

FURTHER NOTES ON AUSTRALIAN COLEOPTERA, WITH DESCRIPTIONS OF NEW SPECIES.

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The following paper embodies the results of some studies I have recently made among the *Phytophaga* of the sub-tribe *Galerucidæ*, and among the *Coccinellidæ* of the group called by M. Mulsant "Trichosomides."

GALERUCIDÆ.

Up to the present time, so far as I can ascertain, only one species of this sub-tribe has been actually recorded as occurring in the colony of South Australia (outside the Northern Territory), and that species (*Monolepta croceicollis*, Germ.) I do not think that I have seen. A second species (*Ellopia pedestris*, Er.) is attributed by Mr. Masters in general terms to "Australia and Tasmania," by which I suppose it is intended to imply that its range is a wide one. I have frequently met with it as far west as the Port Lincoln district, where in some localities it is rather plentiful. In the following pages I describe seven new species from South Australia proper, two from the Northern Territory, five from Western Australia, and one from New South Wales. I have been compelled to supply a new generic name for one of the South Australian species. The *Galerucidæ* appear to be much more plentiful in the northern than in the southern parts of the continent.

AGELASTICA.

Although widely different in colours and markings from any other *Agelastici* known to me, the following insect does not appear to display structural characters that call for generic distinction. It has the anterior coxal cavities open behind, the prolonged epipleuræ, the appendiculated claws, the basal joint of the hind tibiæ not longer than the following two joints together, the mucronated tibiæ, &c., as in *Agelastica*; the antennæ, however, are more slender and the prothorax less transverse than is usual in the genus.

A. lineata, sp. nov. Oblonga; supra livida, capite nigro-maculato, prothorace elytrisq[ue] lineatim nigro-notatis; subtus nigropicea, metasterno prosterno palpis et pedibus (femoribus

piceo notatis exceptis) testaceo-lividis; antennis piceis, articulis singulis (basali exceptâ) basi testaceis. Long. $2\frac{3}{5}$ l.; lat., $1\frac{1}{5}$ l. (vix).

The head is entirely testaceous in front of the antennæ, the hinder part being clouded with black so as to leave only a spot above each eye testaceous. On the prothorax the dark marking takes the form of an irregular and interrupted M. On the elytra the suture is narrowly blackish, and there are also on each elytron four more or less interrupted vittæ wider than the sutural one. None of these dark markings extend into the apical sixth part of the elytra; probably they are variable. In my example the vitta next to the suture is very much interrupted, the anterior part of the third vitta is wanting, and the hinder part of the same runs into the hinder part of the fourth. The head is finely rugulose in front, almost lævigata behind. The antennæ are about two-thirds the length of the body, and only moderately stout, much less so than in *A. melanocephala*, Baly.; joint 1 long piriform black, 2 less than half 1, 3 about twice 2, 4 and the following joints a little longer than 3. The prothorax is about a quarter again as wide as long, slightly narrowed in front, the sides gently arched, the reflexed border rather strong, the front margin truncate or even a little convex, the base widely produced hindward behind the hind angles, the reflexed margin dilated at the front and hind angles, the former being obtuse, the latter right; the surface rather finely and not closely punctulate, more coarsely towards the sides. The elytra are punctured about as closely as the disc of the prothorax, and scarcely so finely, having also some much finer punctures intermingled. The apex of each femur is blackish.

Taken in Western Australia by E. Meyrick, Esq.

MORPHOSPHERA.

It is with considerable hesitation that I refer the following species to this Malayan genus; it ought probably to form a new genus, but as there are several already named genera of *Galerucidæ* of which I have been unable to procure descriptions, I think it better to refer the insect to an existing genus than run the risk of increasing synonymy. The examples before me agree with *Morphosphæra Sumatrana*, Jac., in having the anterior coxal cavities open behind, the antennæ short and robust, the elytral epipleuræ obsolete (or very narrow and vertical) behind the middle, the tibiæ with a short apical spine, and the claws appendiculate. The basal joint of the hind tarsi is a little longer than the following two together, but shorter than the following three. It has much the facies of a very small *Adimonia*, but with the antennæ more, and the legs somewhat less, robust. It should be

added that *M. Sumatrana*, Jac., differs in important respects from *M. maculicollis*, Baly, on which the genus was founded.

M. (?) cincta, sp. nov. Oblonga; sat robusta; sat nitida; fulva; antennis (articulo 1° basi excepto), palpis, et metasterno, nigris; tibiis intermediis posticisque, tarsis omnibus, et abdomine postice, infuscatis vel piceis; elytris marginibus omnibus cyaneo-nigris; capite prothoraceque subtiliter crebre, elytris minus subtiliter sat crebre, punctulatis. Long., $1\frac{3}{5}$ l.; lat., $\frac{4}{5}$ l. (vix.)

The blue-black edging of each elytron is wider along the base and suture than on the lateral margins. The infuscation of the posterior 4 tibiæ begins a little above the middle. The antennæ are very little more than half the length of the body, robust, the first and fourth joints each equal to the other and to the second and third together, the third rather longer than the second. The head bears a very strong somewhat arched transverse furrow between the eyes. The prothorax is very little wider than long, its front angles but feebly defined, its hind angles dentiform; it bears an extremely strong, round fovea on either side of the disc, and these are feebly connected by a shallow transverse impression.

Western Australia; sent to me by E. Meyrick, Esq.

NEORUPILIA, gen. nov.

Caput sat magnum; antennæ graciles corpore vix breviores; articulo 1° elongato, 2° 1° triplo breviori, 3° 2° duplo longiori, 4° 3° longitudine æquali; acetabula antica postice aperta; epipleuræ distinctæ postice obsoletæ; tibiæ mucronatæ; unguiculi leviter appendiculati, parvi; metasternum breve; elytra abdomen haud tegentia.

The metasternum not longer than the prosternum and the elytra separately rounded (or almost subtruncate obliquely) at the apex leaving the last segment and part of the penultimate exposed in one sex (in what I take to be the other sex not quite covering the antepenultimate segment) associate this insect with the group *Rupiliites* of Dr. Chapuis, but it is not closely allied structurally to any of the previously described genera of that group. The claws are very small, and seem to be slightly appendiculate; they are certainly not bifid as in all the known *Rupiliites* except *Marseulia* in which they are simple; perhaps they would be best described as obtusely dentate near the base.

N. viridis, sp. nov. Oblonga; minus robusta; sat nitida; nigra, supra subaureo-viridis; antennis basi, genubus, tibiis, et tarsis (apice excepto), testaceis; capite prothoraceque sparsim subtilissime, elytris sat crebre sat crasse subsquamose, punctulatis. Long., 1 l.; lat., $\frac{1}{2}$ l.

The head bears a transverse furrow between the eyes and a longitudinal carina between the antennæ. The prothorax is not much wider than long, almost truncate in front where it is a little wider than at the base, the sides moderately arched, the front angles obscure, the hind angles subdentiform. The basal joint of the antennæ is pitchy (testaceous beneath), the second and third are dull testaceous, the rest pitchy black.

The single example which I take to be the other sex of this species, in addition to having much shorter elytra, has the antennæ more slender, and the parts of the legs and antennæ which in the type are testaceous, are much more obscure. It may possibly appertain to a distinct species.

Port Lincoln.

ELLOPIA.

E. Sloanei, sp. nov. Sat elongata, postice dilatata; subnitida; supra glabra, piceo-lurida, subcupreo-tincta; capite antice, prothoracis marginibus, tibiisque basi, dilutioribus; corpore subtus nigro; hoc cum pedibus pubescenti; coxis testaceis; capite prothoraceque leviter minus subtiliter punctulatis; elytris coriaceis vix perspicue punctulatis, singulis longitudinaliter profunde bisulcatis. Long., $3\frac{2}{3}$ l; lat., $1\frac{4}{5}$ l.

This remarkable species agrees perfectly with *Ellopia pedestris*, Er., (which appears to be widely distributed in South Australia) in all structural characters, but is widely different specifically. The two deep furrows abbreviated at both ends running down the inner half of each elytron are a very distinctive character; in some (perhaps most) examples there are traces of a much feebler sulcus at no great distance from the lateral margin. The antennæ are a little less robust than in *E. pedestris*; in some examples (as appears also the case in *E. pedestris*) the second joint is less abbreviated than in others; I believe this to be sexual and that the second joint is elongated in the females.

Mulwala (N.S.W.); taken by Mr. T. G. Sloane and courteously supplied to me.

CANDEZEA.

C. Palmerstoni, spec. nov. Sat late oblonga; sat nitida; nigra; capite (labro, palpis, et antennis apicem versus exceptis), prothorace et elytris, testaceis; pedibus plus minus piccescentibus; capite prothoraceque subtilissime sat sparsim, elytris minus subtiliter minus sparsim, punctulatis. Long., $2\frac{4}{5}$ l; lat., $1\frac{2}{5}$ l.

The elytra in some examples are vaguely clouded with infuscation in the hinder half. Head with a straight transverse furrow between the eyes. Antennæ about half as long as the body,

rather slender, the basal three joints testaceous, the rest dark piceous or black, joints 1 and 4 about equal to each other, and each about equal to 2 and 3 together, 3 longer than 2. Prothorax scarcely half as wide as the greatest width of the elytra, about half again as wide as long, moderately narrowed to the front, its angles a little thickened (the anterior nearly right, the posterior obtuse), narrowed and widely produced hindward behind the hind angles, the front almost truncate. Elytral epipleuræ very well defined almost to the apex. Basal joint of hind tarsi longer than the following three together. Claws appendiculate. All the tibia mucronate. Anterior coxal cavities closed.

I think there is no doubt of the correctness of the reference of this species to *Candazea* (not previously recorded as Australian); at any rate this species and the following appear to be congeneric with *C. bimaculata*, Jac., from New Guinea, which their author attributes to the genus.

Northern Territory of South Australia; taken by Dr. Bovill.

C. Bovilli, sp. nov. Sat late oblonga; sat nitida; testacea; antennis (basi exceptis) piceis; elytris (humeris exceptis) fulvo piceis; capite prothoraceque subtiliter sat crebre, elytris sat fortiter sat crebre, punctulatis. Long., $2\frac{4}{5}$ l.; lat., $1\frac{3}{5}$ l.

Each shoulder is testaceous on an area about as large as one of the eyes, and the testaceous colour is narrowly continued thence to the scutellum along the base; the suture also is vaguely stained with testaceous near the base (probably the colour of the elytra is variable). The antennæ and head scarcely differ from those of *C. Palmerstoni*, except in the latter being a little narrower; the prothorax too resembles that of the same species, but is much more closely and strongly punctulate, with the angles more defined and thickened; the puncturation of the elytra too is much stronger. There is a vague depression on either side of the disc of the prothorax.

Northern Territory of South Australia; a single specimen taken by Dr. Bovill.

MONOLEPTA.

M. angulata, sp. nov. Oblonga; sat nitida; piceo-nigra; antennarum basi, ore, capite subtus postice, prosterno medio, pedibusque testaceis; capite supra postice, prothorace basi, scutello et elytris gutta humerali fasciæque angulata ante medium, flavo-rufis; capite sparsim subtilissime, prothorace subtiliter minus sparsim, elytris fortius minus sparsim, punctulatis. Long., $1\frac{4}{5}$ l.; lat. $\frac{4}{5}$ l.

A furrow runs across the head between the eyes, curving for-

ward. The prothorax is half again as wide as long, its front almost truncate, its front angles feeble, its sides gently arched, its hind angles sub-dentiform, its surface even. The antennæ are about two-thirds the length of the body, moderately slender, the basal three joints testaceous, joints 1 and 4 about equal to each other, and each about equal to 2 and 3 together, the latter two not differing much from each other in length. The epipleuræ of the elytra though very narrow and obscure behind the middle do not appear to be absolutely non-existent. The tibiæ are finely mucronated, the anterior coxal cavities closed. The claws are appendiculated. The basal joint of the hind tibiæ equals in length the following three together.

Port Lincoln ; not uncommon.

M. fasciatipennis, sp. nov. Oblonga ; sat nitida ; testacea ; antennis (basi apiceque exceptis) femoribus basi et (nonnullis exemplis) tibiis, infuscatis vel piceis ; prothorace antice (nonnullis exemplis) et elytris totis (fascia angulata mediana excepta), nigris ; capite sparsim subtiliter, prothorace elytrisque minus sparsim minus subtiliter, punctulatis. Long., $1\frac{4}{5}$ l. ; lat., $\frac{4}{5}$ l.

The puncturation is in general a little less strong and less sparing ; apart from this difference and its very different pattern and arrangement of colors, the present species scarcely differs from the preceding. Regarding the ground color of the elytra as black, the red fascia is much wider and less conspicuously angulated than that of *M. angulata* ; this fascia is so placed that its hind margin is slightly behind the middle of the elytra. I can find no structural distinction except that the epipleuræ are even more obscure behind the middle, but still not entirely wanting ; if carefully examined under a powerful lens the elytra are seen to end laterally in (not a single sharp edge like that of a knife blade but) two very fine edges parallel to, and apparently in contact with, each other.

Interior of South Australia ; basin of Lake Eyre.

M. divisa, sp. nov. Oblonga ; sat nitida ; testacea ; antennis (basi excepta), palpis, elytris parte dimidia apicali, et abdomine, piceis vel nigris ; tarsis supra plus minus infuscatis ; capite prothoraceque vix perspicue, elytris subtilius minus crebre, punctulatis. Long., $1\frac{3}{5}$ l. ; lat., $\frac{7}{10}$ l.

The sculpture and proportions of the several parts do not seem to differ noticeably from the same in *M. angulata*, except as follows, viz. : The prothorax is punctured only very obscurely, and for the most part only near the margins, and it has an ill-defined transverse depression (in some examples interrupted near the middle) across the disc ; the elytra are punctured much more finely

and more confusedly (*i.e.*, with punctures still smaller scattered among the prevalent punctures); and the epipleuræ are still less distinct, the two fine lines (that in the hind half of the elytra represent what in front are the two margins of the epipleuræ) both running close before the lateral edge of the upper surface of the elytra; thus the epipleuræ in the hinder part are vertical and excessively narrow, and if they be sought by looking down upon the *under surface* of the insect they cannot be seen at all.

Sedan (South Australia); taken by Mr. B. S. Rothe.

M. inconspicua, sp. nov. Oblonga; sat nitida; fusca, subtus obscurior, antennis apicem versus picescentibus: capite vix perspicue, prothorace subtilius sat sparsim, elytris crassius sat leviter sat crebre, punctulatis. Long., $1\frac{2}{5}$ l.; lat., $\frac{3}{5}$ l.

Compared with *M. angulata*, the antennæ are evidently shorter and the prothorax is more transverse (about twice as wide as long), with the posterior angles less dentiform. The puncturation is not much different from that of *M. angulata*, but seems to be a little less strongly impressed. The epipleuræ are like those of *M. divisa*. The other structural characters seemed to be identical with those of the preceding three species.

An example with long slender antennæ (not much shorter than the body) of which the 3rd joint is evidently longer than the 2nd, may perhaps be the other sex of this insect.

Port Lincoln.

M. Meyricki, sp. nov. Oblongo-ovatus; niger, prothorace, femoribus, tibiis (his apice excepto), et antennarum articulis basalibus 3 (parte apicali picea excepta), testaceis; elytris nigrocyaneis; his crebre minus fortiter rugulose punctulatis; subtus parce pubescens; epipleuris mox pone medium obsoletis. Long., $2\frac{2}{5}$ l.; lat., $1\frac{1}{5}$ l.

A well-marked curved furrow runs across from eye to eye on the head, which is longitudinally carinate down the middle of the anterior portion, and is scarcely distinctly punctulate in any part. The antennæ are about three-quarters the length of the body. The prothorax is in outline and puncturation scarcely different from that of *Agelastica lineata*, except in being slightly more transverse; it differs in the absence of markings and in the presence across the centre of an ill-defined but wide and deep transverse furrow, which is almost interrupted at its middle. The puncturation of the elytra is rugulose, rather strong, and very close.

A single specimen was sent to me from Western Australia by E. Meyrick, Esq.

M. occidentalis, sp. nov. Oblongo-ovatus; niger, capite (vertice summo excepto), prothorace, antennarum basi, pedibusque testaceis; elytris viridibus; his subtiliter minus crebre haud rugulose punctulatis; subtus parce pubescens; epipleuris apicem fere attingentibus. Long., $2\frac{1}{5}$ l.; lat. 1 l.

The sculpture of the head does not differ noticeably from the same in *M. Meyricki*, and the antennæ scarcely differ except in having the basal three joints testaceous and the fourth fuscous. The prothorax is nearly twice as wide as long, and has the angles less prominent and thickened than in *M. Meyricki*, but otherwise is very similar. The puncturation of the elytra is much less close and a little less strong than in that insect.

Western Australia; taken by E. Meyrick, Esq.

M. modesta, sp. nov. Oblonga; capite abdomineque nigris, prothorace pedibusque rufo-testaceis, elytris viridi-nigris, antennis palpisque fuscis; elytris sat crasse sat crebre squamose punctulatis; subtus parce pubescens; epipleuris apicem versus anguste continuatis. Long., $1\frac{3}{5}$ l.; lat., $\frac{3}{5}$ l.

Var. Corpus plus minus obscurum fere usque ad totum nigrum.

As regards colour, I have seldom seen a more variable species than this; all the parts that are not black or greenish-black in the type appear liable to be so exceptionally, except the tibiæ (which are more or less testaceous in all the examples I have seen) and the tarsi, which do not seem to get beyond dark brown. The head does not differ notably from that of *M. occidentalis*, except in having the furrow between the eyes angulated in the middle; the prothorax, too, is similar in proportions and outline, except that its front margin is equal to (not as in *M. occidentalis* a little narrower than) the base; it is, however, much more sparingly punctured, and has no transverse depression across the middle. The elytra are rather coarsely and squamosely, but not closely, punctured; compared with those of *Luperus flavipes*, Linn. (which this insect somewhat resembles), they are more coarsely and squamosely punctulate; they are considerably narrowed at the apex. The third joint of the antennæ is very little longer than second, the fourth equals the second and third together, and is a little longer than the fifth. The elytral epipleuræ are very narrow, but can be traced to near the apex. All the tibiæ are mucronated.

Monolepta croceicollis, Germ., must be much like some varieties of this insect in respect of size and colours, but *inter alia* that species is said to have the third and fourth joints of the antennæ "subequal."

Common near Port Lincoln. I have not seen it from other localities.

M. simulatrix, sp. nov. Oblonga; sat nitida; fusca; tarsi obscurioribus; antennis (basi excepta) nigris; capite prothoraceque sparsim subtiliter, elytris minus subtiliter minus sparsim, punctulatis. Long., 2 l.; lat., 1 l. (vix).

Very like *M. inconspicua*, but larger, and with longer antennæ, which, however, are shorter than those of the specimen mentioned above as possibly the male of that species. The antennæ, moreover, are wholly black, excepting the basal three joints, while in *M. inconspicua* the joints beyond the third are only near their apex, of a darker shade of fuscous than at their base; joints 2 and 3 are about equal to each other, and (together) both to joint 1 and joint 4. The puncturation of the elytra is evidently finer and a little closer than in *M. inconspicua*.

Sent to me from Western Australia by E. Meyrick, Esq.

M. (?) quæsitæ, sp. nov. Oblonga; sat nitida; æneo-nigra; antennis piceis basi testaceis; pedibus anticis (femoribus basi piceis exceptis) testaceis, intermediis (femoribus apice tibiisque basi testaceis exceptis) et posticis piceis; capite vix perspicue, prothorace subtilius crebrius, elytris crassis, punctulatis. Long., $1\frac{2}{3}$ l.; lat., $\frac{3}{5}$ l.

I unfortunately possess only a single example of this insect, and it has dried in a position in which I cannot see the structure of the anterior coxal cavities as distinctly as I could wish, but I am almost certain that they are closed behind. I have, however, placed this doubt on record by the note of interrogation above. The species bears much general resemblance to a darkly-coloured example of *Monolepta modesta*, differing, however, in its antennæ, which (in one sex at least) are scarcely shorter than the body, having the basal joint evidently longer than any of the following three, the second less than half the length of the first, the third a little longer than the second and only a little shorter than the fourth; the basal four joints testaceous, the rest piceous. The head and prothorax are like those of *M. modesta*, but the latter is proportionally smaller. The epipleuræ of the elytra are better developed behind the middle than in the other species of *Monolepta* described above.

Port Lincoln.

COCCINELLIDÆ.

The species treated of in this paper belong to the group of *Coccinellidæ*, called by M. Mulsant *Trichosomidæ*. The number of new species I have to add—all, or nearly all, of them occurring in the southern part of this colony—are more than the entire number previously known from the whole of Australia; from which it will appear that this group of insects presents a very inviting field for the researches of the Australian naturalist.

In Mr. Masters' "Catalogue of the described *Coleoptera* of Australia" there are twenty-two species belonging to this group recorded, but besides there are seven others that appear to have been accidentally omitted from the catalogue, making a total (so far as I have been able to ascertain) of twenty-nine.

The *Trichosomidae* of Mulsant contains a group, *Epilachnides*, which Dr. Chapuis has since, apparently with good reason, elevated to the rank of a principal division of the *Coccinellidae*. If the Australian *Epilachnides* be abstracted, the number of species of true *Coccinellidae* of the pubescent group hitherto recorded as occurring on the continent is reduced to twenty-two. I do not think that the division of the family into a pubescent and a non-pubescent group is altogether natural, but as it happens accidentally that my present paper has to do only with the former (owing to my having no new species of the latter before me), it will be convenient to my present purpose by accepting that division to avoid having to distinguish the new genera and species before me from any of the non-pubescent group.

Dr. Erichsen was the first to describe Australian insects of this group. In his "Beitrag zur Insecten-Fauna von Vandiemensland" (1842) he describes three species as members of the genus *Scymnus*. In 1851 M. Mulsant, in his great work, "Species des Coléoptères *Trimères securipalpes*," characterised seven additional species apportioned among three genera, and in a supplement to the same, two years later, added four more. In 1859 M. Bohemann described an additional species; in 1874 Mr. Crotch (in his "Revision of the *Coccinellidae*") another six, and finally in 1876 Dr. Chapuis (Gen. Col. xii.) one more still. Of these, two are attributed by their author to our own colony, one is stated to be from New South Wales, one from Victoria, one from Western Australia, while three are Tasmanian, and seven come from Queensland, the remainder being vaguely set down as inhabiting "Australia."

The Australian *Coccinellidae* that have received names have been more fortunate than many of our *Coleoptera* in having been intelligibly described, and there are comparatively few whose identification is attended with much uncertainty; I trust that I may prove to have maintained this excellent character for the group in the descriptions that I now offer to the Society.

The principal difficulty that I have encountered in dealing with the following species has been their apportionment into genera. I am of opinion that a large number of new generic names will be eventually required for the Australian pubescent *Coccinellidae*, but I do not think that the work of providing them is one that it would be wise for a student resident in Australia to undertake. Such contributions to science, if they are to be of permanent (or

perhaps I should say of *any*) value must have regard to more than local fauna, and can hardly be made profitably by any who have not access to the vast collections that are stored in the great museums of Europe. Recognising this fact I have adopted the principle of referring the new species I have to describe to existing genera wherever it is at all possible to do so, adding as full information as I can give of the characters that render their position in those genera only provisional. I propose new generic names only for insects which would be so out of place in known genera that their location there would be likely to mislead. Accordingly it will be found that I have attributed by far the larger number of the Coleoptera described to the genera *Scymnus* and *Rhizobius*, although some, at least, of them can hardly be considered truly congeneric with European types.

To *Scymnus* I have referred all the species before me presenting the following combination of characters:—Eyes neither coarsely granulated nor oblique in position; antennæ short, of not less than ten joints;* epipleuræ devoid of well-defined foveæ; prosternum not provided with a prolongation covering the mouth organs in repose, mesosternum not carinate longitudinally; suture between the first and second ventral segments, obliterated (or at least much enfeebled) in the middle; claws appendiculate; base of antennæ exposed.

All the species I have attributed to *Scymnus* correspond with the above formula, with the exception of the last, which differs in specified respects. Were it not for that species I might add to the formula "abdominal lamellæ incomplete." In some respects (especially the structure of the prosternum) the insects thus associated differ much *inter se*, as I have indicated by dividing them into subgeneric groups, to which, however, I have thought it better not to apply names.

The following I have treated as the essential characters of *Rhizobius*:—Eyes coarsely granulated and oblique in position; antennæ more or less long, of eleven joints; epipleuræ devoid of well-defined foveæ; prosternum not with a prolongation covering the mouth organs in repose; mesosternum not carinate longitudinally; suture between the first and second ventral segments, not noticeably enfeebled in the middle; claws appendiculate; base of antennæ exposed; tibiæ more or less slender.

The species in my hands presenting the above characters differ considerably in some respects *inter se*, enabling me to group them in sections that (unless intermediate forms be subsequently found) would seem to be of generic value.

* I believe that in all cases they consist of eleven joints; in the case of several species, however, I have been unable to satisfy myself absolutely on the point.

Mr. Crotch (in his "Revision of the *Coccinellidæ*" 1874) points out that *Rhizobius* and its allies are distinguished from other members of the family by having the anterior coxal cavities open behind. This appears to be a very important observation, but unfortunately generally involves the sacrifice of a specimen for its application, so I have not been able to make full use of it, but, so far as I have been able to ascertain, the species I have referred to *Rhizobius* present the character in question.

For five species I have been compelled, with great reluctance, to propose five new generic names; they all possess strongly marked characters that are quite incompatible with those of any genus I can ascertain to have been previously named.

The remaining three species I have attributed to *Eupalea* (with extreme doubt) and *Novius*.

Of the remaining five genera already attributed to Australia, *Hypoceras*, *Platymus*, and *Pharus* are known to me only by description; the first has the epistoma emarginate and the antennæ only eight-jointed; the second has the mesosternum carinate; and the third has the base of the antennæ concealed, together with epipleuræ devoid of well-defined foveæ. I possess types of the other two, *Cryptolæmus* (a Northern Australian form only, so far as I know, with the prosternum produced over the mouth organs in repose), and *Bucolus* (common in South Australia, having well defined epipleural foveæ, together with a moderately produced prosternum).

The following table indicates some of the distinctive characters of the Australian genera of pubescent *Coccinellidæ* :—

- A. Femora not falling into excavations of the under surface.
- B. Base of antennæ not hidden behind the dilated epistoma.
- C. Epipleuræ devoid of well-defined foveæ.
- D. Antennæ formed of more than eight joints.
- E. Mesosternum not longitudinally carinate.
- F. Prosternum not produced to cover the mouth organs.
- G. Length of antennæ exceeding width of space between the eyes.
- H. Eyes very coarsely granulated.
Rhizobius.
- HH. Eyes more or less finely granulated.
Eupalea (?).
- GG. Length of antennæ not exceeding width of space between the eyes.
- I. Suture between first and second ventral segments enfeebled or obliterated in the middle.
Scymnus.

- II. This suture not noticeably enfeebled in the middle. *Scymnodes.*
- FF. Prosternum produced to cover the mouth or gans. *Cryptolæmus.*
- EE. Mesosternum carinate. *Platyomus.*
- DD. Antennæ formed of only eight joints.
- K. Epistoma truncate in front. *Novius.*
- KK. Epistoma emarginate in front. *Hypoceras.*
- CC. Epipleuræ with well defined foveæ.
- L. Prosternum short. *Bucolellus.*
- LL. Prosternum long. *Bucolus.*
- BB. Base of the antennæ hidden behind the dilated epistoma.
- M. Epipleuræ with well defined foveæ. *Lipernes.*
- MM. Epipleuræ devoid of well defined foveæ. *Pharus.*
- AA. Femora fitting into excavations of the under surface.
- N. Tibiæ fitting into sulci on under surface of femora. *Serangium.*
- NN. Femora normally sulcated. *Cyrema.*

EUPALEA.

It is with much hesitation that I attribute the following species to the tropical South American genus *Eupalea*, notwithstanding that in the supplement to his work M. Mulsant himself (the author of the genus) attributes an Australian species to it (which, however, Mr. Crotch regards as a mistake). The possession of the following characters would seem to place the insect before me in the group of *Coccinellidæ*, which Dr. Chapuis calls "*Poriites*," viz., base of antennæ exposed, epipleuræ not bearing well-defined foveæ, body pubescent, epistoma entire in front, antennæ long enough to reach the base of the prothorax (or nearly so), and having the apical joints elongate. From *Rhizobius* (which agrees with it in most of these respects) it differs by its finely granulated large eyes, with their inner margins subparallel.

The group *Poriites*, according to Dr. Chapuis, contains two genera—*Poria* and *Eupalea*—both inhabiting tropical America, though Dr. Chapuis alludes to M. Mulsant's Australian species, and adds that he has himself a species from Australia in his own collection.

The present insect agrees with *Eupalea* in most respects—especially in the structure of the antennæ, in the rather peculiar prosternal structure, in the sinuation of the epipleuræ opposite the hind femora, and in the small size of the abdominal lamellæ. It differs from the characters of *Eupalea* (as given by Dr. Chapuis) in the finer granulation of the eyes, which are not distinctly sinuated on their internal margin, in the not particularly small

scutellum, and in the claws. These latter are unusually small, and so bent under the last joint of the tarsi that I found them exceedingly difficult to examine. I think, however, that they are certainly appendiculate, with the inner apex of the basal piece somewhat produced, while in *Eupalea* they are said to be bifid, with the inner division short and basal. As this may be a different way of describing the same character, I do not like to found a genus on it. Nevertheless, the present insect is so much smaller and so differently coloured from the South American species, that it can only be provisionally associated with them. The intermediate and (especially) the hind coxæ are unusually widely separated—a character not mentioned as pertaining to *Eupalea*. The first ventral suture is as strongly marked as the others.

E. (?) rotunda, sp. nov. Sub-hemisphæricus; convexus; sat nitidus; pubescens; læte brunneus; prothoracis disco, metasterno abdomine medio, et tarsis, plus minus picescentibus; capite prothoraceque subtiliter, elytris minus subtiliter, sat crebre punctulatis. Long., 1 l.; lat., $\frac{4}{5}$ l.

The almost circular outline and clear, bright brown colour (with only the disc of the prothorax infuscate) of the upper surface of this insect render it at a glance very different from any other Australian *Coccinellid* known to me. For the sake of comparing its puncturation with that of a common species, I may say that its elytra are punctured a little, but not much, more finely than those of *Rhizobius ventralis*, Er. In one of my two examples the suture of the elytra is a little infuscate.

Port Lincoln.

NOVIUS.

N. Lindi, sp. nov. Breviter ovalis; minus convexus; nitidus; pubescens; niger; elytris macula rufa instructis; antennis, palpis, tibiis apice, et tarsis, rufopiceis; capite prothoraceque vix perspicue, elytris crebre subtilius, punctulatis. Long., 1 l.; lat., $\frac{4}{5}$ l.

Each elytron bears a well-defined oblong bright red spot, the hinder end of which reaches about the middle of the length of the elytron, and which is placed near to the suture. The head is wide; the eyes are large and finely granulated, their inner margins parallel. The prothorax is rather more than twice as wide as long down the middle, its front bisinuate, the middle being produced forward, its anterior angles little produced and narrowly rounded off, its sides gently arched and narrowed towards the base (with which they form a very obtuse angle) the latter being strongly arched backward all across and fitting into a deep common emargination of the elytra. The scutellum is triangular and

moderately large. The prosternum is extremely short, not longer than the mesosternum; between the coxæ it appears as a concave lamina scarcely longer than its width behind, with a continuous elevated margin except at its line of contact with the mesosternum, and somewhat narrowed to the front, where it is rounded. The mesosternum is much like that of *Orcus* in size and shape, but is a little more convex; its front is truncate, or almost convex. There is a well-defined sixth ventral segment, and the basal ventral suture is not less marked than the others. The epipleuræ are moderately wide and horizontal at the base, but become gradually narrower and vertical, disappearing altogether before the apex; they are not foveated. The femora and tibiæ are all strongly compressed, the former being deeply grooved for the reception of the latter. The tarsi are very stout. The abdominal lamellæ are complete, and extend back about two-thirds the length of the basal ventral segment. The prothorax is not narrower at its base than the true base of the elytra, but the latter dilate very rapidly immediately from the base, and the humeral angle is so slightly marked that until carefully examined the anterior part of the lateral margin might pass for a portion of the base.

Port Lincoln.

N. bellus, sp. nov. Breviter ovalis; minus convexus; nitidus; pubescens; niger; prothoracis dimidio apicali, elytris vittis maculisque nonnullis, antennis, epipleuris in parte, et segmentis ventralibus in parte, læte rufis; pedibus piceis, tarsis rufescentibus; capite prothoraceque vix perspicue, elytris crebre subtilius, punctulatis. Long., $1\frac{3}{10}$ l.; lat., 1 l.

A very pretty *Scymnid*, the red markings being very bright and sharply defined. On each elytron they are as follows:—(a) A vitta parallel and near to the suture, extending from the base about four-fifths of the distance to the apex, very wide in front and quickly narrowed (somewhat resembling a dumb bell with one of the knobs broken off); (b) a vitta occupying the front half of the lateral margin, and dilated at its base so as to meet the sutural vitta about the middle of the base; (c) a large discal spot just behind the middle; (d) an apical spot. The red parts of the epipleuræ correspond with the marginal and apical red portions of the upper surface. This species does not appear to differ structurally from *Lindi* in any respect, and its sculpture is very similar. Apart from the totally different coloration it is a larger and more convex insect.

Sedan; taken by Mr. B. S. Rothe.

SCYMNODES, *gen. nov.*

Caput prothoraci modice insertum; antennarum basis aperta; oculi sat magni, subtiliter granulati, intus subparalleli;

epipleuræ antice sat latæ, elytrorum in parte quarta postica obsoletæ, haud perspicue foveatæ; prosternum in medio longitudinaliter depressum (spatio depresso utrinque carinato, angusto, abasi ad apicem angustato, apice acuto); mesosternum sat magnum, antice leviter emarginatum; abdomen segmentis 6 conformatum; suturæ ventrales bene impressæ; lamellæ abdominales segmenti basalis apicem fere attingentes, integræ; tibiæ et femora sat fortiter compressæ; antennæ articulis 10 conformatæ, minus breves; corpus pubescens; unguicula appendiculata.

The insect for which I form this genus differs from nearly all hitherto described Australian pubescent *Coccinellidæ* by its antennæ of ten clearly defined joints. The basal two joints are large and dilated, 3 much narrower and rather elongate, 4 evidently shorter than 3, 5 and 6 a little shorter than 4, 7 to 9 gradually longer and wider, 10 pointed. From *Cryptolæmus*, which has very similar antennæ, it may be at once distinguished by the entirely different structure of the prosternum and claws, by the well defined sixth ventral segment, and the greater breadth of the elytral epipleuræ in front. The mesosternum is remarkably like that of *Cryptolæmus*, near which genus I think this one should certainly be placed.

S. difficilis, sp. nov. Sat late ovalis; minus convexus; nitidus; dense albido-pubescent; subtilius sat crebre punctulatus; rufo-ferrugineus; capite postice, prothoracis disco, elytris (apice obscure rufo excepto), prosterno medio, mesosterno, metasterno, et segmento ventrali basali medio, nigro-æneis. Long., 2 l. (vix); lat., $1\frac{2}{5}$ l.

The superficial resemblance of this insect to some of the Australian species of *Rhizobius* is very remarkable. Having only a single specimen I am unable to ascertain certainly whether the anterior cotyloid cavities are open behind, but as far as I can see they are not. The prothorax is about twice as wide as long down the middle, its anterior margin feebly concave but rather strongly sinuate behind the eyes, the base about half again as wide as the front margin, the sides gently arched, the front angles rather prominent but not sharp, the hind angles well developed and gently obtuse. The whitish pubescence is dense uniform and rather woolly looking over the upper surface—it is mixed with a few erect longer ferruginous hairs. The puncturation is a little stronger on the head and a little closer on the prothorax than on the elytra; it does not very nearly resemble the puncturation of any other of the common species known to me, being (on the elytra) about as close as in *R. ventralis*, Er., but

besides being finer than in that insect, it has a faint, obliterated, appearance.

South Australia ; I am not sure whether I took this specimen near Adelaide or in the Port Lincoln district.

SCYMNUS.

A. Prosternum antice æqualiter convexum, nec depressum nec carinatum.

S. inusitatus, sp. nov. Ovalis ; pubescens ; sat convexus ; nitidus ; piceus ; tibiis tarsisque dilutioribus ; capite prothoraceque obsolete, elytris fortius crebrius, punctulatis. Long., 1 l. ; lat., $\frac{7}{10}$ l.

The mesosternum is of moderate size and is truncate in front ; the abdominal lamellæ are incomplete, their hind and external outline being confused with the outline of the basal ventral segment. There are six ventral segments, the apical four not differing much *inter se* in length ; the suture between the basal and next segment is very fine and obscure in the middle ; the metasternum is impunctate down the middle, its sides (and also the ventral segments) being lightly and sparingly punctulate. The elytral puncturation compared with that of *C. flavifrons*, mihi, is larger, more sparing, and much smoother.

The number of ventral segments in *Scymnus* is stated by Dr. Chapuis as five, but even in some European *Scymni* there is a small sixth segment, so that the development of the sixth segment in the present species may be merely a question of degree. The entire absence of any longitudinal sculpture traversing the median part of the prosternum is also approximated by some European forms attributed to the genus. Therefore, although it is likely that these peculiarities will sooner or later be regarded as valid generic characters, I do not think they call for the immediate creation of a new name.

Near Port Lincoln ; taken by sweeping low plants.

AA. Prosternum medio longitudinaliter depressum, spatio depresso utrinque longitudinaliter carinato.

B. Spatio depresso sat lato plus minus parallelo.

S. insidiosus, sp. nov. Breviter ovalis ; pubescens ; sat convexus ; nitidus ; piceo niger ; capite, prothorace (disco excepto), elytris maculis nonnullis epipleurisque, abdominis apice, et pedibus (tibiis posticis 4 plus minus infuscatis exceptis), testaceis ; capite prothoraceque vix perspicue, elytris obscure minus crebre, punctulatis. Long., $\frac{7}{10}$ l. ; lat., $\frac{3}{5}$ l. (vix.)

Var. pallipes. Pedibus totis pallide testaceis.

Var. major. Corpore majore, prothorace pedibusque totis testaceis.

The markings on the elytra are best described by regarding the testaceous portion as the ground colour. There then appear to be the following pitchy-black markings, viz.:—(a) A triangle whose base coincides with the base of the elytra, and whose apex falls on the suture at about half its length, and then is produced somewhat narrowly down the suture to the apex; (b) an obscure marginal border; (c) an oblique fascia connecting the middle of the marginal border, and the suture at two-thirds of its length from the base. There are only five ventral segments, which, together with the sides of the metasternum, are finely but distinctly punctulate, while the middle portion of the latter is impunctulate. The antennæ are very short; I can only count ten joints distinctly.

In my example of the var. *pallipes* each elytron has an additional pitchy-black portion, forming a longitudinal connection between the fascia and the middle of the side of the common basal triangle, so that the testaceous portion which in the type appears as a vitta (running from the shoulder to near the middle of the suture) is here divided into two pieces. In the var. *major* the markings resemble those of the type, but are less clearly defined. The puncturation in both the vars. seems stronger and better defined than in the type, and they may possibly represent a (or even two) new species. All these bear a remarkable superficial resemblance to *Bucolellus ornatus*, mihi, which, however, besides its generic differences, is punctured very differently.

I have met with the type near Port Lincoln, the var. *pallipes* on Yorke's Peninsula, the var. *major* at Woodville.

S. lubricus, sp. nov. Breviter ovalis; pubescens; sat convexus; sat nitidus; vix perspicue punctulatus; niger; capite, prothoracis lateribus margineque antico, et elytrorum lateribus apiceque, plus minus obscure piceo-rufescentibus; antennis, palpis, pedibusque (femoribus plus minus piceis exceptis), latius rufescentibus. Long. $1\frac{1}{5}$ l.; lat. $\frac{4}{5}$ l.

Under a powerful Coddington lens the elytra near the suture appear punctureless, but towards the sides and apex some excessively minute and decidedly sparse puncturation is traceable; the puncturation is very much feebler than in *S. notescens*. The underside resembles that of *S. Meyricki*, but the metasternum is not distinctly wrinkled transversely. My example has a small sixth ventral segment—the first ventral suture is very fine, but distinct.

Port Lincoln.

S. Meyricki, sp. nov. Breviter ovalis; pubescens; sat convexus; sat nitidus; crebre subtilius punctulatus; niger; capite, prothoracis lateribus margineque antico, elytrorum macula

magna ante apicem, antennis, palpis, pedibusque (his femoribus plus minus piceis), rufescentibus. Long., $1\frac{1}{5}$ l.; lat., $\frac{4}{5}$ l.

Var. ? *obscuripes*. Capite, prothoracis lateribus, femoribus omnibus, et tibiis 4 posterioribus, piceis.

The red spot on the elytra occupies the posterior declivity, and is not very conspicuous anywhere, but most so close to the suture; it does not quite reach the apex. The sides of the metasternum and the ventral segments are distinctly punctulate, the middle portion of the former finely wrinkled transversely. There is a small sixth ventral segment; the first ventral suture is very fine, but distinct. The puncturation of the upper surface is very much like that of the common *S. flavifrons*, but appears a little less asperate. In most examples the reddish tone is less decided on the head than on the other red parts.

The puncturation of the var. ? is slightly feebler, and more sparse than in the type; it is very likely to be a distinct species, but may possibly be the other sex of the same.

The type was collected in Western Australia by E. Meyrick, Esq., the var. ? near Port Lincoln by myself.

S. Poonindiensis, sp. nov. Breviter ovalis; pubescens; sat convexus; sat nitidus; niger; capite, prothoracis angulis anticis margineque antico, antennis, palpis, femoribus anticis, et tibiis tarsisque omnibus, testaceis; elytris obscure rufo-umbratis, epipleuris plus minus rufescentibus; capite subtilius sat crebre, prothorace vix perspicue, elytris subtiliter sat crebre, punctulatis. Long., $1\frac{1}{5}$ l. (vix); lat. $\frac{4}{5}$ l.

?Sexus alter. Capite (labro excepto) piceo.

In the type the reddish tone on the elytra is comparatively slight, and is vaguely diffused over the sides and apex; in the specimen mentioned as "?Sexus alter" obscure red is the prevailing colour of the elytra, black being confined to a common space included within a line on either side running from the humeral callus obliquely towards the middle of the suture, and thence continued parallel and close to it to the apex. The puncturation of the elytra is much like that of *S. Meyricki*, but the impunctate prothorax renders this insect very distinct. The middle of the metasternum is scarcely wrinkled; there are five ventral segments; the first ventral suture is distinct, but fine.

Poonindie, near Port Lincoln.

S. Casuarince, sp. nov. Breviter ovalis; pubescens; minus convexus; nitidus; brunneo-ferrugineus; capite, prothorace (disco piceo excepto), antennis, palpis, pedibusque (his femoribus posticis exceptis), epipleuris, et abdominis apice, testaceis; metasterno et abdominis segmentis basalibus nonnullis piceis; capite subtiliter sat crebre, prothorace vix

perspicue, elytris suturam versus antice crebre sat fortiter, his latera apicemque versus gradatim obsoletius, punctulatis. Long., 1 l. ; lat., $\frac{4}{5}$ l. (vix).

This species is easily distinguished by the puncturation of its elytra, which is almost coarse over a small space on either side of the suture a little behind the scutellum, and thence becomes finer and more obsolete in all directions. The sides of the metasternum and the ventral segments are rather coarsely punctured, the middle of the metasternum is almost sculptureless. There are five ventral segments; the first ventral suture is fine, but very distinct.

Port Lincoln; beaten from Sheoak (Casuarina).

S. simplex, sp. nov. Breviter ovalis; pubescens; minus convexus; nitidus; crebre subtiliter punctulatus; piceo-brunneus; capite, prothorace (disco piceo excepto), antennis, palpis, tibiis, tarsisque, sordide testaceis; metasterno elytrisque piceis; his obscure rufo-maculatis. Long., $1\frac{1}{5}$ l.; lat., $\frac{4}{5}$ l.

The most nearly allied, perhaps, to *S. Meyricki*, which, however, is not so closely punctured as the present species. The red marking on the elytra consists of a small ill-defined, and not at all conspicuous, blotch near the lateral margin a little behind its middle. The sides of the metasternum are finely and very closely punctured; the middle is almost sculptureless. The puncturation of the ventral segments is moderately fine and close near the base, and becomes gradually finer and closer to the apex. There are five ventral segments; the first ventral suture, though finer in the middle than the rest, is very distinct.

Petersburg (S.A.); beaten from pine.

S. aspersus, sp. nov. Ovalis; pubescens; sat convexus; nitidus; sparsim subtilissime (elytris latera apicemque versus magis perspicue exceptis) punctulatus; piceus; capite, prothoracis angulis anticis, elytris maculis nonnullis, prosterno (obscure), epipleuris, antennis, palpis, tibiis anticis, et tarsis omnibus, testaceis. Long., $\frac{4}{5}$ l.; lat., $\frac{3}{5}$ l. (vix).

The testaceous marks on the elytra are very obscure, and consist of an elongate spot on either side of the middle of the suture and an oblique line (somewhat resembling a fascia abbreviated at both ends) near the apex. The puncturation of the head and prothorax cannot be seen without a powerful lens; that of the elytra is similar near the scutellum, but becomes gradually better defined towards the sides and apex. On the underside the middle of the metasternum is scarcely punctulate, but bears some fine transverse wrinkles; there is a distinct sixth ventral segment;

the ventral segments are finely and sparsely punctured, the basal ventral suture almost obliterated in the middle.

Port Lincoln (S.A.).

S. australis, sp. nov. Sat breviter ovalis; breviter pubescens; subtilissime crebrius punctulatus; subtus rubro-ferrugineus, supra fusco-testaceus; prothoracis basi lateribusque et elytrorum sutura, marginibus, maculisque pone basin nonnullis, piceo-nigris; antennis palpis pedibusque testaceis, tibiis (nonnullis exemplis) infuscatis. Long., 1 l. (vix); lat., $\frac{3}{5}$ l.

I do not observe any structural difference between this species and *S. aurugineus*, except that this is wider and less parallel in form; its puncturation is so fine and faint as to be scarcely visible under a strong lens. The basal margin of the prothorax, and lateral margins of it and the elytra, are very narrowly blackish; the suture is more widely so; in this typical specimen there is a black spot on the humeral callus and another between it and the suture, and an obscure piceous cloud on the hinder part of the disc, but in other examples some of these spots are wanting. On the underside the pale testaceous colour of the reflexed margin of the elytra is in strong contrast with the dark red general surface.

Petersburg (South Australia).

S. flavifrons, sp. nov. Breviter ovalis; pubescens; niger vel piceus; capite, prothorace antice et lateraliter, pedibus 4 anticis, tibiis tarsisque posticis, læte flavis; elytris apicem versus rufescentibus; capite prothoraceque subtilissime, elytris minus subtiliter, punctulatis; sutura ventrali prima in medio obliterata. Long., $\frac{4}{5}$ l.; lat., $\frac{3}{5}$ l. (vix).

The yellow area on the prothorax is limited behind by a regular curve with its extremities at the posterior angles and its middle nearly touching the middle of the anterior margin of the segment. The pubescence is moderately dense, and semierect (or at least not flatly depressed), and is of a shining silvery white colour. The puncturation is moderately fine and rather dense, and has an asperate appearance as though there were a tendency to granulation on the intervals between the punctures; it is a little more dense near the sides than elsewhere, and scarcely differs on the upper and under surface except in the middle part of the metasternum being almost lævigata; it is not unlike that of the European *S. capitatus*, Fab., but is a little finer and closer.

Common, and widely distributed in South Australia, occurring as far North as Lakes Torrens and Eyre, also near Adelaide, in the West, &c.

In company with the above, and equally commonly, I find specimens which I conjecture to be the other sex (probably

female). They differ in having the yellow colouring less vivid and confined to the mouth organs, legs (even these being in some examples clouded with brown), and (in occasional examples) the extremities of the anterior margin of the prothorax. The anterior prolongation of the metasternum appears to be a little wider than in the type, and on this account there is a possibility of their being a distinct species.

The following forms appear to me to be merely varieties or local races of *S. flavifrons*:—

var? *occidentalis*. Differt maris capite prothoraceque minus argute flavo tinctis, elytris postice haud vel vix rufescentibus; feminae pedibus laetius testaceis. Sent to me from Western Australia by E. Meyrick, Esq.

var? *Victorice*. Differt magnitudine (1 l.) et feminae (mare haud observato) pedibus laetius testaceis, prothoracis angulis anticis laetius rufescentibus, elytris apicem versus haud rufescentibus. Taken by me in Western Victoria.

S. aurugineus, sp. nov. Sat elongato-ovalis, aureo-pubescent; leviter minus crebre punctulatus; piceus; supra ferrugineus, elytris ante medium V aureo conspicue ornatis; antennis palpis pedibus et abdominis apice ferrugineus. Long., $1\frac{1}{10}$ l.; lat., $\frac{3}{5}$ l.

Apparently not a variable insect; rather narrow and parallel. The puncturation of the upper surface smoother finer and less close, that of the underside very much more sparing, than in *S. flavifrons*; the middle of the metasternum without visible punctures. The elytra has a mottled (yellow and reddish) appearance difficult to describe in detail, but in all the examples I have seen there is on each elytron a golden yellow vitta (very conspicuous in certain lights), which runs from immediately below the shoulder obliquely to just in front of the middle of the suture, which, however, it does not quite touch—the vittae of the two elytra thus forming a V (the two arms, however, not quite meeting at the angle). On each elytron the darkest colouring (in some examples deep pitchy) forms a margin on both sides of the vitta. The suture between the first and second ventral segments is fine but distinct.

Widely distributed in South Australia, but apparently not very common. I have it from Kapunda, Petersburg, and Lake Torrens.

BB. Spatio depresso angusto antice subacuto.

S. notescens, sp. nov. Breviter ovalis; capillis sat elongatis erectis sat dense vestitus; sparsius subtilius punctulatus; niger, elytris antice macula permagna testacea notatis; labro,

palpis, antennis, tibiis, tarsis, prothoracisque angulis anticis, plus minus rufescentibus. Long., 1 l.; lat., $\frac{4}{5}$ l.

Maris capite, prothoracis lateribus et femoribus anticis late rufis.

Much more sparingly punctured than either of the preceding two species. The testaceous spot on each elytron comes near touching both the suture and the lateral margin; its front edge is separated from the anterior margin by a distance equal to about two-thirds the length of the prothorax, and its hind margin falls a little behind the middle of the elytron. In shape it may be described as a quadrate figure a little wider than long, deeply emarginate posteriorly, and having its antero-external corner cut off or emarginate. The suture between the first and second ventral segments is fine but distinct,

Common near Port Lincoln; also in the Adelaide district.

AAA. Prosternum inter coxas longitudinaliter bicarinatum, antice æqualiter convexum.

C. Lamellæ abdominalis haud integræ.

S. oscillans, sp. nov. Ovalis; pubescens; sat convexus; nitidus; piceus; prothoracis lateribus, antennis, palpis, epipleuris, pedibusque, testaceis; elytris piceo-brunneis, latera apicemque versus dilutioribus; capite prothoraceque subtiliter minus crebre, elytris sparsius distincte, punctulatis. Long., $1\frac{1}{10}$ l.; lat., $\frac{7}{10}$ l.

The puncturation, compared with that of *S. flavifrons*, *simplex*, &c., is much smoother and more sparse. It is not unlike that of *S. Meyricki*, which, however, is a wider insect proportionally. The sculpture of the prosternum at once distinguishes it from nearly all its allies. The sides of the metasternum are closely, and the ventral segments less closely, punctured; the middle of the former is finely wrinkled transversely. There is a small distinct sixth ventral segment. The first ventral suture is fine, but distinct.

Petersburg, S.A.

S. Sedani, sp. nov. Breviter ovalis; sat convexus; nitidus; pubescens; piceus; elytris rufo bimaculatis; abdomine rufescenti; tibiis, tarsis, epipleuris, sordide testaceis; capite prothoraceque subtiliter crebrius, elytris fortius minus crebre, punctulatis. Long., $1\frac{1}{2}$ l.; lat., 1 l.

The elytra are broadly red in the basal third of the lateral margin, and this red mark is prolonged from its hinder end obliquely towards the suture which it approaches (but not very closely) just in front of the middle; the hinder red spot occupies the apical one-sixth of the elytra. The puncturation of the elytra is stronger than in any of the *Scymni* described above. The

metasternum at its sides and ventral segments are rather strongly punctured, the former much more closely than the latter. The middle of the metasternum is obscurely punctulate. There are only five ventral segments. The basal ventral suture is nearly obliterated in the middle.

Sedan, S.A. ; taken by Mr. B. S. Röthe.

CC. Lamellæ abdominales integræ.

S. parallelus, sp. nov. Oblongus ; subparallelus ; minus convexus ; nitidus ; pubescens ; piceus vel ferrugineo-piceus ; tibiis, tarsorum basi, et elytris singulis vitta lata, testaceis ; capite subtiliter obscure, prothorace vix perspicue, elytris crassius subrugulose, punctulatis. Long., $\frac{4}{5}$ l. ; lat., $\frac{2}{5}$ l.

Not very like *Scymnus* in general apperance, owing to its more elongate flattened form and not very finely granulated eyes ; it is, moreover, the only Australian species (known to me) attributable to the genus in which the abdominal lamellæ are entire, but I cannot find any satisfactory character for separating it. The upper surface is of a shining pitchy colour, inclining to ferruginous about the sides of the elytra, each of which bears a wide and rather obscure testaceous vitta commencing about the middle of the front margin, running down the disc to near the apex, and then turning towards and meeting the suture ; the inner margin of this vitta is better defined than the outer, so that the two vittæ (meeting near the apex) enclose an elongate common space of a deep piceous colour, and externally merge by gradual shades of colour into the general hue. In one of my two examples nearly the whole under surface is reddish, including the femora ; in the other it is pitchy, with the apical segments reddish. The prothorax is scarcely twice as wide as long, its front scarcely emarginate, the front angles but little produced and not sharp, the hind sharply rectangular, the base not much wider than the front, the sides nearly straight. The abdominal lamellæ nearly reach the apex of the basal ventral segment, and are very narrow, their external margin being on the front of the segment, nearly as far from the lateral margin of the segment as the whole width of the lamella along the front margin. The first ventral suture, though perfectly distinct, is evidently feebler in the middle than the other sutures. In one example there is a distinct, in the other a scarcely distinct, small sixth ventral segment. The infuscation of the claw joint of the tarsi is (if invariable) a conspicuous character. The epipleuræ are more or less testaceous.

Port Lincoln.

RHIZOBIUS.

A. Prosternum medio longitudinaliter depressum, spatio depresso utrinque longitudinaliter carinato.

R. discolor, Er. [var (?) *proprius*.] The insect which I attribute to this species measures $2\frac{1}{2}$ l. in length, whereas *R. (Scymnus) discolor* is said to be 2 l., and there is evidently some confusion or mistake about the size, for comparing it with *R. (Scymnus) ventralis*, which is said to be $2\frac{1}{4}$ l., Erichsen calls it "duplo fere minor." Besides this, my specimen displays some colour discrepancy, its upper surface being red brown, inclining to pitchy on the head and prothorax, with the margins of the latter, the shoulders, and the suture, bright red; whereas Erichsen makes the colour black, with the head and the lateral margins of the prothorax red. According to Erichsen the prothorax should be rather sparingly punctulate, whereas in my example this segment (though less closely punctured than the elytra) bears decidedly dense puncturation at the sides, while that of the disc is a little more sparse. The elytra are strongly subrugosely and very closely punctured, and have obsolete indications of striation, but without the slightest tendency to linear puncturation. The whole upper surface is clothed with short, very fine, sub-recumbent pubescence, among which are other hairs standing up more erectly and evidently (though not very much) stouter and longer.

Compared with the European *R. liturus*, Fab., this insect is very much larger and much more parallel-sided in form, with the prothorax very much more transverse (twice as wide as long), its sides being more strongly rounded. The puncturation throughout is very similar to that of *R. liturus*.

As I have seen several specimens of the above described form not varying *inter se*, except in a tendency in some to a reddening of the elytral margins as well as the suture, it would seem to represent at least a localized variety deserving of a name, and is very likely to be a species distinct from the Tasmanian original. I may add that M. Mulsant mentions the testaceous color of the abdominal plates as a character of *R. discolor*; this is not alluded to by Erichsen, nor do I find it in specimens before me,—which have the underside of a nearly unicolorous ferruginous, the abdominal plates extending back not much more than half the length of the basal ventral segment, and being punctured uniformly with the segment itself.

Occurs near Port Lincoln.

R. cyaneus, sp. nov. Elongatus; vix subparallelus; pubescens; subnitidus; supra (capite piceo excepto) obscure cyaneus; subtus, antennis, palpis, pedibusque, obscure ferrugineis; prothorace quam longiori minus duplo latiori, elytris sat angustiori, antice leviter angustato, lateribus leviter arcuatis, angulis anticis subrotundatis haud prominulis, posticis sub-

rectis; capite prothoraceque subtilius sparsius, elytris subfortiter sat crebre, punctulatis; metasterno medio sparsim subtiliter punctulato, transversim vix rugato. Long., $1\frac{3}{5}$ l.; lat., $\frac{4}{5}$ l.

The abdominal plates reach back nearly to the apex of the basal segment, and are punctured much more sparsely than the lateral portion of the segment. The flattened ridge of the prosternum is at its widest immediately behind the front. The pubescence of the upper surface is mixed with hairs that are somewhat stouter and more erect than the rest.

A single specimen occurred to me in Western Victoria.

R. laticulus, sp. nov. Minus elongatus; vix subparallelus; sat æqualiter pubescens; nitidus; piceus; capite, prothorace, pedibus, prosterno, abdominis apice, et (nonnullis exemplis) signaturis quibusdam in elytris positis, testaceis; prothorace quam longiori fere duplo latiori, elytris angustiori, antice minus angustato, lateribus minus rotundatis, angulis anticis rotundatis haud prominulis posticis subrectis; capite prothoraceque subtiliter, elytris minus subtiliter, sparsim punctulatis; metasterno subtiliter transversim rugato, vix perspicue punctulato. Long., 1 l.; lat., $\frac{3}{5}$ l.

In one example (the most highly coloured) the prothorax is dark red in the middle, becoming bright testaceous at the sides; and on the elytra the shoulders, together with an obscure vitta near the suture, are testaceous; in others the whole prothorax is uniformly reddish and the elytra are nearly unicolorous. The abdominal plates are about two-thirds the length of the basal segment, and are punctured as strongly and nearly as closely as the general surface of the segment.

Woodville.

R. Evansi, Muls. Ovalis; sat convexus; pubescens; sat nitidus; supra piceo-niger vix æneo-tinctus; capite, prothorace (plus minus), corpore subtus, antennis, palpis pedibusque, ferrugineis; prothorace quam longiori vix duplo latiori, elytris basi parum angustiori, antice sat angustato, lateribus subrectis, angulis anticis rotundatis subprominulis, posticis obtusis; capite prothoraceque crebrius subfortiter, elytris crebre sat fortiter (latera versus præsertim) punctulatis; metasterno medio (antice præsertim) fortius crebrius punctulato. Long., $1\frac{3}{5}$ —2 l.; lat., $1\frac{1}{8}$ — $1\frac{2}{5}$ l.

The abdominal plates are about three-fourths the length of the basal segment, and are punctured more strongly and less closely than the sides of the segment. The flattened ridge of the prosternum is uniformly narrowed from its base to the front. The

pubescence of the upper surface is of a silvery white colour, and is much mixed with long erect hairs. Compared with the European *R. liturus* this species is much wider, with more strongly rounded sides and much stronger puncturation.

I have re-described this insect, because the original description is very incomplete and founded on a very pale specimen. I do not think there is any doubt of the correctness of my identification.

Apparently common all over Southern Australia.

R. insipidus, sp. nov. Elongato-ovalis; sat convexus; pubescens; minus nitidus; totus brunneus (meso- et meta-sternis et abdomine piceis exceptis); prothorace quam longiori paullo minus duplo latiori, elytris basi vix angustiori, antice vix angustato, lateribus parum arcuatis, angulis anticis plane rotundatis haud prominulis, postice subrectis; capite prothoraceque subtiliter, elytris sat fortiter, sat crebre punctulatis; metasterno medio subtiliter transversim rugato vix perspicue punctulato. Long., $1\frac{1}{5}$ l.; lat., $\frac{4}{5}$ l.

The abdominal plates nearly reach the apex of the basal segment, and are punctured a little more sparingly than the sides of the segment. The flattened ridge of the prosternum is strongly narrowed from its base to the front, which is pointed. The pubescence of the upper surface is whitish-brown in colour, and is mixed with a few rather long erect hairs. In some examples the suture is narrowly infuscate, and in some the elytra have a slight opalescent greenish gloss. The puncturation of the elytra is less strong than in *R. Evansi* and *R. cyaneus*, and slightly stronger than in *R. laticulus*. It is very similar to that of *R. liturus*, Fab.

Roseworthy, S.A., and Kangaroo Island.

R. debilis, sp. nov. Ovalis; sat convexus; pubescens; nitidus; supra piceo-niger vix æneo-tinctus; capite, prothorace, corpore subtus, antennis, palpis, pedibusque, plus minus ferrugineis; prothorace quam longiori duplo latiori, elytris basi vix angustiori, antice sat angustato, lateribus subrectis (marginibus subfortiter reflexis), angulis anticis rotundatis, posticis distinctis obtusis; capite prothoraceque minute sat crebre, elytris prope scutellum subtilissime sparsim (latera apicemque versus magis distincte), punctulatis; metasterno medio vix distincte sculpturato. Long., $1\frac{2}{5}$ l.; lat., $\frac{4}{5}$ l.

An obscure species resembling *R. Evansi*, but smaller and differently punctured, the punctures on the elytra near the scutellum being scarcely visible under a Coddington lens. The prothorax is very wide and short, with its lateral edges more strongly reflexed than is usual in the genus, especially at the anterior angles, which are sub-explanate. The abdominal plates

nearly reach the apex of the basal segment, and are very sparingly punctulate. The flattened ridge of the prosternum (which, however, is scarcely so much flattened as usual) is parallel-sided. The pubescence scarcely differs from that of *R. Evansi*.

Port Lincoln; not common. An abraded specimen from near Lake Eyre seems to be identical, but its condition will not allow of certainty.

R. Lindi, sp. nov. Ovalis; sat convexus; pubescens; sat nitidus; piceus, antennis, palpis, corpore subtus, pedibusque, plus minus rufescentibus; prothorace quam longiori vix duplo latiori, elytris basi vix angustiori, antice vix angustato, lateribus subrectis, angulis anticis rotundatis, posticis distinctis obtusis; capite prothoraceque subtilius, elytris magis fortiter, sat crebre punctulatis; metasterno medio subtiliter transversim rugato sat distincte punctulato. Long., $1-1\frac{2}{5}$ l.; lat. $\frac{3}{5}-1$ l.

The abdominal plates are as in *R. insipidus*. The flattened ridge of the prosternum is strongly narrowed from its base to the front, where it is truncate. The pubescence scarcely differs from that of *R. Evansi*. Nearest to *R. insipidus*, from which its puncturation, though not quite so strong, scarcely distinguishes it. It is, however, a wider and shorter insect, more strongly rounded on the sides, differently coloured, and especially with the prosternal ridge wider and truncate in front. It is smaller, very much more feebly punctured, and more obscurely coloured than *R. Evansi*, and differs from *R. debilis*, *inter alia*, in its stronger puncturation and prosternal ridge narrowed to the front.

Port Lincoln.

R. ruficollis, sp. nov. Ovalis; sat convexus; pubescens; nitidus; subtus ferrugineus; capite, prothorace, pedibusque læte rufis; prothorace quam longiori paullo minus duplo latiori, elytris basi vix angustiori, antice parum angustato, lateribus parum arcuatis, angulis anticis rotundatis, posticis subrectis; capite prothoraceque subfortiter, elytris paulo magis fortiter minus crebre punctulatis; metasterno medio transversim rugato subfortiter punctulato. Long., $1\frac{1}{5}$ l.; lat., $\frac{4}{5}$ l.

The abdominal plates are about three-fourths the length of the basal segment, and are punctured much more strongly and sparsely than the sides of the segment. The prosternal ridge is as in *R. insipidus*. The pubescence resembles that of *R. Evansi*, but the longer erect hairs are even longer and stouter than in that species.

Very differently coloured from all the preceding, and distinguished from all but *R. insipidus* by the sharply-pointed prosternal ridge. From the latter it differs in the pubescence, the

shorter abdominal plates, more strongly sculptured metasternum, rather more sparing puncturation of the upper surface where there is less difference, moreover, than usual in the genus between the punctures on the prothorax and those on the elytra, and in the dark elytral epipleuræ (those of *R. insipidus* show up as of a pale brown colour in strong contrast to the reddish pitchy metasternum and hind body), besides other differences of colour, &c.

Port Lincoln.

R. ventralis, Er. I have taken near Port Lincoln, and also near Adelaide, examples of an insect which I cannot doubt is this remarkably coloured species, but if so, it is desirable to point out that Erichsen is in error in calling it "oblongo-ovalis," as it is rather exceptionally wide. It is, of course, possible that I have not the genuine thing before me, but my specimens agree perfectly with the description in every character except that I have named, including the unusual character of having the anterior angles of the prothorax membranous. Mulsant uses a similar expression in his (apparently independent) description, but afterwards furnishes measurements that certainly do not justify it, but show the species to be of much broader proportions than others to which he applies the same term.

The insect before me is rather unlike *Rhizobius* in facies, but does not differ structurally in any respect so far as I can discover.

Since many of the species of this first section of *Rhizobius* are closely allied *inter se*, the following tabulation may be serviceable:—

A. Elongate subparallel species.

B. Prothorax and elytra brown or ferruginous.

discolor, Er.? (var. *proprius*, Blackb.)

BB. Prothorax and elytra cyaneous.

cyaneus, Blackb.

AA. Oval species.

B. Upper surface clothed with long erect hairs as well as short pubescence.

C. Prosternal ridge sharply pointed in front.

D. Epipleuræ of elytra dark coloured.

ruficollis, Blackb.

DD. Epipleuræ of elytra pallid (in contrast with the much darker under surface of body).

insipidus, Blackb.

CC. Prosternal ridge not sharply pointed in front.

D. Elytra strongly punctulate (more strongly than those of *R. liturus*, Fab.)

Evansi, Muls.

DD. Elytra very finely punctulate; prosternal ridge with parallel sides.

debilis, Blackb.

DDD. Elytra distinctly but not very strongly punctulate; prosternal ridge narrowed forward.

Lindi, Blackb.

- BB. Upper surface evenly pubescent. *laticulus*, Blackb.
 AAA. Form ovate; under surface black, except ventral segments, which are bright red. *ventralis*, Er.

AA. Prosternum antice æqualiter convexum, longitudinaliter neccarinatum nec sulcatum.

B. Species majores.

In this group the intercoxal portion of the prosternum is more or less carinate laterally but the part in front of the coxæ is simply convex with more or less tendency to be compressed, especially in the extreme front, owing to which the middle of the front margin is more or less angularly prominent. The eyes are extremely coarsely granulated and placed very obliquely.

R. australis, sp. nov. Oblongo-ovalis; subparallelus; minus convexus; sat nitidus; pubescens; rufus, elytris (margine laterali sat anguste rufo excepto) piceo-nigris; capite prothoraceque subtiliter sat crebre, elytris fortius subrugulose, punctulatis. Long., $2\frac{2}{5}$ l.; lat., $1\frac{2}{5}$ l.

The red lateral margin of the elytra is not very sharply defined or conspicuous; it is continued round the apex where it is a little dilated. The pubescence of the upper surface is uniform (*i.e.*, not containing hairs conspicuously longer and more erect than the rest). The third joint of the antennæ is as long as the following two together; the ninth and tenth joints are transverse and have their inner apex produced in a kind of lobe which is curved forward against the basal part of the next joint. The prothorax is quite twice as wide as long, widest at the base which is more than half again as wide as the front margin, the latter moderately emarginate with angles quite rounded off; the sides converge slightly from the base to about the middle, thence roundly and more strongly. On the underside the puncturation is fine and close on the sides (and almost effaced in the middle) of the meso and meta-sterna, fine and close on the sides (and very sparing in the middle) of the ventral segments; the abdominal plates are about five-sixths the length of the basal segment and are punctured more sparsely than the adjacent surface; the mesosternum is quite a third as long as the metasternum, and is not emarginate in front; the prosternum is rather wide and flat between the coxæ with its sides parallel and finely keeled, its anterior (and longer) portion being evenly and rather strongly convex; the angular prominence of the anterior margin of the prosternum is extremely feeble. The widest part of the prothorax is five-sevenths of the width of the widest part of the elytra. The claws are appendiculate, but the inner apex of the basal piece is sharp and tooth-like. The middle of the hind margin of the basal ventral segment is roundly and widely (but

rather conspicuously) produced backward over the second segment, in all the specimens I have seen.

Near Adelaide; also taken by Mr. J. G. O. Tepper on Kangaroo Island.

R. subfusca, sp. nov. Oblongo-ovalis; minus parallelus; sat nitidus; pubescens; rufo-fuscus; prothorace elytrisque nigricantibus; capite prothoraceque fortius, elytris magis etiam fortiter, crebre punctulatis. Long., $2\frac{1}{5}$ l.; lat., $1\frac{1}{5}$ l.

The whole under surface is of a somewhat fuscous red colour—the antennæ palpi and legs red rather than fuscous—the upper surface (except the head and anterior angles of prothorax which are reddish) is very dark fuscous. The pubescence is uniform. The antennæ are as in *R. australis*. The prothorax is not more than a third again as wide as it is long down the middle. In other respects the prothorax resembles that of *R. australis* except that it is more evenly narrowed from the base to the apex. The whole undersurface is strongly punctured, the puncturation being very coarse and not close on the prosternum and thence gradually finer and closer hindward till on the apical ventral segment it is very fine and very close. The abdominal plates are hardly three-fourths the length of the basal segment and are punctured rather more coarsely and sparsely than the adjacent surface. The mesosternum resembles that of *R. australis* except that it is very gently and roundly emarginate in front. The prosternum is nearly parallel sided between the coxæ, but hardly distinctly carinate on its margins; in front of the coxæ it is strongly compressed with the angular prominence in the middle of its anterior margin very strong. The greatest width across the elytra is half again the greatest width of the prothorax, though the true base of the former is hardly wider than the base of the latter. The hindward curve of the hind outline of the basal ventral segment is scarcely apparent. The eyes are very coarsely granulated but scarcely so oblique as in *R. australis*.

Adelaide.

N.B.—Although this species differs strongly from the preceding, in many respects its structural differences appear to be only in degree. The prosternum makes a distinct approach towards that of *Cryptolæmus* from which its appendiculate claws, coarsely faceted eyes, &c., distinguish it. It is quite possible that it may eventually have to be distinguished generically from *R. australis*.

R. xanthura, Muls. Specimens in my own and other collections, taken near Mount Gambier, on Kangaroo Island, and other places, evidently pertain to this species. The following particulars are not mentioned in M. Mulsant's description:—Puncturation of the upper surface very close and rather fine,

but strong (a little finer on the prothorax than on the elytra); prosternum as in *R. australis* but anteriorly a little less convex.

**R. major*, sp. nov. Ovalis; minus convexus; sat æqualiter pubescens; sat nitidus; ferrugineo-rufus, elytris (apice anguste rufa excepta) picescentibus; prothorace quam longiori plus duplo latiori, antice leviter angustato, angulis anticis rotundatis, posticis subrectis; capite prothoraceque sat crebre, elytris minus crebre, leviter punctulatis. Long., $2\frac{2}{5}$ — $3\frac{1}{5}$ l.; lat., $1\frac{3}{5}$ — $2\frac{1}{5}$ l.

The abdominal plates are a little more than two-thirds the length of the basal segment; they are punctured finely and closely (like the adjacent surface), and also bear some large sparse punctures. The flattened ridge of the prosternum is narrowed from its base to the front, which is rounded. The underside is closely and finely punctured laterally, the metasternum being nearly impunctate in the middle—the ventral segments in the middle more coarsely and less closely punctured than at the sides.

A large robust species bearing much superficial resemblance to my *R. australis*—from which it differs (apart from the structure of the prosternum) in its generally superior size and robustness, the stoutness of its tarsi, and in the epipleuræ of the elytra being dark piceous, whereas in every specimen that I have seen of *R. australis* they are of a bright ferruginous colour, concolorous with the general surface of the underside. The pubescence, moreover, is of a rich golden brown, and in *R. australis* is pale brownish white.

Fowler's and Streaky Bay. In my collection; also taken by Prof. Tate.

BB. Species minores. Oculi minus obliqui.

R. nitidus, sp. nov. Sat breviter ovalis; convexus; pubescens; nitidus; ferrugineo-piceus; antennis, palpis, pedibus, prothorace antice, prosterni lateribus, et elytrorum epipleuris dilutioribus; prothorace quam longiori duplo latiori, antice angustato, angulis anticis rotundatis, posticis subrectis; capite elytrisque leviter sparsim (his postice fortius), prothorace vix perspicue, punctulatis. Long., $\frac{4}{5}$ l.; lat., $\frac{3}{5}$ l.

The abdominal plates are hardly two-thirds the length of the

* This description I have accidentally misplaced in the memoir; it should follow the description of *R. cyaneus* on p. 200. Owing to this accident I have also omitted the species from the tabulation on p. 203 of species with the prosternum longitudinally flattened. In the tabulation *R. major* would fall among the oval species but is distinct among them by its much greater size and other characters.

basal segment, and are punctured much in the same way as the adjacent surface. The prosternum is evenly convex longitudinally, and its front margin is not in any noticeable manner angularly prominent in the middle. The underside is finely punctulate—more closely at the sides than in the middle. The few specimens that I have seen of this insect are unfortunately much abraded, but I think there is no doubt that in a fresh specimen the pubescence of the upper surface is tolerably close and even, and of a silvery white colour.

Apart from the great difference in the structure of the prosternum, this species has the superficial aspect of a liliputian *R. debilis*.

Port Lincoln.

R. occidentalis, sp. nov. Ovalis; sat convexus; pubescens; vix perspicue punctulatus; nitidus; lurido-testaceus; elytrorum epipleuris pallide flavis, macula basali communi triangulari, sutura, linea communi arcuata post medium, et maculis aliis parvis nonnullis, piceis; prothorace quam longiori vix duplo latiori, antice minus angustato, angulis anticis rotundatis, posticis subrectis. Long., $\frac{4}{5}$ l.; lat., $\frac{3}{5}$ l. (vix).

The abdominal plates and prosternum seem scarcely different from the corresponding parts in *R. nitidus*. Under a powerful Coddington lens there is little defined sculpture visible on the undersurface, except on the ventral segments, where (especially in the middle) some sparse rather fine puncturation can be discerned.

In the unique example that I possess of this insect the prothorax is a little stained with piceous in the middle; on the elytra the fuscous stains consist of a rather broad sutural line, which is crossed near the apex by a short curved line (its convexity hindward) and dilates close to the front into a large triangular patch including the scutellum, but not quite including the humeral calli, and also some small slightly defined spots on the disc.

Western Australia; taken by E. Meyrick, Esq.

R. speratus, sp. nov. Breviter ovalis; pubescens; crebre minus subtiliter punctulatus; fusco-testaceus; elytris anguste piceo-marginatis, postice signatura communi curvata picea instructis—hac cum sutura picescente ancoram simulante. Long., $\frac{4}{5}$ l. (vix); lat., $\frac{3}{5}$ l. (vix).

The puncturation is about as fine as in *S. flavifrons*, but is somewhat closer, and there is no appearance whatever of asperity. The dark fuscous markings of the elytra are all narrow, and make up a very accurate representation of an anchor. There is an additional (but very faintly defined) fuscous line joining the extremities of the flukes of the anchor; if this line be taken

into account the resemblance to an anchor is, of course, less noticeable.

Rather closely resembling the preceding superficially, but different in respect of the markings (which do not seem to be variable) and of the puncturation of the upper surface, which is very much closer and better defined. Compared with *R. nitidus* the puncturation is much finer, closer, and more even.

Three specimens occurred to me in the Lake Eyre basin, interior of South Australia.

R. approximatus, sp. nov. Breviter ovalis; sat convexus; pubescens; nitidus; piceus, vix ferrugineus; antennis palpis pedibusque vix dilutioribus; elytrorum epipleuris pallide brunneis; prothorace quam longiori duplo latiori, antice angustato, angulis anticis rotundatis, posticis subrectis; capite subtilius sat sparsim, prothorace vix perspicue, elytris duplo, punctulatis. Long., $\frac{4}{5}$ l. (vix); lat., $\frac{3}{5}$ l.

Unsatisfactorily close to *R. nitidus*, but presenting characters that seem to indicate a distinct species. The slightly shorter, wider, and less convex form is accompanied by a considerable difference of colour, the whole insect being pitchy black, with scarcely any ferruginous tendency (except the feebly reddish tarsi and the pale brown epipleuræ). The puncturation of the elytra, too, is distinct. In *nitidus* it is very faint near the scutellum but grows much stronger laterally and apically (where it is even, rather strong and by no means close), while in the present species the whole surface (even close to the scutellum) is very distinctly and rather closely though finely punctulate, this system of uniform puncturation becoming mingled towards the side and apex with a much more sparse system of much coarser puncturation.

Port Lincoln.

R. umbratus, sp. nov. Breviter ovalis; sat convexus; pubescens; sat nitidus; subtiliter sat crebre punctulatus; fuscus, antennis palpis pedibusque testaceis; elytris obscure testaceo-notatis; meso- et meta-sternis plus minus picescentibus; prothorace quam longiori duplo latiori, antice leviter angustato, angulis anticis subrotundatis, posticis subrectis. Long., $\frac{4}{5}$ l. (vix); lat., $\frac{3}{5}$ l.

The upper surface is marbled or clouded with pale brown and yellowish testaceous in a vague and somewhat intricate manner difficult to describe accurately. In a well-marked specimen the prothorax is brownish testaceous, cloudily darker along the front and base, while the elytra are of a full fuscous colour, with large cloudy testaceous markings consisting of an oblique fascia (much abbreviated at both ends and angulated behind) near the front, and an obscure spot on either side of the suture behind the

middle, the lateral margins and apex being also testaceous. In some examples the testaceous colour of the apex is intensified in the middle in such manner that it appears as a distinct oblique line of almost vivid yellow; but the markings shade off into the ground colour so vaguely that they present a different appearance according to the position from which the insect is looked at. On the underside the prevailing colour is reddish brown with the breast darker, against which the pale testaceous epipleuræ of the elytra show up very conspicuously. The puncturation of the upper surface differs from that in *R. nitidus* and *R. approximatus* by its much more even distribution—the prothorax being punctured almost uniformly with the elytra—and from that in *R. speratus* by its being slightly stronger and less close.

Port Lincoln; also near Adelaide.

SERANGIUM, *gen. nov.*

Caput prothoraci profunde insertum; antennis 11 articulatis, clava magna, basi aperta; oculi oblongi, sat fortiter granulati, intus subparalleli vel potius leviter antice convergentes; epipleuræ sat angustæ, postice angustatæ, concavæ, elytrorum in parte quarta postica obsoletæ, contra pedes intermedios et posticos profunde foveatæ; prosternum antice sat elongatum, sat æqualiter convexum, in medio longitudinaliter nec carinatum nec depressum, ad pedum receptionem profunde utrinque excavatum; mesosternum breve fortiter transversum, antice truncatum; abdomen segmentis 5 (basali et apicali inter se subæqualibus) conformatum; suturæ ventrales bene impressæ; sterna utrinque ad pedum intermediorum et posticorum receptionem late profunde excavata; lamellæ abdominales segmenti basalis apicem attingentes, hujus cum margine apicali postice confusæ; tibiæ et femora valde compressa; hæc in facie inferiori ad illarum receptionem canaliculata; unguiculi appendiculati.

The combination of the following characters places this genus in the group *Bucolites* of Dr. Chapuis, viz.:—body pubescent, base of antennæ exposed, elytral epipleuræ with well-defined foveæ. Among the *Bucolites* the following combination will distinguish it, viz.:—ventral segments only five, abdominal plates incomplete, prosternum excavated to receive the front legs, tibiæ not dentate externally. It is also distinguished from all other genera of *Coccinnellidæ* known to me by the structure of the legs, which have all their femora sulcate down the middle of their flat under surface for the reception of the tibiæ, in such fashion that when the femora are reposing in their cavities the tibiæ and tarsi are entirely hidden beneath them, and each leg exactly filling its cavity, the general surface is quite level. In the example before

me the head is drawn into the cavity of the prothorax so closely and exactly that the front margin of the epistoma is in contact along its entire length with the front margin of the prosternum, and the oral organs (except the antennæ) are completely hidden; the structure in this respect resembling that of *Cryptolæmus*.

S. mysticum, sp. nov. Late ovale; sat convexum; nitidum; ferrugineum, piceo-umbratum; longe nec crebre albido-pubescent; supra fere impunctatum; subtus segmentis ventralibus antice subtiliter sparsim, postice crebrius subrugulose, punctulatis. Long., $1\frac{1}{5}$ l (vix); lat., $\frac{4}{5}$ l.

The general colour is a deep reddish-brown, the head and thorax pitchy, the general colour clouded vaguely with piceous about the suture and margins of the elytra and on the breast. The prothorax is rather small in proportion to the elytra; it is quite twice as wide as long; its front margin is sinuated behind the eyes; its sides are strongly rounded (somewhat angulated in the middle), and all its angles are rounded off; a delicate impressed line runs immediately in front of the hind margin. The superficial appearance is that of *Scymnus*. Under a very strong lens the prothorax shows some excessively fine puncturation; I cannot discover any on the elytra without using a microscope.

Port Lincoln; under bark of *Eucalyptus*.

BUCOLELLUS, *gen. nov.* [Bucolo affinis].

Corpus pubescens; caput prothoraci mediocriter insertum; antennarum brevium basis aperta; oculi sat magni, sat subtiliter granulati, intus subparallela; epipleuræ antice sat latæ subhorizontales, postice gradatim angustatæ et magis verticales, contra pedes intermedios et posticos profunde foveatæ; prosternum breve, sat æqualiter convexum, in medio longitudinaliter nec carinatum nec depressum; mesosternum sat magnum, antice truncatum; abdomen segmentis 5 (apicali præcedentibus 2 conjunctis longitudine æquali) conformatum; suturæ ventrales bene impressæ; lamellæ abdominales segmenti basalis apicem attingentes, hujus cum margine apicali postice confusæ; femora minus compressa; tibiæ sat graciles; unguiculi appendiculati.

This genus is certainly, I think, near to *Bucolus*, from which it differs chiefly in the shorter antennæ,* in the incomplete ventral lamellæ, and especially in the exceptionally short prosternum, this being in *Bucolus* exceptionally long.

B. ornatus, sp. nov. Breviter ovalis; pubescens; sat convexus;

* I have examined these under a microscope as well as possible without injury to the type, and find that they appear to consist of ten joints, but it is not possible to be quite certain without examination under more favourable conditions.

nitidus; ferrugineo-piceus; antennis, palpis, pedibus, prothoracis lateribus, et elytrorum signis nonnullis, testaceis; prothorace leviter sat crebre, elytris sparsius fortius, corpore subtus (segmento ventrali apicali excepto, hoc subtilius crebre subrugulose), punctulatis. Long., 1 l. (vix); lat., $\frac{4}{5}$ l. (vix).

The testaceous markings on the elytra are complicated and ill-defined, and probably variable. In the example before me on either elytron a wide vitta commences close to the humeral callus and runs obliquely towards the suture, but before reaching it turns hindward and runs parallel to the suture to a little distance short of the apex, where it becomes merged in the wholly testaceous colour of that part; in its hinder half its internal edge is bi-emarginate in such fashion that the dark sutural portion of the elytra appears to be twice dilated in its hinder half, and as a whole presents somewhat the outlines of a wineglass with a broad stem. On its external side the testaceous vitta in the hinder half is indeterminately dilated almost to the lateral margin, but some portion of this dilated portion is darker than other portions, so that there seems here to be a testaceous ground colour bearing some vaguely darker spots. The prothorax is about twice as wide as long; it is strongly emarginate in front, but not conspicuously sinuated behind the eyes; the sides are slightly rounded, the angles but feebly defined; the surface is more coarsely punctured near the lateral margins than in the middle.

A single specimen was sent to me from Western Australia by E. Meyrick, Esq.

BUCOLUS FOURNETI, *Muls.*

This species, omitted in Mr. Master's catalogue, although described originally on specimens stated to have been taken in Australia, is common in the neighbourhood of Adelaide. I have also taken it in the Port Lincoln district and in the Lake Eyre basin in the interior.

LIPERNES, *gen. nov.* (Bucolo affinis).

Corpus pubescens; caput prothoraci mediocriter insertum; antennarum basis haud aperta(?); clypeus cum genis superficiem ante oculos extensam efficiens; oculi magni subtiliter granulati, intus subparalleli; epipleuræ sat angustæ, postice gradatim angustatæ, apicem vix attingentes, contra pedes intermedios et posticos profunde foveatæ; prosternum antice sat breve, sat æqualiter convexum, in medio longitudinaliter nec carinatum nec depressum; mesosternum brevissimum(?) antice truncatum; abdomen segmentis 5 (basali et apicali inter se subæqualibus) conformatum; suturæ ventrales bene impressæ; lamellæ abdominales integræ

segmenti basalis apicem fere attingentes; pedes mediocres; tibiæ minus fortiter compressæ; unguiculi appendiculati.

The loss of the antennæ in my exponent of this genus is unfortunate; these members are very short, with the club proportionally large and the joints preceding the club very minute, so far I have been able to ascertain, but I destroyed the one antenna I had succeeded in distinguishing while trying to count the joints. There will, however, be no difficulty in identifying the genus without a detailed description of the antennæ. The clypeus and cheeks are continuous, and formed almost exactly as in *Orcus*. This character combined with the following will, I think, distinguish the genus from all hitherto named genera of *Coccinellidæ*, viz., anterior tibiæ simple, prosternum evenly convex in front of the anterior coxæ, ventral segments only five, body pubescent, epipleural foveæ very well defined, epipleuræ narrow (e.g., much narrower than in *Bucolus*) and horizontal, legs not received in repose in sulci of the undersurface.

N.B.—I have not been able to satisfy myself as fully as I could wish regarding the structure of the mesosternum; indeed, I have failed to detect any suture between the meta and mesosterna under a fairly good microscope. It is just possible that an excessively fine suture may have escaped my observation, but I think it more probable that the suture is in contact with the hind margin of the prosternum, the mesosternum thus being (in part at least) vertical, and only observable by dissection. There is some approximation to such a structure in *Serangium* and other genera of *Coccinellidæ* where only a very short transverse strip of mesosternum is visible without dissection.

L. angulatus, sp. nov. Late ovalis; sat convexus; nitidus; piceo-niger, apicem versus obscure dilutior; capite prothoraceque subtiliter crebre, elytris paullo fortius sparsius, punctulatis. Long., 1 l.; lat., $\frac{4}{5}$ l. (vix).

The whole body is of a nearly uniform pitchy black colour, the elytra slightly paler towards the apex (perhaps only in occasional examples). The prothorax is about twice as wide as long, its sides very strongly deflexed so as to be almost vertical; the front margin is sinuated behind the eyes; its sides are but little rounded; its front angles though not at all sharp are fairly defined and rather prominent, its hind angles roundly obtuse; the base bears a fine impressed line close within the margin and is strongly convex (or widely lobed) all across the middle, being somewhat angular in front of the scutellum; the puncturation of the surface becomes coarser and subrugulose near the lateral margins where it is perhaps a little stronger than that of the

elytra. The pubescence is silvery, short, and sparse, but my example is certainly more or less abraded.

Near Port Lincoln. Obtained by sweeping low plants.

CYREMA, *gen. nov.* [*Cryptogono affinis*].

Caput prothoraci mediocriter insertum; antennarum basis aperta; oculi magni, minus subtiliter granulati, intus subparalleli; epipleuræ minus latæ, subverticales, postice gradatim angustatæ, contra pedes intermedios et posticos sat profunde foveatæ; prosternum in medio longitudinaliter depressum, utrinque ad pedum receptionem excavatum; mesosternum transversum sat magnum, antice truncatum; abdomen segmentis 5 (basali et apicali longitudine inter se subæqualibus) conformatum; suturæ ventrales bene impressæ; sterna utrinque ad pedum intermediorum et posticorum receptionem excavata; lamellæ (abdominales segmenti basalis apicem attingentes, cum margine apicali postice confusæ) valde conspicuæ, concavæ; femora fortiter compressa; tibiæ minus validæ, anticis fortiter arcuatis.

The antennæ are very short, but I have completely failed to arrive at any certainty as to the details of their structure, so it is better to say nothing about them.* There is very little pubescence on my two specimens; probably, however, they both are more or less abraded. The genus would seem to be allied to several already described, but very distinct from all. The concave lamellæ of the under surface with their margins very strongly in relief, in the concavities of which the legs are contractile, together with the foveated elytral epipleuræ and the great development of the abdominal lamellæ, are suggestive of *Cryptogonus*, but on the other hand the mesosternum is well developed, and the ventral segments are only five in number. The form of the prosternum with a flattened longitudinal median space strongly narrowed from base to front, in combination with the characters mentioned above, will distinguish this genus from all others known to me. The claws are feebly appendiculate, and rather large.

C. nigellum, sp. nov. Late ovale; valde convexum; nitidum;

* The antennæ of some *Coccinellidæ* are very difficult to examine; owing to their minuteness and their concealed position it is often impossible even to break them off from a dry specimen successfully for microscopic study. Dr. Chapuis (Gen. Col. xii., p. 239) speaks of having uselessly sacrificed his unique example of *Cryptogonus* in the hope of furnishing information concerning the antennæ which the author of the genus had been unable to supply. I have to deplore a similar result of my study as regards one of my two specimens of *Cyrema*, and my unique exponent of *Lipernes* is none the better for my explorations in the region of its antennæ.

nigrum vel piceo-nigrum; capite prothoraceque subtiliter sat crebre, elytris multo fortius minus crebre, punctulatis. Long., $\frac{7}{10}$ l.; lat., $\frac{6}{10}$ l. (vix).

The head is wide, and flat between the eyes. Viewed from above the insect has quite the appearance of a *Chilocorus*. The prothorax is considerably longer down the middle than at the margins; across the base its width is more than twice its length down the middle; the front margin is strongly sinuous behind the eyes; the sides are widely, though very slightly, reflexed; the front angles are rounded, the hind angles obtuse. On the under side the meso- and meta-sterna are very finely and obscurely, and the ventral segments finely, closely, and strongly, punctured. The lamellæ under a powerful Coddington lens appear punctureless.

Two specimens occurred to me near Port Lincoln.





1889. "Further notes on Australian Coleoptera, with descriptions of new species." *Transactions and proceedings and report of the Royal Society of South Australia* 11, 175–214.

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