

On some African Mantidae and Phasmidae in the Collection of the Deutschen Entomologischen Museum

By

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(Figs. 1—6.)

The following notes and descriptions were made from material forming a portion of a series of African Orthoptera loaned to me for study by the Deutschen Entomologischen Museum, through Dr. S. Schenkling. The remaining groups are in large part studied and will be reported upon in the near future.

The author wishes to thank Dr. Schenkling and the authorities of the Museum for their kindness in permitting him to study the collection.

Mantidae.

Amorphoscelinae.

Amorphoscelis Stål.

Amorphoscelis laxeretic var. *cameronensis* Werner.

1908. *Amorphoscelis laxeretic* var. *cameronensis* Werner, Bericht. Senckenb. Naturf. Gesell., 1908, p. 32. [Mukonje Farm, Cameroon.]

Cameroon. (Conradt.) One male.

This specimen is defective, lacking the apex of the abdomen, but in all probability it is a male. We have followed Werner in allowing this form but varietal rank, although it will probably be found to merit specific separation from the Togo *laxeretic*.

Amorphoscelis grisea Bolivar.

1908. *Amorphoscelis grisea* Bolivar. Deutsch. Entom. Zeitschrift, 1908, p. 515. [Cameroon.]

Cameroon. (Conradt.) One male.

This specimen is slightly smaller than Bolivar's measurements of the type, but otherwise it is in accord with his description.

Orthoderinae.

Humbertiella Saussure.

Humbertiella africana n. sp.

Type: ♀; Cameroon, West Africa. (Conradt.) [Deutsches Entom. Mus.]

This species is a true *Humbertiella*, a genus previously known only from the Indian and Malayan regions. It is in fact very close to *H. indica* Saussure, the type of the genus, differing only in its

slightly larger size and in having six pairs of gibbosities along the median line instead of five as in *indica*. The distribution of the genus *Humbertiella* is now seen to be very similar to that of the closely allied *Theopompa*.

Size medium; form robust. Head broad, the greatest width about equal to the pronotal length; occipital line subtruncate with loose rounded juxta-ocular nodes separated from the median portion of the occiput by distinct sulci; front subinflated, with four subparallel sulci; ocelli small, placed in a broad low triangle; facial shield strongly transverse, dorsal margin subarcuate, very slightly arcuate ventrad; antennae (incomplete in type) longer than head and pronotum together; eyes prominent, inflated, subglobose, directed somewhat cephalad. Pronotum with the greatest width contained one and one-third times in the length, in form similar to that of the same sex of other species of the genus, cephalic margin moderately arcuate, caudal margin arcuate laterad, emarginato-truncate mesad, lateral margins straight, subparallel cephalad of coxal insertion, arcuate convergent caudad, latero-cephalic angles decided but obtuse; greatest caudal width contained twice in the length; dorsum with a more (cephalad) or less (caudad) distinct medio-longitudinal sulcus, gibbosities arranged in six pairs of which the cephalic is the most extensive, the next pair chiefly laterad of the general series, the following three pairs subequal in size and the caudal the smallest but most decidedly conical of the series, supra-coxal region bearing a lateral pair of tubercles in addition to the median series. Tegmina coriaceous, about twice as long as the head and pronotum together, moderately broad; costal field rather narrow subequal in the proximal three-fifths; apex rotundate oblique sub-truncate; stigma narrow, linear. Wings not extending beyond tegmina. Apex of abdomen surpassing tegmina and wings; supra-anal plate transverse, margin arcuate, a median carina present, the surface of the plate undulate and mesad elevated in a Λ . Cephalic coxae but little shorter than the pronotal length, robust, cephalic margin with extremely low serrulations; cephalic femora nearly half again as long as the coxae, robust, inflated transversely, dorsal line nearly straight, distal extremity comparatively small, discoidal spines four in number, proximal in position, external margin with five spines of which the distal is small and genicular in position, internal margin with sixteen spines which reading from the distal end of series give the following formulae I I IIIII IIIIIII, the distal spine being genicular and the first three separated from one another by considerable interspaces, accessory row of prediscoidal tubercles on ventral face decided, external face decidedly sunken within its margins, a medio-longitudinal row of tubercles present, cephalic tibiae (exclusive of apical claw) two-thirds the length of femora, armed on the external margin with nine spines, internal with ten; cephalic metatarsi equal to

two-thirds the tibial length. Median and caudal limbs very similar, femora robust, subdepressed.

General color wood brown, strongly washed, blotched and punctate with seal brown. Head finely punctulate, the eyes with the general true russet, a narrow transverse bar of seal brown crossing the facial shield and meso-cephalic portion of the eyes; antennae russet, dashed proximad. Pronotum strongly maculate and punctate with seal brown. Tegmina with the general color weale seal brown, brokenly and irregularly lineate-maculate with russet along the veries, stigma same the apical margin weakly russet. Wings infumate with seal brown, the cross-ains clear hyaline in the radiate field, less clear and suffused on the remainder. Ventral surface almost uniform wood brown inclined toward russet. Cephalic coxae paucipunctulate laterad, unicolorous on the internal face; cephalic femora strongly punctato-vermiculate with seal brown on the external face, internal face with a decided blotch of seal brown in the unguinal groove and a fainter, broken medio-longitudinal line of the same on the distal half spines with their distal halves seal brown; cephalic tibiae and greater portion of cephalic tarsi punctate with seal brown, the spines as on the femora. Median and caudal linels punctate strongly (dorsad) or weakly (ventrad) with seal brown, the puncta of the dorsal surface resolving themselves into very poorly defined annuli.

M e a s u r e m e n t s.

| | | |
|--------------------------------------|------|-----|
| Length of body | 36 | mm. |
| Length of pronotum | 8 | „ |
| Greatest width of pronotum | 6 | „ |
| Length of tegmen | 21,5 | „ |
| Greatest width of tegmen | 8 | „ |
| Length of cephalic femur | 9,8 | „ |
| Length of median femur | 9 | „ |
| Length of caudal femur | 9 | „ |

The type is unique.

Theopompa Stål.

Theopompa aurivillii Sjöstedt.

1900. *Theopompa aurivillii* Sjöstedt, Bihang till K. Svenska Akad. Hand, XXV, 4 : 6, p. 3, figg. 3—5. [Mapanga, Cameroon.] Cameroon. (Conradt.) One male.

Tarachodes Burmeister.

Tarachodes sancta (Saussure).

1871. *Ch[iropus] sancta* Saussure, Mélanges Orthoptérologiques, III. Suppl., p. 393. [Natal.]

Umtali, Rhodesia. (Bodong.) One male.

This specimen agrees fully with Saussures description of the species, having the cephalic femora below with „a little black at

the base'' as he particularly states. In this respect it differs somewhat from Werner's figure of the cephalic limb of the species*).

The measurements of the specimen are as follows:

| | |
|--------------------------------------|--------|
| Length of body | 43 mm. |
| Length of pronotum | 9,5 „ |
| Greatest width of pronotum | 5 „ |
| Length of tegmen | 35 „ |

Tarachodes fratercula n. sp.

Type: ♂; German East Africa. [German Entomological Museum.]

Closely allied to *sancta* Saussure, but differing in the considerably smaller size and in the shape of the dorsal margin of the facial shield which is transverse truncate mesad and obliquely truncate laterad. It suggests in many characters *T. obtusiceps* Stål, but differs from that species in the same points as does *T. sancta*.

Size rather small (for the genus); form depressed. Head nearly half again as broad as deep; vertex transverse truncate, laterad with low angulate protuberances next to the eyes, separated from the line of vertex by distinctly impressed sulci; facial shield slightly more than one and one-half times as broad as deep, cephalic margin truncate mesad and oblique truncate laterad; ocelli large, subcontiguous, placed in a triangle; eyes moderately prominent, rounded, somewhat directed cephalad. Pronotum subrectangulate, greatest width contained about twice in the length; cephalic margin strongly arcuate, caudal margin subtruncate mesad and oblique truncate laterad; lateral margins subparallel, very slightly expanded in the supracoxal region, shaft of pronotum slightly narrowed, cephalo-lateral angle slightly protuberant, blunt; median carina hardly indicated, replaced on cephalic half by a rather pronounced sulcus. Tegmina hyaline, distinctly exceeding apex of abdomen, apex sub-obtuseangulate; marginal field narrow. Cephalic coxae distinctly shorter than pronotum, margins unarmed; cephalic femora quite robust, greatest width contained about two and one-half times in length, dorsal margin slightly arcuate proximad, external margin armed with four short thick spines, internal margin with twelve short faintly liseriate spines, discoidal spines four in number; cephalic tibiae armed externally with fourteen depressed subserrate spines, internally with thirteen spines. Median and caudal limbs quite short, rather robust.

General color ochraceous-buff, overlaid with an almost uniform mottling and sprinkling of vandyke brown, venter wood brown. Vertex cephalad with a broad transverse dull blue-black

*) Sitzungsab. K. Akad. Wissensch., Wien, Math.-naturw. Kl. CXVI, Abt. I, pl. II, fig. 7.

bar, facial shield with three narrow poorly defined transverse markings of the same color, one mesad, one dorsad and one ventrad, the median one rather broken into a median and a pair of lateral spots, of which the median one is indistinctly connected with the dorsal and ventral bars; ocelli orange-red; eyes raw umber sprinkled with vandyke brown. Tegmina washed with pale isabella color; veins wood brown, lined at frequent intervals with vandyke brown. Prosternum with a narrow transverse V-shaped bar of black between coxal bases caudal section blackish becoming paler cephalad; mesosternum with a pair of small black dots cephalad and a median black spot between the median coxae; ventral surface of abdomen with a pair of black spots on each segment, these becoming smaller caudad; cerci of general color becoming darker distad.

Cephalic coxae unmarked ventrad, of general ventral color; cephalic femora with a median longitudinal brownish black line on internal face, this heaviest proximad, becoming slender distad; femoral and tibial spines black tipped.

Median tibiae indistinctly annulate. Caudal limbs missing.

Measurements.

| | |
|--------------------------------------|--------|
| Length of body | 32 mm. |
| Greatest width of head | 5,5 „ |
| Length of pronotum | 6,8 „ |
| Greatest width of pronotum | 3,5 „ |
| Length of tegmen | 26,5 „ |
| Length of cephalic femur | 6,5 „ |

The type is the only specimen of the species seen by us.

Tarachodes sjöstedti Werner.

1907. *Tarachodes Sjöstedti* Werner, Sitzungsab. K. Akad. Wissensch. Wien, Math.-nat. Kl., CXVI, Abt. I, p. 215, pl. III, Fig. 4. [Chinchoxo, West-Africa.]

Benguella, Angola. (Wellman.) One male.

This specimen agrees very well with the original description of the species.

Pyrgomantis Gerstaecker.

Pyrgomantis wellmani n. sp.

Type: ♂; Benguella, Angola. (F. C. Wellman.) [German Entomological Museum.]

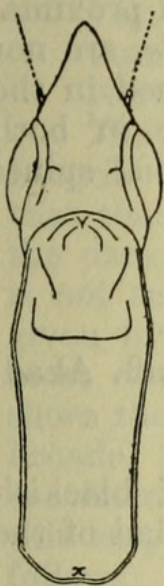
Related to *P. septentrionalis* Werner*) from Gondokoro but differing in the smaller size, shorter and blunter cephalic protuberance and proportionately broader pronotum. The only other species at all closely related is *P. jonesi* Kirby**) from Nigeria, this differing, however, is the much greater size, agreeing in this

*) Sitzungsab. K. Akad. Wissensch., Wien. Math.-natur. Kl., CXVI, Abt. I. p. 228, pl. 1, Fig. 4.

**) Ann. Mag. Nat. Hist (7), XIII, p. 83.

respect with *P. septentrionalis*. The description of *jonesi* is so brief that one can glean almost nothing from it to aid in comparison.

Size small; form moderately elongate. Head half as broad as deep, vertex produced into an acute-angulate cone slightly shorter than the width of head, in transverse section the cone is arcuate dorsad and sub-obtuseangulate ventrad, apex narrowly rounded; facial shield subquadrate, narrow or dorsal than ventrad; dorsal margin acute-angulate produced between antennal bases; eyes elongate-elliptical in base outline, not at all prominent when viewed from the dorsum. Pronotum subrectangulate, greatest width contained slightly more than two and one-half times in length; cephalic margin strongly arcuate, caudal margin, subtruncate mesad, oblique truncate laterad, lateral margins very slightly arcuate one coxal insertion; no distinct medio-longitudinal sulcus or carina present. Tegmina hyaline, apparently falling more or less short of apex of abdomen; apex narrowly rounded; marginal field very narrow. Abdomen mutilated. Cephalic coxae equal to about two-thirds of pronotum length, margins not armed; cephalic femora armed externally with four short spines, internally with thirteen spines, the latter biseriate proximad, discoidal spines four in number; cephalic tibiae armed on the external margin with ten spines, on the internal margin with eleven spines.



Pyrgomantis wellmani n. sp.
Dorsal outline of head and pronotum. ($\times 5$.)

General color buff, more or less deeply and unfinally over laid dorsad and laterad with punctulations of raw umber, ventral color gamboge yellow. Dorsum of head and pronotum with a pronounced medio-longitudinal umber line, reaching caudad from apex of frontal cone. Face of ventral color; eyes broccoli brown. Tegmina washed with wood brown; wings clouded in good part with listre.

Measurements.

| | |
|--------------------------------------|--------|
| Length of body | 23 mm. |
| Greatest depth of head | 5,6 „ |
| Greatest width of head | 2,8 „ |
| Length of pronotum | 6,8 „ |
| Greatest width of pronotum | 2,6 „ |
| Length of tegmen | 14 „ |
| Length of cephalic femur | 5 „ |

The type of this more interesting species is unique. We take great pleasure in dedicating this new form to our learned fellow-country man, Dr. F. Creighton Wellman, who collected the type during his residence in Portuguese West Africa.

Mantinae.

Hapalomantis Stål.

Hapalomantis rhombochir (Werner).

1908. *Eutella rhombochir* Werner, Bericht Senckenb. Naturf. Gesell., 1908, p. 48, taf. III, fig. 6. [No locality.]

Cameroon. (Conradt.) One male, one female.

This species, which was wrongly associated, very poorly figured and insufficiently described without measurements or locality, is closely related to *H. meridionalis* Saussure, differing in the distinctly smaller ocelli, more robust pronotum, proportionately shorter tegmina, much more robust cephalic femora, more arcuate dorsal lamellate expansion of same and in the different tibial spine formulae. The peculiar development of the lateral proximal tibial spines, which this species shares with *meridionalis*, are not shown in the figure given by Werner, although mentioned in the description. The lateral femoral spines number five in both specimens, the internal thirteen in both, the lateral tibial spines seven to eight, the internal tibial spines six to seven.

Dystacta Saussure.

Dystacta alticeps (Schaum).

1853. *Mantis alticeps* Schaum, Ber. Verh. K. Preuß. Akad. Wissensch. Berlin, 1853, p. 777. [Mozambique.]

Benguella, Angola. One female.

This specimen has the pronotum with a pair of blackish half-moons bordering the margins of the pronotum caudad of the greatest width.

The range of this species extends from the Cape region north to Mozambique and the locality here given, the latter being the most northerly record of the species in western Africa. Other records show its occurrence in Zambesia, Damaraland, Nyassaland, Transvaal, Orange River Colony and at Delagoa Bay.

Stenopyga Karsch.

Stenopyga extera Karsch.

1892. *Stenopyga extera* Karsch, Entom. Nachrichten, XVIII, p. 146. [Barombi Station on Elephant Lake, Cameroon.]

Cameroon. (Conradt.) One male.

Paratenodera Rehn.

Paratenodera capitata (Saussure).

1869. *T[enodera] capitata* Saussure, Mitth. Schw. Ent. Gesell., III, p. 69. [Locality?]

British Uganda. (Grauer.) One female.

This specimen agrees very well with the original description and also Sjöstedt's excellent description of this species*). The

*) Bihang till K. Svenska Vet.-Akad. Handl. XXV, afd. IV, No. 6, p. 11—12.

dark triangular spots in the marginal field of the tegmina are not black in the specimen before us, instead being bluish gray but clearly defined and of the peculiar form found in this species.

The only previous records of the species accompanied by localities were from the Congo, but one of these with exact data and that from Madimba, and one from Ruwenzori*). Our record is another link in the chain of evidence extending Congo forest-land types into the Uganda region.

Polyspilota Burmeister.

Polyspilota validissima Gerstaecker.

1883. *Polysp[ilota] validissima* Gerstaecker, Mitth. Naturwiss. Ver. Neu-Vorpomm., XIV, p. 89. [Aburi, Gold Coast.]

Cameroon. (Conradt.) Two males.

North Cameroon. One male.

The range of this fine species is now known to extend from Liberia (Rehn) to Gaboon (Westwood), and it seems probable that there is a reduction in number and an increase in width of the dark transverse bars of the wings southward. Our material is not sufficient to establish this as a certainty, but the figures given by Westwood**) of Gaboon specimens, which represent the most extreme southern locality from which the form is known, show the transverse bars to be fewer in number and individually broader than in Liberian specimens of both sexes. The Cameroon specimens are essentially the same as the Gaboon specimens in this respect. The measurements of the present material are as follows:

| | Cameroon | Cameroon | North Cameroon |
|--------------------------------------|----------|----------|-------------------|
| | mm. | mm. | mm. |
| Length of body | 92,5 | 85 | — |
| Length of pronotum | 35 | 33,5 | 36 |
| Greatest width of pronotum | 6,2 | 6,8 | 7 |
| Length of tegmen | 64 | 65 | 70 |
| Length of cephalic femur | 19,5 | 19,5 | 21 |
| Length of caudal femur | 26 | 26 | 27,5 |

Polyspilota variegata (Olivier).

1792. *Mantis variegata* Olivier, Encycl. Meth., Ins., VII, p. 638. [Angola.]

Cameroon. (Conradt.) Four males, one female.

North Cameroon. Two females.

British Uganda. (Grauer.) One female.

Of these specimens all of the Cameroon series except one *pustulata* type male belong to the *striata* type, both North Came-

*) Kirby, Proc. Zool. Soc. London, 1902, pt. 1, p. 93.

**) Rev. Mant., pl. X, Fig. 4 u. 5.

roon specimens belong to the *striata* form, while the Uganda individual is between the *pustulata* and *viridis* forms.

The measurements of this series are as follows:

| | Cameroon ♂ | Cameroon ♂ | Cameroon ♂ | Cameroon ♂ |
|------------------------------|------------|------------|------------|------------|
| | mm. | mm. | mm. | mm. |
| Length of body | 65,5 | —*) | —*) | 57,5 |
| Width of head | 8 | 7,2 | 7,5 | 7,2 |
| Length of pronotum | 20,2 | 19 | 19 | 19,4 |
| Greatest width of pronotum . | 6 | 5,2 | 5,5 | 5,7 |
| Length of tegmen | 50 | 49 | 47 | 47 |
| Length of cephalic femur . . | 14 | 13,8 | 12,5 | 13,5 |

| | North Cameroon ♀ | North Cameroon ♀ | British Uganda ♀ |
|------------------------------|------------------|------------------|------------------|
| | mm. | mm. | mm. |
| Length of body | 64 | 67 | 57,5 |
| Width of head | 8,6 | 8,5 | 7,5 |
| Length of pronotum | 22,3 | 22 | 17 |
| Greatest width of pronotum . | 6,8 | 7 | 5,5 |
| Length of tegmen | 51 | 51,5 | 47,5 |
| Length of cephalic femur . . | 16,2 | 17 | 13 |

Prohierodula Bolivar.

Prohierodula flavipennis (Karsch).

1892. *Polyspilota flavipennis* Karsch, Entom. Nachr., XVIII, p. 147. [Barombi Station on Elephant Lake, Cameroon.]
Cameroon. (Conradt.) Three males.

Cilnia Stål.

Cilnia humeralis (Saussure).**)

1871. *Cardioptera humeralis* Saussure, Mélanges Orthopt., I., p. 342. [Natal.]

Umtali, Rhodesia. (Bodong.) One female.

This specimen is larger than Natal females examined by us, measuring as follows:

| | |
|--------------------------------------|--------|
| Length of body | 55 mm. |
| Greatest width of head | 10,2 „ |
| Length of pronotum | 19 „ |
| Greatest width of pronotum | 7,8 „ |
| Length of tegmen | 24,5 „ |
| Length of cephalic femur | 18 „ |

This species has been recorded from Natal north to Delagoa Bay and Nyassaland, west to Ovambo, northern Damaraland.

*) Abdomen distorted in drying.

**) *Leomantis ignota* Rehn, Proc. Acad. Nat. Sci. Phila., 1903, p. 706, equals this species.

Sphodromantis Stål.

Sphodromantis ugandanus n. sp.

Type: ♀; British Uganda. (Grauer.) [German Entomological Museum.]

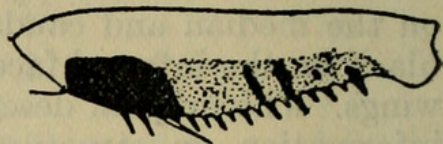
Close to *S. occidentalis* Werner*), but differing as few as can be determined from opposite sexes, in the absence of infuscation on the median and caudal femora, the distribution of yellow and black on the internal face of the cephalic femora and in the tinted wings. The original description of Werner's species contains little information on structural characters which might be used for comparison. It seems quite probable that this species and possibly *occidentalis* may belong in Bolivar's recently erected *Prohiero-*
dula.**)

Size small (for the genus); form moderately robust. Head subtrigonal in shape, occiput decidedly arcuate transversely; ocelli moderately large, placed in a triangle, the dorsal ones more separated from each other than they are from the ventral one; facial shield transverse, the greatest depth contained one and two-thirds times in the greatest width, dorsal margin arcuate; eyes moderately prominent, rounded. Pronotum moderately robust, the greatest width contained two and one-third times in the greatest length; supra-coxal expansion decided, well arcuate, the collar regularly converging from the expansion to the well rounded cephalic margin; shaft regularly narrowing from the expansion to near the middle of shaft, from which point the shaft is slightly and gradually broadened caudad; caudal margin subtruncate mesad and strongly arcuate laterad, lateral margins serrato-dentate, the teeth on the shaft less prominent than those on the inflation; medio-longitudinal carina on shaft decided, represented on collar by a deeply impressed sulcus. Tegmina slightly exceeding the apex of the abdomen, sub-lanceolate, the greatest width contained about three and a third times in the length of the same; costal margin moderately arcuate proximad and distad, the portion between, and by far the greater section, straight; costal field broad, slightly less than half the width of the remainder of the tegmen; apex rather narrowly rounded; stigma elliptical. Wings very slightly surpassing the apex of the tegmina. Cephalic limbs moderately robust; coxae equal to slightly more than two-thirds the pronotal length, cephalic margin with five to six dentiform tubercles, caudal surface irregularly serrato-spinose; cephalic femora but slightly shorter than the pronotum, rather slender, dorsal margin nearly straight, ventral margin moderately arcuate, discoidal spines four in number, external margin with four spines, internal margin with fourteen to fifteen

*) Jahresb. Ver. Vaterl. Naturk. Württemb., LXII, p. 366, 1906 [German South West Africa].

**) Mem. Real Soc. Españ. Hist. Nat., I, no. 26, p. 461.

regularly* biseriate spines; cephalic tibiae (without the claw) about half the length of the femora, armed externally with seven to eight spines and having a considerable unarmed proximal space, internal margin with thirteen spines regularly increasing in size distad; cephalic metatarsi elongate, equal to three-fourths the tibial (exc. 4 claw) length. Median and caudal limbs with the femora appreciably inflated in the proximal two-thirds.



Sphodromantis ugandanus n. sp.
Pattern of internal face of cephalic
femur. ($\times 3$)

General color apple green, becoming nearly oil green on the tegmina and, probably by discoloration, wax yellow on the prothorax and median coxae. Head washed with russet; eyes seal brown. Tegmina with the disto-sutural section very faintly washed with vinaceous-pink; stigma dull cream color, flanked distad and proximad by small spots of seal brown. Wings dull naples yellow, apex sulcoriaceous, apple green, proximal half of costal section with three short transverse moderately distinct maculations of carmine, distal half of costal section subcoriaceous, gamboge yellow. Cephalic limbs of the general color; coxal spines lemon yellow; femora with a large ovate shining bluish maculation proximad of the middle and, on the ventral half in whing the unguinal grosse, distad of this maculation the ventral portion is lemon yellow with three to four oblique seal brown lines proximad, these lines involving major spines, the distal major spines of the same color, minor and all other spines tipped with seal brown. Abdomen clove brown (probably due to discoloration).

M e a s u r e m e n t s .

| | |
|---|--------|
| Length of body | 51 mm. |
| Length of pronotum | 14,5 „ |
| Greatest width of pronotum | 6 „ |
| Length of tegmen | 35,5 „ |
| Width of costal field of tegmen | 3,2 „ |
| Length of cephalic femur | 13,2 „ |
| Length of median femur | 12,5 „ |
| Length of caudal femur | 15,8 „ |

The type is unique.

Sphodromantis lineola (Burmeister).

1838. *M[antis (Stagmatoptera)] lineola* Burmeister, Handb. d. Entom., II, Abt. II, pt. 1, p. 537. [Sierra Leone.]
East Africa. One female.

Sphodromantis centralis Rehn.

In press in *Ergebnisse der Deutschen Cent. Afr. Expedition* 1907-8, Zoologie.

*) There is, but one exception to the regularity of the alternation of large and small spines on this margin in the type, this being the presence of an extra small spine on the right femur.

British Uganda. (Grauer.) Two females.

These specimens have been compared with the typical material and exhibit the distinctive characters of the species to a marked degree. One individual is in the full green phase, while the other is generally green with the tegmina in good part very pale lavender.

Hoplocorypha Stål.

Hoplocorypha macra (Stål).

1856. [*Mantis*] *macra* Stål, Öfv. K. Vet.-Akad. Förh., XIII, p. 169. [Port Natal.]

Benguella, Angola. (Dr. F. C. Wellman.) One female.

This is the most northerly locality in West Africa from which we have seen true *macra*, although Griffini*) has recorded the allied *galeata* from Farim, Portuguese Guinea. It is possible, however, that the latter record is not *galeata*, which is new considered separable from *macra* and probably only East African in its distribution.

Calidomantis Rehn.

Calidomantis fenestrata (Fabricius).

1781. [*Mantis*] *fenestrata* Fabricius, Spec. Ins., I, p. 349. [Aequinoctial Africa.]

British Uganda. (Grauer.) One male.

This specimen has one distinct black spot on the internal face of one cephalic femur and two on the same surface of the other femur.

Calidomantis coxalis (Saussure).

1898. *M[iomantis] coxalis* Saussure, Revue Suisse de Zoologie, V, p. 189. [Southern Africa.]

Benguella, Angola. (Dr. F. C. Wellman.) One male.

This specimen is slightly larger than the original measurements of the species, but otherwise it fully agrees with the original description. The third black femoral spot, which Saussure says is frequently obsolete or absent in the male of this species, is present and as clearly marked as the others.

Dactylopteryx Karsch.

Dactylopteryx flexuosa Karsch.

1892. *Dactylopteryx flexuosa* Karsch, Entom. Nachrichten, XVIII, p. 10. [Gaboön.]

Cameroon. (Conradt.) One male.

This genus is extremely close to *Liturgonsa* and it is very questionable whether it should be recognized. When compared with females of *Liturgonsa*, belonging to the genotype *L. cayennensis*, no differences worthy of generic consideration exist except the form of the tegmina, which may or may not be a sexual character.

*) Ann. Mus. Civ. Stor. Nat. Genova, XLIII, p. 408.

As suggested by Werner*) there appears to be no doubt that Sjöstedt's *Theopompa angusticollis* equals this species.

Arcobotrinae.

Sibylla Stål.

Sibylla pannulata Karsch.

1894. *Sibylla pannulata* Karsch, Berlin. Ent. Zeitschr., XXXIX, p. 277. [Victoria and Buea Mountains, Cameroon.] Cameroon. (Conradt.) One male.

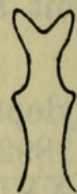
This specimen is slightly larger than the original measurements of the type.

Sibylla graciosa n. sp.

Type: ♂; Cameroon. (Conradt.) [German Entom. Museum.]

This specimen has been compared with the above male of *pannulata* and a Natal male of *pretiosa* Stål, as well as the descriptions of the other species of the genus. It is closer to *pretiosa* than to *pannulata*, but from this it differs in the narrower lobes on the median and caudal femora, the more produced and apically bifurcate cephalic process, the longer cephalic limbs and more elongate tegmina, which latter has also fewer rami to the veins. In the character of the femoral lobes this species shows affinity to *S. elegans* Bolivar**), but the new form can be readily distinguished from the latter species by the proximal lobe on the dorsal margin of the cephalic femora, the more decidedly elongate pronotum of which the shaft is strongly compressed, the shorter genicular spines and non-spiniform lateral angles of the abdominal segments. Other characters of dissimilarity between *graciosa* and *elegans* exist, but we have only given such as the two sexes of *pretiosa* would lead us to believe were found in both sexes, Bolivar's species having been founded on the female.

Size medium; form slender. Head with the greatest width very considerably exceeding the depth of head proper; occipital margin with low subconical juxta-ocular lobes separated from the arcuate median section of the margin by shallow emarginations, the latter continued ventrad one portion of the face as deeply channeled impressions; ocelli fairly large, placed in a low inverted triangle, dorsad of the ocelli involving the base of the frontal process is placed an inverted and V-shaped carina extending from the internal margin of one eye to the same of the other; facial shield transverse, arcuate dorsad, subtruncate ventrad; clypeus produced dorsad into a prominent triangular decurved dentiform process; frontal process about two-thirds as long as the head is deep, the



Sibylla graciosa
n. sp. Form of
cephalic pro-
cess of type
(x 6)

*) Bericht Senckenb. Naturf. Gesell., 1908, p. 41.

**) Mem. R. Soc. Españ. Hist. Nat., I, mem. 26, p 464, pl. XII, Fig. 1. [Cameroon.]

apex divided by a decided V-shaped emargination into a pair of subacute lobes, very slightly proximad of the middle are placed paired low lateral slightly acute lobes, the shaft proximad distinctly broader than distad; eyes subglobose, prominent; antennae slightly longer than the pronotum, moniliform. Pronotum with the greatest width contained four and one-half times in the length; collar rounded cephalad and very slightly constricted immediately cephalad of the supra-coxal expansion, latter distinctly spicate laterad, gibbose and acute bituberculate dorso-caudad of the greatest width as found as in other species of the genus, dorsum of collar with a shallow broad transverse depression; shaft very slender, subcompressed, non-carinate, caudal extremity hardly elevated. Tegmina very nearly twice the length of the pronotum; costal field moderately inflated proximad. Wings hardly exceeding the femoral tips when in repose. Abdomen with the ventro-lateral angles of the dorsal segments rectangulate, non-spiniform. Cerci slightly surpassing the subgenital plate; styles very short, free. Cephalic coxae about one-half the length of the pronotum; margins serrulate, the cephalic margin with the serrulations fewer and larger than on the other margins; cephalic femora nearly two-thirds the length of the pronotum, greatest depth contained four and one-half times in the length, subcompressed, arcuate ventrad; dorsal margin concave on the distal two-thirds, with a long low arcuato-angulate lobe on the proximal third; external margin with five spines, one of which is genicular and very small, internal margin with fifteen spines arranged as follows (reading proximad) 1—1 1 1 1 1 1 1 1 1, the distal one very small and placed on the genicular lobe; discoidal spines four: cephalic tibiae (exclusive of apical claw) slightly more than half the length of the femora; armed on the external margin with six spines, increasing in size distad, on the internal margin with twelve to thirteen spines, increasing in size distad and strongly adpressed proximad: cephalic tibiae three-fifths of the femoral length, the metatarsus occupying distinctly more than half of the tarsal length. Median and caudal femora very slender, moderately inflated at the proximal extremity: proximal lobe rotundato-trigonal, not quite as deep as the thickness of that portion of the femora; distal lobe narrow, deeper than the proximal lobe, distal margin of lobe strongly acute-angulate emarginate mesad, apex rotundato-acute, proximal margin obliquely truncate; genicular spine decided: median and caudal femora very slender.

General color clay color (specimen has probably at some time been immersed in alcohol), clouded and mottled in the head, pronotum and limbs with prout's brown and vandyke brown. Head with the face largely sealbrown. Tegmina infumato-maculate with prout's brown, heaviest near the costal margin. Lobes of median and caudal femora with broken proximal marginal maculations of buffy.

Measurements.

| | |
|--------------------------------------|--------|
| Length of body | 46 mm. |
| Length of pronotum | 18,5 „ |
| Greatest width of pronotum | 4 „ |
| Length of tegmen | 34 „ |
| Length of cephalic femur | 11 „ |
| Length of median femur | 14 „ |
| Length of caudal femur | 15 „ |

The type is unique.

Amphecostephanus* n. gen.

Apparently a member of the division Pachymantides of the Creobotrinae, but not closely related to any of the previously known genera. The peculiar form of the occiput is quite distinct from that of any other genus of the family.

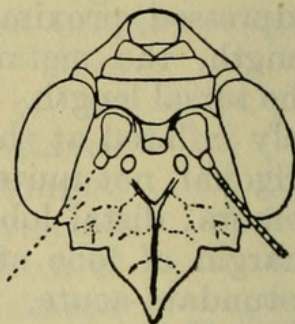
Head strongly depressed; occiput elevated into a lamellate subfoliaceous structure, acute-angulate mesad flanked laterad by rectangulate proximal marginal lobes. Pronotum short subsellate, margins ciliate. Tegmina and wings very ample, greatly surpassing apex of abdomen, margins of tegmina and costal margin of wings ciliate. Cephalic coxae unarmed; cephalic femora compressed, subtrigonal, sublamellate dorsad, discoidal spines four. Median limbs non-lobate. Cerci hardly surpassing the subgenital plate, moniliform, the distal segment broad, depressed, with its distal margin arcuato-emarginate.

Type. — *A. rex* n. sp.

Amphecostephanus rex n. sp.

Type: ♂; Benguella, Angola. (Dr. F. C. Wellman.) [German Entom. Museum.]

Size medium; form moderately elongate. Head with the greatest width contained one and one fifth times in the greatest depth; face subdeplanate; occipital appendage considerably deplanate, slightly curved cephalad toward the apex, the height of the appendage dorsad of the dorsal margin of the eyes two-thirds of its proximal width, median section of the appendage reversed subcordiform, apex acute, proximal lateral shoulders sinuato-rectangulate, separated from the eyes by very small low obtuse lobes, ventral face of appendage venoso-carinate, the median carina forked; ocelli large, placed in an inverted triangle; facial shield transverse, the greatest depth contained nearly three times in the greatest width, dorsal margin arcuato-elevate mesad,



Amphecostephanus rex n. gen. and sp. Cephalic view of head. (× 6.)

*) 'Αμφηκς double-edged, σ τεφανος crown.

arcuato-emarginate laterad, lateral margins truncate, ventral margin arcuato-emarginate; antennae moniliform; eyes moderately prominent, ovoid when seen from the side. Pronotum with the greatest (supra-coxal) width contained about one and one-third times in the length; lateral margins cephalad of the greatest width arcuato-truncate convergent, cephalic extremity narrowly rounded, lateral angles obtuse, thence caudad slightly oblique subtruncate, followed by a marked arcuate constriction of the margins and finally slightly arcuate expanded to the broadly rounded caudal margin; transverse sulcus placed slightly cephalad of the middle, more impressed laterad than mesad, the arms of the sulcus converging cephalad, paralleling the margins; median carina very slightly marked caudad, not indicated elsewhere. Tegmina very broad; costal margin well arcuate in the proximal half, the marginal field emarginate mesad, the margin on the distal fourth strongly arcuate to the rotundato-rectangulate apex; posterior radial vein furcate. Wings surpassing the tips of the tegmina by about the length of the pronotum; costal margin subrect, distad strongly arcuate to the rectangulate slightly uncinat apex, caudad of which the margin of the discoidal field is moderately arcuate. Supraanal plate slightly transverse, strongly arcuate, carinate mesad; cerci with the distal segment broad, depressed, reversed scutiform, the disto-lateral angles acute; subgenital plate broad, scaphiform, distal margin strongly arcuate, styles aborted. Cephalic coxae distinctly longer than the pronotum: cephalic femora subequal to the coxae in length the greatest depth contained about twice in the length; dorsal margin gently arcuate; external margin with five spines; internal margin with twelve spines, the formula reading proximad being I—III I I I I II; ventral margins proximad of the discoidal spines carinate, paucispinulose: cephalic tibiae (exclusive of the apical claw) slightly more than half the length of the femora; armed on the external margin with eleven spines, slightly increasing in size distad; in the internal margin with ten spines: cephalic tarsi very slightly surpassing the femora in length, the metatarsus comprising about half the length of the tarsus. Median limbs slender, the femora but little longer than the cephalic femora, tibiae slightly shorter than the femora. Caudal limbs missing.

General colors mars brown, clouded, lined and blotched with seal brown. Head with the occipital process outlined with the darker color; antennae Naples yellow; eyes vermiculate with seal brown. Pronotum and cephalic limbs chiefly seal brown, the cephalic coxae with the margins beaded with the two colors, the cephalic femora broadly triannulate with the mingled brown shades on a base of cinnamon, cephalic tibiae similar to the femora in coloration. Tegmina and wings pale infumate, finely nebulous with mars brown, the clouding becoming coarser and seal brown toward the more coriaceous costal margins; principal longitudinal

veins lined with seal brown; apex of wings coriaceous, solidly blotched with seal brown. Median limbs cinnamon, clouded and lined with the darker shades.

Measurements.

| | |
|--------------------------------------|----------|
| Length of body | 24,5 mm. |
| Length of pronotum | 3,5 „ |
| Greatest width of pronotum | 2,5 „ |
| Length of tegmen | 24 „ |
| Length of cephalic femur | 4,5 „ |
| Length of median femur | 6,1 „ |

The type of this most remarkable genus and species is unique.

Pseudocreobotra Saussure.

Pseudocreobotra ocellata (Beauvois).

1805. *Empusa ocellata* Beauvois, Ins. Rec. Afr. Amer., p. 110, Orth. pl. XIII, fig. 2. [„Les déserts du royaume d'Oware”.] Cameroon. (Conradt.) One female.

British Uganda. (Grauer.) One male, one female.

The Uganda specimens show a tendency to approach *wahlbergii* in the slightly more ample lateral expansions of the pronotum.

The dimensions of the specimens are as follows:

| | | Length of body | Length of pronotum | Greatest width of pronotum | Length of tegmen | Length of cephalic femur |
|-----------------|---|-------------------|-----------------------|----------------------------------|---------------------|--------------------------------|
| | | mm. | mm. | mm. | mm. | mm. |
| Cameroon. | ♂ | 26 | 5,5 | 5,5 | 28,5 | 8,5 |
| British Uganda. | ♂ | 26,2 | 4,8 | 5,6 | 28,5 | 7,6 |
| „ | ♀ | 36 | 6,3 | 7,2 | 28,5 | 10,5 |

The Uganda female has the eye-spot washed with pale brick-red and the distal extremity and lobes of the median and caudal femora and clouding in the cephalic femora purplish-pink.

Empusinae.

Empusa Illiger.

Empusa fronticornis (Stoll).

1813. *Mantis fronticornis* Stoll, Naturf. Afbeeld. Besch. Spoken etc., pp. 63, 78, pl. XXI, fig. 79. [No locality.] German South-west Africa. One female.

This species is undoubtedly an *Empusa* and Stoll's figure has been correctly associated by Burmeister and Saussure.

Krauss has recorded this species from Okahandya, German Southwest Africa.

Hemiempusa Saussure and Zehntner.

Hemiempusa capensis (Burmeister).*)

1838. *E[mpusa] capensis* Burmeister, Handb. d. Entom., II, pt. 1, p. 547. [Cape of Good Hope.]

British Uganda. (Grauer.) One male.

In recent years quite a number of records of this species from East and Northeast Africa have been published, the species now being known to range as far north as Abyssinia, inland as far as Uganda and Ruanda.

Phasmidae.

Bacillinae.

Bothycharax Kirby.

Bothycharax granulatus Kirby.

1896. *Bothycharax granulatus* Kirby, Ann. Mag. Nat. Hist., 6th ser., XVIII, p. 259, pl. XII, fig. 9. [Ogové Kiru, Gaboon.]

Cameroon. (Conradt.) Seven males, six females, one immature male, two immature females.

The immature male is quite interesting as it has granulations and rugae present as in the female sex, these being almost entirely lost in the adult male. The paired circular „bosses” found on the head of the adult male are indicated in the immature specimen, but their form is not as decided as in the adult.

Clitumninae.

Gratidia Stål.

Gratidia angolensis n. sp.

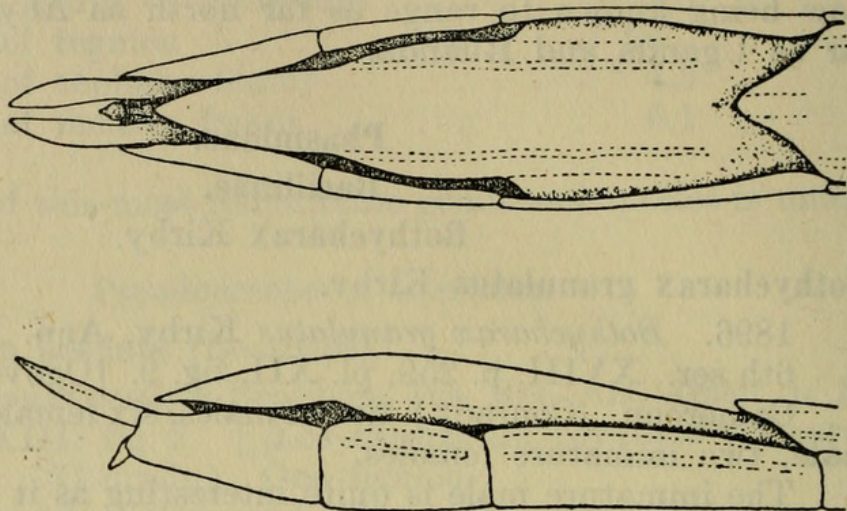
Type: ♀; Benguella, Angola. (Dr. F. C. Wellman.)
[German Entom. Museum.]

Closely allied to *G. graminis*, *sicca*, and *evanescens* Sjöstedt and *leprosus* Gerstaecker from East Africa, differing from the first in the shorter antennae, the less carinate body, more subtuberculate body and in having the anal segment emarginato-fissate to receive the supra-anal plate; from *sicca* in the operculum reaching about to the apex of the anal segment; from *leprosus* in the shorter cerci and less extended seventh ventral segment and from *evanescens* in the operculum being longer and slenderer and in the more tapering cerci.

Size moderately large; from fairly elongate; surface irregularly and very finely subtuberculate, most pronounced on the prothorax, least pronounced on distal section of abdomen. Head slightly less than twice the prothoracic length, moderately tapering caudad,

*) The record of *Idolomorpha dentifrons* from the Daro Mountains, Gallaland, made by the author (Proc. Acad. Nat. Sci. Phila., 1901, p. 288) should refer to this species.

interocular region with practically no inflation, occipital margin with a pair of median low subconical tubercles separated by a distinct impression; eyes strongly flattened laterally, not at all prominent; antennae nearly half again as long as the head, seventeen-jointed. Prothorax with the dorso-lateral carinae slightly and regularly convergent cephalad, cephalic margin markedly arcuato-emarginate, caudal margin subtruncate. Mesothorax three times as long as the head, dorsum with the faintest possible trace of a median carinulation. Metathorax about five-sixths the length of the mesothorax, similarly carinulate; median segment very slightly longitudinal,



Gratidia angolensis n. sp. Lateral and ventral view of apex of abdomen of type. ($\times 9$.)

cephalic margin regularly arcuate cephalad. Abdomen with the segments longitudinal, no distinct longitudinal carinae present except the median and lateral ones 1911 which are well marked except distad where the median is faint, anal segment moderately elongate, tapering, subdepressed dorsad with a delicate median carina, caudal margin subarcuate with a median V emargination exposing the erect, tapering subdigitiform supra-anal plate; cerci about three-fourths the length of the anal segment, slender, tapering, compressed distad, dorsal margin subarcuate, ventral margin straight, apex acute; operculum falling very slightly short of the caudal margin of the anal segment, lanceolate, non-carinate mesad but with decided subparallel lateral carinae; seventh ventral abdominal segment with but the faintest indications of paired median carinae, but with decided subparallel lateral ones, distal margin produced into a sharp rectangulate lobe. Cephalic limbs missing. Median femora about equal in length to the pro- and mesothorax; median tibiae subequal to the mesothorax in length. Caudal femora very slightly shorter than the median femora; tibiae slightly shorter than the femora.

General color ochraceous on the dorsum of the thoracic segments, becoming clay-color on the head, considerable portion of the abdomen and venter; a narrow medio-longitudinal line of seal brown indicated faintly on the head and distinctly though frequently very finely, on the remainder of the dorsum; antennae and limbs more or less washed or clouded with drab.

Measurements.

| | |
|---|--------|
| Length of body | 74 mm. |
| Length of prothorax | 2,7 „ |
| Length of mesothorax | 15,5 „ |
| Length of metathorax (incl. med. segm.) | 12,5 „ |
| Length of cephalic femur | — „ |
| Length of median femur | 18 „ |
| Length of caudal femur | 21,5 „ |

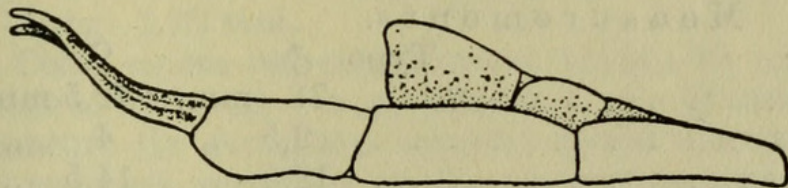
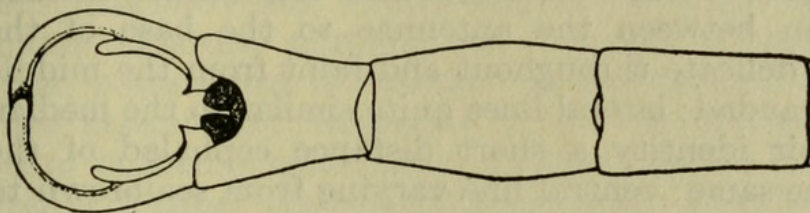
The type is unique.

Leptynia Pautel.

Leptynia cerviformis n. sp.

Type: ♂; Benguella, Angola. (Dr. F. C. Wellman.) [German Ent. Museum.]

Related to *L. rufolineatus* (Schulthess) from Natal and Delagoa Bay, but differing in the median and caudal femora being unarmed ventro-distad, in the more elongate, cerviform, medio-dentate cerci and in the greater longitudinal extent of the dark lateral lines and in the broader ventral line. From *aspericollis*, which is known only from the female sex, *cerviformis* differs in its greater



Leptynia cerviformis n. sp. Dorsal and lateral view of apex of abdomen of type. (× 6.)

size, but owing to the damaged condition of the only female specimen of *cerviformis* further

comparison cannot be made.

The dark brown antennae

somewhat resemble those of *nigro-antennata* Brunner, but the

new form is separated from

that species by numerous characters.

Size moderately large; form very elongate; surface smooth, non-carinate. Head but slightly longer than the prothorax, very slightly narrowing caudad, interocular region with an appreciable inflation which is distinctly excavate meso-cephalad; a medio-dorsal fine sulcus present and slightly severing the occipital margin; eyes subelliptical in basal outline, hardly prominent; antennae (in complete) nearly as long as the mesothorax. Prothorax subtruncate cephalad and caudad. Mesothorax about two and one-third times as long as the head and prothorax together. Metathorax but little short of the head, pro- and mesothorax together; median segment moderately transverse, cephalic margin subtruncate. Abdomen with the segments strongly longi-

tudinal; anal segment slightly shorter than the preceding abdominal segment, regularly expanding caudad, caudal margin with a prominent broad Ω shaped emargination exposing the short transverse arcuate supra-anal plate; cerci inserted distolaterad in the anal segment, distinctly exceeding that segment in length, viewed from the side they are seen to be sigmoid in contour, dropping ventrad of the line of the anal segment, from the dorsum they are seen to be nearly straight and moderately divergent in the proximal half, strongly arcuate convergent distad, internal face with a sharp proximal tooth, the proximal portion of the dorso-internal margin with a rounded ridge which just before the middle of the cercus terminates in a free but subparallel rounded lobe; subgenital plate moderately inflated, subcarinate mesad, distal extremity with a very slight median projection. Cephalic limbs missing. Median femora subequal to the pro- and mesothorax; unarmed ventrad tibiae exceeding the femora by about half the prothoracic length. Caudal femora exceeding the metathorax by nearly the prothoracic length; unarmed ventrad tibiae damaged.

General color pale ochraceous, dorsal lines seal brown; median line extending from between the antennae to the base of the anal segment, very delicate throughout and faint from the middle of the metathorax caudad; lateral lines quite similar to the median line but losing their identity a short distance cephalad of the disappearance of the same; ventral line varying from sealbrown to burnt umber, broad and distinct on the ventral surface of the head and thoracic segments but practically ceasing on the second ventral abdominal segment. Limbs apple green; antennae vandyke brown.

M e a s u r e m e n t s.

| | Type | ♂ | ♀ |
|---|------|-----|----------|
| Length of body | 71 | mm. | 72,5 mm. |
| Length of prothorax | 2,5 | „ | 4 „ |
| Length of mesothorax | 12,5 | „ | 14,5 „ |
| Length of metathorax (incl. med. segm.) . | 18 | „ | 21,5 „ |
| Length of cephalic femur | — | „ | — „ |
| Length of median femur | 14 | „ | 14 „ |
| Length of caudal femur | 20 | „ | — „ |

The paratypic female of which measurements are given above is minus the apex of the abdomen and caudal limbs and has the single remaining cephalic limbs badly contorted. It agrees with the general characters of the male, but the following notes may be of interest. Form moderately robust (for the genus); lateral portions of meso- and metanotum with biseriate marginal rows of low tubercles. Head with the impression in the interocular inflation divided by a marked medio-longitudinal ridge, the inflation less than in the male.

Coloration as in male, but with head and prothorax linding toward greenish and the lines less pronounced and less extensive.



Rehn, James A. G. 1912. "On some African Mantidae and Phasmidae in the Collection of the Deutschen Entomologischen Museum." *Archiv für Naturgeschichte* 78, 106–126.

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