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XLIII.—*On the Tenebrionidæ of Japan.*
By G. LEWIS, F.L.S.

[Plate XIII.]

ON the 28th January, 1874, Marseul read a paper on the Heteromera of Japan before the Entomological Society of France, and after a lapse of rather over two years it was published in the 'Annales' of the Society. Marseul's material consisted chiefly of specimens gathered near Nagasaki and Hiogo, and contained about fifty species of Tenebrionidæ. Since 1876 a few isolated notices of new species have been published, which, with the new species here described, bring the number known from the Japanese islands to 125. As isolated notices of species are not always easy to find, I have given in the list of species at the end of this paper the date of the 'Zoological Record' in which notices of such species may be found. The Munich Catalogue serves up to 1870.

The collection of Coleoptera in the National Museum has been recently enriched by the addition of two important collections of Heteromorous beetles, one formed by Mr. F. Bates, the other by the late Mr. F. P. Pascoe. My visits to South Kensington have in a large measure made the task of determining the genera of my species an easy one; and when at times I have failed there, I have had the kindly assistance of Mr. C. G. Champion, who has lately written on

the Heteromera for the 'Biologia,' a work which involved an exhaustive research in the literature of the family. My own collection of Tenebrionidæ scarcely includes 500 species, and is insufficient to work upon, while my acquaintance with the family as a whole is very limited.

The European genera which are most remarkable in containing Japanese species are *Amarantha*, *Arrhenoplita*, *Corticeus*, *Platydema*, *Scaphidema*, and *Bolitophagus*; the last genus contains *B. reticulatus*, L., the only species not associated with commerce which has been found in Japan, Siberia, and the British Islands. The most salient feature of the species of this series is that so many belong to oriental, tropical, and subtropical genera, such as *Atasthalus*, *Byrsax*, *Ceropria*, *Hemicera*, *Setenis*, *Thydemus*, *Eucyrtus*, *Tetraphyllus*, *Basanus*, and *Ischnodactylus*; and I think this may be accounted for by the fact that the Coleopterous fauna of tropical Asia contains a very large proportion of Heteromorous beetles. This proportion consists, not, as in Europe, of genera such as *Helops*, *Pimelia*, *Blaps*, and *Asida*, each of which contains perhaps a hundred species, but of genera in which the species are limited in number, and therefore, taken as a whole, are species with great diversity of habit and capable as such of thriving under more varying conditions; and these in Japan, with its enormous forests, are exceedingly favourable to insect-life.

During the spring of 1882 I collected 1620 species of Coleoptera in Ceylon, of which 104 pertain to the Tenebrionidæ; this is in very much larger proportion to those found in Japan, which, at a rough calculation for the larger figure, are as 125 to 4500. But in 1881 I left the southern island of Kiushiu on the 3rd of June, before the heat of summer and heavy rains set in, and I missed seeing that year many of the subtropical species which emerged from the pupal state in July and August. Some of these species are *Hemicera zigzaga*, *Notiolesthus foveolatus*, *Thydemus purpurivittatus*, *Strongylium japanum* and *Marseuli*, and I think that there can be but little doubt that if a collection of Coleoptera were made in the provinces of Higo and Satzuma during and after the rainy season, the discovery of novelties of this subtropical class would be considerable. But lest it should be supposed that the tropical element is a very strong one, a glance at the list of species will show that the tropical genera, such as *Eucyrtus*, are represented by only one small species, while in the tropics the species of *Eucyrtus* are very numerous.

Phellopsis suberea, Lew. (Pl. XIII. fig. 1.)

Phellopsis suberea, Lew. Ent. xx. 1887, p. 219.

Hab. Yuyama and Chiuzenji. Found on a boletus attached to a large deciduous oak. Twenty specimens.

Blaps japonensis, Mars.

Leptocolena japonensis, Allard, Ann. Soc. Ent. Fr. (5) x. 1880, p. 320; *ibid.* 1882, p. 133, fig. 125.

The type of this species is in the Bates collection in the British Museum; Marseul placed the species in *Blaps*, and in 1880 Allard founded a subgenus to receive it; but his name has not been accepted by European entomologists.

Hab. "Japan" (Bates). I did not meet with it.

MICROPEDINUS, gen. nov.

The characters of this genus are for the most part the same as those of *Cabirus*, Mulsant, and the two small species for which it is established resemble somewhat *C. minutissimus*, Muls. The distinctive differences of *Micropedinus* are that the forehead is not emarginate anteriorly, as in *Pedinus* and *Opatrum*; the elytra are punctate, not striate, and in the male the tarsi on the anterior and intermediate tibiæ are transverse and very wide, the second and third joints being the widest. The tarsi in the female are as wide as those of the male of *C. minutissimus*, Muls. If European entomologists do not consider these characteristics sufficient to found a genus on, my name will serve for *Cabirus*, as Mulsant's name was occupied by Hübner in Lepidoptera as early as 1816.

Micropedinus algæ, sp. n.

Piceus vel niger, parum nitidus, supra punctatus; elytris haud striatis; antennis pedibusque dilutioribus.

L. $4\frac{3}{4}$ – $5\frac{1}{4}$ mill.

Piceous or nearly black, somewhat shining; the head and thorax very distinctly punctate, punctures dense at the sides, rather less closely set on the disks; the scutellum is transverse and rounded off posteriorly at the sides; the elytra, bases punctured like the disk of the thorax, but on the middle of the dorsum to the apices the punctures gradually become

less distinct and less circular in outline, and each bears a single grey hair between the punctures, the surface is microscopically granulate; the legs, tibiæ in both sexes are dilated after the manner of a *Pedinus*, but the male has the second and third joints of the tarsi on the anterior and intermediate feet very wide and transverse, as stated above.

Hab. Kobé. Abundant under seaweeds on the sandy sea-coast.

Micropedinus pallidipennis, sp. n.

M. algæ simillimus, sed piceus vel brunneus; elytris pallidis, ♀ tibiis anticis haud dilatatis.

L. $3\frac{3}{4}$ –4 mill.

This species is extremely similar to the last, but it is smaller, and the elytra are generally pale in colour. Sometimes the whole insect is of a light brown colour, but there is a variety in which the dorsal area is dark. Structurally it differs from *M. algæ* in the antennæ being shorter with the articulations more compressed, in the thorax being less transverse, and, above all, in the anterior tibiæ in the female not being dilated near the tarsi.

Hab. Kobé. Associated with *M. algæ*.

Opatrum expansicolle, sp. n.

Nigrum, opacum, supra granulatum; thorace lato, marginibus explanatis; elytris tenuiter punctato-striatis.

L. 11–11½ mill.

Dull black, opaque, granulate; the head widened and thickened before the eyes, emarginate anteriorly; the thorax explanate laterally, edge rounded off from the anterior angle nearly to the base, posterior angles slightly turned outwards; the elytra, striæ when visible fine and punctate, in many examples the striæ are obsolete, interstices granulate like the head and thorax; the antennæ, two basal joints pitchy red.

This species differs from all in this series in the shape of the thorax.

Hab. Kiga, Kobé, Arima, and on Maiyasan.

Opatrum orarium, sp. n.

Atrum, opacum, oblongo-ovatum, granulatum; capite securiformi, ante oculos angulato; elytris obsolete striatis.

L. 10 mill.

Densely black, opaque, oblong-oval, granulate above; the head emarginate anteriorly, angles before the eyes prominent, giving the head a hatchet-shaped outline; the thorax transverse, wholly arched at the sides from one angle to the other, bisinuate at base; the elytra obsoletely striate; the antennæ and legs black, claws palish.

The shape of the head is a distinctive character in this species; otherwise it is very similar to, but larger than, *O. japanum*, Motsch.

Hab. Kobé. One example.

Opatrum persimile, sp. n.

O. japono simillimum, sed thorace post caput semicirculari et tibiis anticis dilatato-compressis.

L. 9 mill.

This species is extremely like *O. japanum*, Motsch., but the surface-sculpture is not so coarse, the thorax has a semi-circular outline behind the head, and the posterior angles are small and slightly turned outwards and more acute; the anterior tibiæ are gradually widened from the base, a little thickened on the inner surface, and emarginate at the tarsal end between the point of the insertion of the tarsus and the outer edge. In *O. japanum* and all the other species of this series the tarsal end of the fore tibia is cut out on the outer edge; in this species it is not.

Hab. Miyanoshita or Odawara.

Opatrum coriaceum, Motsch.

In the male the hind tibiæ are denticulate on the inner edge, like those of *O. recticolle*.

Hab. Yokohama (very common on the beach), Odawara, and Kiga.

Opatrum recticolle, Motsch.

Opatrum sexiale, Mars.

There is a remarkable sexual character in this species not noticed by Marseul; the hind tibiæ for two thirds of their length are obtusely denticulate on the inner edge.

Hab. Kobé, Sannohe, Shirakawa, and in countless multitudes on the plain of Fужisan in the early days of May.

Opatrum villigerum (Blanch.).

Opatrum villigerum, Blanch. Voy. Pôle-Sud, iv. p. 154, t. x. fig. 15.

Mesomorphus villiger, Miedel, Deutsch. ent. Zeitschr. 1880, p. 40;
Fairm. Ann. Soc. Ent. Belg. 1894, p. 20.

This species was originally described from Australia, where Mr. J. J. Walker has also recently found it. I have met with it in Ceylon.

Hab. Kobé. I found three examples on the sandy sea-beach.

Idisia ornata, Pasc.

Pascoe records this species from Mantchuria, but I think this locality should be received with caution, as the captor, Dr. Adams, did not label his captures, to say the least, systematically, and he collected during the same voyage on the west coast of Japan.

Hab. Enoshima and Niigata. Abundant on the sand-hills.

Phaleria Riederi (Fald.).

Diaperis Riederi, Fald. Bull. Mosc. 1833, p. 57, t. iii. fig. 8; Lew. Ent. 1893, p. 151 (for synonymy see list).

Phaleria subhumeralis, Mars.

Hab. Hakodate. Abundant on the sand-hills surrounding the harbour.

EPIPHALERIA, gen. nov.

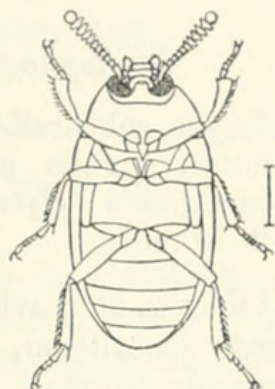
I propose this genus to receive some eastern species that it does not seem desirable to retain in *Phaleria*. The species differ from *Phaleria* (type *P. cadaverina*, F.) in having a small head, large eyes, which approach each other on the underside of the head; the mesosternum is a broad plate, as broad in the middle as half its width, widely separating the posterior and intermediate coxæ; the second and third joints of the tarsi in the males are scarcely dilated and the fifth joint of the antenna is nearly as large as the sixth. The outline of the body is an elongate oval. The underside of the type, *E. atriceps*, is given in woodcut, fig. 1. *Phaleria pusilla*, Boh., from Hong Kong, belongs to this genus, and there are two species found in Ceylon.

Epiphaleria atriceps, sp. n. (Woodcut fig. 1.)

Elongato-ovata, testacea, capite nigro subtilissime punctulato ; thorace elytrisque nigro-ornatis.
L. 4-4½ mill.

Elongate-ovate, testaceous, shining ; the whole of the upper surface is seen under the microscope to have a fine and clear mosaic-like sculpture ; the head black, with an extremely fine punctuation ; the thorax, disk dark brown, with a linear fovea well marked opposite the fourth elytral stria ; the scutellum triangular, wide at the base ; the elytra finely punctate-striate, interstices flat, punctulate like the head, dorsal area dark brown, the pattern on interstices 3 and 5 is prolonged posteriorly in most examples ; the antennæ, legs, and mouth-organs testaceous.

Fig. 1.



Hab. Enoshima and Niigata. Under seaweed.

[*Note.*—The following species is common on the sea-beach at Colombo and Galle, in Ceylon :—

Epiphaleria pallida, sp. n.

Oblong, testaceous, eyes alone black ; the head clearly punctulate ; the thorax with an extremely fine punctuation and linear fovea similar to that of *E. atriceps* ; the elytra punctate-striate, striæ near the suture finest, interstices impunctate ; the abdominal segments are slightly infusate ; the antennæ and legs concolorous. The mosaic-like sculpture is only seen under the microscope on the thorax.

L. 6-6½ mill.]

Trachyscelis sabuleti, sp. n.

Piceus, nitidus, supra lævis ; thorace rufo-piceo ; antennis testaceis ; pedibus brunneis.

L. 3-3¼ mill.

Piceous, shining, smooth above, hairy beneath ; the head and thorax impunctate ; the scutellum microscopically strigose, somewhat triangular but bulging out laterally ; the elytra clearly and evenly punctate-striate, interstices with a

few transverse lines at rather wide intervals, sutural interstice sometimes reddish; the antennæ are much paler than the legs.

I think the form of the scutellum may be a good specific character in this species. It is similar to *T. tenuistriatus*, Fairm., but it is smaller, narrower, and the dorsal striæ are better defined, and it also resembles the European *T. aphodioides*, Germ.

Hab. Enoshima. Occurs under seaweed on sandy shores.

Bolitophagus felix, sp. n. (Pl. XIII. fig. 2.)

Oblongus, subparallelus, piceo-brunneus, subnitidus; capite securiformi, angulis utrinque valde productis; thorace post oculos emarginato; elytris costatis, costis multo interruptis.
L. 9-10 mill.

Oblong, somewhat parallel at the sides, dark brown; the head securiform, remarkably angulate outside the eyes, rugosely punctate, with transverse crescent-shaped line before the eyes; the thorax channelled in the middle, disk tuberculate on either side and rugosely punctate, lateral margins explanate, transversely rugose, edges feebly crenate, strongly emarginate behind each eye; the elytra, lateral margin narrowly elevated, edges uneven, striate-punctate, interstices with broken costæ, third costa strongest and least interrupted; the antennæ reddish brown; the legs darker, tibiæ carinate and angulate before the tarsi.

Hab. Nagasaki. Found in April in a small boletus, *Polyporus lucidus*, Fr., a species of wide distribution in the northern hemisphere, growing on *Pinus massomana*, S. & Z. (Kuro-matzu). The boletus gives out a strong pungent smell in early summer, and may be discovered by it; the beetles scoop out the centre and live in the hollow in companies of six or eight. *Trogosita japonica*, Reit., was found associated with it in the *Polyporus*.

Bolitophagus pannosus, sp. n.

B. interrupto similis, sed brevior et latior; antennis rufo-brunneis.
L. $4\frac{1}{2}$ mill.

Oblong-oval, black, opaque, rugosely sculptured; the head somewhat transverse, anterior edge narrowly and feebly raised, angulate before the eyes; the thorax with a narrow median granulate channel, and the disks on either side of it tuberculate, lateral margin explanate, edges crenate; the elytra, sutural interstice with a feeble row of tubercles, second inter-

stice tubercles larger, third carinate at the base, tuberculate posteriorly, 4 to 6 similarly tuberculate, between the tubercles are numerous small nodules which apparently represent the striæ; the antennæ dull reddish brown, joints 8 to 10 markedly transverse; the legs darker, tibiæ carinate, tarsi reddish.

This species resembles *B. interruptus*, Ill., in the sculpture of the elytra, but it is much shorter and relatively broader and the joints of the antennæ are much more transverse and less lax.

Hab. Oyayama. One example, April 26th, 1881.

ATASTHALUS, Pasc.

Atasthalus, Pasc. Ann. & Mag. Nat. Hist. 1871, viii. p. 348.

Type *A. spectrum*, Pasc.

This genus resembles *Bolitophagus* more than *Bolitoxenus*. In the first the eleventh joint of the antenna is free of the tenth, in *Atasthalus* the tenth joint is incised to admit the base of the terminal joint. In *Bolitoxenus*, type *B. gibber*, Motsch., the articulations of the antenna are more compressed and the prosternum has a keel. In the Munich Catalogue, p. 1946, the genus *Bolitoxenus* includes *B. testudinarius*, Motsch., and *B. tuberculifer*, Motsch.; these two species belong to the genus *Byrsax*, in fact the last name is only a synonym of *Byrsax horridus*, Ol. *Bolitoxenus bifurcus*, Pasc., should be placed in *Bolitonæus*.

Atasthalus dentifrons, sp. n. (Pl. XIII. fig. 3.)

Oblongus, subparallelus, niger vel nigro-brunneus, opacus; fronte margine 4-dentata; thorace cornibus duobus validis, parum brevibus, rectis.

L. $9\frac{1}{2}$ –12 mill.

Oblong, rather parallel, black or dull blackish brown; the head, frontal margin reflexed and with two prominent teeth in the middle and two others less conspicuous over the bases of the antennæ; the thorax, lateral edge lirate, surface very rough with frequent tubercles, with two robust median horns, long enough to cover the base of the antennæ from view when seen from above, tips covered with golden or reddish hairs; the elytra parallel at sides, rough, with a few polished tubercles on what are apparently the third and fifth interstices; the striæ are represented by irregular punctures; the antennæ and legs dull brown, tibiæ carinate, not narrowed near the tarsi; the last segment of the abdomen is rugose,

not punctate. The female differs in the head being wider, the frontal dentation merely remaining in outline, and the thorax has coarse and rugose protuberances without hair in the place of horns. In some small males the thoracic horns almost disappear, but a nodule with red hairs indicates their places.

Hab. Hakone and Nikko. Common in boleti on beeches in May.

Atasthalus bellicosus, sp. n. (Pl. XIII. fig. 4.)

Breviter ovalis, nigro-brunneus, rugose sculpturatus; fronte haud dentata; thorace cornibus duobus elongatis subparallelis vel parum obliquis.

L. 7-9 mill.

Shortly oval, dull blackish brown; the head rugose, punctate, frontal margin arched in outline, edge roughened, not dentate; the thorax lirate and arched at the sides, surface rough with frequent tubercles, two median horns, sometimes parallel to each other, sometimes obliquely turning inwards, projecting in well-developed specimens half their length beyond the head, apices with tufts of red hairs; the elytra with tubercles on the third and fifth interstices well marked and not irregular, seventh interstice with tubercles less defined, between the tubercles are irregular rows of punctures; the antennæ and legs dull brown, tibiæ carinate, narrowed near the tarsi; the last segment of the abdomen is coarsely punctate. The female is similar to the male, except that the thoracic horns are represented by large protuberances. Some examples are densely squamous.

A small variety or species, *A. incurvatus*, occurs very commonly, in which the horns of the male are short and incurved; if they touched a circular space would be enclosed.

Hab. Miyanoshta, Hakone, Chiuzenji, Nikko, and Nishimura. Occurs, like the last species, in large boleti, but is apparently more widely distributed.

[*Note.*—*Atasthalus taprobanæ*, sp. n. I obtained a species very similar indeed to *A. bellicosus* in Ceylon; but the male may be known by the frontal carina being raised and denticulate, the ocular ridge being more prominent, the punctuation under the thoracic horns is distinct, and the horns are more than half as long again. The female has the thoracic protuberances wider apart, more erect, and more regularly covered with tubercles. There are specimens in the Bates collection taken by Nietner.

Hab. Wackwall, near Galle. I found three examples in a boletus.]

BOLITONÆUS, gen. nov.

Type *B. mergæ*.

I propose this genus to receive some small species which vary in size from about 4 to 6 mill.; most of its characters are those common to *Atasthalus*; the antennæ have seven rather short and sometimes robust (*B. mergæ*) moniliform joints, sometimes the joints are much more slender (*4-dentatus*), eighth to tenth more or less transverse, eleventh with the base somewhat embedded in the tenth; the maxillary palpi slender, terminal joint rather long; the eyes, ocular ridge ceases abruptly in the middle of the eye-disk, the ridge when viewed from above gives the eye the appearance of having a small tubercle in its centre. The prosternum is depressed posteriorly and the mesosternum somewhat short. *Bolitophagus vacca*, Motsch., *Heledona nasalis*, Pasc., and *Bolitotherus 4-dentatus*, Cand., should be placed in this genus. The type of *Bolitotherus* (*Phellidius*, Lec.), Candèze, is an American species, *B. cornutus*, F., which has an antenna of ten joints only; but Candèze also included in it *B. 4-dentatus*, which has eleven joints to these organs. Pascoe's note (Ann. & Mag. Nat. Hist. 1871, viii. p. 348) regarding *Bolitotherus* may be cancelled, as the note was written, as he informed me, under the impression that *B. cornutus*, F., was, as indicated in the Munich Catalogue, a Ceylonese insect.

Bolitonæus mergæ, sp. n. (Pl. XIII. fig. 5.)

Oblongus, parum cylindricus, obscure brunneus; thorace marginibus crenato, ♂ cornibus duobus horizontalibus ad apicem dense rufo-hirtis.

L. 4-4½ mill.

Oblong, dull brown or blackish brown, opaque; the head very rugose, frontal margin roughened on the edge, with a small denticle near the antenna in well-developed males; the thorax rough, nodulous, laterally crenate, with two median horizontal horns, reaching in fine examples beyond the head by half their length, incurved from their bases, apices densely clothed with reddish hair; the elytra, interstices rugose, with eight or ten rows of small nodules on each wing-case, but this sculpture suffers much from abrasion and is often obsolete. The antennæ rather stout, seventh and eighth joints rather transverse, ninth, tenth, and eleventh forming a club; the

tibiæ carinate and scarcely narrowed near the tarsi. In small males the thoracic armature is very short and stout, and this form admits of the eyes being seen from above outside the horns; in the large individuals the horns intervene. In the females the horns are absent, but the anterior part of the thorax is gibbous.

B. 4-dentatus, Cand., differs from the above in having more slender antennæ, with two conspicuous frontal denticulations on the anterior edge, and in having the tibiæ very markedly narrowed from the middle to the tarsal end.

Hab. Yuyama. A large boletus was found full of specimens in all stages on the 11th May, 1881.

Byrsax niponicus, sp. n.

Ovalis, supra parum convexus, fuscus, rugose sculpturatus, nodulosus; antennis ferrugineis; pedibus brunneis; ♂ capite cornibus duobus elongatis erectis; thorace explanato.

L. 5-6½ mill.

Oval, rather convex above; the male—head rugose, with two long slender horns, diverging upwards from their bases, slightly turning in at their tips, forehead depressed between the horns, the thorax laterally explanate, edges lirate, broadest just before the base, rough and nodulose; the elytra rough and nodulose, very similar to those figured for *Atasthalus bellicosus*; the female—head rugose, not depressed, lateral edges of the thorax more strongly lirate and much more widened out before the base; in both sexes the anterior and intermediate tibiæ are slightly narrowed before the tarsal end and carinate their whole length; the legs obscure brown, antennæ ferrugineous. The ocular ridges project more in the male than in the female.

Hab. Nara. About a dozen examples from a boletus, 27th June, 1881.

Byrsax spiniceps, sp. n.

Oblongus, supra modice convexus, dense squamosus; ♂ capite cornibus duobus spiniformibus.

L. 3-4 mill.

Oblong, moderately convex above, with a whitish squamaceous substance, which, in uninjured specimens, obscures all sculpture. The male with two long spine-like horns, which, when viewed sideways, are seen to be bent forwards in the upper half, ocular ridge projecting into an outline of an obtuse angle; the thorax, lateral margins widely explanate,

with markedly lirate edges. In the female the ocular ridge projects much less, and the thorax behind the neck is elevated in the form of two ridges.

I have only six specimens of this little species, and they are all more or less thickly covered with a whitish squamosity.

Hab. Yuyama and Nikko.

Diaperis niponensis, Lew.

Diaperis niponensis, Lew. Ent. xx. 1887, p. 217.

This species resembles a very large specimen of *D. boteli*, L.

Hab. Nikko, Mayebara, Junsai, and Sapporo. Commonest in Yezo.

Diaperis Lewisi, Bates.

Diaperis Lewisi, Bates, Ent. M. M. x. 1873, p. 14.

Diaperis rubrofasciatus, Reit. 1879.

Hab. Nagasaki, Kumamoto, Miyanoshita, and Tokio; Siberia (*Reitter*).

DERISPIA, gen. nov.

Body hemispherical, outline of the head, thorax, and elytra together being circular; the head relatively somewhat large, eyes small, coarsely granulate, palpi large, terminal joint oblong; the thorax explanate laterally, widely incised to receive the head, eyes visible from above; the scutellum triangular, but widest at the base; the elytra dilated at the sides, and in structure very similar to those drawn for *Leiochrinus satzumæ* (woodcut, fig. 2), but not quite so wide; the prosternum rather narrow, truncate behind, slightly narrowed between the coxæ; the mesosternum small and transverse; the metasternum arched between the coxæ; the anterior tarsi short and pilose beneath, linear but rather robust, the claw-bearing joint being as stout as the others, and the hind tarsus has the basal joint long, like those of *Basanus* and *Scaphidium*; the antennæ also rather stout, first joint larger and longer than the second, third longer than the second and a little constricted at the base, fourth stouter than the third and equal in size to each of the six following, terminal joint rather longer and oval.

Type, *Diaperis maculipennis*, Mars.

Leiochrinus coccinelloides, Westw., also belongs to this genus, the type of *Leiochrinus* being *L. discoidalis*, Westw., a very different insect. The species of this genus are apparently very numerous in the eastern tropics; I found six in Ceylon.

LEIOCHRINUS, Westw.

Leiochrinus, Westwood, Tijdschr. voor Ent. xxvi. p. 68.

The genus *Leiochrinus* was founded by Westwood in 1883, and a figure of the type of the genus, *L. fulvicollis*, is given on pl. iii. fig. 14, and on pl. v. fig. 7 is a drawing of the posterior tarsus. The type of this genus evidently agrees with *L. satzumæ*, sp. n.; the head is entirely concealed under the thorax, the latter segment and the elytra forming an almost complete circular outline. With the head thus concealed the antennal orbits are absent. The form of the tarsi, also, in the genus is most peculiar. Westwood gave a drawing of the upperside of the type, and to supplement his figure I give here a woodcut, fig. 2, showing in outline the under surface of *L. satzumæ* and the fore tarsus. There are several genera in which the curious tarsi are, with more or less modified form, similar, so that I quite agree with Mr. Champion that it is best to group them together as *Leiochrininae*. I think the position of the group is near the *Diaperinae*, as they cannot be far separated from the genus *Derispiæ*, which, I think, is placed in a natural position if it is put near *Diaperis*.

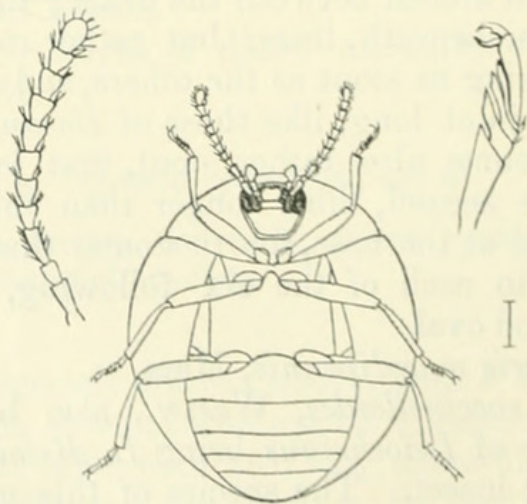
Leiochrinus satzumæ, sp. n. (Woodcut, fig. 2.)

Circularis, rufo-testaceus, nitidus; thorace disco transversim infusato; elytris delicate punctulatis, disco rufo-testaceo, marginibus angustissimis testaceis.

L. 4 mill.

Thorax and elytra circular in outline, head impressed in the thorax and entirely concealed when viewed from above;

Fig. 2.



the tissue of the thorax is very thin and pellucid over the eyes, which can be dimly seen through it. The thorax has a

wide transverse dark band across its base; the elytra very faintly punctulate, the punctures most visible form a line close to the suture, a dark band occupies the external margins, but leaves the extremely narrow rim pale; the antennæ—four basal joints reddish, the others infusate; the legs reddish or brownish yellow. When the antennæ are stretched out the second joint does not reach beyond the rim of the thorax.

Hab. Yuyama, Hitoyoshi, Fukahori, and Nara. Many examples beaten from foliage in which dead branches and twigs were interspersed.

LEIOCHRODES, Westw.

Leiochrodes, Westw. Tijdschr. voor Ent. xxvi. p. 69.

Type, *L. discoidalis* (pl. iii. fig. 15).

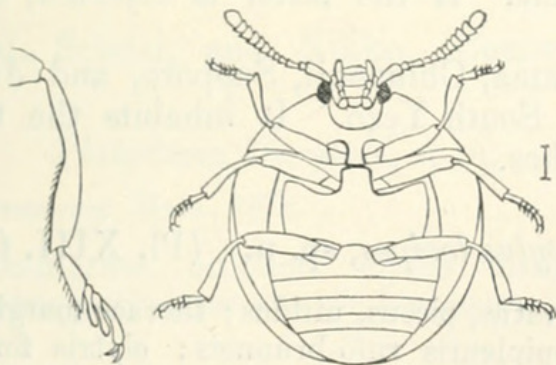
Leiochrodes convexus, sp. n. (Woodcut, fig. 3.)

Hemisphæricus, perconvexus, piceo-niger, nitidus; elytris haud striatis, impunctatis; antennis pedibusque rufo-brunneis, tibiis posticis curvatis.

L. $2\frac{1}{2}$ – $2\frac{3}{4}$ mill.

Circular in outline, very convex above, piceous or black, shining, with the legs and antennæ reddish brown; the head, thorax, and elytra wholly smooth; the prosternum bisinuous posteriorly and widening out a little from the coxæ to the base; the hind tibiæ are bent and enlarged on their inner

Fig. 3.



edge like the intermediate tibiæ figured in this paper for *Ischnodactylus loripes*. This form of tibiæ has, however, in this species apparently no sexual purpose as it is found in all my specimens, but the structure enables the tibia, in a state of repose or in a state of simulating death, to be brought closely on to the femur which fits into it.

Hab. Nagasaki and Kioto. Occurs under damp decaying leaves in early spring.

Arrhenoplita (Hoplocephala) asiatica, sp. n.

Oblonga, nitida, rufo-brunnea; capite thoraceque rufis; elytris nigris apice excepto.

L. $6\frac{1}{2}$ mill.

Oblong, reddish brown; the head red, rather rugosely punctured, male with two erect horns close to the eyes, in the female the head is swollen only close to the eyes; the thorax red, evenly not closely punctulate; the scutellum obscurely red; the elytra black, with the apices red, punctate-striate, interstices sparingly punctulate; the antennæ and legs red.

Similar to *A. hæmorrhoidalis*, F., but the thorax is much wider and less convex laterally and the thoracic punctuation larger. *A. hæmorrhoidalis* occurs in Siberia as well as in Europe.

Hab. Sapporo. A boletus I found on an oak contained three males and one female.

Amarantha atrocyanea, Lew.

Amarantha atrocyanea, Lew. Ent. M. M. 1891, ser. 2, ii. p. 70 (*Metachisa*, Duval).

The location of the genus *Amarantha* is doubtful. Faust placed it near *Arrhenoplita (Hoplocephala)*, but the form of the sterna and the structure of the first segment of the abdomen more nearly resemble a species of *Hemicera*. The short tarsi, however, are similar to *Arrhenoplita*. *Amaranthus* is the name of a well-known flower of older date than Motschulsky's name. If the latter is rejected, Duval's name will serve.

Hab. Oyayama, Chiuzenji, Sapporo, and Junsai. Taken abundantly in South Yezo. It inhabits the touch-wood of decaying beeches.

Ischnodactylus loripes, sp. n. (Pl. XIII. fig. 6, ♂.)

Subdepressus, ovatus, piceus, nitidus; thorace marginibus, antennis, pedibus et epipleuris rufo-brunneis; elytris fortiter punctato-striatis.

L. ♀ 7, ♂ $8\frac{1}{2}$ mill.

Oblong oval, pitchy black, somewhat depressed; margin of the thorax, epipleuræ, antennæ, and legs reddish brown, and sometimes also the sutural interstice of the elytra is reddish; the head somewhat wide, rather densely, not coarsely punctured, not cornute in the male; the thorax transverse, slightly explanate laterally, punctured similarly to the head; the scu-

tellum feebly punctulate; the elytra rather long, parallel at the sides, strongly punctate-striate. The hind tibiæ of the male are bent, basal half slender, tarsal end from the middle enlarged.

The form of the hind tibiæ agrees somewhat with that of the intermediate tibiæ of *Platydemus umbratum*, Mars. There is an undescribed species in the British Museum from Singapore which resembles it closely; the absence of the armature on the head of the male in this species does not seem to me sufficient to exclude it from *Ischnodactylus*.

Hab. Oyayama. Three specimens.

Platydemus nigroæneus, Motsch.

Platydemus musivum, Harold, 1878.

This species closely resembles *P. Dejeanii*, Cast., both in size and colour. Harold, in redescribing it as *P. musivum*, laid great stress on the elytra being "striato-punctatis," but in a long series of specimens half of them have the elytra punctate-striate. The armature of the head of the male is usually two tubercles, but sometimes there are two pointed but not slender horns. The colour of the epipleuræ is sometimes æneous, sometimes reddish.

Hab. Nikko, Miyanoshta, Kiga, and Oyayama. Common.

Platydemus Dejeanii, Cast.

I have a series of examples which agree precisely with Siberian specimens referred to this species by Reitter and others.

Hab. Junsai, Sendai, and Nikko. Commonest in the north.

Platydemus Marseuli, sp. n.

Platydemus nigroæneus, Mars., 1876.

Oblongum, æneo-nigrum, nitidum; elytris distincte punctato-striatis; antennis pedibusque obscure brunneis.

L. $4\frac{1}{2}$ –5 mill.

Oblong, greenish or brassy black; the head and thorax rather closely punctulate; in the male are two frontal horns, straight and pointed in well-developed specimens, in others the horns are reduced to two obtuse tubercles; the elytra distinctly punctate-striate, interstices rather flat and finely punctulate, and usually more brassy in colour than the thorax; the antennæ and legs are uniformly an obscure brown.

There is very little to distinguish this species from *P. nigro-æneum*, Motsch., except its size and that the wider joints of the antennæ are more transverse.

Hab. Nagasaki, Kumamoto, Miyanoshita, Kadzusa, and Yokohama.

Platydemia higonium, sp. n.

Breviter ovale, convexum, æneum, metallicum; elytris distincte striato-punctatis; antennis pedibusque obscure brunneis.

L. $5\frac{1}{2}$ – $6\frac{1}{2}$ mill.

Shortly oval, convex above, brassy, very shining; the head rather densely excavated between the eyes in both sexes, the male with two rather long and acute horns well separated from each and scarcely thickened at their bases; the thorax evenly, not very densely, punctulate, brassy, with a purple tint; the elytra, interstices flat, finely punctulate, striæ consisting entirely of rows of punctures; the antennæ and legs obscure brown.

This is the most metallic species in this series, and the only one in which the elytral striæ consist throughout of a series of punctures only, each puncture being clearly separated from another.

Hab. Hitoyoshi, Oguma, and Rakuwayama. Seven specimens.

Platydemia sylvestre, sp. n.

Ovatum, convexum, æneum, submetallicum; capite in medio impresso; elytris fortiter punctato-striatis.

L. $4\frac{3}{4}$ –5 mill.

Ovate, convex above, brassy or brassy green, somewhat metallic; the head semicircular in front, clearly and rather thickly punctulate, with a median impression between the eyes, impression deepest in the male; the thorax narrowest anteriorly, widening to base, lateral edge raised, punctulate, punctures finer and less close than those of the head; the scutellum smooth; the elytra strongly punctate-striate, interstices little convex, with scattered and extremely fine punctures; the antennæ and legs dull reddish brown. The male is apparently without armature on the head.

Hab. Hakone and Kiga. Six specimens.

Platydemia recticorne, sp. n.

Oblongo-ovatum, supra convexum, piceum, nitidum; antennis, pedibus et epipleuris rufis; thorace punctulato; elytris fortiter punctato-striatis, interstitiis distincte punctulatis.

L. $4\frac{1}{4}$ – $4\frac{1}{2}$ mill.

Oblong-ovate, convex above, piceous, shining; the head semicircular in front, reddish brown before the eyes, rather densely punctulate, the female with a median fovea between the eyes, the male with two slender reddish horns, straight, and reaching out beyond the head; the thorax punctured like the head, anterior angles rather broadly red; the scutellum very obscurely punctulate; the elytra—epipleuræ reddish, sometimes also the humeral angle is red, strongly punctate-striate, interstices also very distinctly punctulate; the antennæ, mouth-organs, and legs clear reddish brown.

In well-developed males the frontal horns measure from $\frac{1}{2}$ mill. to $\frac{3}{4}$ mill., but in a few specimens the forehead is scarcely more than tuberculate. This species in size and general sculpture corresponds with *P. Marseuli*.

Hab. Kiga, Nikko, Oyayama, and Konose. Rather common.

Platydema lynceum, sp. n.

Oblongo-ovale, purpureo-nigrum; oculos supra parum approximatis; capite thoraceque punctulatis; elytris valde punctato-striatis.

L. 7 mill.

Oblong oval, nearly black, with a faint purple tint; the head not cornute in either sex, irregularly and sparingly punctulate; eyes large and approaching each other above on the inner anterior edge, especially in the male; the thorax transverse, narrowest in front, widest behind, finely and sparingly punctulate; the elytra rather long, strongly punctate-striate, interstices microscopically and sparsely punctulate; the antennæ and legs dull brown. The sexes can be distinguished by their tarsi.

Hab. Nantaizan, Yokohama, and Junsai. Nine examples.

Platydema fumosum, sp. n.

Ovale, atrum, opacum; antennis articulis primo et secundo tarsisque rufis.

L. $6\frac{1}{4}$ mill.

Oval, densely black, opaque; the head finely and sparingly punctured, semicircular anteriorly; the thorax arched at the sides, bisinuous behind, punctured like the head; the scutellum triangular; the elytra, striæ fine and punctulate, interstices flat; the antennæ, two basal joints red, the others black; the legs dusky brown, tarsi reddish, basal joint of the anterior tarsus of the male slightly enlarged. Head not cornute in either sex.

In outline and colour this species resembles *P. umbratum*, Mars., an insect which measures 10 mill. and has the basal joint of the anterior tarsus in the male considerably enlarged; but there are no sexual differences in the tibiæ. I think *P. umbratum* and *P. malaccum*, Mars., and the above species might be very well separated from *Platydemia*.

Hab. Kioto and Nara. Five examples.

Platydemia scriptum, sp. n.

Oblongo-ovatum, rufo-brunneum, subopacum; elytris punctato-striatis, fasciis duabus dentato-sinuatis.

L. $2\frac{1}{2}$ mill.

Reddish brown, somewhat opaque; the head rather densely punctulate, clypeus reddish, semicircular in outline; the thorax punctured like the head, arched at the sides, colour darkest on the disk; the elytra punctate-striate, interstices opaque and impunctate, variegated with dark markings, which usually take the form of two dorsal dentate-sinuate fasciæ; the apex reddish brown, with the pattern widening out on the sides; the antennæ and legs reddish brown.

This small species resembles *P. hieroglyphicum*, Cast. Brul. The colour of the elytra is variable. This also, and those resembling it, ought, I think, to be separated from the genus *Platydemia*.

Hab. Nagasaki. Three examples.

Basanus erotyloides, Lew. (Pl. XIII. fig. 7.)

Basanus erotyloides, Lew. Ent. M. M. 1891, p. 71.

This species is noticed here merely to call attention to the figure; the insect is black, with red or yellowish-red elytral markings, and the abdomen is of the same colour.

Hab. Found in most of the forests.

Scaphidema ornatellum, sp. n.

Ovatum, æneo-nigrum, nitidum; thorace plano marginibus utrinque canaliculatis; elytris a basi flavo-fasciatis; pedibus rufis.

L. $4\frac{3}{4}$ –5 mill.

Ovate, brassy black, shining; the head irregularly punctured, anteriorly reddish; the thorax more finely and more sparingly punctured than the head, lateral margins distinctly canaliculate; the scutellum brassy or obscurely red; the elytra punctate-striate, interstices feebly convex, very sparingly punctulate, with a yellow fascia near the base on interstices 3–8; on the fifth interstice the fascia widens out

before and behind; the antennæ black, with three basal joints red or piceous; the legs reddish brown, rarely black.

Hab. Oyayama, Kiga, and Nikko. Twenty examples.

Scaphidema pictipenne, sp. n.

Ovatum, æneo-nigrum, nitidum; thorace parum convexo; elytris quadrifasciatis; antennis a basi pedibusque rufis.

L. $3\frac{1}{4}$ – $3\frac{1}{2}$ mill.

This small species is very similar to *S. ornatellum*, but it is less broad and the thorax much less conspicuously canaliculate at the sides and convex on the disk; the elytra have a second fascia (although somewhat obscure) before the apex, and the apices are more pointed.

Hab. Nara. Three specimens.

Scaphidema discale, sp. n.

Ovatum, æneo-nigrum; elytris obsolete maculatis vel totis æneis; antennis a basi pedibusque rufis.

L. $3\frac{1}{2}$ –4 mill.

Ovate, brassy black, shining; the head punctured somewhat closely, mouth-organs reddish; the thorax finely and sparingly punctured, little convex, especially behind the neck; the elytra punctate-striate, with a small flavous disk near the base on the fifth interstice; the antennæ, three basal joints red, rest black; the legs reddish brown.

The punctuation of the thorax is larger and closer in this species than in the others of this series; the elytra are relatively longer and the maculation is confined to a small obscure disk near the base of the wing-case. In a variety the flavous disk is absent.

Hab. Kashiwagi, Kiga, and Nikko. Six examples.

Scaphidema nigricorne, sp. n.

S. discali simillimum, sed differt antennis longioribus et totis nigris; elytris immaculatis; pedibus nigris, tarsis rufescentibus.

L. 4 mill.

This insect is larger than *S. discale*; the thorax less finely punctured and less narrowed anteriorly; the antennæ are wholly black, and the legs black with reddish tarsi. It is most similar to the European *S. æneum*, Payk.

Hab. Kiga. A single example.

Alphitophagus japanus, Mars.

I have taken this species abundantly in Ceylon. In a list of insects given in Tennent's 'Ceylon,' 1861, this species

stands under three different names, in three different genera, but it is not necessary to specify them.

Hab. Nagasaki and Bukenji, near Yokohama. I have seen this species in great abundance on many occasions.

Alphitophagus pallidicollis, sp. n.

Rufo-testaceus, capite thoraceque dense punctulatis; elytris nigro-fasciatis.

L. $3\frac{1}{2}$ mill.

Reddish, pale brown, or yellow, antennæ and legs the same colour; the head and thorax evenly and densely punctulate; the elytra punctate-striate, interstices microscopically punctulate, with a black fascia at the base on interstices 2-6, and a second dorsal fascia entirely crosses the wing-case, the last is usually broadest at the suture; and in some examples the two fasciæ join on the sutural interstice.

Easily separated from *A. japonus*, Mars., by the colour, size, and the dense punctuation of the thorax.

Hab. Yokohama. Nine examples from a boletus at Bukenji in company with a large number of *A. japonus*, Mars.

Pentaphyllus oblongus, sp. n.

Oblongus, subparallelus, flavo-testaceus; elytris punctulatis, striis obsoletis; antennis pedibusque concoloribus.

L. $2\frac{1}{3}$ mill.

Oblong, somewhat parallel at the sides, yellow-testaceous; the head distinctly and not closely punctured, with the surface microscopically strigose; the thorax arched at the sides, with the margin evenly elevated, anterior angles well rounded off, surface sculptured like the head; the scutellum small and triangular; the elytra punctulate, striæ obsolete, surface with very feeble leather-like sculpture, lateral margin raised like that of the thorax; the antennæ, articulations 1-2 rather robust and equal, 3-6 shorter and smaller, 7 slightly transverse, 8 distinctly transverse, 9-10 rather widely transverse, terminal joint nearly circular in outline, the last five joints forming a lax club.

This species is larger and more parallel than *P. testaceus*, Helw., and the antennæ are differently formed, with the articulations much more lax. But the seventh and eighth joints are transverse, although not very distinctly so, and I have no doubt the species are congeneric.

Hab. Yokohama, at Bukenji. One example.

Menimus niponicus, sp. n.

Flavo-testaceus, nitidus, supra convexus; capite thoraceque sparse

punctatis; elytris striato-punctatis; antennis pedibusque concoloribus.

L. $2\frac{1}{4}$ mill.

Yellow-testaceous, shining, convex above; the head rather large, eyes small, surface sparingly punctate, punctures somewhat large and irregularly set; the thorax punctured like the head, rather strongly marginate at the sides; the elytra marginate externally like the thorax, widest in the middle, obtusely acuminate behind, striate-punctate, the rows of punctures are not very regular, and in the interstices there are a few similar punctures which apparently add to their irregularity; the prosternal posterior process is continued behind the coxæ on the same plane as the anterior part and is scarcely widened out; in a species from New Zealand this process is a little depressed and slightly widened out. The antennæ, joints 7-10 form a compressed club, the seventh joint is smaller than the eighth, and is relatively larger than in the New Zealand species, which has a more lax club.

I have placed this species in *Menimus* without hesitation, notwithstanding the other known species in the genus are all from New Zealand, from whence Mr. Champion has kindly lent me an example.

Hab. Kiga. Found in the recesses (a foot from the bark) of a very large and decaying beech, in company with *Eugoniopus Lewisi*, Reit.; six examples.

Ceropria sulcifrons, Har.

Ceropria sulcifrons, Har. S. e. Z. 1878, xxxix. p. 353.

The fine iridescent colours of this species assume a circular form both near the humeral angle and before the apices of the elytra. In the other three species of this series the centre of the iridescence is so near the margin that the colours can only form a semicircle.

Hab. Kiga and Hakone (abundant), and on Oyayama.

Ceropria subocellata, Cast.

Ceropria subocellata, Cast. Brul. Mon. p. 308.

This species is broader and more oval in outline than *C. induta*, Wiedem., and it measures nearly 13 mill. In the male the anterior tarsi are scarcely dilated and the anterior and intermediate tibiæ are not dentate. There is a long series of it in the Bates collection from many localities.

Hab. Nagasaki. Three examples.

Ceropria striata, sp. n.

Oblongo-ovata, nigra, nitida; thorace distincte punctulato; elytris fortiter punctato-striatis, interstitiis convexis et obsolete punctulatis.

L. $11\frac{1}{2}$ mill.

Oblong-ovate, black, shining; the head irregularly punctulate; the thorax bluish black, somewhat densely punctulate, lateral margin canaliculate, feebly sinuous behind the eyes, bisinuous at the base; the scutellum smooth, and as large again as in *C. induta*; the elytra strongly punctate-striate, interstices convex and nearly smooth, with a golden area over the hind coxæ, otherwise similar in colour to *C. induta*. In the male the anterior and intermediate tibiæ are bent and a little enlarged at the tarsal end, the enlarged part of the anterior tibiæ is denticulate on the inner edge.

This species closely resembles *C. induta*, but it is longer, with the lateral rim of the thorax more elevated, the scutellum larger, and the elytral interspaces more convex and less punctulate.

Hab. Kumakuni in Higo. Three examples.

Ceropria induta, Wiedem.

Ceropria induta, Wiedem. Zool. Mag. i. 3, 1819, p. 164.

Specimens of this species were named *C. subocellata*, Cast., by Marseul in 1876; it was originally described from Javan specimens. I have taken it commonly in Ceylon and Singapore, and it appears to be distributed all over the Oriental region.

Hab. Nagasaki and Oyama. Like the three preceding species in Japan, it occurs under the bark of Kuro-matzu (*Pinus massomana*, S. & Z.).

[To be continued.]

XLIV.—*Natural History Notes from H.M. Indian Marine Survey Steamer 'Investigator,' Commander R. F. Hoskyn, R.N., late commanding.*—Series II., No. 1. *On the Results of the Deep-sea Dredging during the Season 1890–91 (concluded).* By A. ALCOCK, M.B., Surgeon-Captain I.M.S., Superintendent of the Indian Museum.

[Continued from p. 334.]

BRACHYURA.

Family Inachidæ.

ECHINOPLAX, Miers.

85. *Echinoplax pungens*, Wood-Mason.

Echinoplax pungens, Wood-Mason, Ann. & Mag. Nat. Hist., March 1891, p. 259.

Station 115, 188–220 fathoms.



Lewis, Graceanna. 1894. "On the Tenebrionidae of Japan." *The Annals and magazine of natural history; zoology, botany, and geology* 13, 377–400.

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