

## STUDIES IN AUSTRALIAN ENTOMOLOGY.

## No. IV.—NEW GENERA AND SPECIES OF CARABIDÆ.

BY THOMAS G. SLOANE.

## EURYSCAPHUS EBENINUS, n.sp.

Black, shining. Head subquadrate ( $7 \times 9$  mm.); frontal sulci parallel towards the front then curving sharply out towards the base of the mandibles, a curved impression connecting them behind; the space between the sulci and antennæ slightly rugulose; eyes not prominent, a short blunt process projecting forward below each; a single supra-orbital puncture on each side. Prothorax transverse ( $8 \times 13$  mm.), not convex, widest behind the middle; sides slightly rounded, and a little narrowed to the front; anterior angles obtuse, strongly produced, posterior angles rounded, not marked; anterior margin sinuate; base distinctly lobate; lateral border strongly reflexed, wider on each side behind, narrow on the basal lobe; median line distinct, ending behind in a strong transverse impression defining the basal part; two marginal punctures on each side as usual in the genus. Elytra subcircular ( $17 \times 16$  mm.), convex, smooth (some faint traces of striæ towards the apex), broadest before the middle, rounded on the sides; humeral angles rounded, with the margin very strongly reflexed; lateral margins broad, not reflexed behind but strongly so in front; a single puncture on the apical third of each elytron. Anterior tibiæ with two strong teeth externally, and above these three small projections.

Length 34, breadth 16 mm.

*Hab.*—Yilgarn, West Australia, 200 miles north-east of York, W.A.

I am indebted to Mr. C. French, Government Entomologist of Victoria for my single specimen of this fine species.



The bipunctate elytra place this species with *E. bipunctatus*, Macl., *E. obesus*, Macl., and *E. tatei*, Blackb. In general appearance it resembles *E. bipunctatus*, from which however the lobate prothorax will sufficiently distinguish it; from *E. obesus* it may be distinguished by the prothorax being decidedly lobate, and broadly margined laterally, by the elytra being proportionately broader, less convex, more broadly and decidedly emarginate at the base, the lateral margins broader and far more conspicuous, especially at the shoulders. *E. tatei* is unknown to me, but judging from the description it is more closely allied to *E. obesus* than to the present species.\*

#### HELLUO INSIGNIS, n.sp.

Black. General form depressed. Head large, flat (as in *H. costatus*). Prothorax glabrous, cordate ( $5 \times 6$  mm.), widest about anterior third, rugulose, punctate; the punctures large, thickly placed along margins, thinly in middle; lateral border narrow, reflexed, sharply sinuate behind and meeting the base squarely; base broadly emarginate in middle and cut obliquely forward on each side to the posterior angles, these prominent; a transverse impression in front; median line clearly and distinctly impressed. Elytra glabrous, broadly ovate ( $13 \times 10$  mm.), widest behind the middle; sides lightly rounded; shoulders rounded; apex broad, truncate; 4 costæ on each elytron (including suture), between every costa a smooth shining interstice, between every costa and interstice a strong punctate stria, every costa with two rows of thinly

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\* I take the present opportunity to make the following notes on three New South Wales species of *Euryscaphus* known to me:—

- (1) *E. bipunctatus*, Macl.—I have taken this species at Mulwala on the Murray, and at Condobolin on the Lachlan.
- (2) *E. obesus*, Macl. = *E. ferox*, Sloane, P.L.S.N.S.W., 1888 (2), Vol. III., p. 1109—this I have ascertained by comparison of the types; when I wrote I only knew *E. obesus* from description. The faint puncturation of the elytra noted in my description is not natural. The habitat of *E. obesus* is therefore western New South Wales, not West Australia as believed by Sir W. Macleay.
- (3) *E. minor*, Macl. = *E. arenarius*, Sloane, l.c., p. 1110—also from comparison with type. This is a widely spread species in N.S.W.; I have taken it at Mulwala, Condobolin, and at Coonabarabran on the Castlereagh.



placed fine punctures, one on each side; the space between the outer costa and lateral margin thickly set with coarse punctures in rows (about five rows). Prosternum punctate, the episterna smooth, shining. Mesosternum, metasternum, coxæ and trochanters punctate. Segments of abdomen shining, thinly punctate in middle, the sides and apex thickly set with fine setigerous punctures; apex of abdomen projecting beyond elytra.

Length 23-28, breadth 8-10½ mm.

*Hab.*—Darling River, N.S.W.

This fine species is very distinct from *H. costatus*, being a larger and much broader insect; it can be distinguished at once by its broader and less parallel elytra much more coarsely punctate and without any reddish hairs along the striæ. The episterna of the prothorax too are smooth, while in *H. costatus* they are punctate.

This species was first sent from Walgett by Mr. Rose last April; since then Mr. R. Helms, when collecting in June on the Darling for the Australian Museum during the disastrous Darling floods, got about 1500 specimens along that river between Bourke and Wilcannia.

CASNONIA RIVERINÆ, n.sp.

Head black, globular, constricted behind, united to the prothorax by a condyle, covered with scattered erect hairs; eyes prominent; antennæ black, 2nd joint short, 3rd and 4th cylindrical, about equal in length, hardly longer than succeeding joints, these rather depressed. Prothorax red, excepting the basal portion bluish black, globular, about as long as broad ( $1\frac{1}{4} \times 1\frac{1}{4}$  mm.), basal part constricted, anterior part with scattered erect hairs; a lateral ridge on each side; the median line visible, not impressed. Elytra bluish green with a single broad reddish fascia on the apical half, (the fascia arcuate behind and not reaching the sides of the elytra), short, broad, about twice as broad as prothorax ( $3\frac{1}{2} \times 2\frac{1}{2}$  mm); base subtruncate, declivous, the shoulders rounded; apex broad, subsinuate, obliquely cut on each side to the tip; basal third and sides strongly punctato-striate; apex punctato-rugulose; 4 equidistant rows of erect sparsely placed hairs extending



the whole length of the elytra, all crossing the elytral fascia. Undersurface bluish black, excepting the prothorax in front of the coxæ red, and the metasternum piceous. Legs black, the basal part of the femora light yellow; tarsi hairy above, last joint not bifid.

Length 7, breadth  $2\frac{1}{2}$  mm.

*Hab.*—Mulwala, Murray River, N.S.W.

This species is closely related to *C. globulicollis*, Macl., though very distinct by the markings of the elytra. As pointed out by Sir William Macleay, these species evidently cannot remain in the same genus as *C. aliena*,\* Pasc.; they differ from it in their short globular prothorax, broader elytra, hairy tarsi, and the form of the antennæ. In *C. aliena* the antennæ are very slender and have the 3rd joint about equal in length to the 3 succeeding ones, while *C. riverinæ* and *C. globulicollis* have the 3rd joint much shorter and about as long as the 4th. De Chaudoir has expressed the opinion (Bull. Mosc. LII, 1877, p. 265) that *C. obscura* would be better placed in *Odacantha*, a genus unknown to me except from description.

#### LACCOCENUS, n.gen.

*Head* not large, with a longitudinal ridge on each side extending backwards as far as the base of the eyes, forehead smooth, two supra-orbital punctures on each side.

*Mandibles*, short, strong, scrobe with a setigerous puncture in front.

*Maxillæ* roundly curved in front, apex elongate, not acute, inner side clothed with a single row of hairs.

*Labrum* sexsetose and lightly emarginate in front.

*Clypeus* emarginate, a strong setigerous puncture on each side.

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\* De Chaudoir has published the identity of *C. australis*, Chaud., and *C. clarensii*, Cast., with *C. aliena*, Pasc. (Bull. Mosc. XLV, Part i, 1872, p. 405); to these must be added *C. angusticollis*, Macl., that species being (as suspected by its author) not separable from *C. aliena*; this I have ascertained by comparison of a specimen of *C. aliena* from the Richmond River, N.S.W., in my collection with Sir William Macleay's type of *C. angusticollis*.



*Labium* short, bisetose, lightly emarginate in front.

*Mentum* deeply emarginate, with a short bifid median projection ; lobes rounded externally, oblique on inner side.

*Palpi* short, thick, cylindrical ; labial having last joint equal in length to penultimate, obtuse at apex, penultimate joint bisetose in front and with a short seta at the apex externally ; maxillary having penultimate joint short, triangular, last joint with the apex a little narrowed and obtuse.

*Antennæ* short, moniliform, incrassate, 3 basal joints cylindrical, others flattened and ciliate on each edge, 1st joint thick, 2nd shortest, 3rd longer, about equalling 1st in length, others equal.

*Prothorax* about as wide as long, sides rounded and plurisetose in front, sinuate behind, disc canaliculate, a single strong lateral impression on each side behind, posterior marginal seta at the basal angle.

*Elytra* oval, convex, punctato-striate, without a basal border.

*Prosternum* setigero-punctate, particularly towards the front.

*Mesosternal episterna* punctate, the epimera not reaching the coxæ.

*Metasternum* strongly punctate on each side, the episterna narrow, elongate.

*Ventral segments* with transverse rows of strong punctures on each side, these more thickly placed on the basal segments.

*Legs* : anterior femora short, thick, lightly channelled below on apical half ; anterior tibiæ straight, narrow, lightly excavate below, apical portion hirsute on lower side ; tarsi short, narrow, last joint longest, (much longer in posterior tarsi), other joints quadrate, 3 basal joints in male slightly dilatate and clothed with spongiöse tissue below.

*Body* pedunculate, winged.

*Scutellum* small, placed on the peduncle.

The position of this genus among the Australian *Carabidæ* appears doubtful ; in most characters it approaches the *Morionini*, and but for the scrobe of the mandibles having a setigerous puncture I should place it in that subfamily. Probably its nearest



relationship is to the genera *Moriomorpha* and *Melasodera*; (de Castelnau's genus *Celanida* is synonymous with *Melasodera*). I am inclined to suggest a new subfamily *Moriomorphini* to include the three genera. The short incrassate moniliform antennæ, and the mandibles with a setigerous puncture in the scrobe are characteristic features of all three genera.

LACCOCENUS AMBIGUUS, n.sp.

Black, shining; legs and parts of mouth piceous. Head smooth, elongate; a longitudinal ridge on each side, extending from outer angles of clypeus to base of eyes, preocular ridges rounded inwards in front to meet these facial ridges at base of clypeus; a transverse impression across the head behind the eyes; eyes prominent, inclosed behind; anterior supra-orbital puncture conspicuous, placed between the ridges level with the front of the eyes. Prothorax smooth, slightly broader than long, ( $1\frac{1}{2} \times 1\frac{3}{4}$  mm.), widest about anterior third, not much narrowed at base, truncate in front and behind; sides rounded in front, sinuate behind and meeting the base at right angles; anterior angles round, not advanced; lateral border strongly reflexed; lateral channel with long setæ, except on straightened part behind; median line distinctly impressed on disc, not reaching either margin; a short deep longitudinal impression on each side at the base, a narrow ridge separating this impression from the lateral channel. Elytra oval ( $3\frac{3}{4} \times 2$  mm.), convex, parallel on sides, truncate at base, rounded at apex, striate on disc; sides smooth; 4 striæ formed by closely placed strong punctures on the sutural half of each elytron, these striæ not reaching the base or apex; lateral border strong, reaching peduncle in front, not reaching to tip of elytra; a few umbilical punctures along the margin, these interrupted in the middle; two small punctures at base of each elytron. Ventral segments glabrous, strongly divided, a transverse row of punctures at base of each segment.

Length  $6\frac{1}{2}$ , breadth  $3\frac{3}{4}$  mm.

*Hab.*—Dunoon, Richmond River (R. Helms).



The following species should not, I think, be separated from the Australian Carabs referred to the genus *Drimostoma* by deCastelnau in his work on Australian Carabidæ.\* It however presents some very decided differences; the most noticeable being its greater size, and the form of the antennæ and mentum. In *D. helmsi* the antennæ are moniliform and slightly thicker to the apex; while in a species from Victoria in my collection, which I regard as *D. australis*, Casteln., the antennæ are filiform and slender; the mentum in *D. helmsi* is short, with the lobes rounded on the outer side, obtuse at the apex, and broadly oblique on the inner side; in *D. australis*(?) the mentum has the lobes triangular and pointed at the apex, the inner and outer sides being sharply and about equally oblique; the median tooth does not present any differences. Both species seem to agree in all other points and both have the scrobe of the mandibles furnished with a setigerous puncture in front.

DRIMOSTOMA HELMSI, n.sp.

Black; legs, palpi, and antennæ piceous. Head small; forehead with a straight strong longitudinal groove on each side; the clypeal suture distinct between the grooves; clypeus large, declivous, truncate in front, the lateral setigerous punctures strongly marked; neck short, globular, slightly raised above the plane of the forehead; eyes prominent, hardly inclosed behind, but strongly inclosed below; two supra-orbital punctures on each side. Labrum sex-setose, truncate. Mandibles short, strong, curved and acute at apex; scrobe with a setigerous puncture in front. Mentum short, obliquely emarginate; lobes obtuse at the apex, rounded externally; median tooth short, broad, triangular, a rounded suture dividing it from the mentum. Palpi short; maxillary having penultimate joint narrow, triangular, last joint elongate (longer than penultimate), narrowed and subacute at apex; labial having last joint rather longer than penultimate, thick, club-shaped, the apex obtuse. Antennæ short, moniliform, slightly incrassate; 4 basal joints cylindrical, others subquadrate, compressed,

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\* Trans. Roy. Soc. Victoria, 1868, VIII., p. 198.





3 basal joints glabrous, 1st thick, 2nd very short, 3rd nearly twice the length of 2nd. Prothorax short, broad ( $2\frac{1}{2} \times 3$  mm.), not convex, truncate behind, broadest about the middle; the sides strongly rounded; anterior angles rounded; basal angles prominent, subdentiform; border rather strongly and equally reflexed, very shortly sinuate in front to basal angles, extending along anterior margin on each side, but not crossing the middle, fine, but entire, on the base; median line lightly marked; a wide irregular impression on each side of the base; two marginal setæ on each side, the anterior one at the broadest part, the posterior one on the border at the basal angles. Elytra broadly oval ( $5 \times 3\frac{1}{2}$  mm.), subconvex, declivous behind, vertical on the sides, strongly striate; dorsal interstices equal, convex; striæ crenulate, 1-6 on dorsal surface, 7th obsolete, 8th (the marginal stria) strongly punctate along its course; the space (about the width of 2 interstices) between the 6th and 7th striæ smooth and vertical on the sides, becoming carinate behind, and reaching the apex; base truncate, declivous, appearing slightly emarginate between the shoulders, the basal border sinuate behind and terminating in a short tooth at the shoulders; lateral border reflexed, more widely so in front, sinuate behind. Scutellum small, triangular; no abbreviated subscutellar stria. Prosternum not excavated between the coxæ; metasternal epimera not reaching the coxæ. Ventral segments lævigata, 3 last convex, deeply divided from one another. Tarsi short; the joints slightly dilatate in the male, but not spongiose below; posterior coxæ contiguous.

Length 9, breadth  $3\frac{1}{2}$  mm.

*Hab.*—Dunoon, Richmond River (R. Helms, April, 1890.)

In the present state of our knowledge of the Australian *Feronini* a new genus is needful for a large *Feronid* in the Australian Museum, labelled "Wide Bay Queensland." It will come between *Nurus* and *Mecynognathus*, as represented by *Homalosoma dilaticeps*, Chaud. I would here note that I am not at all sure that *Homalosoma dilaticeps*, Chaud., is congeneric with *Mecynognathus*



*damelli*, MacI., though both Gestro and de Chaudoir have agreed in regarding it as so. The present species has the fascies of a *Nurus*, but can readily be distinguished by the want of a basal border to the elytra, and absence of squamulæ on the lower surface of any of the joints of the anterior tarsi in the ♂.

NURIDIUS, n.gen.

*Head* large, with strong frontal impressions, the sides not protuberant behind the eyes; two supra-orbital punctures on each side; eyes convex.

*Labrum* sexsetose, broad, rounded in front.

*Palpi* as in *Homalosoma*; penultimate joint of labial palpi with 5 long setæ in front, and two short setæ (one at each side) near the apex.

*Mentum*, *clypeus*, *mandibles*, and *antennæ* not differing from *Homalosoma*.

*Prothorax* subquadrate, transverse, a little narrowed behind; a flattened space along the base between the lateral basal impressions; basal angles rounded; posterior marginal puncture placed within the lateral margin.

*Elytra* subcostate, convex, broad, not narrowed behind; apex broadly rounded, not sinuate; base without a border; shoulders subdentiform.

*Body* apterous, subpedunculate.

*Prosternum* and *mesosternum* setigero-punctate.

*Metasternal episterna* broader than long.

*Legs*: anterior femora with a row of setigerous punctures in front, extending to near apex; anterior tarsi in ♂ hardly dilatate and without squamulæ below, basal joint as long as two succeeding joints taken together; posterior trochanters short, obtusely rounded at apex.

NURIDIUS FORTIS, n.sp.

Black, shining, the elytra a little opaque; elytra without a basal border; body subpedunculate.



♂. Head large ( $7 \times 7$  mm.), slightly ampliate behind the eyes; frontal impressions strong, subsinuate; labrum rounded; clypeus very lightly emarginate, clypeal suture distinct; eyes round, projecting. Prothorax short, transverse ( $6 \times 9$  mm.), a little narrowed behind, not convex, declivous to the anterior margins, and behind in the middle; anterior margin slightly sinuate; base broadly emarginate in the middle; lateral borders thick, reflexed, wider at the anterior angles, more strongly reflexed behind; the basal angles rounded; the posterior marginal seta placed inside the margin at the angles of the base; a strong transverse impression in front; a flattened space along the middle of the base, connected by an oblique transverse impression with the lateral channel on each side; median line strongly impressed, crossed by fine transverse striae. Elytra short, broad ( $16 \times 12$  mm.), convex, declivous and broadly rounded behind (not sinuate), subtruncate at base, lightly rounded on the sides, broadest behind the middle, striate; the striae very lightly punctate; the interstices subcostate, (not carinate), equal, 1st, 2nd, and 6th reaching the apex, all except the 7th obsolete at base; two fine punctures on 3rd interstice towards the base; no abbreviated stria behind the scutellum; lateral borders reflexed, rising from a short subdentiform projection at the shoulders, reaching the apex; a narrow shining margin along the sides, punctate on its inner edge. Scutellum short, broad, rounded behind. Prosternum longitudinally impressed between the coxae, setigeropunctate, a few scattered setigerous punctures towards the middle, in front of the coxae. Mesosternum setigero-punctate. Metasternum not punctate on each side near the epimera; the episterna short, margined behind and on inner side, declivous to the epimera. Segments of abdomen, except the last, with scattered setigerous punctures towards the middle, last segment with one setigerous puncture on each side.

♀.—Rather narrower; head  $6 \times 6\frac{1}{2}$ , prothorax  $6 \times 8\frac{1}{2}$ , elytra  $16 \times 11\frac{3}{4}$  mm.



Length 31, breadth  $11\frac{3}{4}$ -12 mm.

*Hab.*—Wide Bay District, Queensland.

LOXOGMUS, n.gen.

*Head* short, broad; eyes round, very prominent; forehead strongly bi-impressed.

*Mandibles* short, broad; external edge arcuate; apex hooked, acuminate.

*Labrum* small; the anterior margin truncate, setigerous; (it is declivous in front from behind the setæ, and this causes the anterior margin to appear lightly emarginate from some points of view.)

*Clypeus* smooth, transverse, declivous, truncate in front; clypeal suture distinct.

*Mentum* short, obliquely emarginate; median tooth short, a raised suture across its base.

*Palpi* short, thick; labial having the two apical joints equal in length, penultimate bisetose in front, last very thick, wide, and truncate at apex; maxillary having penultimate joint very short, triangular, apical joint about twice the length of penultimate, thick, cylindrical, truncate.

*Antennæ* short, subfiliform, rather thicker towards apex, 3 basal joints glabrous, 1st thick, longest, 2nd short, 3rd longer than 2nd or subsequent joints.

*Legs*: thighs short, thick, anterior thickest, channelled below; anterior tibiæ rather arched, wide and truncate at apex, emargination of lower side deep; 4 posterior tarsi with the joints sulcate externally, anterior tarsi in ♂ with the joints triangular, 3 first dilatate, clothed with two oblique rows of pulvilli below, 4th small, without pulvilli below.

*Prothorax* transverse, not narrowed behind; sides rounded in front; basal angles squarely marked; median line light; an elongate impression on each side behind, reaching the base; the posterior marginal puncture at the base considerably distant internally from the lateral margin.



*Elytra* striate, the 5th stria bent obliquely inwards towards the base; the base bordered, the border ending in a tooth at the shoulders; no abbreviated subscutellar stria.

*Prosternum* not excavate between the coxæ, not margined behind. *Metasternal episterna* and *epimera* short though together longer than front margin of episterna. *Sterna* smooth.

*Ventral segments* crossed by transverse sulci, smooth; the punctures of the ambulatorial setæ present, these large and foveiform on apical segment.

*Body* not pedunculate, apterous.

This form is a very distinct one among the Australian *Feronini*. It appears to have some affinity to *Microferonia*, Blackburn, a genus I have never seen; but the shape of the palpi and the sulcate ventral segments are sufficient in themselves to prevent its coming into that genus. Its place seems to be in the series of genera of which *Ceneus* may be taken as the central genus; these are characterised by their sulcate ventral segments, and maxillary palpi with the penultimate joint triangular and shorter than the last. The single impression on each side of the prothorax behind will readily distinguish it from *Ceneus*, &c.

#### LOXOGMUS OBSCURUS, n.sp.

♂.—Black, shining; antennæ, tarsi, and parts of mouth piceous. Head smooth, short, strongly impressed on each side; the space on each side between the eyes and frontal impression forming a ridge; clypeal suture strongly marked; a transverse impression across the head behind the eyes; eyes prominent. Prothorax smooth, depressed, broader than long ( $3 \times 4$  mm.), not narrowed behind; sides parallel behind, rounded in front; anterior angles not produced; posterior angles rectangular; anterior margin broadly emarginate, bordered on each side; base truncate, the middle very lightly emarginate; lateral margin narrow, reflexed; median line lightly marked, not reaching either margin; a single narrow longitudinal impression at the base on each side about half way between median line and margin. *Elytra* broad ( $6\frac{3}{4} \times 4\frac{1}{2}$  mm.),



truncate at base, parallel on the sides, lightly sinuate at apex, strongly striate; the striæ extending in full depth to base and apex, 2nd rising from a punctiform impression at base, 5th bent inwards near the base; interstices subconvex, 3rd impunctate, 8th punctate, the punctures most thickly placed near the shoulder, interrupted in the middle; basal border ending externally in a sharp tooth at shoulders. Ventral segments sulcate, strongly divided; apical segment with two strong foveiform impressions behind the middle. Metasternal episterna and epimera short, though together longer than anterior margin of episterna. Legs short; anterior femora wide at apex.

Length  $11\frac{1}{2}$ , breadth  $4\frac{1}{2}$  mm.

*Hab.*—Dunoon, Richmond River, N.S.W. (R. Helms). A single specimen in my collection.





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