

STUDIES IN AUSTRALIAN ENTOMOLOGY.

No. I.—REVIEW OF THE GENUS *SARTICUS* (CARABIDÆ).

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SARTICUS.

Sarticus, Motschulsky, Bull. Mosc. 1865, pt. iv., p. 265.

This genus among the *Feronides* was founded in 1865 by M. Victor Motschulsky. The same year and previously to Motschulsky's paper, Baron de Chaudoir* and Count de Castelnau† described species belonging to *Sarticus* under the heading of *Steropus* (*Steropi australici*, Chaud.). In 1874, when reviewing de Castelnau's species,‡ de Chaudoir adopted Motschulsky's name *Sarticus* for his *Steropi australici*.

I find that Motschulsky's definition of *Sarticus* cannot be taken without modification; the following are its characters as I would define them.

Head rather small, the facial impressions faint.

Prothorax rounded on the sides; the basal angles rounded off; the lateral margins reflexed, more widely so towards the base; the median line impressed, ending behind in a punctiform impression; a single deep and wide impression on each side near the basal angles, touching the lateral margin at its posterior extremity; the marginal punctures at the base small and placed on the edge of the lateral margins; a narrow entire border along the anterior margin.

Elytra wider than the prothorax, usually convex, striate, with an abbreviated subscutellar stria between the suture and the first stria.

Abdomen with basal segment punctate.

* Bull. Mosc. 1865, iii. p. 97.

† Trans. Roy. Soc. Victoria, VIII.

‡ Ann. Mus. Genov. 1874, VI.

Antennæ light, filiform; 3rd joint almost one-half longer than 4th, apical joint long, narrow, pointed.

Apterous.

Other features in common with other divisions of the *Feronides*.

Its position seems to be between *Cyphosoma*, Hope,* and *Notonomus*, Chaud. From *Cyphosoma* it may be readily distinguished by the presence of an abbreviated subscutellar stria, and by the segments of the abdomen not having a transverse line across them. It is more difficult to point out decidedly distinctive characters between *Sarticus* and *Notonomus*; the following seem the most noticeable: (a) the narrow border along the anterior margin of the prothorax, which is entire in *Sarticus*, does not reach the middle of the margin in *Notonomus*; (b) the posterior marginal punctures of the prothorax differ somewhat in their position—in *Sarticus* these are always placed on the *edge* of the margin, and a little more forward than in *Notonomus*; (c) the basal segment of the abdomen is always punctate in *Sarticus*, but not so in *Notonomus*.

The following is a tabular view of all the species of *Sarticus* I have seen; those unknown to me, viz., *S. iriditinctus*, Chaud., and *S. quadrisulcatus*, Chaud., I have omitted.†

I. Dorsal striæ of elytra not punctate.

Elytra convex... .. *S. aubei*, Casteln.

Elytra depressed..... *S. Macleayi*, sp.nov.

II. Dorsal striæ of elytra punctate.

A Mesosternal and metasternal
episterna not punctate.

* The genus *Cyphosoma* was founded by Hope (Ann. and Mag. Nat. Hist. 1842, IX. p. 426) for an insect from Port Essington, which he named *Cyphosoma unicolor*. Chaudoir has determined (Bull. Mosc. 1878. LIII. pt. iii. p. 35) *Cyphosoma*, Hope, to be the same as *Cratogaster*, Blanch. Hope's name, which seems to have been lost sight of, must therefore be adopted.

† *Feronia lesueuri*, Casteln., Trans. Roy. Soc. Victoria, p. 210, is included in *Sarticus* in Masters' Catalogue, the authority being de Chaudoir (*Ann. Mus. Genov.* 1874, p. 596). It is unknown to me, but from de Chaudoir's description it is evidently not a *Sarticus*, nor do I think he intended that it should be placed in that genus.

- a* Elytra with humeral elevation..... *S. saphyreomarginatus*, Casteln.
- aa* Elytra with no humeral elevation.
- Elytra convex, with 7th stria obliterate..... *S. discopunctatus*, Chaud.
- Elytra hardly convex, with 7th stria distinct *S. obesulus*, Chaud.
- B* Mesosternal and metasternal episterna punctate.
- b* Form and size normal.
- c* Elytra with interstices flat (striae shallow and finely punctate).
- Prothorax perceptibly narrowed behind..... *S. civilis*, Germ.
- Prothorax not perceptibly narrowed behind..... *S. Rockhamptonensis*, Casteln.
- cc* Elytra with interstices convex (always convex in ♂, sometimes hardly so in ♀).
- Elytra depressed, striae deep and strongly punctate..... *S. habitans*, sp.nov.
- Elytra convex, striae strong and finely punctate..... *S. monarensis*, sp.nov.
- bb* Form graceful, size small.
- Elytra flat, broad, widely margined; prothorax transverse..... *S. cycloderus*, Chaud.
- Elytra narrow, finely margined; prothorax almost as long as wide..... *S. ischnus*, Chaud.

SARTICUS AUBEI.

Pterostichus aubei, Casteln., Trans. Roy. Soc. Victoria, VIII., p. 215; *Sarticus aubei*, Chaud., Ann. Mus. Genov. VI. p. 595.

In February 1888, I found a species of *Sarticus* at Bathurst after heavy rains; it seemed very common, great numbers being crushed on the pavements of the town by persons walking in the evening. I feel sure that this is *Sarticus aubei*, Casteln. De Castelnau's diagnosis of this species is quite useless, and as it has not been described before in an Australian publication, I append the following description.

Black, nitid; the striae not punctate. Prothorax transverse (4 mm. \times 5 mm.), rounded on the sides and angles; lateral margins reflexed, more widely so at the posterior angles; median line lightly marked, not reaching either margin, ending behind in a deep foveolet; the disc crossed by faint transverse striolæ. Elytra oval (11 mm. \times 6 mm.), rather convex, deeply striate; the sides abrupt, parallel, narrowing slightly towards the base; the lateral margins reflexed, sinuate towards the apex, rounded and joining the basal border at the shoulders; the striae smooth; the dorsal interstices convex, equal, reaching to both base and apex, 3rd with three distinct punctures, 7th not elevated at the base, 8th and 9th flat, 8th wider than 9th; 7th stria shallow, punctulate, 8th shallow, its course interrupted by the large punctures of the 9th interstice, these wide apart in the middle but close and undulating towards the apex; abbreviated stria of moderate length. Segments of the abdomen with a foveiform impression on each side, these more transverse and punctate on the three last segments. Prosternum smooth without a margin. Metasternal episterna impunctate. Tarsi of hinder legs distinctly sulcated.

It probably has rather a wide range in eastern New South Wales.

SARTICUS MACLEAYI, sp. nov.

Niger, nitidissimus; capite lævi; prothorace planiusculo, canaliculato, antice truncato, postice leviter emarginato, ad angulos posticos utrinque impresso, lateribus rotundatis marginatis; elytris

ovalibus, subplanatis, profunde striatis (*striis in fundo sub lente crenulatis*); abdominis segmentis tribus ultimis utrinque foveolatis punctulatisque; episternis posticis haud punctulatis.

Long. 15, lat. 5 mm.

Very shining black. Head rather small, smooth; eyes prominent; post-clypeal suture distinct; clypeus with a well-marked punctiform impression on each side; the impressions on each side behind the clypeus short and shallow. Prothorax almost as long as wide ($3\frac{1}{2}$ mm. \times 4 mm.), truncate in front, wider at the anterior angles than at the posterior, lightly rounded on the sides; the lateral margins narrowly reflexed in front, widely so at the posterior angles; median line lightly marked, not reaching either margin, ending in front in a faint transverse impression, and behind in a deep foveolet; disc closely covered with minute transverse striolæ. Elytra oval (8 mm. \times 5 mm.), flat, deeply striate; sides abrupt, parallel, narrowing slightly towards the base; lateral margins rather wide, reflexed, rounded off and joining the basal border at the shoulders, sinuate towards the apex; the dorsal interstices equal, rather convex, extending in full depth to both base and apex, 3rd with three distinct punctures, 7th not elevated at the shoulders, 8th and 9th flat, and of about equal width; 7th stria shallow and finely punctulate; 8th shallow, interrupted by large punctures, these more widely placed in front, behind more closely set and elongate; abbreviated stria short, oblique. Three last segments of the abdomen with a broad shallow transverse impressicn on each side, these impressions punctate. Prosternum without a margin. Metasternal episterna impunctate.

This species is allied to *S. aubei*, but is altogether a flatter and smaller insect.

A single male specimen taken June, 1888.

Hab.—Coonabarabran, N.S.W.

SARTICUS SAPHYREOMARGINATUS.

Feronia (Steropus) saphyreomarginata, Casteln., Trans. Roy. Soc. Victoria, 1865, VIII. p. 222; *Feronia (Steropus) cyaneocincta*,

Chaud., Bull. Mosc. 1865, iii., p. 97; *Feronia* (*Pterostichus*) *azureomarginata*, Casteln., l.c. 1865, VIII. p. 215.

This species is easily distinguished from all others by the elevation of the 7th interstice of the elytra at the shoulders, and by the 6th stria bending in and joining the 5th near the base and just behind the humeral carina. These characters are peculiar to this species, and are in themselves sufficient to determine it. The striæ of the elytra are deep and strongly punctate; the prothorax and elytra have a bluish margin, the shades of blue being variable. The female is broader, and has the elytra duller than the male.

Length 16-20; breadth 6-8 mm.

A common and widely-spread species. I have it from Melbourne, Victoria; and from Mulwala, Condobolin, and the Warialda district in N. S. Wales. It also occurs in Queensland.

I am led to consider *Pterostichus azureomarginatus*, Casteln., as a synonym partly by de Chaudoir's remark * that "it is a *Sarticus*, and appears to me, apart from a little greater size, not to differ from *Fer. saphyreomarginata*," and partly because I have a specimen from Condobolin, on the Lachlan, which agrees very well with de Castelnau's description.

SARTICUS DISCOPUNCTATUS.

Feronia (*Steropus*) *discopunctata*, Chaud., Bull. Mosc. 1865, iii. p. 97; *Feronia* (*Steropus*) *germari*, Casteln., Trans. Roy. Soc. Victoria, 1865, VIII. p. 222; *Feronia* (*Steropus*) *bonvouloiri*, Casteln., l.c. p. 223; *Sarticus ovicollis*, Motsch., Bull. Mosc. 1865, iv. p. 266.

A distinct species, and easily distinguished by its oval and convex elytra, with roughly punctate striæ; the 7th stria is obliterated (though usually perceptible); this gives the sides a smooth and glossy appearance; the lateral margins are broad and

* Ann. Mus. Civ. Genov. 1874, VI., p. 595.

distinct, and not sinuate towards the apex; the elytra are more broadly rounded behind than in other species.

Length 15-18; breadth $6\frac{1}{2}$ -8 mm.

Hab.—South Australia; Mulwala, N.S.W.

SARTICUS OBESULUS.

Feronia (Steropus) obesula, Chaud., Bull. Mosc. 1865, iii. p. 99; *Sarticus orbicollis*, Motsch., Bull. Mosc. 1865, iv. p. 266; *Feronia (Steropus) saphyripennis*, Casteln., Trans. Roy. Soc. Victoria, 1865, VIII. p. 223; *Feronia (Steropus) esmeraldipennis*, Castln. l.c.; *Feronia (Steropus) olivieri*, Castln., l.c.

The broad prothorax with rounded sides, and the wide and not very convex elytra are the conspicuous features of this species. The striæ of the elytra are deep and strongly punctate (more especially so in the male) on the anterior part of the elytra; towards the apex, and on the sides the striæ are shallower and the punctures fine. On the posterior part the elytra are flushed with purple, particularly towards the sides. Its affinity is to *S. civilis* from which it differs, *inter alia*, in its thorax being wider behind, and in its elytra having deeper and more strongly punctate striæ.

Length 15-17; breadth $5\text{-}6\frac{1}{2}$ mm.

Hab.—Melbourne, Princetown (mouth of Gellibrand River), Victoria.

SARTICUS CIVILIS.

Pterostichus civilis, Germ., Linn. Ent. 1848, III. p. 167; *Feronia (Steropus) civilis*, Chaud., Bull. Mosc. 1865, iii. p. 99.

This species may be distinguished from *S. obesula*, which is nearly allied to it, by the absence of any bluish tint on the elytra, and by its more elongate shape; by the striæ of the elytra being shallower and much more finely punctate; and by the shape of the prothorax, which is not so transverse, and is narrower behind than in front; the lateral margins of the elytra are narrower and more sinuate behind. From *S. habitans*, another allied species, which a description might not differentiate much, though they are quite distinct, it differs, *inter alia*, in its prothorax being narrowed

behind, in the 8th interstice being broader than the 9th, and in the 8th stria not being thickly set with punctures.

Length 14-15 ; breadth 5 mm.

Hab.—South Australia.

I have only had the opportunity of examining three specimens of *S. civilis* ; of these two had the mesosternal espisterna distinctly punctate, while the metasternal espisterna in none of them presented more than two punctures ; judging from the latter feature alone it would almost be better placed with group I. of my table.

SARTICUS ROCKHAMPTONENSIS.

Feronia (Steropus) rockhamptonensis, Casteln., Trans. Roy. Soc. Victoria, 1865, VIII. p. 223.

This species has been united with *S. obesulus* by de Chaudoir,* but I have a female specimen from the Rockhampton district which appears to me distinct from *S. obesulus*, while it agrees with de Castelnau's description of *S. rockhamptonensis*.

In general appearance like *S. obesula*, but differing from it in having the prothorax less transverse ; in the elytra of the female being duller, with the striæ shallow and very finely punctate, and with the interstices flat ; in all the segments of the abdomen being closely and rather roughly punctate ; and in the mesosternal and metasternal episterna being punctate.

Length 16 ; breadth 6 mm.

Hab.—Rockhampton district, Queensland, a single female specimen in my collection.

SARTICUS HABITANS, sp.nov.

Niger, nitidus ; prothorace antice posticeque truncato, canaliculato, ad angulos posticos utrinque impresso ; lateribus rotundatis marginatis ; elytris ovatis, tenue marginatis, fortiter striato-punctulatis, interstitiis convexis, 3° tribus punctis impresso, lateribus subparallelis ; abdominis segmentis ad latera subtiliter punctulatis.

Long. 13-15 mm. ; lat. $4\frac{1}{2}$ - $5\frac{1}{2}$ mm.

* Ann. Mus. Civ. Genov. VI. p. 595.

Black, nitid (elytra not opaque in the female). Head not offering any distinctive features. Prothorax rather broad and flat (3 mm. \times 4 mm.); truncate in front and behind; the sides rounded; lateral margins wide at the posterior angles; median line distinct, not reaching either margin, ending behind in a punctiform impression. Elytra very little wider than the prothorax ($7\frac{1}{2}$ mm. \times $4\frac{1}{2}$ mm.), sub-convex; the disc flatter in the male than in the female; the sides sub-parallel, with the lateral margins narrow and sinuate behind; striæ deep, thickly set with rather strong punctures, especially towards the sides (in the female shallower and less strongly punctate than in the male); 8th thickly and closely punctate, thus obscuring the punctures of the 9th interstice; interstices convex, equal in front, but the 2nd, 4th, and 6th narrowed towards the apex; 3rd with three impressed punctures, 8th not wider than 9th. Segments of the abdomen thickly and finely punctate towards the sides. Mesosternal and metasternal episterna punctate.

A common species in many parts of N. S. Wales. I have it from Mulwala, Goulburn, (at both places it is common) and Blayney. A single specimen which I have from Glen Innes, seems a lighter insect, with the prothorax more rounded, and the elytra more convex and less strongly punctate; it is possibly a distinct species though I am unable to regard it as more than a variety.

SARTICUS MONARENSIS, sp.nov.

Niger, nitidus, elytris obscure viridescentibus; capite parvulo, oculis vix prominulis; prothorace lævi, antice posticeque truncato, marginato, canaliculato, ad angulos posticos utrinque impresso, lateribus parum rotundatis; elytris ovalibus, subconvexis punctulato-striatis, interstitiis vix convexis 3° punctis tribus extus notato; abdominis segmentis ad latera subtilissime punctulatis.

Long. 12-13; lat. 4-5 mm.

Black, nitid, the elytra having a greenish tinge (in the female the elytra are more opaque than in the male). Head smooth, not

large ; eyes not very prominent ; clypeus lightly impressed on each side ; the post-clypeal suture not distinct. Prothorax subquadrate ($3 \text{ mm} \times 3\frac{1}{4} \text{ mm.}$), sides rounded ; the lateral margins narrow in front, wider and upturned at the posterior angles ; median line light, short, not reaching either margin, ending behind in a punctiform impression. Elytra oval ($7 \text{ mm.} \times 4\frac{1}{4} \text{ mm.}$), rather convex, striate ; the striæ thickly and finely punctate, extending in full depth to base and apex ; the interstices equal, slightly convex in the male, but not so in the female, 3rd with three punctures placed almost in the 3rd stria, the punctures of the 9th placed along the 8th stria—more widely in front, closer, yet not confluent behind ; abbreviated stria short and slightly oblique ; the sides somewhat abrupt, with the lateral margins rather wide, narrowly reflexed, and rounded off at the shoulders to the basal border. Segments of the abdomen smooth, with very fine punctures—visible under a lens—towards the sides. Prosternum without a margin. Metasternal episterna strongly punctate.

This species has probably a wide distribution in the Australian Alps. There are specimens in the Australian Museum from Bombala and the Monaro district of N.S.W. The specimens on which the description above is founded are a pair in my collection from Porpunkah, near Mount Buffalo, Victoria.

SARTICUS CYCLODERUS.

Feronia (Steropus) cyclodera, Chaud., Bull. Mosc. 1865, iii. p. 100 ; *Feronia (Steropus) Waterhousei*, Casteln., Trans. Roy. Soc. Victoria, VIII. p. 224 ; *Feronia (Steropus) Mastersi*, Casteln., l.c. ; *Feronia (Steropus) Blagravi*, Casteln., l.c.

Size small. Black, nitid, the elytra and under parts having a piceous tinge. Head small, lightly impressed on each side in front. Prothorax rather convex ($2\frac{1}{2} \text{ mm.} \times 3 \text{ mm.}$), rounded on the sides, a little narrowed behind, the margins wide behind ; median line light, not terminating towards the base in the usual foveolet, but almost reaching the margin. Elytra oval ($6 \text{ mm.} \times$

$3\frac{1}{2}$ mm.), a little wider than the prothorax, rather flat, the sides sloping gently from the 6th stria; striæ shallow, finely punctate, the abbreviated stria longer and less oblique than usual in the genus; interstices equal, not convex, 9th punctate as usual. Segments of the abdomen smooth. Metasternal episterna with a few fine punctures.

Long. 10, lat. $3\frac{1}{2}$ mm.

Hab.—South Australia.

I have six specimens, all of which I believe to be females; the anterior tarsi are as in the females of all other species of *Sarticus* I have seen, not being dilatate, but I cannot discern more than one setigerous puncture on each side of the anus in any of my specimens; in every other species I know the female has two anal punctures on each side.

The synonymy given above is on the authority of de Chaudoir.*

SARTICUS ISCHNUS.

Feronia (Steropus) elegantula, Casteln., Trans. Roy. Soc. Victoria, 1867, VIII. p. 224.

The name *Feronia (Sarticus) ischna* was proposed by de Chaudoir (Bull. Mosc. 1878, LIII. p. 68) for *Feronia (Steropus) elegantula*, Casteln., de Castelnau's name having been previously used in the genus *Feronia*.

This species is allied to *S. cycloderus*, Chaud., but is of much more elongate form, and has the prothorax hardly transverse. The following is de Castelnau's original description: "Length, 4 lines; very much like *Waterhousei* [*cycloderus*, Chaud.], but of a still more slender and elegant form; thorax much narrower behind; elytra more elongated and oval; three punctiform impressions on the interval between the second and third striæ."

To this I would add the following measurements taken from specimens in the Australian Museum, Sydney.

Length 8 mm.; breadth $2\frac{3}{4}$ mm. Prothorax, length 2 mm.; breadth $2\frac{1}{4}$ mm. Elytra, length 5 mm.; breadth $2\frac{3}{4}$ mm.

Hab.—King George's Sound.

* Ann. Mus. Civ. Genov. VI. p. 595.

SARTICUS IRIDITINCTUS.

Feronia (*Steropus*) *iriditincta*, Chaud., Bull. Mosc. 1865, iii. p. 100.

This species is unknown to me; the following is de Chaudoir's description.

"Præcedentis [*S. cycloderus*] summa affinitis, differre tamen videtur *thorace* longiore et angustiore lateribus minus rotundato, postice haud angustato, ovoideo, antice emarginato, basi subtruncato, margine posteriorius minus dilatato, elytrorum striis multo obsoletius punctatis, interstitio tertio punctis duobus tantum impressis, et imprimis colore totius fere corporis valde irideo.

Long. $8\frac{1}{2}$ mm.

Hab.—Swan River."

SARTICUS QUADRISULCATUS.

Feronia (*Sarticus*) *quadrissulcata*, Chaud., Bull. Mosc. 1878, iii. p. 67.

A remarkable species unknown to me. The following are its chief characteristics taken from de Chaudoir's lengthy description.

It is distinguished from all the species of this subgenus, and from the majority of the species included in *Feronia*, with the exception of *Oribazus*, by the sculpture of the elytra which have only 4 deep sulci. *Facies* of *S. saphyreomarginatus*. Elytra not wider than the thorax, smooth and rather convex, striæ deep but narrower and less punctate [than in *S. saphyreomarginatus*], 2nd, 3rd, 6th, and 7th totally obliterated so that the interstice which separates the 2nd from the 4th has the width of 2 interstices, while there is only 1 between the 5th and 8th striæ. Of an iridescent black, very shiny, and as if varnished, prothorax and elytra of an iridescent bronze with the lateral channel of the prothorax, the wide external interstice of the elytra as well as the 9th interstice and the lateral groove of a coppery green, the lateral margins and the epipleuræ are black like the under surface.

Length 19 mm. ; breadth $6\frac{1}{4}$ mm.

Hab.—Port Denison.