep near the median part of the disk, and edged there laterally by a toothed, compressed laminate ridge, in the median part of the upper part of the disk there is a well defined longitudinal groove reaching close to the base, and the surface is deeply but not very closely punctured; the punctures are rounded, and more crowded in the centre of the sides, and in the anterior part of the median lobe; scutellum almost impunctate; elytra deeply punctato-striate, intervals impunctate; eighth and ninth striae of equal length and reaching well on to the humeral tubercle; anterior tibiae six-dentate; under side and legs densely pubescent.

Female: Like the male, the only difference being in the shape of the prothorax the anterior part of which is merely slightly impressed laterally, and not excavate; the punctures are also denser and a little more rugose.

Length 6-8 mm.; width 4-5 mm.

This species is very distinct from all the other South African ones, and has no ally so far as is now known.

Hab. Natal (Newcastle, Frere).

BOLBOCERAS STERCOROSUM, n. spec.

Female: Brick-red, with the head and the greater part of the prothorax ferruginous; labrum slightly emarginate, clypeus truncate at tip, sinuate laterally, the basal angles are not at all sharp, there is no trace of any median tubercle, and the whole surface is sub-scribulate except a small basal area, which is punctulate; prothorax moderately sinuate in front, median part of the anterior margin simple, it is covered with deep, irregularly scattered punctures which are more closely set as well as scribulate on the sides, but along the basal margin there is an impunctate, narrow, transverse zone, in the centre of the anterior part there is a faint, longitudinal impression; scutellum impunctate; elytra punctato-striate, eighth interval a little shorter than the ninth, but reaching the apical part of the humeral callus; under side and legs densely pubescent; anterior tibiae six-dentate.

Length $7\frac{1}{2}$ mm.; width $5\frac{1}{2}$ mm.

Hab. Cape Colony (Bechuanaland).

This species closely resembles small female examples of *B. pannosum*, but the anterior tibiae are distinctly six-dentate, whereas in the latter they are seven-dentate.

BOLBOCERAS CONSOCIUM, Bohem.,

Plate XXXVI., fig. 26.

Insect Caffr., ii., p. 372.

Ferruginous red, with the median part of the prothorax and the head often infusate; labrum emarginate and with a very distinct transverse carina running along the apical margin, head scribulate except for a small basal area, which is smooth and vaguely punctate; clypeus short, transverse, a little sinuate below the basal angles which are distinctly aculeate, while in the centre, but a little in advance of them, there is a small tubercle hardly more raised than the basal angles, and which in the large development is united diagonally with them by a slightly raised carina; prothorax moderately deeply sinuate in front, and with the median part of the margin bi-tuberculate; it is covered with somewhat scattered, deep punctures denser along the sides, and with a fairly broad basal impunctate transverse space, and in the anterior part of the disk there is in both sexes a round, not very deep, smooth impression reaching from the apical margin to about one-third of the length; scutellum with a few scattered punctures; elytra punctato-striate, punctures deep, very closely set, eighth stria slightly shorter than the ninth, and both reaching the

humeral callus; anterior tibiae seven-dentate; under side and legs densely pubescent.

Length $9\frac{1}{2}$ –10 mm.; width 7 mm.

Hab. Ovanpoland (Omrromba), Southern Rhodesia (Salisbury).

The shape of the genital armature is not unlike that of *B. plausibile*, (plate xxxix., fig. 6, 6'), but the sheath is not grooved on the upper part, and instead of being somewhat rounded, the apical projection is long, constricted at base, and dilated in a triangular process pointing downwards, flat above, triangular laterally, and excavate in the vertical part.

BOLBOCERAS POSTICATUM, Bohem.,

Öfvers. Vet. Ak. Förh., 1860, p. 114.

“Rounded, very convex, light ferruginous, shining, clothed with fulvous hairs beneath; head thickly and roughly granulate, armed in a line with the antennae with a bifid tubercle and having a transverse carina in front of the tubercle; prothorax closely punctate but somewhat smooth before the basal part, very deeply sulcate in the median part of the disk, obsoletely tuberculate on each side, and having an arcuate impression at a distance from the apex; scutellum closely rugoso-punctate; elytra distinctly punctato-striate, and having behind a very large piceous black patch extending on both sides; intervals plane, smooth; anterior tibiae seven-dentate.”

Length 14 mm.; width 9 mm.

Hab. Neighbourhood of Lake N'Gami.

I have only seen the type of this species. The clypeus and head are similar to those of the female of *B. capense*, the prothorax is excavate like that of *B. consocium*, but much more deeply punctate, and the elytra are reddish from the base to the median part, and deeply infusate in the posterior part.

BOLBOCERAS PANNOSUM, n. spec.

This species is very closely allied to *B. caffrum*; it is, however, distinguished by the very much less distinct basal angles of the clypeus, as well as by the lesser median tubercle which is not connected by a carina with the basal angles, and even almost disappears; the anterior margin of the prothorax is slightly sinuate at middle, but is not tuberculate, and instead of a round, basal anterior impression there is a very faint, longitudinal depression,

often nearly obsolete, but not altogether wanting; the head is scrobiculate right to the basal margin; the scutellum is aciculate, the colour of the head and thorax is less infuscate, and the punctures on the elytra are deeper and a little larger; anterior tibiæ seven-dentate.

Length 8-9½ mm.; width 5½-7 mm.

Hab. Natal (Durban).

BOLBOCERAS MACULICOLLE, Bohem.,

Plate XXXVI., fig. 28; Plate XXXIX., fig. 9.

Insect. Caffrar., ii., p. 375.

?*B. dorsuale*, Boh., loc. cit., p. 376.

Testaceous red, with the head, a wide longitudinal patch in the centre of the prothorax, and the suture of elytra, black; head covered with broad, deep, foveate punctures, scrobiculate on the clypeus; labrum emarginate; clypeus truncate at tip, a little diagonally attenuate and sinuate laterally, basal angles raised in the shape of a sharp triangle, in the median part of the head there is a transverse, distinctly tri-dentate carina in a line with the apical part of the eyes; prothorax not very sinuate at apex, median part of apical margin simple, it is covered all over with scattered punctures which are a little more numerous and slightly more closely set in the female, there is a shallow impression in the anterior part, and an ill-defined, sulcate, longitudinal median line in the posterior half of the disk; scutellum deeply and moderately closely punctured; elytra deeply and closely punctato-striate, eight and ninth intervals reaching the humeral callus, intervals impunctate and convex; under side and legs densely pubescent; anterior tibiæ nine-dentate.

Female similar to male.

Length 9-10 mm.; width 5½-6 mm.

Hab. Natal (Frere).

I believe that *B. dorsuale* is the same species as *B. maculicolle*; in the former the sutural band on the elytra is broadly dilated in the apical part. Boheman says that the anterior tibiæ have eight teeth instead of nine. I omitted to verify this character when I examined the type.

BOLBOCERAS ORNATELLUM, n. spec.

Pale testaceous, head black, prothorax with a quadrate, black median patch, scutellum as well as the suture of elytra black; labrum

slightly emarginate, and with a distinct, transverse carina, clypeus truncate at tip, attenuate laterally, and with the basal angles produced into a very sharp triangle, close to the apical margin there is a broadly triangular carina reaching from the basal angles to a short distance from the tip, and strongly reflexed at apex, a little past the median part of the head, which is there depressed, there is another transverse carina extending for half the width; prothorax moderately sinuate in the anterior part, apical margin simple in the centre, it is covered with deep, equi-distant punctures which become scarcer in the median posterior part of the disk, there is a median sub-orbicular impression close to the apical margin which varies in depth, but is nevertheless distinct, and a deep, sub-punctulate, median longitudinal sulcus reaching from about the median part of the disk to near the base; scutellum deeply and closely punctured for two-thirds of the length; elytra deeply and closely punctato-striate, eighth stria a little shorter than the ninth, and reaching the apex of the humeral callus; intervals impunctate, and slightly convex; anterior tibiae nine-dentate; under side and legs densely pubescent.

Length 7 mm.; width 5 mm.

Hab. Southern Rhodesia (Salisbury).

BOLBOCERAS RUFOTESTACEUM, Bohem.,

Insect. Caffr., ii., p. 373.

"Sub-globose, testaceous red, shining; head sparingly punctate behind, and having on the vertex a transverse fuscous carina not much raised, and abbreviated on each side, clypeus short, sensibly narrowed in front, slightly reflexed, truncate at the tip, closely and roughly punctate, and bearing a moderately highly raised carina somewhat arcuate in the middle, and distinct from the frontal part; prothorax strongly but sparingly punctured, very convex, and with a very faint impression near the apex; scutellum sparingly punctate; elytra very convex, somewhat deeply punctato-striate, and with the intervals smooth; the suture and the outer margins are slightly infuscate; anterior tibiae ten-dentate.

Length $9\frac{1}{4}$ mm.; width $6\frac{1}{2}$ mm."

Hab. Neighbourhood of the Orange River, teste Boheman.

I have only seen the type of this species, which resembles much *B. maculicollis*, but there is no fuscous or black patch on the prothorax, nor is the head black, and the transverse median carina reaches to the sides, and is situated farther forward.

SUB-FAMILY HYBOSORINÆ.

Mandibles not quite covered by the labrum ; labial palpigers very greatly developed, antennæ ten-jointed ; middle coxæ oblique and approximate ; epimera of metathorax small but visible ; abdomen six-jointed, the apical joint alone free ; elytra covering the pygidium ; anterior tibiæ bi- or tri-dentate outwardly and serrulate.

Key to the Genera.

- A. Posterior tibiæ dilated and excavated outwardly, outer margin dentate.

Anterior tibiæ three-dentate, apical spur nearly straight ;
elytra multi-striate, and with distinct epipleura *Hybosorus*.

Anterior tibiæ bi-dentate, apical spur very long and curving
outwards ; elytra granulose, faintly striate, no epipleura .. *Chaetocanthus*.

- A'. Posterior tibiæ not dilated and not excavate.

Anterior tibiæ weakly bi-dentate, apical spur moderately
long and slender, posterior tarsi nearly as long as the
tibiæ, claw long, slender *Phæocrous*.

GEN. HYBOSORUS, McLeay,

Hor., Entom., i., 1819, p. 120.

Mentum sub-quadrate but with the basal angles a little rounded, slightly emarginate at tip, and with the palpigers quadrate and very greatly developed, being nearly one-third of the width of the mentum, second joint of labial palpi swollen and of about the same length as the basal one, apical one longer than the second, slightly swollen at base, and sub-cylindrical from there, ligula membranaceous, bi-lobate, briefly ciliate internally at tip, and long ; maxillæ moderately short, massive, deeply emarginate outwardly, apical lobe ciliate, not dentate, inner one somewhat slender, briefly ciliate and horny at tip, but not dentate ; antennæ ten-jointed, basal joint short, swollen, second one globular, club tri-jointed, with the inner joint very concave and also a little larger than the other two ; mandibles not hidden by the labrum, strongly arcuate, sharp at tip, but not dentate inwardly ; eyes divided in front by the canthus of the genæ, but not deeply, and showing less on the upper than on the under side ; head and prothorax simple, the latter diagonally attenuate laterally from the sharp anterior angle to the posterior

which is also sharp; the anterior part is slightly bi-sinuate and broadly marginate, while the base, which is marginate like the outer sides, is sinuate close to the outer angle; scutellum moderately long, triangular; elytra elongate, oblong, convex, multi-striate, covering the pygidium and also the abdomen; epipleura narrow, almost grooved in the posterior part; abdomen six-jointed, apical joint alone free; coxae contiguous, except the intermediate ones which are divided by a narrow sulcus; legs robust; anterior tibiae tri-dentate outwardly, serrulate above the digits, and having a strong apical spur set in the rounded inner angle, intermediate and posterior tibiae broadly carinate on the upper side and having a very distinct transverse median ridge, dilated at tip, where they are not deeply scooped, but ciliate all round, and having two slightly compressed spurs set in the inner angle; tarsi shorter than the tibiae, somewhat thick, except the anterior ones, and with the four basal ones nearly of equal size, claws simple. The valves of the penis seem to be bifid owing to the median membrane becoming chitinous at the tip, and being produced there into a deeply sinuate lobate lamina running parallel with the valves when open (plate xxxviii., figs. 38, 39).

The species of this genus are said to occur in sandy spots, and are very commonly caught at camp-fires, or at lights during thundery weather. They are easily recognised owing to the shining body and the numerous punctate stria of the elytra.

The genus is represented in Europe, Northern America, Syria, India, and Africa (Senegal, Central Africa, Abyssinia, the Galla country, and Sierra Leone).

Key to the Species.

Prothorax with fine, not closely set punctures, base slightly sinuate near the outer angle; anterior tibiae with three obtuse serrate teeth above the digits *illigeri*.

Prothorax with fine, not closely set punctures, base very deeply sinuate near the outer angle; anterior tibiae with four or five distinct serrate teeth above the digits *ruficornis*.

Prothorax with deep, closely set punctures, base very deeply sinuate near the outer angle; anterior tibiae with somewhat obtuse serrate teeth above the digits *grossus*.

HYBOSORUS ILLIGERI, Reich.,

Annals Soc. Entom. d. France, 1853, p. 88.

Piceous black on the upper side, piceous red beneath, glabrous above, shining, antennae flavous; clypeus semicircular, slightly

marginate, head finely and closely punctured except along the base where there is a narrow, transverse, impunctate area; prothorax diagonally ampliate from the anterior angle to the posterior which is sharp, moderately convex on the upper part, distinctly marginate all round, finely and moderately closely punctate, the punctures being less numerous and a little more scattered on the median part, the base is arcuate and very slightly sinuate near the outer angle; scutellum triangular, slightly aciculate; elytra elongate, slightly ampliate laterally from about the median part, convex, distinctly marginate, the suture is a little raised in the posterior part, and there is on each side seventeen or eighteen series of closely set, round, shallow punctures; abdomen and legs sparsely ciliate, metasternum with a faint median longitudinal impressed line; anterior tibiae tridentate outwardly with the basal tooth very short, and having two or three ill-defined serrations above it.

Length 6-9 mm.; width $4\frac{1}{2}$ mm.

Hab. The whole of Cape Colony, Natal, and Transvaal, Mozambique (Lourenço-Marquez, Rikatla), Southern Rhodesia (Salisbury, Buluwayo, Enkeldoorn), Damaraland, Ovampoland. It occurs also in Southern Europe, North America, the Guinea Coast, Senegal, Northern Africa, Abyssinia, Somaliland, Boran Galla, Zanzibar, &c.

HYBOSORUS RUFICORNIS, Bohem.,

Insect. Caffrar., ii., p. 369.

But for the size, which is considerably larger, this species is similar to the preceding one, except that the basal part of the prothorax is very much more deeply sinuate laterally near the outer angle, and that the anterior tibiae have four or five distinct serrations above the basal outer tooth.

Length 10-13 mm.; width $6\frac{1}{2}$ -8 mm.

Hab. The whole of South Africa, with the exception of the Cape Colony, so far as I know.

HYBOSORUS CRASSUS, Klug,

Monatsb. Berl. Acad., 1855, p. 657.

Size, colour, and shape of small examples of *H. ruficornis*, but distinguished by the much rougher punctures of the head and by the more closely set and deeper punctures on the prothorax; the anterior

tibiae have above the basal outer tooth only three serrations, the teeth of which are somewhat obtuse in my examples. I regret that I did not, at the time I examined it, note this character in the type.

Length 10 mm.; width 7 mm.

Hab. Southern Rhodesia (Victoria Falls) Mozambique (Tette).

CHLETOCANTHUS, n. gen.

Mentum slightly concave and in the shape of an inverted, broadly truncate cone, not emarginate in the middle at tip and densely bristly; ligula long, very broad and very deeply incised, but not quite bi-lobate; second joint of labial palpi swollen and as long as the apical one which is narrower and much more cylindrical, palpi-gers strongly developed, sub-quadrate; maxillæ short, massive, apical lobe long, closely ciliate, inner lobe briefly ciliate and having at the tip a strong, hooked tooth, apical joint of maxillary palpi nearly as long as the two preceding, almost cylindrical, and rounded at tip; eyes not divided by the canthus of the genæ, and showing as much on the upper side as they do on the under side; labrum narrow, transverse, not covering the mandibles which are compressed, arcuate, sharp at tip, and have a strong inner tooth; head simple; suture of genæ invisible; antennæ nine-jointed, third to sixth joints of equal width and pressed against each other, club lenticular, three-jointed; prothorax slightly amplified diagonally from the apex to the base which is moderately arcuate with the outer angles sharp, and is distinctly marginate; scutellum not very long, rounded at tip; elytra oblong, elongate, moderately convex, very indistinctly striate, and without any trace of epipleura; pygidium vertical, triangular, partly covered by the elytra; abdomen six-segmented, segments convex, not contracted at middle, and all of equal width except the apical one which is narrower; metasternum moderately broad, intermediate coxæ contiguous, carinate inwardly, posterior ones not contiguous; anterior tibiae with two very large and very long outer teeth and very closely serrate above the digits, apical spur a little longer than the apical outer tooth, curving outwardly in the same direction, but much narrower; intermediate tibiae strongly emarginate in the upper part and sharply dilated at tip, bi-carinate and bi-dentate above the median part, and having two long, flattened apical spurs which are not of equal length and are densely fringed with long ciliæ; these spurs are somewhat blunt at the tip and a little shorter than the tarsi; posterior femora very compressed and dilated

triangularly from base to apex, narrowly bi-carinate on the upper side and having four transverse carinae, the apical and the supra-apical of which extend right across the outer part and form there two very distinct ridges, apical part hardly hollowed and having near the outer angle a bi-carinate, longitudinal, dentiform process, and in the inner angle two compressed, ciliate spurs similar to the intermediate ones, but a little shorter.

CHETOCANTHUS INSUETUS, n. spec.,

Plate XXXIX., fig. 21.

Chestnut brown, very briefly pubescent on the upper side, but with pectus, legs, and the outer basal margins of the prothorax very densely hairy, the hairs are flavous and very long; the labrum is also pubescent, and there is a bunch of long, pubescent hairs on each side of the head above the point of insertion of the antennae; head densely granular; antennae flavous; prothorax covered with small granules set close to one another; scutellum rugose; elytra covered with elongate, depressed granules set very close to one another, and having only one distinct stria along the suture and a faint trace of one or two more on the discoidal part; pygidium finely aciculate, pubescent, abdominal segments closely scabrose; femora and tibiae hardly punctate; metasternum slightly scabrose and grooved longitudinally.

Length $8\frac{3}{4}$ -9 mm.; width $4\frac{1}{4}$ mm.

Hab. Cape Colony (Fraserburg, Carnarvon).

I have seen only two female examples of this remarkable insect, the habits of which are unknown.

GEN. *PHLEOCROUS*, Casteln.,

Hist. Nat., ii., 1840, p. 108.

Silphodes, Westw.

Mentum very concave, longer than broad, rounded laterally especially at the base, not deeply emarginate at the tip, and set with only a few rigid setae, ligula bi-lobate, membranous, with the lobes slender at the tip and very long, palpigers well developed, somewhat broadly conical, apical joint nearly as long as the two preceding, nearly straight inwardly but ampliate in the middle outwardly and rounded at the tip; maxillae moderately long,

broadly hollowed inwardly, apical lobe broad, pubescent and ciliate, inner lobe narrow, pubescent, stiffly ciliate, the apical part is corneous and bears at tip two stronger and stiffer claw-like ciliæ and a small sharp tooth underneath; apical joint of maxillary palpi long, sub-cylindrical and truncate at tip; antennæ ten-jointed, club tri-jointed, first joint larger than the other two and concave, apical joint flat; eyes deeply divided by the canthus of the genæ and showing much less on the upper than on the under side; mandibles partly hidden by the labrum, arcuate in the anterior part where they are reflexed, slightly bifid at tip and ciliate laterally; head simple, labrum briefly transverse, emarginate at middle and rounded laterally; prothorax attenuate diagonally from base to apex and with the anterior angles sharp and the basal one obtusely rounded, very little convex on the disk and depressed laterally behind; scutellum sharply triangular; elytra elongate, ampliate in the posterior part, moderately convex in front, distinctly more so behind, covering the pygidium, and somewhat indistinctly striate; coxæ contiguous; legs moderately slender; anterior tibiæ nearly straight, not obliquely truncate and with a slender apical spur in the outer angle, bi-dentate externally and strongly serrate above the digits right to the base; intermediate and posterior tibiæ slender, bi-carinate, ciliate on the upper side and not dilated at tip; tarsi not quite as long as the tibiæ; outer claws of the anterior tarsi a little longer than the inner one and having a small but sharp tooth underneath towards the middle, intermediate, and posterior claws simple and of equal length; valves of penis bifid and greatly distorted (plate xxxix., figs. 1, 1a, 1b.).

The genus is represented in Madagascar, Senegal, Central and Eastern Africa, Sumatra, and Australia.

PHEOCROUS MADAGASCARIENSIS Westw.,

Plate XXXIX., figs. 1, 1a, 1b.

Trans. Entom. Soc. Lond., 1846, p. 161.

Chestnut-brown, glabrous, somewhat ferruginous red on the clypeus, the sides of the prothorax, and the legs; antennæ ferruginous; labrum nearly as broad as the clypeus with the suture slightly arcuate, whole head covered with closely set punctures, genæ distinct, sub-auriculate, but without suture; prothorax narrowly marginate all round, slightly convex, distinctly depressed laterally and covered with not very closely set punctures which are deeper and a little more scattered on the sides than on the disk in the median

part of which there is a longitudinal impressed line obliterated towards the base and apex; scutellum very slightly punctate; elytra with the suture raised, and having in addition to the juxta-sutural shallow striæ three feebly indicated sub-striate lines on each side, the whole surface is covered with very closely set, shallow punctures; abdomen setulose; median part of metathorax somewhat lozenge-shaped and impressed.

Length 12 mm.; width $7\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Salisbury).

SUB-FAMILY ORPHNINÆ.

Antennæ ten-jointed; buccal organs not covered by the clypeus; intermediate coxæ approximate, very developed, strongly carinate inwardly; abdomen eight-jointed; pygidium sub-triangular, partly covered by the elytra; intermediate and posterior legs with two spurs.

Key to the Genera.

Head with a cephalic horn; prothorax excavate in the middle in the male; posterior legs with a spur on each side of the tarsus .. *Orphnus*.

Head and prothorax simple; spurs of the posterior tibiæ set in the inner angle *Ochodæus*.

GEN. ORPHNUS, McLeay,

Hor., Entom., i., 1819, p. 119.

Mentum elongate, parallel, attenuate, and rounded towards the tip which is very deeply and broadly emarginate; ligula longer than the mentum, bi-lobate, ciliate at tip, membranaceous; first joint of maxillary palpi short, second longer, curved, very obliquely truncate at tip, apical one sub-fusiform, blunt at tip; maxillæ massive, short, excavated inwardly, external lobe short, densely ciliate, the ciliæ stiff and long and having on each side of the inner basal part a strong, slightly curved tooth, inner lobe short, also ciliate inwardly but less stiffly and having a long tooth at apex; last joint of maxillary palpi nearly as long as the two preceding, sub-fusiform inwardly, slightly sinuose outwardly and slightly truncate at tip; mandibles strong, wide, arcuate, scooped in the centre and with four strong inner teeth; labrum distinct, emarginate, densely ciliate; clypeus short, rounded

eyes divided in front by the canthus of the genæ; eyes globose but not showing as much in the upper part as on the under side; antennæ ten-jointed, club tri-jointed, the joints long, ultimate one a little concave; prothorax a little ampliate laterally and more or less obliquely attenuate towards the base, marginate, simple or deeply excavate and having a faint supra-marginal lateral impression; scutellum ogival, moderately long; elytra somewhat short, parallel, rounded behind, convex, vaguely striate along the sutural part and very indistinctly on the discoidal part, and irregularly pitted; pygidium uncovered, nearly vertical; abdominal segments, with the exception of the penultimate one, narrow; intermediate and posterior coxæ nearly contiguous, very broad, lamelliform, the intermediate ones strongly carinate along the median sulcus; metasternum narrow and not projecting beyond the base of the median coxæ; legs robust; anterior tibiæ strongly tri-dentate outwardly, obliquely truncate inwardly and without apical spur in the male; intermediate and posterior dilated, bi-carinate and uni-dentate transversely on the upper side, truncate at tip where they are stiffly bristly, they are compressed and the apical spurs, which in the posterior legs are set in the median part of the inner margin on each side of the tarsus, not at the angle, are very long and sharp and of nearly equal size.

The head and prothorax are simple in the female, but in the male the head bears a sharp vertical horn in the anterior part, and the prothorax is more or less deeply excavated with the walls of the excavation often vertical; the valves of the penis are symmetrical (plate xxxviii., fig. 37), they vary slightly in the different species, being more or less deeply emarginate inwardly and outwardly, but this difference is very slight, and is referred to here merely on account of the great similarity in the outward characters.

In South Africa the species are usually caught at camp-fires. The genus is represented in India and Ceylon, and in Africa it occurs in Senegal, Abyssinia, Gallaland, and East German Africa, and also in Madagascar. All the African species are very much alike, and the greater or less development of the cephalic horn and of the prothoracic cavity enhances the difficulty of distinguishing between the species.

Key to the Species.

A. Walls of the prothoracic cavity of the male strongly sinuate, bi-dentate.

a². Colour brick-red or piccons red.

Elytra foveolate and with only one juxta-sutural stria . . . *pugnax*.

Elytra punctate and having each two moderately distinct dorsal striæ besides the juxta-sutural one *plebeius*.

*a*¹. Colour black or piceous black.

Elytra with five fairly distinct striæ on each side *bilobus*.

Elytra with only a juxta-sutural stria on each side *ovampoianus*.

*A*¹. Walls of the prothoracic cavity of the male sharply triangular at tip.

a. Colour brick-red or piceous red.

Head truncate and sub-carinate in front; cephalic horn flat in front and not triangular behind; elytra coriaceous *rufulus*.

Head normal; cephalic horn flat in front and triangular behind; elytra sub-coriaceous *zambesianus*.

(*Female*.)

Prothorax very closely punctured except for a narrow longitudinal median space; elytra with fine, somewhat distinct striæ *incultus*.

ORPHNUS PUGNAX, Péring.,

Plate XXXVI., fig. 29.

Trans. Entom. Soc. Lond., 1896, p. 159.

Brick-red, glabrous, shining; head of the male impunctate and having at about the median part a nearly vertical horn flattened at the base in front and triangular behind, this horn attains the height of the anterior part of the vertical walls edging the deep excavation on the median part of the prothorax which reaches nearly to the base; the walls edging this excavation are vertical, perpendicular in the anterior part and very deeply sinuate at tip, the anterior angle of the sinuation is triangular, the posterior, which is more raised than the anterior, is slightly rounded, and from there the walls slope towards the base for about one-third of the length, the sides of the prothorax and of the walls have a few deep, scattered punctures, but the excavation is impunctate; scutellum more rounded than ogival at tip, transversely impressed and impunctate; elytra short, convex, faintly striate only along the suture and set with rough, nearly confluent, shallow sub-alveolate punctures.

Female: Whole head distinctly punctate, on the vertex is a very short but sharp triangular tubercle close to the base; the prothorax has a shallow transverse apical impression, but is otherwise simple, and has a very distinct median longitudinal, broad but shallow furrow extending from base to apex, and it is covered with somewhat closely

set, deep, foveate punctures; the elytra are as in the male and equally roughly punctured, but there are five more distinct striae on the discoidal part.

Length 5-5½ mm.; width 3-3¼ mm.

Hab. Southern Rhodesia (Salisbury).

ORPHNUS PLEBEIUS, n. spec.

Male: Piceous red, shining, glabrous; head nearly impunctate and having in the central part a sharp conical tubercle or a small horn; prothorax very deeply excavated from the anterior part to close to the base, the walls edging the excavation are similar in shape to those of *O. pugnax*, but they are only very slightly punctate outwardly, and the sides are almost impunctate along the outer margins; scutellum ogival, impunctate; elytra moderately convex, distinctly striate along the suture, the second stria is nearly obliterated, but the third one is quite distinct, and the fifth one noticeable, the punctures are deep but not rugose, greatly scattered and almost obliterated in the rounded posterior part; metasternum with a median slightly impressed line and a shallow basal impression.

In the small development the head has a transverse triangular median tubercle only, and instead of an excavation on the prothorax there is an anterior sub-triangular impression with a slightly raised rounded ridge on each side of it near the apex, the sides are moderately closely punctured, but the median part is smooth; the valves of the penis are longer than in fig. 37 of plate xxxviii. (*O. zambesianus*), less emarginate inwardly near the base, and with the dilated apical process sharper at tip, vertical and sharply angular behind.

Female unknown.

Length 8 mm.; width 4½ mm.

Hab. Southern Rhodesia (Enkeldoorn).

ORPHNUS BILOBUS, Klug,

Monatsb. Berl. Acad., 1855, p. 656.

O. mashunus, Pér., Trans. Entom. Soc. Lond., 1896, p. 158.

Male: Black or piceous black, shining; head impunctate and having in the centre a vertical horn flattened in front, and also in the hind part of the base, this horn, which varies in size, does not reach quite to the height of the anterior part of the walls of the prothoracic excavation which are strongly emarginate at tip and perpendicular in front in the same manner as in *O. pugnax* (pl. xxxvi., fig. 29), the excavation is smooth and does not quite reach the base, but is pro-

longed behind into a bluntly triangular depression; scutellum slightly carinate longitudinally in the median part, not impressed transversely at the base which is punctulate; elytra convex, and having besides the juxta-sutural striae two dorsal fairly well-defined ones corresponding to the third and fifth, while the two intermediate ones show faintly only, the sides are strongly and irregularly punctate and somewhat coriaceous, while in the dorsal part there are some shallow, slightly seriate punctures in the striae and in some of the intervals. In the smaller development the cephalic horn is small, the excavation is deep, but the walls are not raised, but slightly sinuate in the upper part towards the middle, and very sloping in the anterior part; it is this small development that I described under the name of *O. mashunus*; the metasternum has a lozenge-shaped impression with a median longitudinal line; the valves of the penis are somewhat different from those of the other species, being longer, slightly concave inwardly near the base, while the outer margin is more arcuate, and the apical outer margin sharply aculeate, nearly perpendicular, and very sharp at tip.

Length 11–11½ mm.; width 6½–7 mm.

Hab. Southern Rhodesia (Salisbury), Mozambique (Tette).

ORPHNUS OVAMPOANUS, Péring.,
Trans. Entom. Soc. Lond., 1896, p. 158.

Male: The description of the small development of *O. bilobus* almost exactly suits this species, except that the walls of the prothoracic cavity, which are also not much raised, abut very closely on the apical margin, and that the cavity itself reaches only to the median part of the disk, the posterior part being closely punctate; it is also much smaller, and the striae on the elytra, with the exception of the juxta-sutural one, are obliterated or hardly discernible; the valves of the penis are more slender, not so deeply arcuate outwardly, and with the forcipate part very much less angular, and nearly straight from the angle to the tip.

Female not known with certainty.

Length 7 mm.; width 4 mm.

Hab. Ovampoland.

ORPHNUS ZAMBESIANUS, Péring.,
Plate XXXVI., fig. 31; Plate XXXIX., fig. 37.
Trans. Entom. Soc. Lond., 1896, p. 157.

Male: Brick-red, or piceous red, shining; head fuscous, very finely

aciculate, and bearing a horn on the very edge of the clypeus, this horn is long or very long, vertical, flat in front and triangular behind, but even in the great development it does not reach quite as high as the highest point of the vertical walls edging the deep, broad excavation on the prothorax, this excavation reaches from near the anterior margin to close to the base, and is edged laterally by a high wall, which, in the anterior part, is produced into a triangular elevation, and the whole surface of the sides is covered with round punctures neither deep nor closely set, the excavation itself is impunctate; prothorax ogival, punctulate; elytra convex, distinctly striate only along the suture, but with a faint second stria visible in the posterior part only, the whole surface is covered with shallow more or less rugose and often confluent punctures giving to the elytra a sub-coriaceous appearance. In the small development the thoracic excavation is deep, but the anterior part of the walls is not produced into a triangular elevation, it is, however, aculeate but remains in a line with the rest of the wall.

Female: Clypeal part of the head deeply punctate, posterior part smooth; prothorax simple, punctulate laterally, but smooth in the median part; scutellum slightly carinate longitudinally; elytra less coriaceous and with the punctures more distinctly seriate in the dorsal part, the first and second striae are distinct from the base to the posterior rounded part; metasternum with an impressed longitudinal line as in the male.

This species is very closely allied to *O. meleagris* from Senegal, which, however, is piceous black; the valves of the penis are differently shaped, and are longer, less arcuate externally and the apical forcipate part is more oblique.

Length 9–10½ mm.; width 5–7 mm.

Hab. Southern Rhodesia (Buluwayo, Limpopo River).

I have seen a species from the Galla country which resembles this species so closely as to be almost indistinguishable from it; the colour, however, is patchy black and the valves of the penis are deeply emarginate outwardly and the forcipate part is not angular and is slightly rounded and attenuate towards the tip. For this species, I propose the name of *O. emeritus*.

ORPHNUS RUFULUS, Bohem.,

Insect. Caffrar., ii., p. 368.

Male: Brick-red, shining; head truncate in front and transversely quadrate, the truncate apical part is sub-tuberculate laterally and sub-carinate, the cephalic horn, which is vertical, long, and not

triangular behind, is quite apical, and the truncate part may be said to be its basal part; the prothorax is deeply excavate from the anterior margin to the base, and the walls of the excavation which are very much raised are not quite vertical in front, and are produced in the middle into a broad and sharp triangle the sides of which have nearly the same slope, the cavity is closely punctured, the punctures being almost contiguous, and the sides are covered with moderately deep, not closely set punctures; elytra covered with deep, irregular, scattered punctures, and having four faint dorsal striae, including the juxta-sutural one, all four of which disappear past the median part; valves of penis deeply emarginate from near the base to the median part, not angular in the lower part of the emargination, and with the forcipate part nearly straight from there to the apex; the inner part is deeply emarginate at the base.

Female: Same colour as the male, although a little lighter, the clypeal part is distinctly punctate and separated from the frontal part by a somewhat evanescent bi-sinuate line; prothorax simple, somewhat closely punctate, but with the punctures a little less numerous in the median part; elytra as coriaceous as in the male, although the punctures are not quite so deep, and with only one discernible stria besides the juxta-sutural one; the metasternum has a slightly impressed longitudinal line as in the male.

I am not quite sure that the female here described is that of *O. rufulus*; it is much shorter, in proportion to the size, but it comes from the same locality.

Length 6-7 mm.; width 4-5 mm.

Hab. Cape Colony (Griqualand West), neighbourhood of Limpopo River, teste Boheman.

ORPHNUS INCULTUS, Péring.

Hybosorus incultus, Trans. S. Afric. Philos. Soc., vol. vi., 1892, p. 31.

Female: Piceous, moderately shining; head simple, closely and distinctly punctate except for a narrow basal strip which is almost impunctate, frontal transverse line hardly noticeable; prothorax simple, covered with small punctures very closely set except in the median part where they are few, and having in the basal part an elongate, sub-triangular, slight impression; scutellum slightly concave, ogival, punctate; elytra with scattered punctures more numerous in the anterior part, first and second striae distinct from the base to the posterior rounded part, third and fifth also distinct

but obliterated in the posterior part, fourth feebly indicated by some punctures in the anterior part only; metasternum impressed and with a median, longitudinal line.

Male unknown.

Length 9 mm.; width 5 mm.

Hab. Ovampoland.

Distinguished from the female of *O. zambesianus* by the more deeply and closely punctate prothorax, and the more distinctly impressed supra-basal part.

GEN. OCHODÆUS, Lepell and Serv.,

Encycl. Méth., x., 1825, p. 360.

Mentum rounded laterally, attenuate in front, emarginate at tip; ligula membranous, bi-lobate, projecting beyond the mentum; last joint of labial palpi smaller than the second; maxillæ robust, apical lobe sub-triangular, strongly ciliate, inner lobe with a long process hooked inwardly, last joint of maxillary palpi long, sub-cylindrical, truncate at tip; mandibles semicircular, compressed, acute at tip, and slightly bi-dentate inwardly; labrum long, strongly emarginate at tip; clypeus sub-circular and with the margin carinate, eyes large, not divided by the canthus of the genæ, antennæ ten-jointed, club large, lenticular; head simple; prothorax also simple, convex, a little ampliate laterally and marginate all round; scutellum ogival, depressed; elytra oblong, convex, punctato-striate; pygidium sub-triangular, partly covered by the elytra; abdominal segments partly soldered, and of nearly equal width in the middle, except the last one; intermediate and posterior coxæ nearly contiguous, also lamelliform, but not as strongly developed as in *Orphnus*; metasternum not produced between the intermediate coxæ; legs robust, anterior tibiæ tridentate outwardly, but with the basal tooth much smaller than the other two, very oblique inwardly and provided with a very long apical spur, inner angle very sharp in the male; anterior tarsi very slender, claws wide apart and also very slender; intermediate and posterior tibiæ bi-carinate on the upper side, and bristly, but not serrate, apical spurs set in the inner angle, long, and not equal in length.

OCHODÆUS CAPICOLA, n. spec.

Testaceous red, briefly but densely pubescent; head roughly and closely punctate; antennæ flavescent; prothorax covered with closely set, triangular granules, it is distinctly emarginate all round,

and has a median, longitudinal groove which is more distinct in the posterior than in the anterior part; scutellum sharply ogival, granulose; elytra striate, striæ deeply and broadly punctate, intervals with a double series of small granules, and slightly convex; epipleura also granulose; under side densely pubescent, moderately shining, legs almost impunctate, all femora dentate underneath at apex, the tooth being stronger in the posterior ones.

Length 6 mm.; width 3 mm.

Hab. Cape Colony (Stellenbosch).

(The following genus and species are unknown to me. I have not been able to find the locality "Sissanto" in South Africa, and it is thus possible that it is north of the South African area.)

GEN. DREPANOGNATHUS, Lansb.,

Notes from the Leyden Museum, vol. viii., 1886, p. 92.

"There is in the Leyden Museum a curious small Orphnid beetle, remarkable owing to its depressed facies and its short clypeus. It cannot be interpolated in any of the known genera, and must form a new one, the distinctive characters of which are as follows:—

Antennæ ten-jointed, basal joint very long, clava lenticular; clypeus very short; labrum uncovered, horny, broadly emarginate, rounded laterally and bearing long setæ; mandibles robust, projecting much beyond the head, rounded outwardly, falciform, and enclosing an empty space; maxillæ horny; mentum moderately elongate, ligula sinuate at tip; labial palpi short; apical joint of maxillary palpi very long and fusiform; coxæ oblique, contiguous at the base; abdominal segments mobile, but not entirely free; legs of *Orphnus*, apical spurs of posterior tibiæ very long. Facies of a Hydrophilid beetle."

DREPANOGNATHUS MANDIBULARIS, Lansb.,

Loc. cit., p. 92.

"Oblongo-ovate, plane, very shining, black on the upper side, with the lateral part of the clypeus and of the elytra somewhat transparent brown, brown also beneath, abdomen testaceo-fulvous; sides of the prothorax, legs and pectus fringed with long, stiff hairs; head smooth, transversely impressed in the centre, clypeus very short, straight in front, not reflexed; eyes very large, no genæ; prothorax reflexed at base, covered with big, remote punctures less numerous

in the centre; scutellum smooth, rounded behind; elytra covered with wide umbilicate punctures disposed in longitudinal series, which become obliterated towards the apex, the sutural stria is alone noticeable, and the interval enclosed by it is raised; pygidium invisible; first joint of the posterior tarsi as long as the three following put together, but shorter than the apical spurs; anterior tibiæ tri-dentate and not erenulate above the digits.

Length $6\frac{1}{2}$ mm.

Hab. South-Western Africa (? Sissanto)."

After describing a second species of this genus from Madagascar, Lausberge adds that—"The depressed shape of these insects, as well as the strength of their buccal organs, denote that they probably inhabit rotten trunks of trees, and are found under the bark in the manner of the *Dynastini*, from which the *Orphnini* have wrongly been far separated."

SUB-FAMILY DYNASTINÆ.

Ligula horny and fused with the mentum, but sloping backwards; maxillary palpi inserted either on the sides of the anterior face or in the inner face of the mentum; maxillæ moderately robust, upper lobe horny, hollowed inwardly, straight or curved and pluri-dentate inwardly, or sometimes ovate or transverse and not dentate; mandibles strong, projecting always beyond the clypeus which is obliquely attenuate laterally with the apical part bi-dentate or reflexed in the middle; genæ small, sometimes reduced to a mere canthus; antennæ ten-jointed in all the South African species, club tri-jointed; anterior coxæ set deeply in the cotyloid cavities, the four posterior ones contiguous; elytra covering the basal part of the pygidium; claws not toothed beneath or conspicuously cleft, but the anterior tarsi of the male are often thickened and the inner claw is very much developed and more or less contorted; last three pairs of abdominal spiracles strongly diverging, and placed on the ventral segments.

This sub-family is distinguished from the sub-family *Rutelinae*, with which it has in common three strongly diverging abdominal spiracles, by the apparent absence of the labrum which is hidden under the clypeus but can still be detected in some species, and by the claws of the tarsi, which are equal, although the inner one is often thickened in the male.

The clypeus is always strongly attenuate obliquely on the sides with the apex truncate and bi-dentate, or when not bi-dentate it is

reflexed at the tip, it is fringed inwardly with dense fulvous hairs, and is occasionally divided from the frontal part by a more or less distinct, carinate suture; the mandibles are obtusely tri-dentate or bi-dentate, sharply uni-dentate, or rounded, in the latter case they are very concave and wider than the clypeus, the genæ are never very much developed, and the eyes are divided by the canthus of the genæ; the antennæ are ten-jointed (in all the South African species), the club is sometimes reniform, but in one case (*Homœomorphus*) very elongate and lamellate in the male; the maxillæ are sharply pluri-dentate inwardly, the teeth being in most cases opposite one another, more or less connate at base, but in some genera (*Pychnoschema*, *Oryctes*) they are not dentate, and are even reduced to a very small pubescent lobe in the first-named genus; the head and prothorax in the majority of cases bear horns or tubercles, and are excavated in the male; the elytra are either convex, moderately convex, or almost plane, and they have a basal, epipleural fold, they are not deeply striate, the striæ being geminate, and most apparent in the dorsal part only; the propygidium is very often provided with transverse, more or less fine striæ or ridges, serving as stridulating organs, but although in some species these are almost invisible, yet a certain amount of rasping noise can be produced by the friction of the outer edge of the elytra against the scabrose sides of the dorsal part of the ventral segments; the pygidium is usually convex, and the more convex it is, the more constricted is the abdomen in the male, and the last segment in this sex is always shorter than the penultimate one; the anterior tibiæ are strongly tri-dentate outwardly, and occasionally have intermediate serrate teeth, they are very obliquely truncate inwardly, and the inner spur is long and sharp; the four posterior ones are robust, sometimes very broadly dilated (*Temnorhynchus*), usually transversely bi-carinate obliquely on the upper part, but these carinæ are sometimes developed into two strong teeth, and the inner or outer part is dentate, the apex is semicircular, and stiffly bristly or ciliate or not, or tri-dentate, almost digitate, on the upper side; the basal joint of the posterior tarsi is triangular, and often developed into a long spinose process, and the onychium is greatly developed, bi-setose or penicillate, and in some genera, *Rhizoplatus*, &c., it is as long as the claws.

These insects are of sluggish gait when met with in the daylight, but they are mostly nocturnal or crepuscular, and are often attracted in numbers by electric lights.

Some of them are now known to live on the roots of plants, and prove somewhat injurious to the farmer (*Heteronychus*, *Pentodon-toschema*); others are found buried in the wet sand on the banks of

brooks and rivers (*Temnorhynchus*); in some again the habits are the same as in their European congeners, and they are met with in decomposed logs or tree-trunks (*Oryctes monoceros*, *Syrichthodontus spurius*); others are found in the old heaps of faeces carried out of its nest by the white ant, *Hodotermes havilandi*, Sharp, and live there with their larvæ (*Syrichthus verus*, *Pycnoschema corydon*, &c.); but *Cyphonistes corniculatus* and *Syrichthomorphus termitophilus* are only found underground, on the sides, or at the bottom of the conical mounds made by *Termes trinervius* and another *Termes*, and their larvæ feed on the material of which the mound is made. I suspect that most of the species found in South Africa do the same.

This adaptation to a new mode of life explains the presence in the dry, treeless Karroo plains, of insects generally connected with arboreal decomposed vegetation.

The shape of the genital armature is of service for the identification of the species, but these organs are not quite so dissimilar in shape as in the *Geotrupinæ*; in some genera the difference is slight, in others certain species have nearly similar armatures, and some have quite different ones (*Pentodontoschema*, &c.).

I have made use of the shape of the mentum to remove several species from genera to which they should not belong, and the European genera *Pentodon* and *Phillognathus* have therefore no longer any representatives in South Africa. The inclusion of several species in some other genera was due merely to superficial resemblance.

Of the nineteen genera found in South Africa, ten have not been met with elsewhere, i.e., *Pentodontoschema*, *Hyboschema*, *Orsilochus*, *Callistemous*, *Homæomorphus*, *Syrichthus*, *Syrichthodontus*, *Syrichthomorphus*, *Venedus*, and *Pseudocyphonistes*.

Key to the Genera.

- A². Labial palpi inserted on the sides of the mentum but in the outer part.
- B². Intermediate and posterior tibiæ non-digitate at apex.
- C. Median and posterior tibiæ with two ciliate oblique carinæ. *Ale*
- D². Maxillæ tri-dentate, not showing much beyond the clypeus.
- E. Inner claw of anterior tarsi of male thickened and contorted.
- F⁵. Apical part of posterior tarsi ciliate, but with one apical spine.

Mentum very elongate, strongly constricted laterally before the apex; maxillæ with six inner teeth; clypeus bi-dentate *Heteronychus*.

- F⁴. Apical part of posterior tarsi ciliate and without an apical spine.

Mentum elongato-ovate with the ligular part dilated; maxillæ four- or five-dentate, in the latter case the basal tooth is bifid *Pentodontoschema*.

Mentum lanceolate at tip, maxillæ six-dentate *Hyboschema*.

Mentum elongate, acuminate at tip; maxillæ small, not dentate *Orsilochus*.

- F³. Apical part of posterior tibiæ neither ciliate nor spinose.

Frontal carina raised in a vertical wall in both sexes; posterior tibiæ very broadly dilated *Temnorrhynchus*.

Frontal carina normal; clypeus acuminate . . *Callistemonus*.

- D¹. Maxillæ rounded, very convex; apical part of anterior tibiæ ciliate.

F². Clypeus very narrow, lanceolate; club of antennæ uniform, moderately long; mentum very sharply acuminate at tip *Ptychnoschema*.

- F¹. Apical part of anterior tibiæ slightly ciliate and triangular.

Clypeus not very narrow; club of antennæ very long, laminiform; mentum convex at base, deeply excavate at tip and emarginate there *Homœomorphus*.

- B¹. Intermediate and posterior tibiæ digitate at apex.

b². Claw of anterior tibiæ thickened in the male.

Mentum elongato-ovate, and with the ligular part strongly constricted laterally and expanding triangularly at tip; maxillæ five-dentate *Cyphonistes*.

- b¹. Inner claw of anterior tarsi of male not thickened.

Mentum small, oblong at tip; maxillæ concave, transverse, not dentate *Oryctes*.

Mentum elongato-ovate with the apical part emarginate; maxillæ strongly arcuate at tip and briefly bifid at apex and at base . . . *Archon*.

- A¹. Labial palpi inserted in the inner part of the mentum.

B². Intermediate and posterior tibiæ non-digitate at apex.

C¹. Median and posterior tibiæ with two oblique ciliate carinæ.

D². Inner claw of male not thickened.

c². Maxillæ bifid at tip, unidentate in the middle, trifid at base.

Mentum rounded laterally at base, ligular part not contracted *Syrichthodontus*.

Mentum in the shape of an elongate triangle, very deeply incised in the middle; maxillæ as in *Syrichthodontus* *Pseudosyrichthodus*.

c¹. Maxillæ sharply bi-dentate at tip, uni-dentate at middle, and trifid at base.

Mentum nearly rounded at tip; maxillæ of *Syrichthodontus* *Syrichthomorphus*

Anterior femora dentate *Venedus*.

D¹. Inner claw of male thickened.

Mentum nearly straight laterally, ligular part narrower than the mentum, rounded laterally and broadly emarginate at tip *Syrichthus*.

B¹. Intermediate and posterior tibiæ digitate at tip.

C². Median and posterior tibiæ with the second transverse carina spinose outwardly.

Mentum nearly straight at tip, nearly truncate; maxillæ concave, bifid at tip and bi-dentate at base *Pseudocyphonistes*.

C¹. Median and posterior tibiæ having two long spines instead of the transverse carinæ.

Mentum quite transverse, and without trace of ligula *Rhizoplatys*.

Mentum with the ligular part bi-lobate at tip. *Rhizoplatodes*.

GEN. HETERONYCHUS, Burm.,

Handb. d. Entom., v., 1847, p. 90.

Mentum very elongate, either sub-carinate longitudinally at middle or with two concave impressions (*claudius*), strongly constricted laterally near the tip, and expanding from there for a short distance, slightly oblique laterally in the anterior margin and deeply incised in the middle at the tip, it is deeply and broadly pitted, and set with long, bristly hairs; ligula fused with the mentum but very hairy,

labial palpi short, apical joint longer than the two preceding put together, swollen, ovate and sharp at tip; external lobe of maxillæ armed with six sharp, claw-like teeth set opposite one another, but with the two upper ones joined at base, maxillary palpi long, apical joint longer than the second, slightly truncate at tip, fusiform and carinate inwardly but straight outwardly (except in *H. claudius*, where it is equally swollen on both sides and broadly truncate); mandibles ending in three not very obtuse teeth recurved and projecting beyond the clypeus; head broad, not long, clypeus and genæ sharply carinate, the former strongly attenuate, straight at tip, and with the apical margin dentate more or less sharply at an equal distance from the outer angle and from the centre; the clypeus is divided from the frontal part by a clypeal transverse carina, sometimes tuberculate, sometimes a little raised, and occasionally interrupted in the centre, above this clypeal carina there is a frontal one strongly arcuate laterally above and in front of the eye, and often commingling with the clypeal one in the anterior part, eyes large, equally divided by the canthus of the genæ; antennæ ten-jointed, club elongato-ovate; prothorax not very convex, transverse, attenuate laterally in the anterior part, nearly straight from the median part to the posterior angle which is not sharp, base not marginate, slightly sinuate on each side of the middle; scutellum somewhat large, ogival; elytra nearly parallel for a third of the length, slightly ampliate laterally from there, rounded behind and somewhat convex in the posterior half of the disk, they are glabrous and have a series of scar-like round punctures forming a more or less deep striation, but the juxta-sutural stria is not punctate, and the second one is obliquely divergent in the anterior part, and seldom reaches the base, while the three dorsal ones are there deeply impressed; the epipleura are hardly visible, and the elytra do not quite cover the propygidium which bears in the centre two series of transverse, stridulating striæ; the pygidium is convex in both sexes, but more transversely so in the female than in the male; the abdominal segments are glabrous except for a transverse lateral series of setigerous punctures varying in number on the intermediate abdominal segments, in the male the apical abdominal segment is strongly sinuate and constricted laterally owing to the lateral development of the inferior surface of the pygidium which in the median part is reduced often to a mere fold, but which in some species is broader and has in the centre a transverse excavation; lateral part of abdominal segments and sides of the metasternum granular, the latter smooth and impressed longitudinally in the centre; prosternum with a thick horizontal carina at base ending in a round or ogival setiferous blunt process under the

coxæ; anterior tibiæ tri- or quadri-dentate outwardly and having some intermediate or supra-digital serrate teeth; the intermediate and posterior tibiæ have respectively three and two ciliate carinæ in chevron, and are bi-emarginate on the upper side; the anterior tarsi vary in the two sexes, they are short and thick in the male, the apical joint being much inflated, longer than the two preceding and not spinose, the outer claw is very slender, but the inner one is very broad, laminate, curved downwards in the direction of the under surface of the apical joint, and is slightly emarginate inwardly at tip or sometimes feebly dentate there, while in the female these tarsi are moderately slender, the apical joint is not swollen, and the two claws are simple and equal; the intermediate and posterior ones are in both sexes a little more slender than the anterior ones of the female.

I have divided the South African species into two groups, according to the shape of the stridulating striæ on the pygidium, which are either very fine and extend across the median part of the pygidium, or are in the shape of two vertical, oblique rows, the striæ themselves being very short and set somewhat apart.

Two species, *H. arator* and *H. wilmsi*, sometimes prove a source of trouble to the agriculturist, the former, especially in the Cape Colony, to the vine- and potato-grower, and the latter doing, it is alleged, much damage to the sugar-cane plantations in Natal. One of the normal enemies of *H. arator* is a Hymenopteron *Scolia fulvofimbriata*, Burm., which I found in very great numbers at Stellenbosch in a field of sweet potatoes, infected by this beetle.

All the South African species are very much alike, and with the exception of *H. claudius*, which is also an inhabitant of Senegambia, are difficult of identification. The shape, however, of the genital armature is of great use in the discrimination of species, and it varies considerably.

The genus is represented in Africa (Sierra Leone, Senegal, Gaboon, Abyssinia, Gallaland, the Tanganyka region, German East Africa), Madagascar, India, Java, Australia, and New Caledonia.

Key to the Species.

A². Head with two tubercles, stridulation striæ straight.

B⁵. Anterior tibiæ quadri-dentate outwardly.

C⁷. Prothorax with two median tubercles.

Stridulating striæ transverse, very indistinct, not divided; fold of pygidium very narrow, simple at middle *claudius*.

B⁴. Anterior tibiae with three strong teeth and three serrate ones.C¹. Prothorax without any tubercle.

Stridulating striae little developed, transverse, but slightly divided at apex by a faint, impressed line; basal fold of pygidium with a broadly triangular excavation.

Propygidium without distinct longitudinal impressed line, cephalic tubercles moderately developed *wilmsi*.

Propygidium with three distinct longitudinal impressed lines, cephalic tubercles moderately developed *niger*.

Stridulating striae transverse, straight, divided for half the length by a smooth space; fold of pygidium broad at middle and with an ovate excavation *infrictus*.

A¹. Head without any tubercle; stridulating striae oblique.B³. Anterior tibiae with three strong teeth and three serrate ones.

Transverse clypeal carina broadly interrupted, slightly tuberculate where interrupted; pygidium punctate on the sides only; stridulating striae very broad *indigus*.

Transverse clypeal carina non-interrupted, very slightly arcuate; fold of pygidium somewhat broad, simple at middle *corvinus*.

Transverse clypeal carina partly emarginate in a short crescent in the middle, interrupted in the female, upper half of pygidium strongly punctate transversely *mashunus*.

Transverse clypeal carina fine, nearly straight; pygidium aciculate in the median part along the upper margin only; fold of pygidium moderately narrow and with an elongate impression in the centre in the male *transvaalensis*.

Frontal and clypeal carinae running parallel, the former not interrupted, the other forming a small arc of circle in the centre; elytra feebly punctate; pygidium smooth only in the lower median part which is depressed *indotatus*.

Frontal and clypeal carinae running parallel, the former not interrupted, the other produced into a sharp triangle at middle; elytra deeply punctate; whole of the lower part of pygidium smooth *tristis*.

Clypeal carina broadly interrupted in the centre, frontal carina distinctly arcuate at middle; pygidium entirely smooth *arator*.

B². Anterior tibiae with only one serrate tooth.

Clypeal carina obliterated, frontal one very distinct and triangular at middle; pygidium with the basal part nearly entirely scrobiculate except for a small, smooth median space *viator*.

Clypeal carina not very distinct; frontal one well defined and triangular at middle; pygidium with the whole basal part deeply punctured *pauperatus*.

B¹. Anterior tibiae without serrate teeth.

Clypeal carina interrupted in the centre, frontal one broadly triangular at middle; pygidium closely punctured for half the width; elytra very deeply striate *dissidens*.

HETERONYCHUS CLAUDIUS, Klug,

Plate XL, fig. 1.

Erman, Reis. Atl., 1835, p. 35.

Dark brown, almost piceous red on the head and prothorax, dark chestnut on the elytra, and with the under side and legs lighter chestnut-brown; antennæ almost brown; head roughly punctured except for a narrow, basal margin, the clypeus is not dentate in front, the frontal carinate line is obliterated, and instead of a clypeal carina there is on each side of the median part of the head a sharp, triangular tubercle; prothorax covered with moderately closely set punctures, a little denser and slightly more rugose and also a little broader in the anterior part which is slightly retuse and bears at a short distance from the anterior margin two small, coalescing tubercles; scutellum with an indistinct arcuate transverse series of punctures; elytra not broader than the prothorax at the base, nearly parallel for one-third of the length, and a little amplified from there to the rounded posterior part, convex at a short distance from the base and having one juxta-sutural, entire, impunctate stria, and three dorsal geminate ones hardly impressed but filled with not closely set, round, scar-like punctures, the intervals are filled with similar punctures a little more closely set than those in the dorsal striæ, and there is a distinct callus on the posterior part at the junction of the first and third dorsal striæ and under the second; propygidium covered with closely set asperous granules, changing into fine transverse undivided folds in the median part; pygidium smooth in the convex part, rugulose on the sides and along the base, fold of pygidium very narrow in the male and carinate, anterior tibiae strongly and sharply quadri-dentate; abdominal segments with a lateral row of crenulate setigerous pits; metathorax with a deep, median impression and a longitudinal impressed line, pectus hairy, prosternum with a conspicuous, sub-ogival, projecting process.

Length 29–32 mm. ; width $16\frac{1}{2}$ –17 mm.

Hab. Damaraland (Angra Pequena).

This species is also met with in Senegal and the West African Coast.

HETERONYCHUS WILMSI, Kolbe, *Plate XL, fig. 3*
Entom. Nachr., vol. xxvi., 1900.

Black, shining, glabrous except on the prosternum ; antennæ and palpi ferruginous ; head aciculate, very deeply impressed transversely in the median part, with the impression and also the basal part of the clypeus rugulose, the frontal carina is obliterated, but the clypeal one, which is still visible outwardly, is produced into a conspicuous, sharp tubercle on each side of the anterior part of the transverse impression, the clypeus is bi-dentate at apex ; prothorax a little attenuate laterally from the anterior angle to about the median part where it is straight, moderately convex, and impunctate ; scutellum impunctate ; elytra slightly sinuate laterally from about one-third of the length and a little ampliate from there towards the rounded posterior part, the juxta-sutural stria is entire and impunctate, the second one is very oblique, and punctate right to the apex, the third, fourth, and fifth are obliterated before reaching the declivous posterior part, but only at a short distance of the junction of the second and sixth striæ, the intervals are impunctate in the dorsal posterior part, but there are a few punctures between the base and the median part on the fourth, sixth, seventh, and the whole of the eighth, while the posterior and apical parts are covered with deep, nearly confluent foveolate punctures, but on the whole the punctate striæ are only moderately deep ; propygidium having in the centre fine, transverse, very closely set folds divided at apex by a faint, longitudinal line, pygidium finely shagreened all round but with the convex part smooth, fold wide, and having in the centre a broadly triangular excavation ; second, third, and fourth abdominal segments with a row of transverse setigerous punctures, gradually decreasing in number on the third and fourth ; metasternum impressed longitudinally, prosternum pilose and with a sub-ogival process at base ; anterior tibiæ with a serrate tooth between the second and the basal outer teeth and three serrate ones above the digitation ; inner claw of anterior tibiæ of male very broad, bluntly rounded at tip, and not dentate or emarginate outwardly.

Length 18–19 mm. ; width $9-10\frac{1}{2}$ mm.

Hab. Natal (Pinetown, Maritzburg, Estcourt, Durban), Transvaal (Lydenburg, teste Kolbe, Johannesburg), Cape Colony (East London, St. John's River).

HETERONYCHUS NIGER, Klug,
Monatsb. Berl. Acad., 1855, p. 657.

Very closely allied to the preceding species, but larger and also broader in proportion; the head is similar in shape and sculpture, although the anterior part is slightly granulose; the attenuation of the anterior part of the prothorax is shorter, and the posterior part is not quite so parallel; the elytra are more distinctly ampliate past the lateral sinuation, and have a much broader appearance, the punctate striæ are similar, but are much more obliterated towards the base, and the punctures on the dorsal intervals, which are slightly aciculate and not smooth, are hardly distinct; the propygidium has three fine median longitudinal lines edging and dividing the very fine, transverse stridulating folds; the pygidium has a shagreened basal, transverse band extending over one-fourth of the width, the remainder being quite smooth; the fold of the pygidium, which is very distinctly carinate and wide, has a broadly triangular impression in the median part; the anterior tibiæ are as in the preceding species, but the inner claw of the anterior tibiæ of the male is more emarginate outwardly.

Length 18-20 mm.; width 10-11 mm.

Hab. Mozambique (Rikatla).

My examples are a little smaller than Klug's type, and the cephalic tubercles are more developed. The genital armature is of the same shape, but a little broader in proportion to the size.

HETERONYCHUS INFRICTUS, n. spec.,

~~Plate XL., fig. 2.~~

Black, very shining on the upper side, chestnut-brown underneath; head with a distinct median depression, frontal carina distinct laterally in front of the eye, but obliterated from there, clypeal carina distinct laterally and produced on each side into the median part into a short, triangular, aculeate projection or small tubercle, the median impression and the clypeus are rugosely shagreened, and the clypeus is distinctly and sharply bi-dentate; prothorax impunctate, little convex, slightly attenuate laterally for about one-third of the length, and nearly, but not quite, parallel from there; scutellum impunctate; elytra a little ampliate past the ante-median lateral sinuation, very weakly punctato-striate in the dorsal part and with the second stria nearly obliterated at some distance from the base, supra-lateral striæ and intervals, as well as the posterior rounded part, deeply and closely foveolato-punctate, there is no puncture on the anterior part

of the first, second, and third intervals, and those on the fifth and seventh are scarcely distinct; propygidium, with two sub-parallel series of transverse folds fairly broadly divided in the centre by a smooth space; pygidium shagreened but with the apical convex part sometimes slightly aciculate, fold of pygidium very broad at middle, and having in the centre a deep, transversely ovate excavation in the male; intermediate abdominal segments without a row of punctures; metasternum not deeply impressed, but distinctly grooved longitudinally; prosternum with the basal process somewhat rounded but very projecting; anterior tibiae with an intermediate serrate tooth and three more above the digitation; inner claw of male a little acuminate but not emarginate outwardly.

Length $14\frac{1}{2}$ –17 mm.; width 7–9 mm.

Hab. Southern Rhodesia (Salisbury, Enkeldoorn).

HETERONYCHUS LICAS, Klug,

Plate XL., fig. 32.

Erman. Reis. Atl., p. 35.

H. corvinus, Klug, Monatsb. Berl. Acad., 1855, p. 657.

H. curtipennis, Fairm., Ann. Soc. Entom. Belg., 1894, p. 315.

Black, very shining; palpi, pectus, and legs dark chestnut; head nearly smooth above the clypeal transverse ridge which is entire, very distinct, slightly flexed in the centre, frontal carina merged with the clypeal, except laterally, clypeus very rugose, especially in the centre, sharply bi-dentate at apex; prothorax attenuate laterally in front for about one-third of the length, not quite parallel from there to the posterior angle, moderately convex and smooth; scutellum sharply ogival, impunctate, and impressed longitudinally in the centre in the male only; elytra sub-parallel for a little more than one-third of the length where they are slightly sinuate, and moderately ampliate from there to the posterior rounded part; the striae are deeply punctured, the second one does not always reach quite to the base, the second interval has numerous punctures stretching from base to apex, the fourth, fifth, and sixth have a short series of moderately distinct punctures in the posterior part, and the apical margin is deeply and broadly pitted; stridulating striae forming on the pygidium a broadly truncate cone; pygidium very rugosely shagreened transversely for half the width, the lower half being quite smooth, second, third, fourth, and fifth abdominal segments with a lateral series respectively of eight, four, and three setigerous, deep punctures; fold of pygidium narrow, simple at middle; meta-

sternum impressed longitudinally, basal process of prosternum ovate ; anterior tibiae with one intermediate and one supra-basal serrate tooth ; inner claw of the male sinuate inwardly towards the tip, and having there three short bristles.

Length 19 mm. ; width 9-9½ mm.

Hab. Mozambique (Lourenço-Marquez).

According to Herr H. Kolbe, *H. corvinus* is synonymous with *H. licas*.

HETERONYCHIUS INDIGUS, n. spec.

This species, of which the female only is known, and the habitat uncertain, is not unlike the female of *H. wilmsi*, but it is much smaller, and the elytra are more amplified laterally behind in proportion to its size, the shape of the head and sculpture are similar, but it is probable that in the male the posterior part of the head is less rugose, as in *H. wilmsi*, the clypeal carina with which the fontal one is merged is very broadly interrupted at middle, much raised, and even slightly angular where interrupted ; the prothorax is similar in shape and sculpture ; the elytra are more ampliate past the lateral sinuation, the striae are equally deep, but the punctures are not quite so well defined, only the seventh interval from the suture showing a few punctures in the posterior part ; the striae on the propygidium are very wide transversely, and are separated towards the base by a triangular, nearly smooth space ; pygidium with only a few lateral punctures, the rest of the surface being smooth ; second basal abdominal segment with five setigerous punctures, third and fourth with only two ; metasternum and prosternum normal ; anterior tibiae with one intermediate and one basal serrate tooth.

Length 15 mm. ; width 8 mm.

Hab. ? Natal.

The shape of the stridulating striae on the propygidium will easily lead to the identification of this otherwise obscure species.

HETERONYCHUS MASHUNUS, n. spec.,

Plate XL, fig. 4.

Male : Shape, size, and sculpture of the female *H. indigus*, from which it differs in the clypeal carina not being distinctly interrupted in the centre, and in the frontal carina being somewhat distinct and arcuate in the median part ; the striae on the elytra are similar, but there is a row of not well defined punctures in the posterior part of

the second, fourth, and eighth intervals; the stridulating striæ on the propygidium are very narrow and very diagonal, and the upper half of the pygidium is roughly punctured, the lower half being smooth; the inner claw is slightly sinuate and moderately sharp at tip.

The female of this species, or at least the examples which I take to be such and which come from the same locality, are more elongate than the male; the clypeal line is more distinctly interrupted, there is no puncture on the second interval, and only one or two on the fourth; the two rows of striæ on the pygidium are not quite so diagonal; the pygidium has the same sculpture as the male.

Length 14–16 mm.; width 8–8½ mm.

Hab. Southern Rhodesia (Mazoe, Salisbury).

HETERONYCHUS TRANSVAALENSIS, n. spec.,

Plate XL., fig. *♂* 9.

Very similar to *H. mashunus*; it is a little smaller and more cylindrical; the punctate striæ on the elytra are not so deep, and the punctures are shallower; the clypeal carina is entire, and the frontal one, although very fine, is distinct and also transverse in the centre; but the sculpture of the pygidium is very different, being almost entirely smooth except for a very narrow aciculate basal band, and with the aciculation a little more defined on the sides; the fold of the pygidium has also a transverse impression in the centre; in the female the four intermediate abdominal segments have a long series of transverse punctures.

Length 12½–13 mm.; width 7 mm.

Hab. Transvaal (Johannesburg).

HETERONYCHUS INDOTATUS, n. spec.

More robust than the four preceding species, owing to its slightly greater width in proportion to its size; the prothorax, which is a little more plane is less arcuate laterally in front; it is very shiny; the clypeal carina is fine but distinct, not interrupted, and the frontal one which is equally distinct, runs parallel to the clypeal one, and forms a small arc in the centre, the head is very rugose right up to the base; the scutellum is triangular and has a fine median longitudinal line; the striæ on the elytra are very slightly impressed, and the punctures very fine and shallow, with scarcely any trace of them in the dorsal and supra-lateral intervals; the pygidium is slightly different in shape from that of the other South African

Heteronychus; instead of being regularly convex in the median part, it has an arcuate rounded median ridge and a sub-vertical slightly depressed space underneath, the upper half is closely rugose, and the lower half quite smooth, the fold is moderately broad at middle, but not impressed; intermediate abdominal segments feebly punctate transversely; metasternum not impressed. Female unknown.

Length $15\frac{1}{2}$ mm.; width 8 mm.

Hab. Transvaal (Potchefstroom).

HETERONYCHUS TRISTIS, Bohem.,

Plate XL., fig. ρ . 7.

Insect. Caffrar., ii., p. 9.

This species is the smallest *Heteronychus* known, and is as often dark chestnut as black; the clypeal and frontal carinæ are similar to those of *H. indotatus*, but the clypeal one is a little flexed towards the apex; the scutellum has no impressed, median longitudinal line; the striæ on the elytra are deep and the punctures very conspicuous, the dorsal intervals are very slightly convex and impunctate except in the basal part of the second; the pygidium is normally convex, the upper half very rugose and the lower one smooth; intermediate abdominal segments with rows of transverse setigerous punctures of nearly equal length; metasternum slightly impressed, and with a distinct, median longitudinal line.

Length $8\frac{1}{2}$ –9 mm.; width $4\frac{3}{4}$ –5 mm.

Hab. Natal (Durban, Estcourt), Mozambique (Lourenço-Marquez).

HETERONYCHUS ARATOR, Fabric.,

Plate XL., fig. γ . 5.

Entom. Syst., i., p. 33.

H. cricetus, Haüsm., Illig. Magaz., vi., p. 266, 1807.

Black, shining; head with the clypeal carina moderately distinctly interrupted in the centre and the frontal carina sinuate in the middle but entire, rugose and somewhat transversely plicate; prothorax nearly parallel for two-thirds of the length, and oblique, but not arcuate in the anterior part; scutellum sharply ogival; elytra distinctly ampliate laterally past the sinuate part, deeply punctato-striate, with the five dorsal intervals impunctate, and a faint series

of punctures on the sixth and eighth, except in the rounded posterior part which is deeply and irregularly pitted; the pygidium is entirely smooth but for a slight aciculation in the angles of the basal part; fold of pygidium reduced to a mere line; metasternum with an impressed, longitudinal median line.

Length 11–15 mm.; width 6–7 mm.

This species, which seems to have a wide range in South Africa, can be easily recognised by the nearly entirely smooth pygidium.

Hab. Cape Colony (found everywhere), Natal (Durban, Newcastle, Maritzburg), Transvaal (Potchefstroom, Rustenburg, Johannesburg), Southern Rhodesia (Salisbury).

Herr H. Kolbe has endeavoured to distinguish *H. cricetus* from *H. arator* (Entom. Nachr., 1900, p. 163), but I do not think there is any justification for doing so. The size of *arator* is very variable, and the small modifications mentioned by Kolbe depend to a great extent on the size. The genital armature of the two is identical. I have seen examples collected by Ecklon and Zeyher some sixty years ago, and identified by Klug, I believe, as *H. cricetus*, Hausm., at the Berlin museum.

HETERONYCHUS VIATOR, n. spec.,

Plate XL., fig. *f. 11.*

Resembles slightly *H. indotatus*, but it has a more elliptical appearance owing to the elytra being only very slightly sinuate laterally before the median part, and the fold of the margin is more conspicuous; the prothorax is also gradually although slightly attenuate laterally from the basal to the apical part; the clypeal carina is obliterated, but the frontal carina is very distinct, and produced in the middle into a sharp triangle the point of which is directed towards the base; the head, except the basal part, is very rugose; scutellum sharp and with a distinct, median impressed line; elytra very feebly punctato-striate and without any trace of punctures in the intervals except in the posterior part of the eighth, where there are a few; apical part broadly but shallowly pitted; pygidium with a broad, rugose basal band extending over one-third of the width, the other two-thirds quite smooth; metasternum normal; anterior tibiae with only one intermediate serrate tooth between the basal and the second one.

Length 14–15 mm.; width 8–9 mm.

Hab. Transvaal (Potchefstroom), Natal (Newcastle, Durban).

HETERONYCHUS PAUPERATUS, n. spec.,

Plate XL., fig. 8. 10.

Black, shining; head with a very ill-defined clypeal carina which is broadly interrupted at middle, frontal carina very distinct, arcuate, and produced into a sharp triangle directed towards the base at middle, head moderately rugose on the clypeus, but nearly smooth beyond the frontal carina in the male (the female is unknown); prothorax gradually attenuate laterally from the base to the apex; intervals of elytra deep, but somewhat narrow, and with the punctures closely set, the seven dorsal intervals are impunctate, but the eighth is punctate for the whole length; basal part of pygidium very rugose for nearly half the width with the median part of the band somewhat arcuate towards the base, the remainder of the pygidium is quite smooth; penultimate abdominal segment of abdomen with only one setigerous puncture; metasternum normal; anterior tibiae with an intermediate serrate tooth between the basal and the second outer tooth.

Length $13\frac{1}{2}$ mm.; width 7 mm.

Hab. Southern Rhodesia (Salisbury).

HETERONYCHUS DISSIDENS, n. spec.,

Plate XL., fig. 10. 6.

Black, moderately shining, with the elytra opaque; head entirely rugose, clypeal carina broadly interrupted at middle, frontal one entire, produced into a sharp triangle in the centre; prothorax moderately attenuate laterally in front, but not quite parallel in the posterior part; scutellum sharply ogival; elytra somewhat short, slightly sinuate laterally at a short distance from the shoulders, a little oblique and distinctly ampliate from there to the posterior rounded part, very deeply striate, but the punctures on the striae are nearly obliterated in the two examples at my disposal, the dorsal intervals are a little convex, especially past the median part, but the second, fourth, and sixth have a faint trace of seriate punctures from near the base to the apex; pygidium with a very closely punctured transverse basal band extending over half the width, and with the remaining space smooth; in the female this band is more broadly pitted; anterior tibiae with hardly any trace of a serrate tooth between the basal and second one; metasternum normal.

Length 13 mm.; width $7-7\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Salisbury).

(Species not identified.)

HETERONYCHUS ATRATUS, Klug,

Monatsb. Berl. Acad., 1855, p. 657; Peters' Reis., 1862, p. 253.

"Black; antennæ and legs ferruginous, head rugose; clypeus obtuse, marginate, frontal line sub-interrupted in the centre; prothorax smooth, sub-globose; elytra striate, closely punctate at apex, intermediate striæ abbreviated. Female.

Length $6\frac{1}{2}$ lin.

A single example from Tette. Deep black, not shining, of the size and form of *H. arator*; antennæ and dorsal joints brown; head weakly rugose, clypeus marginate and with the apex reflexed, between the eyes there is a curved ledge which is scarcely interrupted in the middle; prothorax smooth; on the elytra are rows of impressed punctures of which the fifth and sixth are abbreviated, and do not reach far beyond the median part of the elytra, apex densely punctate, intervals smooth but with some indistinct impressed punctures in the second and eighth; pygidium marginate and rugose with the exception of the apex which is smooth."

HETERONYCHUS LÆVILINEATUS, Fairm.,

Annal. Soc. Entom. Belg., 1894, p. 315.

"Very similar to *H. punctolineatus*, but a little smaller, and especially more slender; vertex not impressed; prothorax narrower, less narrowed in front; elytra similarly finely striate with the striæ smooth, and with very smooth punctures at the base; stridulating apparatus not conspicuous.

This species seems to be allied to *H. atratus*, Klug, from Mozambique, but this last-named species is only 13 mm. long, the elytra have deep punctures, the fifth and sixth rows are obliterated behind and do not go much beyond the median part of the elytra, the intervals are smooth, the second and eighth alone having a few not very well marked punctures, the pygidium is marginate and wrinkled except the apical part which is smooth.

Hab. Mozambique."

Although I have received all or nearly all the Mozambique species described by Mons. Fairmaire from the same collector as himself, I have not been able to identify the present one.

HETERONYCHUS TRANSVALICUS, Kolbe,

Entomol. Nachr., 1890, p. 167.

"Black, shining, obovate, palpi and antennæ brown, tarsi chestnut, clypeus sub-glabrous transversely, a little rugose, slightly reflexed, briefly bi-lobate or obtuse in front, forehead not impressed, a little more rugose transversely in front, transverse carina slender, interrupted in the centre; prothorax transverse, attenuate in front, little narrowed behind, ampliate laterally past the middle, anterior angles acuminate, posterior obtusely rounded, whole surface impunctate; elytra short, a little ampliate behind, punctato-striate in the dorsal part, and with the striæ moderately impressed, three to five or four and five abbreviated behind, and equally remote from one another; intervals moderately plane or slightly convex, impunctate, eighth interval with a few punctures, apical part punctate; anterior tibiæ tridentate outwardly and having a small tooth between the two basal ones, basal teeth sometimes rounded; pygidium convex, shining, impunctate, closely rugose and punctate along the base for more than a third of the total transverse area, but much more slightly punctate in the centre of the base; no ante-anal apical pygidial area, and the margin is narrow; stridulating folds of the propygidium very fine and transversely striate, arcuate, very distant towards the apex, and joining in front.

Length 15 mm."

Hab. Transvaal (Lydenburg), teste Herr Kolbe.

PENTODONTOSCHEMA, n. gen.,

~~Plate XL., fig. 11.~~

Mentum elongate, ovate laterally from the base to near the insertion of the palpi, a little constricted there and with the apical part oblique on each side from the outer angle to a deep, median incision, the outer surface is convex, but there is an excavation towards the apical margin varying in depth, but sometimes very broad and deep; last joint of labial palpi elongate, sub-acuminate, straight outwardly, slightly swollen inwardly, last joint of maxillary palpi similar in shape, but a little longer; maxillæ five-dented inwardly except in *P. capicola*, where there are only four teeth, the teeth are long and hooked, the two inner ones being connate at the base; mandibles bluntly tri-dentate, reflexed and projecting beyond the clypeus which is acuminate laterally, straight or very little rounded, and bi-dentate or not; head with a transverse carina sometimes tuberculate at

middle, and disappearing when the tubercle is developed into a short horn, no frontal carina, genæ reduced to a mere canthus; antennæ ten-jointed, club of moderate size; prothorax rounded laterally and a little ampliate at middle, convex, not marginate along the base, simple, but occasionally excavated in front in the male (*P. aries*); scutellum ogival, somewhat sharp at tip; elytra a little broader than the prothorax, a little sinuate laterally at about the median part and slightly ampliate beyond that, they are feebly punctato-striate, the striæ are geminate and the intervals are plane and occasionally punctate; the pygidium is moderately convex past the median part in both sexes, but in the females of *P. aries* and *P. capicola* there is a median, transverse rounded carina overhanging respectively a depression or an excavation; the propygidium has two series of oblique, transverse stridulating ridges reaching from the base to half the length of the segment, and generally continued on the lower half as very fine, interrupted, short and closely set folds divided by a triangular, somewhat impressed punctate space in the shape of an inverted cone; last abdominal segment nearly entire; metasternum and prosternum similar in shape to that of the preceding genus; anterior tibiæ strongly tri-dentate outwardly, and having one serrate tooth above the digitation and occasionally another between the basal and the second digit; joints of anterior tarsi of male thickened, penultimate one produced inwardly into a long, dentate process, last joint as long as the three preceding, and somewhat swollen, inner claw curved inwardly under the joint, laminate, and more or less distinctly bifid at tip; in the female the inner claw is a little more robust than the outer.

I separate the South African species from the European genus *Pentodon* owing to the thickening of the joints of the anterior tarsi of the male, and of the non-simple claws. In this genus the genital armature is of two kinds; the forcipate part is long and opens outwards, or is short and immovable.

The insects included in this genus are occasionally met with walking with difficulty on grassy plots either in the spring or after the summer rains. The genus, as now restricted, does not seem to have been met with in other parts of Africa.

Key to the Species.

A². Anterior tibiæ tri-dentate and with two serrate teeth.

B². Prothorax excavated in front in the male.

Clypeus bi-dentate, cephalic horn conspicuous, recurved in the male; pygidium in the female depressed under the transverse ridge *aries*.

B¹. Prothorax not excavated in front in the male.

Clypeus not dentate; head with a frontal tubercle; pygidium in the female excavate under the ridge *capicola*.

Clypeus bi-dentate; head with a conical cephalic horn in the male *diversa*.

A¹. Anterior tibiae with only one basal serrate tooth.

Clypeus bi-dentate; head without frontal tubercle; pygidium in the female simple *fraudulenta*.

Clypeus not dentate; head without frontal tubercle; pygidium simple in the female, and entirely punctured in both sexes *nirca*.
deceptor.

PENTODONTOSCHEMA ARIES, Fabr.,

Plate XL, fig. ~~12~~ 13.

Mantiss. Insect. i., p. 7, nr. 49.

Chestnut-brown, seldom piceous red, and then only so on the head and prothorax; head very coarsely rugose on the posterior part, much less so on the clypeus which is sharply acuminate laterally, truncate at tip and sharply bi-dentate, there is no clypeal carina, but instead a median sharp tooth in both sexes, longer, sharper, and slightly curving backwards in the male; prothorax distinctly rounded laterally from the anterior part to the middle, and not much attenuated in front, sub-parallel from the median part to a short distance from the posterior angle, and slightly attenuate there, but more so in the male, base very distinctly sinuate on each side of the median part, it is convex, and has a very broad, semicircular, deep impression in the anterior part in the male, and is quite simple in the female, and is covered with not closely set and not deep round punctures which in the anterior part become transverse, and are very much more closely set; scutellum ogival, and having a not very distinct longitudinal line; elytra a little broader than the prothorax, distinctly sinuate laterally near the median part, and a little more ampliate beyond the sinuation than near the humeral part; the striae are hardly impressed and are formed by a series of shallow, round punctures, the juxta-sutural stria, which is also punctate, being the only one impressed, and the alternate intervals, which are wide, have several irregular rows of punctures as deep as those in the striae, but not reaching the base; pygidium of male smooth with the lateral angles of the base closely shagreened, and a few scattered punctures along the base in the female the space under the median transverse carina overhanging the narrow, transverse shallow excavation is flat

and rugulose; under side, except the abdomen, clothed with dense fulvous hairs; metasternum deeply grooved longitudinally; inner claw of anterior tarsi moderately thick, long, and slightly bifid at tip.

Length 22-24 mm.; width 12-14½ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Malmesburg, Knysna, Fraserburg, Uniondale).

PENTODONTOSCHEMA CAPICOLA, n. spec.,

Plate XL., fig. 13.12, fig. 34

Very dark brown on the upper side, chestnut-brown beneath, glabrous on the upper side, but somewhat thickly hairy on the whole pectus; head with the clypeus oblique, very feebly dentate on each side at tip and slightly rounded there, there is a very distinct transverse clypeal carina produced into a very short conical tubercle in the centre, the clypeus is very closely pitted, and the head behind the carina is more rugose than the clypeus; prothorax simple in both sexes, elliptical laterally, but more attenuate in the anterior than in the posterior part, and covered with shallow punctures not closely set on the disk except in the anterior part along the margin, where the punctures are broader, deeper, and closely set; scutellum impunctate; elytra broader than the prothorax at base, not sinuate laterally but gradually, although slightly, broadening from the humeral part to three-fourths of the length where they are a little more ampliate and rounded towards the posterior part; elytra very feebly punctato-striate and with the two intermediate dorsal striæ nearly obliterated past the middle, the intervals, except the first, second and third ones, have some series of punctures more numerous laterally and a little deeper there than on the dorsal part; pygidium with a faint, scattered aciculation, but distinctly rugulose at the basal angles; intermediate abdominal segments with a long series of closely set setigerous punctures; metasternum slightly aciculate at middle, somewhat depressed there, and with a median grooved line; anterior tibiae with three strong outer teeth, an intermediate serrate one, and another above the digitation.

Length 19-22 mm.; width 11-13 mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Malmesbury, Paarl, Worcester).

This species is distinguished from *P. aries* by the prothorax which is simple in both sexes, the more rounded apical part of the clypeus which is obsoletely dentate, or even not at all so in the female, the short occipital tubercle, and the non-parallel elytra.

PENTODONTOSCHEMA DIVERSA,

Plate XL., fig. 14.

Resembles small female examples of the preceding species, but it is black; the head bears a conical horn intermediate in length between that of the male and of the female of *P. aries*, but the clypeal carina is quite distinct; the shape of the prothorax is similar, and the sculpture nearly the same, although the punctures are a little closer, but the two sinuations on the base are not so distinct, and in the male the anterior part is not retuse nor excavate; the elytra are much more cylindrical, the striæ are deeper but a little narrower, and the punctures which are similarly disposed in the striæ and the intervals are smaller, but they extend as far as the base, which is seldom the case in *P. aries*; the upper half of the pygidium is aciculate and rugulose in the lateral part of the base; in the male, the only sex I know, the inner claw of the anterior tarsi is very distinctly bifid.

Length 20 mm.; width $10\frac{1}{2}$ mm.

Hab. Cape Colony (Uitenhage).

PENTODONTOSCHEMA FRAUDULENTA, n. spec.,

Piceous black, shining; facies intermediate between that of *P. capicola* and that of *P. nireus*, but approximating more to that of the former owing to the shape of the elytra which are diagonal laterally from the shoulder to two-thirds of the length, where they are amplified; the whole head is equally rugose, and the clypeus is bidentate, but there is no frontal tubercle, and the transverse carina is distinct; the prothorax is similar in shape and sculpture; the striæ on the elytra are identical, but the punctures which in *P. capicola* are numerous on the two first alternate dorsal intervals, are uniseriate in the present species; the whole pygidium is covered in both sexes with moderately closely set round punctures, has a narrow basal aciculate basal band, and the basal corners are rugulose, there is no excavation in the female; the anterior tibiæ have no intermediate serrate tooth between the basal and the second digit, but whereas in general facies this species approximates to *P. capicola* to such an extent that it could be mistaken for it except for the differences mentioned here, the genital armature of the male is almost entirely similar to that of *P. nireus*, the only difference being in the shorter and more broadly triangular emargination in the middle of the penultimate joint which is also not grooved longitudinally on the

upper side ; the pygidium of the female is like that of *P. nireus*, but the general facies is that of *P. aries*.

Length 17–19 mm. ; width $10\frac{1}{2}$ –11 mm.

Hab. Cape Colony (Graham's Town, Butterworth, Fort Beaufort, Kowie).

PENTODONTOSCHEMA NIREA, Burm.,

Plate XL., fig. 15.

Handb. d. Entom., v., 1847, p. 103.

Smaller than the preceding and black above, but chestnut-brown beneath, and with the whole pectus clothed with fulvous hairs ; the elytra are also a little more ampliate nearer the median part laterally, but they appear so because there is no slight supra-lateral depression as in *P. capicola* ; the median part of the clypeus is rounded and not dentate laterally, the carina is transverse, and distinct, but although a little raised in the centre it is not tuberculate, the sculpture of the head is identical ; the prothorax is attenuate laterally in front, but although rounded from the median part to the basal angle, it is very little attenuate there, the base is much less distinctly sinuate on each side, and the punctures are much deeper and more conspicuous ; striæ of elytra deeper and also more deeply punctured, the punctures on the intervals disposed in a single row ; prosternum closely and deeply punctured but with a narrow basal transverse band finely aciculate ; anterior tibiæ with only a serrate tooth above the digitation ; inner claw of anterior tarsi moderately developed, and very feebly bifid laterally near the tip.

Length 16–17 mm. ; width 9–11 mm.

The shape of the genital armature is quite different from that of the other species, except that of *H. deceptor*.

Hab. Cape Colony (Knysna, Seymour, Somerset East).

PENTODONTOSCHEMA DECEPTOR, n. spec.,

Plate XL., fig. 16.

This species is so closely allied to the preceding that it can hardly be differentiated without examination of the genital armature which, although shaped somewhat alike, is very different ; the head is similar in shape and in sculpture, but the punctures on the prothorax are deeper and slightly more closely set on the sides and in front, and the punctures on the striæ of the elytra are very much less distinct especially on the sides, the elytra themselves have a more cylindrical appearance, and the pygidium is not quite so large, but

the sculpture is the same; the inner claw of the anterior tarsi of the male is not much developed, but is bifid at tip.

Length 14 mm.; width 8 mm.

Hab. Natal (Newcastle), Transvaal (Potchefstroom).

HYBOSCHEMA, n. gen.

Mentum gradually narrowed from the base to three-fourths of the length, and broadly dilated from there to the apex where it is deeply and broadly emarginate; last joint of labial palpi much longer than the two preceding put together, maxillæ with three strong, hamate teeth on each side, at tip, the two upper ones being connate at base; last joint of maxillary palpi long, fusiform, but more swollen inwardly than outwardly, and distinctly truncate at tip; head without clypeal or frontal ridge, clypeus very attenuate obliquely, apical part straight and with the margin recurved but not dentate; prothorax a little attenuate laterally in front, base with an impressed line along the margin; scutellum sharply ogival; elytra short, a little broader than the prothorax at base, a little ampliate laterally towards the middle and covering the basal part of the pygidium which is only slightly convex in the lower part, the striation on the elytra is of the same sort as in the two preceding genera, but not cicatricose; the last abdominal segment is very little constricted laterally; the metasternum and the prosternum are similar; the anterior tibiae are tri-dentate outwardly without additional serrate teeth, and the joints of the anterior tarsi, and also the shape of the inner claw are similar; the stridulating striæ on the propygidium are obliterated, but a noise is produced by the friction of the elytra with the sides of the dorsal segments of the abdomen.

This genus is differentiated from *Pentodontoschema* by the maxillæ being six-dentate, and also by the shape of the labial palpi; the facies is also shorter, the elytra are more ampliate, and the stridulating striæ are absent.

Only two species occur in South Africa. They are closely allied, and the genital armatures are very similar.

Key to the Species.

Elytra with very shallow, feebly punctate dorsal striæ, intervals plane *contracta*.

Elytra with deeply punctate dorsal striæ, alternate supra-lateral intervals convex *sobrina*.

HYBOSCHEMA CONTRACTA, Bohem.,

Plate XL., fig. 17.

Heteronychus contractus, Insect. Caffr., ii., p. 4.

Black, with a piceous tinge, and occasionally dark chestnut, not very shining, glabrous, with the prosternum clothed with long, dense fulvous hairs; head covered with deep, round punctures, except along the base, clypeus very acuminate and with the narrowed median part transverse, reflexed and very slightly incised in the centre but not dentate, there is a transverse not well defined clypeal raised line; prothorax convex, one-third broader than long, distinctly attenuate in a sub-elliptical fashion laterally from the anterior angle to about one-third of the length, and from there slightly amplified diagonally as far as the posterior angle which is sharp, basal part marginate, the surface is covered with round punctures set equally far apart but moderately close to each other; scutellum broadly ogival, impunctate; elytra short, only longer by one-third than the prothorax, very convex especially behind, produced diagonally laterally from the humeral angle to past the middle where they are amplified especially towards the posterior part, they have in the dorsal part five narrow striae, very slightly punctured, or sometimes not punctured at all, and the three supra-marginal striae consist of a series of deeper, round punctures, the intervals are impunctate and plane; pygidium finely aciculate along the margin, finely shagreened laterally and with the slightly convex part smooth; inner claw of anterior tarsi constricted at base, long, curved, simple and sharp at tip; anterior tibiae sharply and strongly tridentate; median part of metasternum small, plane, and with a fine, impressed longitudinal line.

Length 13-17 mm.; width 8-10 mm.

Hab. Cape Colony (East London), Natal (Durban).

HYBOSCHEMA SOBRINA, n. spec.,

Plate XL., fig. 18.

Black or dark chestnut on the head and prothorax, and with the elytra lighter, opaque, glabrous; head as in the preceding species, but having a smooth, median space along the clypeus which is also reflexed and not at all incised; the prothorax is similar in shape and punctuation; the elytra are less amplified laterally behind, and as the outer margin is distinctly depressed the ampliation is hardly noticeable, they are deeply striate, all the striae are deeply punctate including the juxta-sutural one and the fifth and seventh

intervals and occasionally the ninth also are convex; pygidium feebly aciculate, very little convex near the apex on the male, the rest as in *H. contractus*.

Length $14\frac{1}{2}$ –18 mm.; width 9–10 mm.

Hab. Transvaal (Potchefstroom, Rustenburg), Natal (Frere).

This species is easily distinguished from *H. contractus* by the much more deeply punctate dorsal striation of the elytra, as well as by the quite opaque colour. The genital armature is, however, very similar to that of *H. contractus*, but the forceps are longer and not similarly compressed outwardly.

GEN. ORSILOCHUS, Burm.,

Handb. d. Entom., v., p. 112.

Lacord. Gener. d. Coleopt., iii., p. 417.

“Mentum elongate and acuminate at tip; maxillæ with the apical lobe small and not toothed; palpi moderately robust, second joint of maxillary strongly swollen at tip; mandibles projecting beyond the clypeus, truncate at tip, concave above; head oblique, plane, clypeus narrowed and obtuse in front, divided from the frontal part by a bi-tuberculate carina; antennæ ten-jointed; prothorax transverse, as broad as the elytra at base in the male, broadly and deeply excavate in the anterior part, and with a small horn on the anterior margin; that of the female a little narrowed behind, not excavate, but with a small tubercle in the anterior part; elytra short; legs very robust, bicarinate across on the upper side; external claw of anterior tarsi thickened in the male; prosternum with a strong post-coxal process; no stridulating striæ.”

I have not been able to procure the insect included by Burmeister in this genus, but Lacordaire has given a good figure of it.

ORSILOCHUS CORNUTUS, Thunb.,

Mém. de l'Acad. Impér. de St. Pétersb., vi., p. 398.; Lacord., Gener. d. Coleopt. Atlas, pl. xxxvi., figs. 3, 3a, 3b, Burm., loc. cit., p. 113.

Syrichthus spurius, Bohem. Insect. Caffr., ii., p. 68.

“Black, brown above, but little shining, surface of head coarsely punctate, and with two tubercles on the frontal suture, the terminal with a margin somewhat bent upwards; prothorax in the male rugose in the excavation, strongly punctate on the corners, as broad as the elytra, strongly convex, gibbose with the shoulder angles

blunt, punctate all over in the female, much narrower, especially behind, humeral angles having behind the anterior margin the trace of a tubercle; elytra smooth, equally wide, sharply marginate laterally and with some punctures in place of the sutural stripe; pygidium punctate, pubescent at apex in the male and all over in the female; under side and legs red-brown, densely hairy; anterior tibiæ with three obtuse outer teeth."

Length $16-17\frac{1}{2}$ mm; width $11\frac{1}{2}$ mm.

Hab. Boheman gives the whole of Caffraria as habitat of this insect. The only example I have seen is one of his types.

GEN. TEMNORHYNCHUS, Hope,

The Coleopt. Man., 1837, i., p. 93.

Mentum elongate, ovate laterally towards the middle, constricted towards the point of insertion of the antennæ and broadly dilated above it, very broadly and deeply emarginate at tip, and with the sides of the emargination very oblique, it is very convex in the middle, but the upper half is distinctly bent backwards and is very broadly scooped near the anterior margin; labial palpi short, robust, apical joint broadly fusiform and truncate at tip; maxillæ densely fringed with very long ciliate hairs, and having a briefly incurved tooth bluntly incised in the anterior margin, and a sharply bifid one a little lower down; last joint of maxillary palpi sub-cylindrical, but a little swollen inwardly and rounded at tip, fusiform inwardly only; mandibles tri-dentate, teeth rounded, not much reflexed and projecting a little beyond the clypeus, the latter reduced to a mere horizontal bi-dentate line and produced into a vertical lamina much higher than the apical margin of the prothorax and sometimes bluntly incised, or very deeply cleft; genæ distinct; antennæ ten-jointed, clava as long as the six preceding joints put together; prothorax dilated laterally at middle, marginate all round, excavated in the anterior part in the male, slightly retuse in the female; scutellum ogival; elytra a little wider than the prothorax, distinctly sinuate laterally before the median part, callose behind; propygidium partly granulose, but without any stridulating striæ; pygidium convex, and more transversely so in the female than in the male; last joint of abdominal segments entire, all but the basal one with a transverse non-interrupted row of setigerous punctures; median part of metasternum diamond-shaped, intercoxal process of prosternum oblongo-ovate; legs massive, intermediate and posterior ones with two oblique strong carinæ, they are broadly dilated at

tip, deeply scooped there semicircularly, and the two apical inner spurs are compressed, dilated, especially on the posterior legs, and rounded at tip, anterior tibiæ strongly tri-dentate outwardly, anterior tarsi slender and with the claw nearly equal in both sexes. The genital armatures are very similar in the four South African species, and do not help much in the identification. The shape of the vertical frontal part imparts to the species included in this genus a very peculiar aspect. They are occasionally met with dragging themselves wearily along in herbaceous places, but I have also found *T. faunus* imbedded in the soft, wet sand on the banks of streams, from which it emerges when the bank is tramped upon.

Key to the Species.

A². Elytra impunctate.

Frontal part retuse at tip or feebly incised; prothorax of male not deeply excavate in front for half the length, and not tuberculate in the posterior margin. *retusus*.

Frontal part crescent-shaped at tip; prothorax of male with a median excavation extending to half the length, and with a tubercle on the posterior margin; posterior part with a median smooth broad space *clypeatus*.

Frontal part crescent-shaped or produced into two long vertical horns; prothorax of male with a median excavation extending to half the length, and with the posterior margin more or less distinctly tri-tuberculate, posterior part with a very narrow smooth longitudinal space *bubalus*.

A¹. Elytra distinctly punctate and striate in the anterior part.

Frontal part produced into two sub-vertical horns on the male, or deeply emarginate triangularly in the female; prothorax of male with a median sloping excavation extending from the apex to near the base, and with a distinct tubercle in the posterior margin . . . *faunus*.

TEMNORHYNCHUS RETUSUS, Fabr.,

Plate XL., fig. 19. 22.

Spec. Insect., f. i., p. 14.

Oliv. Entom., i., 3, p. 46, pl. xi., fig. 100.

Piceous red, sometimes with the elytra chestnut-brown; under side and legs chestnut-brown, and pectus and legs densely hairy; head sharply dentate on each side of the median clypeal margin, frontal carina roughly shagreened, vertical, ovate with the narrower part uppermost and a little sharply acuminate and slightly bifid

in the male, slightly emarginate in the female; prothorax little ampliate laterally towards the median part, but a little more attenuate towards the anterior angle than towards the basal, it is obliquely retuse in front in the male but not excavated, and the retuse part is smooth, and extends from the anterior margin to the median part, the rest of the surface is covered with round, non-confluent foveate punctures, but in the middle of the posterior part there is a somewhat narrow, longitudinal, smooth space reaching from the margin of the retuse part to the base, in the female there is no retuse impression, but the sculpture is identical; scutellum impunctate; elytra with hardly any trace of stria, except along the suture, but showing traces of obsolete punctures along the sides, in the female traces of these obsolete striæ and punctures are a little more visible, but cannot be said to be distinct; pygidium covered with very rugose punctures and granular intervals, and clothed with a dense fulvous pubescence; anterior tibiæ strongly tri-dentate outwardly, apical tooth broad but not very sharp, inner spur not reaching the apical part of the tibiæ.

Length 14–20½ mm.; width 8–10½ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Paarl, Worcester, Malmesbury, Caledon, Prince Albert, Alexandria, Uitenhage).

TEMNORHYNCHUS CLYPEATUS, Klug, *Monatsb. Berl. Acad.*, 1855, p. 657; Peters' *Reis.*, p. 251, pl. xiv., fig 13.

Piceous black on the head and prothorax and with the elytra and under side chestnut-brown; median part of clypeus sharply dentate on each side, the teeth a little longer and more horizontal in the female than in the male, frontal carina transversely plicate, steeply sloping, ampliate, rounded laterally, and deeply emarginate at tip in the shape of a not very arcuate crescent in both sexes, the apex of this carina is not higher than the apical margin of the prothorax in the female, and is a little higher in the male owing to the anterior part of the prothorax being excavated from the anterior margin to the median part of the disk, the posterior margin of this smooth excavation is slightly bi-sinuate, and has in the centre a small sharp tubercle, the sides are covered above the lateral round impression with coarse, somewhat confluent, foveolate punctures, the lateral margin is broadly impunctate and in the middle of the posterior discoidal part there is a broad, smooth, slightly depressed space reaching from the cavity to the base; elytra with a very faint trace of a double series of punctures at about the median part of each elytron

and near the base, but in some examples two or three duplicate series of punctures are somewhat apparent, and extend as far and even slightly further than the median part, especially in small examples, in the female the anterior part of the prothorax is slightly retuse, and the posterior median part is also slightly depressed; the sculpture is a little less scrobiculate laterally, in the median part there is a narrow, longitudinal smooth band extending almost from apex to base, and the striae and punctures are a little more apparent than in the male, but are nevertheless not conspicuous; outer teeth of anterior tibiae moderately sharp in both sexes, inner spur either as long as the inner rounded part of the outer apical tooth, or slightly shorter; pygidium impunctate in the lower part, but fringed at apex with long, fulvous hairs, upper part roughly punctate and granular, and densely hairy.

Length 20–24 mm.; width 10–12½ mm.

Klug has evidently mistaken the female of *T. faunus* for that of *T. clypeatus*; the former is easily recognisable by the fairly well defined striae and punctures on the elytra. Although I have not seen Klug's type of *T. clypeatus*, I have little doubt of the identity of my examples, not only owing to the good figure given in Peters' Reise, but also because I have some specimens from almost the same locality. But whereas Klug's type is fuscous black, all but one of my examples are chestnut brown and only fuscous, or piceous black on the head and prothorax.

Hab. Cape Colony (Port St. John, Kowie River), Natal (Durban), Southern Rhodesia (Manica), Mozambique (Tette, teste Klug).

TEMNORHYNCHUS BUBALUS, n. spec.,

Plate XL, fig. 20. (4.)

Head and prothorax piceous, but often dark ferruginous; elytra chestnut-brown; apical margin of clypeus produced at each angle into a long, sub-horizontal tooth slightly reflexed at apex, and very conspicuous in both sexes, clypeal carina very roughly shagreened, slightly slanting backwards in the large development, and more so in the smaller where it is not rounded or ampliate laterally, and is broadly and deeply incised triangularly, while in the large development the incised part is much longer than the non-incised one, and forms two slightly diverging horns, in the female the incision is less broadly triangular, and the height of the carina is nearly the same as that of the smaller development; prothorax excavate in the median part in the male, the excavate part varying in size and depth, but not reaching further than the median part of the disk, slightly

dentate in the middle of the posterior margin, and even tri-dentate in the large development, the impression or excavation is smooth, but the whole of the surface, except a smooth narrow lateral band and a still narrower, longitudinal median space reaching from the excavation to the base, is covered with foveate punctures somewhat rugose and nearly coalescing laterally in both sexes; scutellum smooth; elytra impunctate and having on each side, apart from the juxta-sutural stria, two extremely faint impressed lines hardly distinguishable in both sexes, but in the very small development there are very faint traces of punctures; lower part of pygidium smooth in both sexes, upper part not closely punctate, and the punctures bearing a long rufous seta; anterior tibiae with the outer teeth sharply dentate, and the apical spur reaching as far as the rounded basal part of the apical tooth.

Length 19-26 mm.; width 10-14 mm.

Hab. Damaraland (? Otjimbingwe, Swakop River).

TEMNORHYNCHUS FAUNUS, n. spec.,

Plate XL., fig. 21.

T. clypeatus, Klug (female), Peters' Reis., p. 251, pl. xiv., figs. 3, 13, 14.

Black, shining, but occasionally reddish brown; apical margin of clypeus produced at each angle into a long, sub-horizontal tooth slightly reflexed at apex and conspicuous in both sexes, frontal carina sloping distinctly, lyre-shaped in the great development, very deeply incised in large and small examples, the incision being rounded, and the two walls straight and forming two vertical horns; the anterior part is very roughly shagreened, and hardly plicate transversely at base; prothorax very broadly and deeply excavated in the male from the anterior margin to a very short distance from the base, and having in the middle of the posterior margin of the smooth excavation a conspicuous tubercle, the sides, except for a narrow space along the outer margin, and the narrow, supra-basal space, are conspicuously scrobiculate; in the female the prothorax is not excavate nor retuse in front, and the whole surface is covered with broad, contiguous, non-scrbiculate foveæ; scutellum smooth; elytra having on each side three double, punctate striae, very distinct from the base to two-thirds of the length, extending further towards the apex in the female, and having conspicuous punctures in the intervals; under side as in the previous species; apical outer tooth of anterior tibiae moderately sharp, spur barely reaching the inner rounded part of the apical outer tooth.

This species varies very much in size, but the frontal carina of the male is always deeply incised, the incision being rounded at base, and the walls straight; it is easily distinguished from the other South African species by the prothoracic cavity of the male which extends nearly on the whole of the median discoidal part, even in small examples, and also by the distinctly striate and punctate elytra. In small specimens found in the Worcester and Paarl districts these striae and also the punctures are somewhat obliterated, the punctures especially; in fact it may be said that the examples from the western parts of the Cape Colony have the elytra less punctate than those from elsewhere.

Length 21-26 mm.; width 11-13½ mm.

Hab. Cape Colony (Stellenbosch, Paarl, Worcester, Prieska, Carnarvon, Graham's Town), Natal (Durban, Frere, Estcourt), Transvaal (Johannesburg, Potchefstroom), Southern Rhodesia (Manica, Buluwayo), Damaraland (Otjimbingwe).

GEN. PYCHNOSCHEMA, Thoms.,

~~Plate XL., fig. 22.~~

Archiv. Entom., ii., 1858, p. 65.

Mentum triangular or conical laterally, and produced into a long sharp point at apex, distinctly concave in the median part, and with the concavity hidden by a bunch of dense hairs, apical joint of labial palpi sub-ensiform, very long, deeply grooved externally, rounded at tip, apical lobe of maxillæ very small, horny, oblong, bristly, but non-dentate, last joint of maxillary palpi curved like that of the labial, but a little longer, and also grooved outwardly for nearly half the length; mandibles semicircular, concave and showing strongly owing to the clypeus being reduced to a narrow triangular ledge recurved at tip; genæ transversely lobate, narrow, projecting beyond the eyes; head with a distinct incurved horn in the male, or a high transverse sub-tuberculate carina in the female; prothorax diagonally attenuate laterally in front and a little ampliate in the middle, marginate all round except in the centre of the base which is distinctly sinuate, the posterior angles are sharp; the anterior part of the disk is excavated in the male and sometimes bi- or quadri-tuberculate in the posterior margin, in the female the prothorax is simple; elytra as broad as the prothorax at the base, distinctly ampliate laterally past the middle, moderately convex or even somewhat plane (*P. corydon*), not very callous behind, more or less deeply punctulate and with two duplicate regular series of punctures more

or less distinct, but representing the striæ; propygidium without any trace of stridulating organs, and occasionally densely pubescent like the pygidium which is declivous in both sexes and very little convex; abdominal segments contracted, metasternum large, grooved longitudinally, intercoxal process horizontal, sharply carinate in the inferior margin and flat at tip; anterior tibiæ strongly tri-dentate outwardly, joints of anterior tarsi moderately thickened, penultimate one not produced into a spine beneath, last one swollen, a little longer than the penultimate one, inner claw massive, bent under the joint, slightly emarginate near the apex, or split into two slender divaricating teeth connate at base in one species (*P. corydon*); onychium very short, bi-setose; basal joint of posterior tarsi angular but not spinose.

The habits of one of the species are known. It lives in the deposits of faeces heaped outside its nest by an underground *Termes*.

Key to the Species.

A². Inner claw of anterior tarsi of male cleft in two long claws.

Body somewhat depressed and elongate; genæ fairly broad, oblique in front and laterally, not projecting much beyond the eye; posterior margin of prothoracic excavation bi- or quadridentate in the male *corydon*.

A¹. Inner claw of anterior tarsi of male simple.

Body somewhat convex; genæ moderately broad, straight in front, sub-truncate laterally and projecting much beyond the eye; posterior margin of prothoracic excavation bi-dentate .. *corpulenta*.

Body moderately convex; genæ narrow, slightly oblique in front, produced laterally into a triangular tooth carinate on the upper part and projecting much beyond the eye; prothoracic excavation not dentate behind *diversa*.

Body short; genæ very narrow and forming a straight transverse lobe projecting much beyond the eye and strongly reflexed at tip; prothoracic cavity semicircular, not dentate behind .. *mashuna*.

PYCNOSCHEMA CORPULENTA, n. spec.,

Plate XL., fig. 28.

Male: Reddish brown on the head and prothorax; antennæ, elytra, legs, and under side chestnut-brown; clypeus lanceolate, recurved at apex, carinate above, the ridge connected with the base of a moderately long horn recurved, almost hooked at tip; head quite truncate laterally and with the genæ produced into a transverse process

forming a parallel lobe truncate but with both the angles slightly rounded and projecting a good distance beyond the eye; this lobe is roughly punctured, and the bi-impressed posterior part of the head has also a few rugose punctures; prothorax very diagonally attenuate laterally in front, hardly ampliate towards the median part, and slightly sinuose above the posterior angle which is sharp, marginate all round, obliquely truncate in front where there is a moderately deep but somewhat broad excavation with a slightly overhanging ridge, emarginate in the centre and with the angles of the excavation subdentate, posterior part sloping towards the sides, and covered on the slope with somewhat deep, round, remote punctures, the median part of the disk is nearly smooth, and the supra-marginal lateral part is feebly punctate, but the excavation is smooth; scutellum smooth, faintly impressed longitudinally at tip; elytra not broader than the prothorax at the base, distinctly sinuate laterally and a little ampliate from the median to the posterior rounded part, moderately convex, callose on each side behind, and having, besides the juxta-sutural stria, three somewhat distinct duplicate rows of round punctures, the intervals also have series of similar punctures which on the sides become most irregular and are somewhat closely set; pygidium obsoletely shagreened, and with a faint longitudinal median impression reaching from base to apex; abdominal segments impunctate and glabrous, sternum densely villose. The genital armature differs very much from that of the other South African species.

Female unknown.

Length 21 mm.; width $11\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Salisbury).

PYCNOSCHEMA CORYDON, Oliv.,

Plate XL., fig. 25.

Entomol., i., 3, p. 181, pl. xxviii., fig 245.

Head and legs piceous red; prothorax, elytra, and under side chestnut-brown; not quite so robust as the preceding species, more elongate, and with the elytra planer; the head is very hairy in the centre, the clypeus is very narrow and in the shape of an aculeate tooth recurved at tip, the cephalic horn is villose laterally and varies much in length, the genæ, which project beyond the eyes, are moderately broad, oblique in front, diagonally truncate laterally in the male, but with the upper angle sharp and recurved in the female, in which sex there is no cephalic horn but a very high transverse ledge aculeate at middle and connected by a longitudinal

carina with the reflexed part of the clypeus; prothorax sub-vertical in front in the male, with the anterior part excavated and the upper margin of the excavation forming an overhanging ledge sinuate in the middle, or in the middle and on the sides according to the development, and with the angles of the emargination acute, almost dentate especially in the centre, this excavation is almost smooth, but slightly villose inwardly along the upper ledge, and the posterior and lateral parts of the disk are covered with round, moderately deep punctures, rarer and less closely set in the median part, in the female the prothorax is simple but has a faint marginal impression, the punctures are also denser; scutellum with a few faint punctures in the male, but deep ones in the female; elytra elongate, somewhat depressed, covered with round but shallow seriate punctures, and having on each side three distinct double rows representing the striæ; propygidium, pygidium, abdomen, legs, and sternum densely villose; inner claw of anterior tarsi cleft into two divaricating teeth carinate at base.

Length 12–21 mm.; width 7–10 mm.

This species is crepuscular or nocturnal. It is found in the old heaps of accumulated faeces brought out of the underground termite nests *Hodotermes havilandi*. I found the larva also there, and also another Dynastid *Syrichthys verus*.

Hab. From Cape Town to the Zambesi River.

PYCHNOSCHEMA DIVERSA, n. sp.

Plate XL., fig. 23, fig. 38.

A close ally to *Pychnoschema corydon*, but distinguished, however, by the shape of the genital armature and the following characters: the colour is piceous black, seldom piceous red on the elytra; the clypeus and the cephalic horn are similar except that the latter is not so much hooked at tip in the large development, the genæ are narrower and are produced into a triangular process projecting much beyond the eye and carinate in the middle; the prothorax is more oblique laterally in front in the male, the median excavation is not so declivous and has no trace of an overhanging sinuate ledge, and the posterior part of the disk is less sloping; the elytra are not so plane in the anterior part, and the punctures are broader, deeper, and more closely set in both sexes.

Length 13–17 mm.; width 8–9 mm.

Hab. Cape Colony (Uitenhage, Graham's Town).

PYCHNOSCHEMA MASHUNA, n. spec.

Easily distinguished by its short, robust facies. Black, shining; clypeus a little broader than in the other three South African species, cephalic horn robust, recurved from the base, genæ very narrow, quite straight in front, rounded at tip and projecting much beyond the eye; head deeply and irregularly punctured, deeply impressed in the centre of the base; prothorax short, much amplified laterally at middle, broader than long by one-half, convex and having nearly the whole of the anterior part scooped out into a sub-vertical, deep, semi-circular excavation the lower part of which is punctate, posterior part of the disk a little convex and punctulate, sides also punctulate, the punctures remote; scutellum with a few punctures in the centre; elytra short, somewhat convex, very faintly punctate, and with the three dorsal double series of punctures not very distinct or partly obliterated; pygidium glabrous, slightly shagreened but less so in the median part which is nearly smooth; abdominal segments a little more contracted than in the other species, under side and legs densely villose.

Length 13–15 mm.; width 7–9 mm.

Hab. Southern Rhodesia (Salisbury).

Although the facies of this species is very different from that of *P. diversa*, the genital armature of both is strikingly alike.

CALLISTEMONUS, n. gen. *Plate XL, fig. 29*

Mentum ampliate and rounded laterally, gradually attenuate, and with the ligular part very distinct, ampliate laterally, rounded on each side, emarginate at middle, and standing at a certain distance from the rounded apical upper margin of the mentum which is strongly in relief; insertion of the labial palpi quite lateral, the latter short, joints robust, apical one swollen, moderately sharp at tip, upper lobe of maxillæ straight, a little hollowed inwardly, slightly dentate at tip, and with two short, horizontal teeth opposite one another, maxillary palpi short, moderately robust, apical joint fusiform inwardly, straight outwardly; mandibles concave, very rounded, and projecting much beyond the short, triangular clypeus; prothorax moderately convex, slightly impressed in the male, and with a short tubercle in the anterior margin; scutellum bluntly triangular; elytra sub-parallel, convex, deeply punctured; stridulating organs in the shape of two diagonal finely striate bands; pygidium regularly convex in the male; anterior tibiæ tri-dentate; penultimate joint of anterior tarsi produced beneath into a sharp

process; last joint very swollen, inner claw thickened, sharp at tip, and bent under the joint; posterior tibiæ broad, supra-apical transverse carina on the intermediate and posterior ones, bluntly tridentate, apex non-ciliate, apical spurs thickened, but hollowed inwardly and not sharp at tip.

The shape of the posterior apical spurs approximates to that of *Temnorhynchus*. The suture between the mentum and the ligula is strongly exemplified in this genus.

CALLISTEMONUS INTRUSUS, n. sp.

Piceous black, sometimes piceous red; antennæ, legs, and under side rufous brown and densely hairy; head very rugose; clypeus distinctly reflexed in front, genæ somewhat triangular, distinct, in the centre of the head are two very indistinct, transversely subtriangular prominences; prothorax attenuate laterally in front, but nearly straight for two-thirds of the length, convex, covered with closely set, deep punctures, and having in the anterior part a small, more or less round depression, and a small tubercle in the centre of the anterior margin; scutellum impunctate, slightly impressed longitudinally at apex; elytra sub-cylindrical, deeply punctured; the punctures are set close to one another, and the three dorsal duplicate striæ are visible; pygidium finely and closely shagreened; abdominal segments a little contracted; basal intercoxal process of prosternum flat, but broad, and ovate at tip.

Length 15–19 mm.; width 8–10 mm.

Hab. Cape Colony (Uitenhage).

GEN. HOMŒOMORPHUS, Burm.,

Handb. d. Entom., v., 1847, p. 31.

Mentum very convex in the inferior part and deeply excavated at tip, very oblique laterally from the base to the point of insertion of the antennæ, slightly narrowed obliquely from there towards the apex which is emarginate, labial palpi short, intermediate one swollen, apical one longer than the preceding two put together, elongato-ovate, and slightly truncate at tip; maxillæ with the apical lobe horny, scooped out inwardly, not dentate nor ciliate in the inner part, and with a few setæ outwardly, second and third joints of maxillary palpi thick, conical, apical one broadly elongato-ovate and moderately acuminate at tip; mandibles concave, not much curved

laterally, not dentate in the anterior part, and projecting much beyond the clypeus, which is very narrowed at the base and sharply acuminate and reflexed at apex; genæ distinct; antennæ ten-jointed; in the male the clava is formed of three lamellæ of equal size, much longer than the whole of the preceding joints, basal joint thick and short; prothorax marginate all round, obliquely attenuate laterally in the anterior part, parallel in the posterior and not very convex; scutellum ogival; elytra short, a little ampliate laterally past the middle, feebly striate but deeply punctate; pygidium very little convex, nearly vertical; intermediate and posterior tibiæ not strongly carinate transversely, mesosternum with a sharp, triangular intercoxal horizontal spine; anterior tibiæ sharply tri-dentate, anterior tarsi moderately slender, inner claw not dentate but a little broader in the centre than the outer one.

In the only example at my disposal, which is a male, the anterior tarsi are partly missing, and the description of the claws is taken from Burmeister. The shape of the upper lobe of the maxillæ is very singular, and the club of the antennæ in the male is nearly as elongate and of the same shape as in some species of the Melolonthinid *Macrophyla*.

HOMEOMORPHUS RUFIPES, Burm.,

Handb. d. Entom., loc. cit., p. 32.

Male: Intensely black, with the prothorax moderately shining and the elytra opaque; it is glabrous on the upper side, and clothed with dense fulvous hairs on the under side and legs; basal joints of antennæ somewhat piceous red, club black; head very rugose, truncate laterally, nearly straight above the canthus of the genæ, and with the clypeus triangular, acuminate, with the apical margin reflexed; there is no trace of a clypeal carina, but at the junction of the clypeus and of the frontal part there is a short, sharp median tubercle; prothorax attenuate obliquely laterally in the anterior part, straight from about the median part to the posterior angle which is sharp, marginate along the base except in the centre, obliquely declivous in the anterior part, and very slightly impressed transversely there and also longitudinally to beyond the median part, and covered with equally remote round, not closely set punctures; scutellum ogival, deeply and rugosely punctured and grooved in the centre of the apical part; elytra very little sinuate laterally, and gradually ampliate past the median part, they are short, a little broader than the prothorax, slightly callose behind, not very convex, and have regular rows of round, moderately deep punctures less distinct on the sides, the

striae seem to have disappeared, but a double one is somewhat discernible in the middle of the dorsal part; pygidium finely shagreened except the apical part which is smooth.

Female unknown.

Nothing is known of the habits of this remarkable insect, but judging from the shape of the maxillae, it is probable that, like *Pychnoschema*, it lives in the manure-heaps of the subterraneous white ant *Hodotermes havilandi*, Sharp.

Length 14 mm.; width 8 mm.

Hab. Cape Colony (Malmesbury).

GEN. CYPHONISTES, Burm.,

Handb. d. Entom., v., 1847, p. 213. Plate XL. figs. 29

Mentum narrow, elongato-ovate, attenuate laterally towards the insertion of the labial palpi, obliquely ampliate above it, and broadly emarginate, it is deeply excavate longitudinally from the base to three-fourths of the length, the ligular part is slightly receding and grooved in the centre; labial palpi short, apical one sub-cylindrical, rounded at tip, apical lobe of maxillae not much curved, hollowed inwardly, having a short, curved tooth at the tip, two, opposite one another, near the apex, and a strongly bifid one at the base, last joint of maxillary palpi not long, fusiform inwardly, straight outwardly, and sub-truncate at tip; mandibles three-dentate, the teeth a little divaricating, somewhat angular, reflexed and projecting much beyond the clypeus which is very attenuated laterally, slightly reflexed at tip, but not bi-dentate; genae projecting much, triangular, median part of the head with a long compressed horn bifid at tip in the male, or a short bifid tubercle in the female; prothorax marginate all round, excavate and bi-tuberculate in front in the male, simple in the female; scutellum ogival; elytra convex, slightly ampliate laterally past the middle, distinctly punctate and even striate, callose behind; propygidium very finely striate transversely and broadly in the median part, pygidium transversely convex at a short distance from the basal part, and a little declivous in the middle, horizontally sub-aculeate at the apex and projecting as an inverted gutter, and having the lower part of the pygidium overhung by the upper in the female; abdominal segments a little contracted in the middle; metasternum moderately broad, prosternum with an horizontal, carinate, intercoxal process, pectus very pubescent; anterior tibiae sharply tridentate, joints of anterior tarsi thickened in the male, penultimate

as long as the four preceding, inner claw broad, compressed, very long, flexed inwardly underneath and moderately sharp at tip; the intermediate and posterior tibiae end in two and three long spines respectively, and the two median transverse carinae are strongly dentate on the inner side.

This genus includes only one species the habits of which are not known, but I suppose that they are similar to those of *Pseudocypphonistes*; it has very wide range in South Africa, and is also recorded from Zanzibar.

CYPHONISTES VALLATUS, Wiedem.,

Zool. Magaz., ii., 1, p. 4.

Piceous black, shining, under side and legs piceous or piceous red, pectus densely villose; head smooth in the male, very rugose in the female, armed in the centre in the male with a flattened horn, slightly curved backwards and strongly furcate at tip in the large development, varying in size in the smaller, being less distinctly furcate at tip as the size decreases, and with only a small, yet distinct bifid tubercle in the female; prothorax abruptly retuse in front, and with the anterior part produced into a compressed, sub-horizontal horn strongly bifid at tip, and about 4 mm. long and broad in the large development; in the female the prothorax is simple, but very deeply and somewhat closely punctured on the sides and in the anterior part, and with the punctures more remote in the centre and the posterior part of the disk, while in the male they are only punctulate on the sides of the posterior part; elytra covered all over with very conspicuous, cicatricose punctures, crowded together, especially along the sides, and with the four duplicate striae fairly distinct from the base to three-fourths of the length in both sexes; propygidium very finely pubescent, pygidium smooth and shining in the whole of the median part in the male, and with the upper ledge very rugose, and the lower less so in the female; in the male the last abdominal segment has a broad, transverse, reddish brown, moderately arcuate, membranaceous margin which is quadrate in the female, and the abdominal segment proper is produced in the middle into a sharp spine reaching to three-fourths of the length of the membranaceous part, and overlapping it.

Length 26–31 mm.; width 13–17 mm.

Hab. Cape Colony (Mossel Bay, Knysna, Kowie), Natal (Durban), Transvaal (Potchefstroom, Rustenburg, Johannesburg), Southern Rhodesia (Mazoe, Buluwayo, Salisbury).

GEN. ORYCTES, Illig.,
Käfer Preuss., 1798, p. 11.

Mentum small, elongate, ampliate laterally above the base, slightly attenuate from there and with the apical part oblong; it is moderately convex in the middle, but the apical part slopes backwards and is moderately deeply excavate, labial palpi short, apical joint sub-fusiform, rounded at tip; maxillæ not very robust for the size of the insect, inner lobe horny, transverse, slightly concave, having a thick fringe of long, ciliate hairs on the upper and outer margins, but none inwardly; maxillary palpi moderately long, second joint robust, thicker and a little longer than the apical one which is fusiform inwardly, straight and grooved outwardly, and moderately bluntly rounded at tip; mandibles triangular at tip, but with the inner part a little arcuate, projecting a little beyond the clypeus which is broadly incised and has two strong recurved teeth at apex, and densely ciliate all round; genæ reduced to a lobate canthus; head with a strong triangular tooth in the frontal part, or a very long horn curving backwards, according to the sex, and also to the species; prothorax narrowed laterally in front, not very ampliate past the middle, somewhat convex, and with the anterior part more or less deeply excavated or impressed according to the sex; scutellum somewhat bluntly triangular; elytra elongate, and with striæ almost indistinct or well defined, but always with a well-defined juxta-sutural one; propygidium with the median part very finely plicate transversely; pygidium narrow, transversely convex; anterior tibiæ pluri-dentate; anterior tarsi slender and similar in both sexes, claws simple, onychium long and briefly penicillate, basal joint of posterior tarsi produced into a long, sharp tooth; abdominal segments not contracted; intercoxal ledge of prosternum plane beneath and truncate at tip; sternum densely pubescent, except the median part of the metasternum.

The most common of the two species found in South Africa is *O. boas*, which is occasionally found in manure-heaps; the second species, *O. monocoros*, is found in rotten trunks, and is consequently limited to the eastern forest belt extending as far as Knysna in the Cape Colony.

Key to the Species.

A². Anterior tibiæ tri-dentate and with a supra-digital tooth.

Cephalic horn very long and curved, with the prothorax deeply excavate and bi-tuberculate in the male; cephalic horn short and vertical on the female, anterior impression on prothorax, shallow and uni-tuberculate at tip; elytra obsoletely striate in both sexes *boas*.

A¹. Anterior tibiae with three long outer teeth and two shorter but strong serrate teeth.

Cephalic horn short, not curved; prothoracic excavation shallow, uni-tuberculate in both sexes; elytra deeply punctured, striae distinct *monoceros*.

ORYCTES BOAS, Fabric.,

Plate XL., fig. 26. 3).

Head, prothorax, and tibiae piceous red or very dark brown, elytra chestnut-brown, femora and under side also chestnut-brown; head rugose, clypeus triangularly emarginate at tip, and with the angles triangularly dentate, genae semicircular, in the male the frontal part is armed with a very long horn, compressed and strongly curved backward and hooked at tip, while the female has a short, sharply triangular tooth; in the male the anterior part of the prothorax is deeply excavate from the anterior margin to three-fourths of the length, and strongly bi-dentate in the posterior margin, this excavation is villose in the anterior part and strongly shagreened in the centre, the posterior part of the disk is convex and smooth, the lateral part is remotely punctulate; in the female there is in front a short, semicircular, villose, shallow impression transversely foveolato-plicate, and the discoidal part for two-thirds of the length is roughly and irregularly plicate with the intervening spaces punctulate, the hind part of the disk is smooth and impunctate; scutellum closely and deeply punctate; elytra more sinuate laterally and a little more ampliate past the middle in the male than in the female, very faintly striate and very remotely punctulate; mesosternum and metasternum cicatricose except in the median part of the latter.

Length 41-44 mm.; width 19-21 mm.

Hab. The whole of South Africa except the south-western part of Cape Colony.

ORYCTES MONOCEROS,

Plate XL., fig. ~~27~~. 30.

Head and prothorax piceous black or piceous red, elytra dark chestnut-brown, under side and femora light chestnut-brown; clypeus very broadly and deeply emarginate at tip, and with the two angles strongly diverging and produced into a very sharp, recurved process, frontal part produced into a very high triangular ledge culminating in a sharp, vertical, short horn in both sexes, the whole head is very rugose except for a small median space at the base, genae

narrow, obliquely rounded; prothorax attenuate laterally in front for a short distance only, convex, and having in both sexes a shallow, very oblique depression reaching from the anterior margin to the median part, edged all round by a smooth convex ridge more or less rounded, and having in the posterior margin a triangular tubercle which is sometimes slightly bifid, this shallow depression is roughly and irregularly plicate, and the sides, as well as a moderately broad band in the posterior part of the disk, are scrobiculate, but along the base there is a broad smooth band with a few remote, slight punctures; scutellum roughly punctured, but having a smooth margin; elytra very little sinuated laterally and covered with very close, deep cicatricose punctures, the four duplicated dorsal striæ are moderately distinct; stridulating striæ in the median part of the propygidium extremely fine, almost indistinct; under side as in *O. boas*, but with the abdominal segments more punctured; anterior tibiæ strongly tri-dentate outwardly and with a smaller tooth between the basal and second one, and another above the digitation.

Length 37–47 mm.; width 16–20 mm.

Hab. Cape Colony (? Knysna), Natal (Durban), Mozambique (Lourenço-Marquez). It occurs also in Western and Central Africa.

GEN. ARCHON, Kirby,

Trans. Linn. Soc., xiv., 1840, p. 567.

Augosoma, Burm.

Mentum elongato-ovate, strongly constricted at the insertion of the palpi which are set near the apex, slightly dilated above the palpi and emarginate at tip, it is nearly plane, broadly but not deeply grooved longitudinally in the middle, and with the ligular part not very oblique; labial palpi short, last joint cylindrical, rounded at tip; apical lobe of maxillæ horny and produced into a broad arcuate, excavate tooth briefly bifid at apex and at base, and very much of the same shape as in *Pseudocyphonistes*; apical joint of maxillary palpi not long and sub-cylindrical; mandibles bi-dentate, the inner tooth small and not very apparent, outer one strongly reflexed, but rounded; clypeus narrowed diagonally laterally and produced at apex into two recurved teeth; genæ narrow, very diagonal; head bearing in the centre either a gigantic compressed tooth, slanting forward, or a very short one arcuate in the male, but bi-tuberculate in the female; prothorax marginate all round, retuse in front

in the male and armed with a very long horn or with a moderate sized one according to the development in the male, simple and with a transverse median ridge in the female; elytra distinctly ampliate laterally past the ante-median sinuation, non-striate and hardly aciculate; propygidium and pygidium of *Oryctes*; under side, tibiae, and tarsi similar.

ARCHON CENTAURUS, Fabric.,

Syst. Entom., p. 8.

Head and anterior part of prothorax piceous red, the rest of the body chestnut-brown; head deeply pitted and with the basal part of the clypeus covered with semiconcentric folds, genae reduced to a narrow, oblique lobe, forming the canthus of the eye, in the male the head bears in the large development a very large, compressed horn slanting forward, hooked at apex and having a very large compressed inner tubercle at a short distance from the hooked tip, in the smaller development the cephalic horn is not much more pronounced than in *Oryctes monoceros*; the female has only two short tubercles united by a sinuate carina; prothorax very retuse and constricted laterally in the large development of the male, quite impunctate, and with the median part of the disk produced into a long, compressed horn, bi-furcate at tip, and having at the base two conspicuous horizontal teeth; this horn, which is directed forward and slightly curved, projects a little beyond the cephalic one, but is of the same length, exceeding sometimes 26 mm.; in the small development the anterior part of the prothorax is a little excavate, and has a short, sharp, slightly bent forward median tooth only 6 or 8 mm. long; in the female the prothorax is simple, a little attenuate obliquely laterally in front, slightly retuse in the anterior part, with the retuse part edged by a very distinct, short, rounded carina; it is roughly and irregularly plicate transversely for half the width, and the posterior half is smooth, except for a few punctures along the base; elytra with the striae, even the juxta-sutural one indistinct, and the whole surface dotted here and there with very fine and very remote punctures; pygidium quite smooth in the male, closely punctate and slightly scabrose and fringed with hairs above the middle in the female, under side very little pubescent.

Length, exclusive of horns, 44–62 mm.; width 24–33 mm.

This species inhabits the Guinea and Cameroon Coasts of Western Africa; but I have received a large female (56 mm.) from Durban,

Natal. I am not aware of it having been found in, or recorded from, the East Coast of Africa.

GEN. SYRICHTHUS, Hope,

The Coleopt. Manual, 1837, i., p. 91, pl. xi., fig. 8.

Mentum sub-parallel laterally, carinate in the middle in the anterior part, impressed longitudinally on each side and transversely impressed at tip under the ligular part which is narrower than the mentum, rounded laterally and broadly emarginate at tip; the mentum is not always sub-parallel laterally, being a little attenuate from the median towards the apical part, but this seldom occurs; the insertion of the labial palpi is at the back of the mentum, last joint of maxillary and labial palpi moderately long, sub-cylindrical and sub-truncate at tip; apical lobe of maxillæ straight, not hollowed, sharply dentate at tip, the tooth being at right angles, in the median part there is a similar tooth, and at the base a transverse trifid one; mandibles triangular, greatly diverging, slightly reflexed at tip, and projecting much sub-laterally beyond the short clypeus which is sinuate laterally, broadly triangular and with the median part not projecting much, and bearing in the male a short, recurved tooth, and a sharp, conical tubercle in the female; club of antennæ sub-reniform, as long as the six intermediate joints which are very closely set; prothorax moderately convex, rounded laterally, marginate all round except in the centre of the base; scutellum ogival; elytra sub-parallel, rounded behind, convex, deeply punctured and slightly striate; propygidium striate transversely at middle, densely pubescent; pygidium convex in the male and transversely so in the upper part in the female; last abdominal segment moderately broad and emarginate in the male, very broad and entire in the female, metasternum not broad, intercoxal basal process of prosternum triangular at tip; anterior tibiæ strongly tri-dentate outwardly, intermediate and posterior tibiæ fringed with stiff ciliæ at apex, but not tri-dentate, the transverse carina are also non-dentate; anterior tarsi of male a little thickened, penultimate joint projecting triangularly below the apical one which is very long and strongly curved; the inner claw is twice as long as the outer, broad, compressed and curved downwards.

The only species included in this genus is found, with its larva, in the old heaps of fæces brought outside its nest by the white ant *Hodotermes havilandi*, Sharp.

SYRICHTHUS VERUS, Burm.,

Plate XL, fig. 28. *fig.* 36.

Handb. d. Entom., v., 1847, p. 168.

Piceous black, shining, fringed along the prothorax, and also past the median part of the outer margins of the elytra, with very dense and long chestnut-red hairs; head rugose, clypeus very short, truncate at tip and bearing a small hooked tooth in the male, while the female has a sharp tubercle situated in the centre of the head, the posterior part of the head is deeply excavated in the male, but not in the female, and the excavation is bounded by a sub-basal transverse carina; prothorax simple in both sexes and covered with deep, closely set punctures; scutellum impunctate; elytra covered with deep, round punctures regularly seriate, the striae are little distinct, but they are indicated by a series of long, almost bristly recumbent fulvous setae, distinctly remote and springing from one of the punctures in the striate, duplicate row, but also from between the two rows in the basal part, these setae are, however, often rubbed off; pygidium very rugose but with a smooth, triangular apical space in the male, equally rugose in the female, with the transverse concave part densely pubescent in this sex; four basal abdominal segments nearly impunctate in both sexes in the middle, and having only one row of setigerous punctures in the two apical ones in the male, but these two segments are very roughly punctured in the female, and very densely pilose.

Length 18–24 mm.; width $9\frac{1}{2}$ –13 mm.

Hab. The whole of Cape Colony, Transvaal (Potchefstroom, Johannesburg, Rustenburg).

SYRICHTHODONTUS, n. gen.

Mentum a little rounded laterally at base, then diagonally acuminate until near the apex where the ligular part is hardly contracted at all, and is deeply emarginate triangularly on the apical margin, the anterior part is impressed on each side, the median part is sharply carinate, and the slightly recumbent ligular part is deeply hollowed in the middle; palpi and maxillae as in *Syrichthus*, the upper tooth, however, being slightly bifid; clypeus sharply triangular, reflexed in a tooth at tip; genae distinct, triangular; mandibles long, sharp at tip; head with a small, sharp tubercle in the male; prothorax rounded and a little ampliate laterally, plane and with an anterior impression containing a median tubercle in the male, more convex in the female; elytra depressed; pygidium not convex in either

sex; propygidium with a narrow median space very indistinctly scabroso-plicate; legs and under side as in *Syrichthus*; anterior tarsi not much thickened, and with the claws equal in both sexes.

The only species included in this genus is found in decayed tree-trunks.

SYRICHTHODONTUS SPURIUS, Burm.,

Plate XL., fig. 26.

Handb. d. Entom., v., 1847, p. 168.

S. cribratus, ♀ Bohem., Insect. Caffrar., ii., p. 6.

Piceous black, seldom quite black, moderately shining, densely fringed along the whole of the outer margin of the prothorax and half of that of the elytra with very dense, long, fulvous hairs, as in *Syrichthus verus*; head rugose, clypeus sharply recurved at middle and with a short sharp tubercle in the median part in the male, and a transverse carina slightly aculeate at middle in the female; prothorax depressed in both sexes, but covered with broad, deep punctures; in the male there is in front a semicircular, deep impression enclosing a triangular median tubercle, and the posterior part of the disk is sometimes deeply grooved; scutellum impunctate; elytra sub-parallel, depressed, very roughly and closely punctate, with the striæ single, moderately distinct, and indicated in fresh examples by long, remote, rufescent setæ, as in *Syrichthus verus*; pygidium deeply foveolate; under side very villose.

Length 13–21 mm.; width 7–11 mm.

Boheman's *S. cribratus* is a small female in which the villosity has disappeared, and his *Syrichthus spurius* is identical with *Orsilochus cornutus*.

Hab. Cape Colony (Cape Town, Stellenbosch, Knysna), Bechuana-land (Kuruman).

SYRICHTHOMORPHUS, n. gen.

Mentum a little rounded laterally from the base to a third of the length, gradually attenuate from there to the apex, and with the ligular part hardly constricted laterally, and only slightly emarginate at tip, it is impressed on each side at the base, and the ligular part does not recede much, but is deeply concave; maxillæ and palpi similar to those of *Pseudosyrichthus* and *Syrichthodontus*; head similar; prothorax convex and with a marginal tubercle in the anterior part, and a very deep median groove in the female, the only sex known; elytra convex; no stridulating organ on the propy-

gidium; pygidium of the female produced into the middle into a conspicuous, transverse rounded ledge, overhanging an apical longitudinal impression; legs and tarsi as in the female of *Syrichthus*.

SYRICHTHOMORPHUS TERMITOPHILUS, n. spec

Plate XL, fig. 30.

Female: Piceous or chestnut-brown, shining, densely but briefly fringed with fulvous hairs along the margin of the prothorax and that of the elytra to about the median part of the latter; head scrobiculate, clypeus very sharply reflexed at apex, genæ distinct, somewhat triangular, the anterior part of the head owing to the reflexed anterior part of the clypeus is concave, and past the frontal part there is a very short, median transverse carina; prothorax ampliate laterally and rounded at middle, covered on the anterior part with nearly confluent, rugose foveæ, and with round, foveate punctures behind, in the anterior margin there is a distinct, sharp, median tubercle, and at a short distance from it begins a longitudinal, very deep groove, reaching nearly to the base; elytra convex, especially behind, a little ampliate laterally from about the median part and covered with round, small, cicatricose punctures; the striæ are also punctate but moderately distinct, and have a single series, often worn off, of remotely distant fulvous long setæ; propygidium scabrose, without trace of stridulating organs and briefly pubescent; pygidium with the upper part produced into a rounded, convex ledge overhanging the lower half in the median part of which there is a longitudinal impression divided into two by a median, also longitudinal carina; abdomen nearly glabrous; sternum densely villose.

Male unknown.

Length 18–26 mm.; width $9\frac{1}{2}$ –13 mm.

Hab. Transvaal (Boksburg, Lydenburg).

This species seems to have the same habits as *Pseudocyphonistes corniculatus*. Mr. Harold Fry has found it with numerous larvae on the underground sides of a small mound of *Termes trinervius*, Ramb., on which they had made quite an excavation; they were feeding on the nest itself.

PSEUDOSYRICHTHUS, n. gen.

Mentum in the shape of a very elongate triangle with the apical part deeply incised triangularly for nearly all the width, diagonally impressed on each side of the base, but not carinate, ligular part

deeply impressed; palpi and maxillæ as in *Syrichthodontus*; the head and the prothorax are similar, the latter having in the male only a deep median longitudinal groove, reaching from apex to base; the elytra are depressed and a little ampliate past the middle, and on the propygidium there are two median vertical, narrow, finely striate bands; the pygidium, legs, and tarsi as in *Syrichthodontus*.

This genus is really distinguished from *Syrichthodontus* mainly by the shape of the mentum and of the stridulating organs, but the facies is very different.

PSEUDOSYRICHTHUS CLATHRATUS, Gerst.,

Plate XL., fig. 27.

Beitr. Ins. Zanz., 1866, p. 40; Glied. Faun. Sans. Geb., 1873, p. 105, pl. vi., fig. 7.

Male: Black, moderately shining, glabrous above, but with the outer margin of the prothorax and of the elytra from the base to past the middle fringed with moderately long, dense fulvous hairs; head strongly scrobiculate, and having in the centre a short, but sharp conical tubercle; prothorax slightly retuse near the anterior margin, where there is a small, median tubercle, hardly convex, deeply grooved from near the anterior tubercle to the base, and covered with very dense, round, foveate punctures, closely set but not coalescing; scutellum nearly smooth; elytra with ten series of deep, clathrate foveæ, the intervals of which are costate and somewhat sharp, the foveæ are occasionally filled with earth, the suture is a little raised; pygidium covered with closely set foveate punctures, propygidium clothed, except on the stridulating organs, with a short, dense flavescent pubescence; under side densely hairy.

Female unknown.

The habits of this species are different from those of *Syrichthodontus*, as evidenced by the foveæ on the elytra being filled with earth occasionally, and thus implying a subterraneous mode of life in the early stage.

Length 20–22 mm.; width $9\frac{1}{2}$ – $10\frac{1}{2}$ mm.

Hab. Southern Rhodesia (Salisbury, Victoria Falls, Manica). It was first recorded from Lake Jipe, in British East Africa.

VENEDUS, n. gen.

I have not been able to dissect Boheman's co-type of *Heteronychus paradoxus*, which was only lent to me for the purpose of identifi-

cation. It is not a *Heteronychus*. The mandibles, instead of being tri-dentate on each side, are a little concave and similar to those of *Rhizoplatys*, and there is a highly raised frontal carina bearing an emarginate tubercle; the prothorax has an excavation in the anterior part which is edged in front by a transverse lamellate carina; the anterior femora are armed with an obtuse tooth; the anterior tibiae are quadri-dentate, and judging from the example I have seen, the tarsi of the anterior tibiae and also the inner claw are not thickened in the male.

VENEDUS PARADOXUS, Bohem.

Heteronychus paradoxus, Insect. Caffrar., ii., p. 7.

“Oblong, convex, black, shining, under side ferruginous, sternum sparingly villose; head not rugose; clypeus triangular, strongly reflexed at tip, mandibles concave, not rounded, and reflexed, and in the frontal part there is a short, bifid, more or less raised tuberculated carina; prothorax slightly attenuate laterally in front ampliate and rounded in the middle, very convex and having in the anterior part a triangular impression slightly retuse in front and edged by a vertical, laminate carina, this impression extends a little further than the median part of the disk, and the rest of the surface, with the exception of the posterior part, is unevenly punctured; scutellum smooth; elytra parallel, convex, moderately distinctly punctato-striate and with the intervals of the dorsal part very sparingly punctulate, but the punctures on the sides are more numerous and more irregular; pygidium finely but somewhat densely punctulate except at the base where the punctures are not so numerous; anterior femora armed not far from the apex with an obtuse tooth, and emarginate at apex, anterior tibiae quadri-dentate.

Although Boheman gives the whole of Caffraria as the habitat of this insect, which therefore ought not to be scarce, I have seen only one example—one of Boheman’s.

Length $19\frac{1}{2}$ –21 mm.; width 10 – $10\frac{1}{2}$ mm.”

PSEUDOCYPHONISTES, n. gen.
Plate XL., fig. 35.

Mentum not very convex, ovate laterally from the base to past the median part and a little attenuate obliquely from there, truncate at the tip, and not constricted or grooved laterally for the insertion of the labial palpi which are set in the inner face of the mentum; labial palpi moderately short, last joint cylindrical, slightly rounded

at tip; upper lobe of maxillæ horny, and produced into a nearly vertical, slightly concave tooth, sharply bifid at tip, and another strongly bifid near the base, last joint of maxillary palpi strongly fusiform inwardly, straight or nearly so outwardly and nearly as long as the three preceding it; mandibles convex, bi-dentate, and reflexed, inner tooth smaller than the other, and both rounded; clypeus greatly attenuate obliquely laterally, and reflexed at apex; head with a short, bifid tubercle in both sexes; prothorax not excavate or tuberculate; elytra convex, a little ampliate laterally past the middle, deeply and closely punctured in the dorsal part from the base to past the middle; anterior tibiae strongly tri-dentate outwardly; anterior tarsi of male thickened, penultimate joint produced beneath the last one into a very distinct, transverse process, inner claw thickened, strongly curved; transverse carinae on the intermediate and posterior legs sharply dentate in the outer angle; basal joint of tarsi sharply dentate above; pygidium and prosternum as in *Oryctes*.

This genus differs from *Cyphonistes* in general facies, owing to the cephalic horn of the male being tubercular, and the prothorax simple, but the main distinctive character is the shape of the mentum which is not strangulate nor grooved laterally on the outer side for the insertion of the antennæ.

It includes only one species, *P. corniculatus*, which is found under the small mounds made by a *Termes* (*spec. indeterminata*). Its larva is also found there in company with that of the Cetonid *Trichostetha capensis*, and I have ascertained that it feeds upon the material of which the more or less conical base of the termite nest is made.

PSEUDOCYPHONISTES CORNICULATUS, Burm.

Handb. d. Entom., v., 1847, p. 214.

Chestnut-brown on the upper and under sides, glabrous above, densely hairy on the pectus; clypeus triangular, sinuate laterally near the base and with the straight apical part reflexed but not dentate, maxillæ projecting very much beyond the clypeus, bi-dentate on each side, the inner tooth being smaller and rounded, the outer one diverging, sharp and reflexed, genæ sub-semicircular, distinct, in both sexes there is a frontal ledge produced in the centre into a small yet distinct tubercle emarginate at tip; prothorax somewhat convex, simple in both sexes, very distinctly marginate all round, strongly plicate in the anterior part for two-thirds of the length, but with a broad basal and lateral smooth space; scutellum strongly punctured at middle; elytra convex, not very sinuate

laterally, but gradually ampliate from the median to the posterior part, not very callose behind, and having the median dorsal part deeply and closely punctured for half the length, while the sides are slightly rugose or less distinctly punctate in the anterior part; upper part of pygidium densely hairy, the lower margin is also fringed with long fulvous hairs, abdominal segments punctulate and hairy, especially the apical one, which has a fringe of very long hairs.

Length 30–33 mm.; width 16–17½ mm.

Hab. Cape Colony (Cape Town, Stellenbosch, Worcester, Mossel Bay).

GEN. RHIZOPLATYS, Westw.,

Proceed. Entom. Soc. Lond., 1841, p. 38.

Trionychus, Burm.

Mentum very broad, attenuate at base, sub-parallel laterally, not narrowed and transverse at tip and entirely hiding the ligula which is much reduced, densely hairy and soldered with the inner face of the mentum, labial palpi moderately long, apical joint sub-cylindrical but finely carinate inwardly, rounded at tip, and having a few deep setigerous punctures very remote, the basal joint is about two-thirds of the length of the apical one, and the intermediate is very short; upper lobe of maxillary palpi produced into a very sharp strongly curved tooth, hollowed inwardly, and having another beneath, equally sharp, but not so much curved, and under this second one, a transverse row of three, less sharp and connate at base; head truncate in front of the genæ which are transverse, clypeus triangular and slightly reflexed at apex, no clypeal carina, but instead a short tubercle in both sexes; mandibles projecting beyond the clypeus, angular outwardly in the anterior margin and sharply dentate at tip; antennæ ten-jointed, basal joint very thick, intermediate ones very short, thick, set very closely upon each other, club sub-reniform, as long as all the intermediate joints; prothorax very little convex, a little ampliate laterally at middle, marginate all round, and with the posterior angles very sharp, excavate or impressed in both sexes in the anterior part, but less deeply in the female than in the male; elytra elongate, not much convex, declivous behind, sub-parallel, more or less deeply aciculate and only very faintly striate; propygidium covered in the centre with very fine, short, irregular folds set close to one another, and being probably organs of stridulation; pygidium not very convex except towards the apical part in the male; abdomen deeply punctured; median part of metasternum very little depressed; prosternum with the intercoxal process very sloping,

glabrous, and with the anterior part produced into a very long, robust tooth sharp at tip; anterior tarsi of the male thickened, moderately slender in the female, claws with the onychium as long as the claws themselves and penicillate at tip, basal joint of intermediate and posterior tibiae produced on each side into a sharp spine in both sexes, the upper one being much longer than the lower; the inner claw of the anterior tarsi of the male is thickened, curved and bifid at tip.

The genus is represented in Western Africa (Senegal and Guinea).

Key to the Species.

Prothorax hardly excavate in the anterior part in the male and with two callose tubercles *trituberculatus*.

Prothorax deeply excavate in the anterior part in the male and with two greatly developed triangular tubercles *bituberculatus*.

RHIZOPLATYS TRITUBERCULATUS, Burm.,

Plate XL., fig. 32.

Handb. d. Entom., v., 1847, p. 141.

Head, prothorax, and legs piceous black; elytra dark chestnut-brown; head rugose, the rugosity formed by short, transverse, irregular folds on the clypeus, and transverse punctures on the posterior part; mandibles sharply aculeate in the outer angle and sharply dentate at the inner, clypeus sinuate laterally, sharply attenuate, and with the apical part sub-transverse and reflexed into a short, triangular tubercle, genæ produced into a transverse lobe in front of the eyes, in the centre of the head there is a sharp, conspicuous tubercle in both sexes; prothorax not very convex, distinctly rounded in the median part, attenuate in front, and only slightly sinuate above the posterior angle which is very sharp, it is covered with fine, closely set punctures, which are slightly rugose laterally and in front, but more remote in the median and posterior part of the disk, in the male there is a median, anterior groove forming a narrow excavation and a small tubercle on each side, as well as a not very distinct longitudinal impression above the base, in the female this groove is much more shallow, but it also extends, although it is not very distinct, on the whole of the disk, and there are no tubercles on the anterior part; scutellum triangular, a little blunt at tip, deeply punctate except at apex; elytra depressed, slightly sinuate laterally not in the margin itself but a little above it, declivous behind, distinctly callose there, very faintly striate, and covered with small,

shallow cicatricose punctures nearly coalescing; propygidium covered with very closely set, fine, very short, somewhat irregular folds on the whole of the median part; pygidium finely plicate transversely and finely scabrose at apex in the female; under side almost glabrous except for a short pubescence on the sides of the metasternum; abdominal segments deeply and closely punctate, process of prosternum strongly carinate and with the apical part sloping, deeply impressed, and glabrous; anterior tibiae very sharply tri-dentate; joints of anterior tarsi a little thickened, inner claw contorted, broad, bifid at tip in the male; in the female these joints are not very slender, and the two claws are equal.

Length 31-38 mm.; width 15-18 mm.

Hab. Cape Colony (Cape Town, Knysna, Port St. John), Natal (Durban).

RHIZOPLATYS BITUBERCULATUS, Klug,

Plate XL., fig. 33

Monatsb. Berl. Acad., 1855, p. 657; Peters' Reis., 1862, p. 253.

General appearance of the preceding species, but a little narrower, and with the elytra more finely punctured and the striae nearly invisible; head as in *R. trituberculatus*; the mandibles are sharply aculeate in the outer angle of the anterior margin and very sharply dentate in the inner, the spine-like tooth being recurved; the cephalic horn is sharper and longer; in the male the prothorax is similarly sculptured, but is a little more ampliate laterally at middle, and it is deeply and broadly excavated from the anterior margin to two-thirds of the length, with the anterior part of the walls of the excavation produced into two conical, very conspicuous tubercles; the posterior part of the disk is slightly impressed in the middle; the female much resembles that of *R. trituberculatus*, but the prothorax is much more deeply and broadly punctured and is even serobiculate laterally, and there is a distinct impression, callose on each side, in the anterior part of the prothorax; under side as in *R. trituberculatus*, but the four outer spines on the intermediate and posterior tibiae are not connate at base.

Length 33-35 mm.; width 15-16 mm.

Hab. Southern Rhodesia (Victoria Falls), Mozambique (Lourenço-Marquez).

RHIZOPLATODES, n. gen.

Closely allied to *Rhizoplatys*, but with the shape of the mentum and maxillae different. Mentum diagonally ampliate laterally from

the base to a third of the length, emarginate there and slightly attenuate towards the apex where it is very deeply sinuate in the outer angles, and bi-lobate at the apex ; it is not very convex in the median part, but is deeply impressed at apex ; maxillæ with the upper lobe armed with two sharp teeth bent at right angles, the upper of which is a little concave and placed above the second one which is not hollowed and is set on the inner margin and a little below the first, and below these the inner lobe is produced into a trifid, transverse tooth ; palpi and mandibles as in *Rhizoplatys*, but the mandibles are more aculeate and produced at apex into a triangular reflexed tooth.

RHIZOPLATODES CASTANEIPENNIS, Bohem.,

Plate fig.

Insect. Caffrar., ii., p. 27.

Rhizoplatys ambiguus, Gerst., Deck. Reis., p. 873, p. 105, pl. vii., fig. 2.

Head and prothorax piceous black ; elytra either piceous black or chestnut-brown, legs piceous red ; head very rugose ; clypeus very obliquely attenuate laterally, and with the apical part triangular and reflexed ; in the male the posterior part of the head is deeply excavate in the middle, and there is, close to the apex of the clypeus, a conspicuous, vertical tooth, hooked backwards at tip and about 2 mm. long ; in the female there is a similar impression, but much more shallow, the dentate apex of the clypeus is prolonged towards the median part in a short, high carina, connected often with a sharp tubercle situated in the centre of the head ; prothorax briefly retuse in front in the male, the retuse part being divided nearly into two by a triangular, narrow longitudinal impression which is continued as a deep furrow along the discoidal part as far as the base ; in the female the anterior part is not retuse, and the impression is more in the shape of a groove, also continued as far as the base ; in both sexes the surface is covered with round punctures a little remote in the posterior part and denser and a little deeper in the anterior and lateral parts ; scutellum punctate in the base and centre ; elytra elongate, somewhat plane, nearly parallel, declivous at apex, covered with shallow, slightly cicatricose punctures closely set, and with the striæ obliterated ; pygidium moderately closely punctate in the male, rugose in the female ; abdominal segments with one median row of setigerous punctures, but the apical one is smooth in the centre in the male ; this segment is very rugose, and the others closely punctured, as well as having

the transverse row; metasternum, hardly impressed longitudinally; basal intercoxal process of prosternum strongly sloping, triangular carinate all round and grooved transversely along the lower part.

Length 23–27 mm.; width 11–13 mm.

Boheman evidently saw female examples only, judging from his description, and from his type. The males seem to be much rarer, and I have seen only two examples. There is little doubt that *Rhizoplatis ambiguus*, Gerst., is identical with Boheman's *R. castaneipennis*.

Hab. Transvaal (Johannesburg, Potchefstroom, Klerksdorp, Lydenburg). I believe, but am not quite sure, that my male example from Johannesburg was found in a Termite nest.

Charles F. Smith.

Heliog. Un. in Paris

1	<i>Helicoprion hamadryas</i> , Fab.	6	<i>Helicoprion anterior</i> , Fab.
2	" <i>pirmal</i> , "	7	" <i>gigas</i> , Lin.
3	" <i>faunus</i> , Boh.	8	" <i>japetus</i> , Kluğ.
4	" <i>selousi</i> , Perinö.	9	<i>Catharsius heros</i> , Boh.
5	" <i>eryx</i> , Fab.	10	" <i>insignis</i> , Perinö.

11 XXXIII

Claude
Müller, del.

Heligoland

Claudio Fuller, del.

DESCRIPTION OF PLATE VII.

Edwards Fera.

DEUTEROSTOMA, BEETLE, & COLEOPTERA.

SMITHSONIAN INSTITUTION LIBRARIES

3 9088 00722 7184