

keys are set in the lower margin of the basal joint of the mandible, while the keys themselves are on the inner face of the coxal joint of the palpus. In *Phormingochilus*, on the other hand, this position is reversed, the keys or rods being on the mandible, while the opposing spines are on the palpus. These beautiful structures, as represented in the two genera mentioned above, have been described and figured in a most interesting paper published in 'Natural Science,' vol. vi. p. 35, Jan. 1895, entitled "Musical Boxes in Spiders."

Amongst other spiders which exhibit an organ of somewhat similar character in the male sex and in a rudimentary form in the female sex, in connexion with the mandibles and palpi, we may mention the genus *Leptyphantes* of the family Theridiidæ and some other genera commonly included under the name *Tmeticus*. The organ in this case consists of a series of transverse grooves, opposed by a small spine set in the apex of a minute conical prominence, situated near the base on the inner side of the femoral joint of the palpus, which works upon and across the grooves.

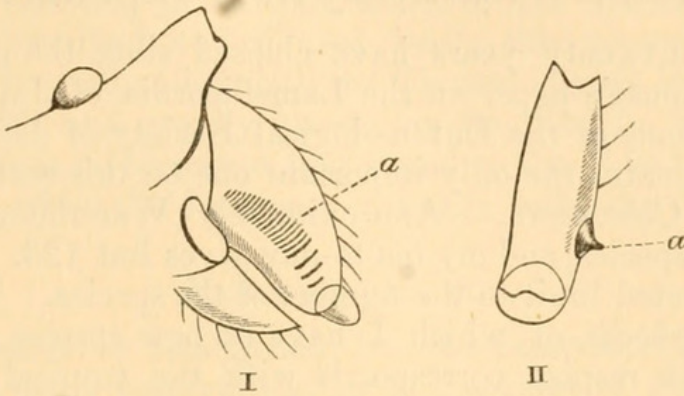
These organs were described and figured long ago by Mr. F. Maule-Campbell, of Hoddesdon.

The sound which these minute organs would emit, if indeed any, would of course be far too insignificant to be heard by the human ear.

More interesting on the whole, perhaps, than these is a somewhat similar organ discovered on the mandible of the genus *Thomisoides*, consisting, in this case also, of an extended series of very highly specialized transverse ridges upon the outer surface, while on the opposing surface of the femur of the palpus appear from four to six (the number varying in different species) small separate tubercles. This structure has been described and figured by M. Simon in 'Histoire Naturelle des Araignées,' pp. 268 and 269, and also by Mr. Pocock in the paper mentioned above, and is found in both sexes of *Thomisoides*.

During the past year I have discovered in all the specimens of the genus *Scytodes*, and in both sexes which have come to hand from various parts of the world, a structure very similar to those in *Leptyphantes*, consisting of a series of short transverse ridges, more pronounced and more widely separate towards the apex, becoming finer and more closely adjacent towards the base (fig. I., *a*). On the femoral joint of the palpus near the inner basal angle there is a stout conical prominence, its apex terminating in a short blunt spine (fig. II., *a*). This would, when the palpi were moved to and

fro, pass over the ridges on the mandible, and perhaps produce a strident sound of greater or less intensity (see figures I. and II.).



Of several other genera, *Loxosceles* and *Dictis*, for instance, which M. Simon regards as closely allied to *Scytodes* and *Thomisoides*, it is noteworthy that they show no signs of either ridges on the mandibles or spines on the palpus. At any rate, the species which I have been able to examine—*Loxosceles rufescens*, L. Duf., and *Dictis gilva*, Thor.—do not.

M. Simon, in 'Histoire Naturelle des Araignées,' regards the generic term *Dictis* as a synonym of *Scytodes*. One would, however, be inclined to think that the absence of this organ might be a sufficient reason for keeping the genera *Scytodes* and *Dictis* quite distinct, as originally contemplated by Dr. Thorell.

Of those other organs to which I have briefly referred above, consisting of a deep fovea in the base of the abdomen, just above the pedicle, working in correlation with the roughened or developed and prominent end of the cephalothorax, I may refer to those visible in certain genera of the family Theridiidæ, as, for instance, in *Steatoda*, *Asagena*, *Pedanostethus*, &c.

But by far the most remarkable and the most highly specialized of these organs yet observed is that recently discovered by Mr. Pocock in the male of *Cambridgea antipodiana* (White), and described, with figures, in the Ann. & Mag. Nat. Hist. ser. 6, vol. xvi., Sept. 1895, in a paper entitled "On a new Sound-producing Organ in a Spider."

In this case the upper surface of the pedicle is produced in the form of a sharp, curved, triangular blade, which, when the abdomen is moved, works in and across a deeply corrugated fovea in the base of the abdomen.

LII.—*On the Lamellicorn Coleoptera of Japan, and Notices of others.* By G. LEWIS, F.L.S.

ALTHOUGH twenty years have elapsed since the publication of Waterhouse's paper on the Lamellicornia of Japan in the 'Transactions of the Entomological Society of London,' his memoir remains the only important one on this section of the Japanese Coleoptera. Approximately Waterhouse enumerated 100 species, and my list to-day gives but 123. There is an unexpected limit to the number of the species. The fauna fails in *Aphodii*, of which I have no new species to record, and in this respect corresponds with the tropical region of Eastern Asia; and it lacks *Onthophagi*, which in Southern and Central China are particularly numerous. It is possible that the finest species are local and remain to be discovered. No species of *Euchirus* is at present known to occur in the Archipelago, but it is very probable one exists, and it should be sought for in autumn in the large elevated forests of the central and southern provinces.

The Cetoniidæ are not generally dealt with here, because they were the subject of an article in this Magazine in 1887 (xix. pp.196–202), and beyond two species of *Cetonia* described by Janson in 1888 and one new species of *Paratrichius* described in the note at the end of this paper, there is nothing further to record.

I consider that the following species have been erroneously included in the catalogues and papers on the Japanese Coleoptera, and I have not given their names a place in my list:—*Onthophagus dama*, F.; *Geotrupes splendidus*, F.; *Serica brunnea*, L.; *Phyllopertha horticola*, L.; *Phyllopertha arenaria*, Brullé; *Anomala oblonga*, Scop.; and *Mimela testaceoviridis*, Blanch. Regarding the synonymy set forth in the List of Species, I believe it is correct; and when it differs from lists previously published I have given in the body of this paper the reasons for my conclusions.

Three species of *Aphodii* have been very indifferently described by Motschulsky, and Waterhouse, failing to refer them to any species in the collection formerly in his hands, transcribed Motschulsky's descriptions verbatim, to enable students not having the 'Etudes' to judge of their value. After studying Motschulsky's papers and becoming familiar with the author's work generally, I think I have assigned his names to the right species; but in consideration of the incompleteness (and, in one case, false measurement) of his descriptions, I think his names are not entitled to the right

of precedence. It is better to regard them as manuscript names.

A curious species of a genus allied to *Uroxys* has been found lately on Oshima, the largest island of the Ruikiuan group, and it is described and figured here: this group of islands must not be confounded with the Chinese islands lying further to the south, and usually known as the Luikiu Islands, because there is no corresponding sound to the R in the Chinese language, while the Japanese language lacks the L.

PANELUS, gen. nov.

This genus is established for the reception of a small species in many respects similar to a species of *Scatinus* and *Saphobius*. Body somewhat ovate; terminal joint of maxillary palpi elongate; the mentum small and distinctly incised anteriorly; the head, eyes visible from above, clypeus bidentate on the anterior edge, frontal suture invisible, lateral edge minutely notched; the mesosternum pointed anteriorly; the thorax, anterior angles largely excavated for the reception of the antennal clubs; the legs, anterior tibiæ feebly dilated apically, apex without tarsal grooves, intermediate and posterior tibiæ bent, not dilated towards the tarsi, anterior tarsi very short. In the figure the tarsi are drawn a little too long; the figure represents the form of the intermediate tarsus, which, like the hind tarsus, is stout at the base.

Type *Temnoplectron parvulum*, Waterh.

Fig. 1.

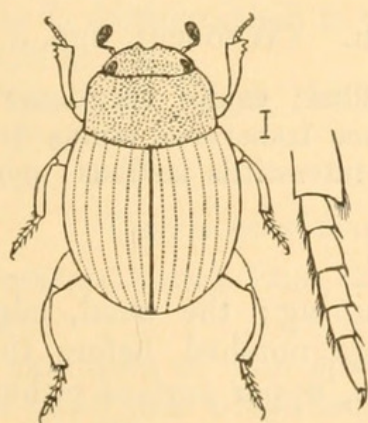
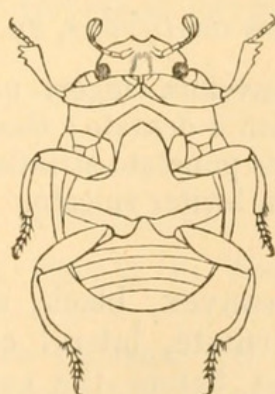


Fig. 2.



Panelus parvulus. (Woodcut, figs. 1, 2.)

Temnoplectron parvulum, Waterh. Ent. M. M. p. 175 (1874).

Waterhouse's description is as follows:—

“Elongatum, subovatum, piceum, nitidum. Capite magno, leviter

convexo, subrotundato, subtilissime et crebre punctulato; margine antico depresso, in medio bidenticulato atque inter denticulos emarginato. Thorace crebre et distincte punctato, longitudine duplo latiori, sat convexo, antice angustato, margine antico leviter emarginato, postice rotundato, lateribus ad angulos anticos subito oblique angustatis, angulis anticis rectis, posticis obtusis. Elytris sat convexis, lævibus, longitudine non brevioribus, infra humeros latioribus, dein ad apicem arcuatim angustatis, singulis tenuissime septem-striatis. Tibiis compressis, arcuatis, tarsis compressis. Antennarum clava nigro-fusca.

"L. $2\frac{1}{2}$ mill., lat. $1\frac{1}{2}$ mill."

Hab. Nagasaki and its neighbourhood. Occurs under dead leaves in the early days of April, and is not uncommon.

MARAXES, gen. nov.

Body oblong; the maxillary palpi, terminal joint long and very feebly securiform; the mentum narrow, emarginate anteriorly; the head angularly explanate laterally, eyes semicircular in outline, invisible above; the clypeus anteriorly 4-dentate, frontal suture invisible; the thorax transverse, with cavities in the anterior angle for the reception of the antennal club; the scutellum invisible externally; the elytra widest in the middle, humeral angle rectangular, but a little prominent; the pygidium invisible from above; the coxæ, anterior pair contiguous, intermediate widely separate, posterior approximate; the legs, anterior tibiæ gradually dilated to the apex, apices grooved for the reception of the tarsi in repose.

This genus may be placed near *Uroxys*.

Maraxes dentifrons, sp. n. (Woodcut, figs. 3, 4)

Oblongus, convexus, niger, nitidus; capite vix dense punctato, clypeo antice 4-dentato; thorace transverso, minus dense punctato; elytris punctato-striatis, interstitiis lævibus; pygidio lævi, transversim leviter sulcato.

L. 5 mill.

Oblong, convex, black, shining; the head, edge of the clypeus 4-dentate, lateral edge notched before the median angle, widest before the eyes, upper surface rather densely punctate; the thorax transverse, the punctures a little less closely set than those of the head, anterior angles obtuse, posterior angles rectangular; the elytra clearly punctate-striate, interspaces smooth; the pygidium smooth, with a rather fine transverse sulcus near the base, which is V-shaped in the middle; the legs, tibiæ widen out to the apices, anterior

pair 3-dentate, intermediate and posterior spinose on the outer edge and without grooves; the underside is strongly punctate except in the area near the intermediate coxæ.

Fig. 3.

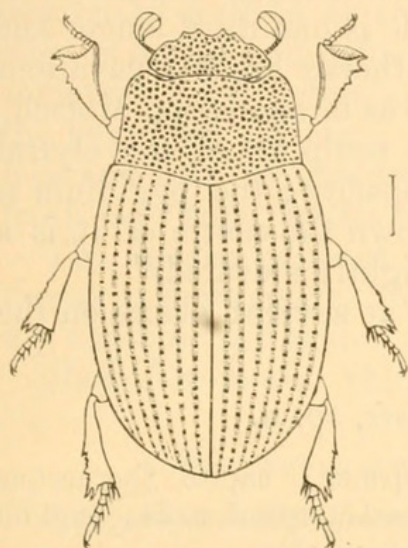
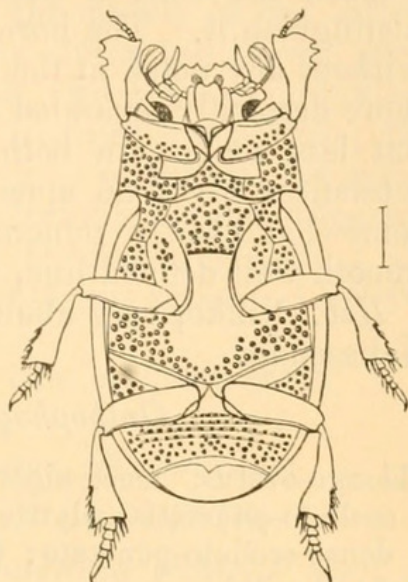


Fig. 4.



Hab. Oshima.

I am much indebted to Monsieur René Oberthür for an example of this species.

Copris ochus.

Catharsius ochus, Motsch. Etud. Ent. p. 13 (1860); Waterh. Trans. Ent. Soc Lond. i. p. 73 (1875).

There is only one carina on the hind tibia of this species; *Catharsius* is distinguished from *Copris* in having two.

L. 20–26 millim.

Hab. Simabara, Kobé, Nikko, and Hakodate. Abundant on sandy areas.

Copris acutidens, Motschulsky.

Copris acutidens, Motsch. Etud. Ent. 1860, p. 13; Waterh. *l. c.* p. 75 (1875).

Large examples of this species measure 16 millim., and there is a small race which measures only 10 millim.

Hab. Abundant in all the islands in sandy places.

Copris pecuarius, Lewis.

Copris pecuarius, Lew. Wien. ent. Zeit. iii. Heft i. p. 17 (1884).

“*C. lunari* affinis, sed major. Niger, nitidus, elytris punctato-

striatis, interstitiis subtiliter alutaceis; pygidio sat dense punctato, in medio linea longitudinali lævi subelevata.

Long. 20–23 mm.

“This species is closely allied to *Copris lunaris*, L., but besides the size, it has several well-marked characters to distinguish it. The horn in the male is one third longer and without any notch at the base; the thorax has the elevations more decidedly separated and formed as in *acutidens*, Motsch., but less acute. In both sexes the sculpture of the elytral interstices gives an appearance of opacity; the pygidium is somewhat closely punctured, and down the centre of it is a smooth well-defined line, which is slightly elevated.”

Hab. Nikko, very abundant; also at several places on the Nakasendo.

Onthophagus nikkoensis, sp. n.

Oblongo-ovatus, æneo-niger, parum opacus; capite thoraceque ocellato-punctatis; elytris interstitiis basi et apicali rufis; pygidio dense ocellato-punctato; tibiis anticis truncatis.

L. $5\frac{1}{2}$ –6 mill.

Oblong-ovate, brassy black, rather opaque; the head, clypeus anterior edge incised in the middle, surface strongly and closely punctate, punctures transversely confluent, the suture is indicated by an evenly arched carina, behind the carina the forehead is densely ocellate-punctate, punctures not confluent, in front of the neck a second transverse carina; the thorax densely and clearly ocellate-punctate, in ♀ there is a gibbose elevation behind the middle of the head, in ♂ the gibbosity is more transverse and divided into three parts; the elytra distinctly but not deeply striate, interstices opaque, with two longitudinal rows of small granules, rows most regular on the interstices near the suture, interstices usually reddish at the apices and bases; the pygidium clearly ocellate-punctate; the legs and antennæ pitchy brown, the ends of the anterior tibiæ are truncate like those of *O. jessoensis* and *brevis*.

Hab. Nikko and Nara. Abundant at Nikko in June.

Onthophagus vacerosus, sp. n.

Breviter ovalis, piceus, setosus, nitidus; capite bicarinato, punctato; thorace convexo, undique punctato; elytris obscure brunneis. L. 4 mill.

Shortly oval, piceous, setose, shining; the head, clypeus feebly emarginate, with confluent punctures, divided from the

head by a well-marked transverse carina, before the neck there is a second transverse carina, equal in length to the first, punctures between the carinae not confluent nor so large and deep as those in the clypeus; the thorax convex on the disk, evenly, not coarsely punctured throughout, punctures obsoletely ocellate, at the side near the middle of the lateral edge is a small ill-defined boss; the elytra dull brown, striae somewhat faint, interstices flat, with two rows of granules; the pygidium punctate, punctures frequently confluent; the legs and antennae obscurely brown, tibiae tridentate, the apical tooth is at right angles to the tibia, leaving the end truncate.

The species is about the size of *O. brevis*, Waterh.; the thorax is more convex than any other of this series. I believe my example is a male.

Hab. Awomori. One specimen, 31st August, 1880.

Onthophagus ocellato-punctatus, Waterhouse.

Onthophagus ocellato-punctatus, Waterh. *l. c.* p. 79 (1875).

The male has a slender and somewhat straight horn on the posterior edge of the head; this sex was unknown to Waterhouse.

Hab. Hiogo in August 1871, and on the sand-hills at Hakodate in September 1880.

Note.—*Caccobius* is a generic name proposed for such species of *Onthophagus* in which the tarsal end of the tibia is truncate; but intermediate forms occur between *Caccobius* and the typical *Onthophagi*, and the genus is now considered to be of doubtful validity.

Aphodius Solskyi, Harold.

Aphodius Solskyi, Har. Deutsch. ent. Zeit. p. 251 (1871).

Aphodius diversus, Waterh. Trans. Ent. Soc. Lond. i. p. 82 (1875).

Aphodius castaneipennis, Waterh. *l. c.* p. 83 (1875).

Calamosternus rectus, Motsch. Bull. Mosc. p. 169 (1866).

Chilo thorax vitta, Motsch. *l. c.* p. 170 (1866).

Waterhouse thought that Motschulsky's words "angulis posticis subacutis" did not apply to his *Aphodius diversus*; but the few words of description he gives of *C. rectus* apply in other respects, and some latitude of interpretation is necessary with this author. I also consider that the *C. vitta*, Motsch., is the common colour-variety of *A. Solskyi*, Har., very abundant in Japan. There is nothing except the words "tenue punctato-striatis" as applied to the elytra, against the "punctato-striatis" applied to *C. rectus*, that can throw

doubt on the matter. I do not think Motschulsky's names are entitled to first rank, as, if allied species had been found (as in the case of his *Holotrichia parallela*), the descriptions are so vague that they would probably apply to all. His measurement of *Chilothorax vitta* is 4 lines by $1\frac{1}{2}$ line, an impossible measurement for an *Aphodius* said to be "elongato-subovatus."

Hab. Very common in Japan and in many parts of China.

Aphodius brevisculus, Motschulsky.

Aphodius brevisculus, Motsch. Bull. Mosc. i. p. 170 (1866); Waterh. l. c. p. 82.

This species is generally black, but sometimes the thorax is broadly margined with brown and the elytra wholly brown; in other specimens the elytra are black, with a brownish spot on the humeral angle. The elytra are punctate-striate.

L. $3\frac{1}{2}$ –5 mill.

Hab. Hakodate. Many examples.

Aphodius eccoptus, Bates.

Aphodius eccoptus, Bates, Ent. Month. Mag. xxv. p. 297 (1889).

"Subgen. *Melinoptero* (Muls.) referendus. Elongatus, parum convexus, nigro vel castaneo-fuscus, femoribus ventroque sordide testaceis, elytris haud dense recumbente fulvo-pubescentibus; capite discrete punctulato, inermi, clypeo semicirculari, genis haud productis, obtusis; thorace apud angulos posticos valde sinuato, margine laterali incrassato, basali medio immarginato, disco æqualiter discrete punctulato; elytris punctato-striatis, interstitiis medio convexis sparse punctulatis, striis 3–7 apice abbreviatis; tibiis posticis apice spinis inæqualibus."

L. 8 mill.

This species differs from all in this series in the sinuation in the hind angles of the thorax.

Hab. Nikko and on the Mikuni-togé. I took it very abundant at Nikko in company with *Copris pecuarius*, Lew., and *Oniticellus phanæoides*, Westw.

Aphodius lividus, Olivier.

Aphodius lividus, Ol. Ent. i. p. 86, t. xxvi. fig. 22.

This species is usually regarded as a cosmopolitan insect; in the Munich Catalogue the synonymy consists of fourteen names; Olivier figured it and Fabricius described it three times.

Hab. Oyayama, Awomori, and Hakodate. Ten examples.

Aphodius ovalis, Waterhouse.

Aphodius ovalis, Waterh. l. c. p. 89.

Hab. This species appears to be local. The original example came from Nagasaki, and on the 16th February, 1881, I obtained four more specimens at Ipongi, a place about four miles from the town.

Aphodius variabilis, Waterhouse.

Aphodius variabilis, Waterh. l. c. p. 90.

Melinopterus nigrotessellatus, Motsch. Bull. Mosc. p. 170 (1866).

I consider that the above names apply to the same species. Motschulsky's description is not sufficient to allow his name precedence; the form of this insect is "elongato-subovatus" (the same as *Chilothorax vitta*) and the measurement 2 lines by 1 line. The punctuation of the thorax varies in density in *A. variabilis*, and the scutellum is black, piceous, or red in various examples. I have three specimens from Yokohama in which the dorsal spots unite and form a broad transverse band, which, however, leaves the sutural interstice obscurely brown.

Hab. Nagasaki, Kobé, and Yokohama. Common where it occurs.

Aphodius urostigma, Harold.

Aphodius urostigma, Har. Berl. ent. Zeit. p. 170 (1862); Waterh. l. c. p. 90.

Harold in 1878 (Munich Cat. p. 1055) considered this species to be the same as *A. pallidicornis*, Walker; but Waterhouse, having access to Walker's type in 1875, pointed out the differences.

Hab. Nagasaki, Oyayama, Nikko, and Awomori. Waterhouse gives China and Ceylon as localities, and Harold's typical specimen came from Java.

CÆLIUS, gen. nov.

The species for which this genus is established has a corporal outline like *Saprosites*, long and parallel at the sides, and it inhabits the recesses of old trees. From the colour and the difficulty I had in obtaining a few specimens, it probably rarely comes near the surface. Head anteriorly semicircular in outline, frontal suture well marked, mentum rather narrow, arched not incised in front, terminal leaflet of the antennal club much less transverse than in *Saprosites*; the anterior and posterior coxæ contiguous, intermediate moderately

separated; the pygidium exposed. *Cælius* differs from *Saprosites* in the form of the clypeus, which is depressed but not deflexed, the scutellum is less narrow, and the anterior thoracic angles are somewhat acute. In *Saprosites* the frontal suture is not visible, the clypeus is deflexed and emarginate.

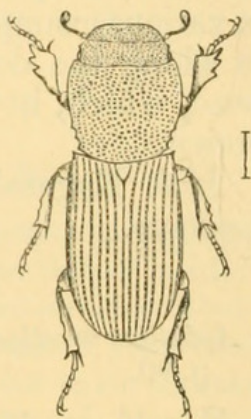
Cælius denticollis, sp. n. (Woodcut, fig. 5.)

Elongatus, parallelus, rufo-brunneus; capite punctulato, linea transversa distincte impressa et utrinque fusco-maculata; thorace antice minute disco grosse punctato; antennis pedibusque concoloribus.

L. $3\frac{3}{4}$ mill.

Elongate, parallel, reddish brown, shining; the head punctulate, punctures variable in size and not very closely set, clypeus anteriorly with a widely arched outline, not emarginate, frontal suture very distinct, with two dusky spots like those in *Ægialia rufa*, F. (*nec* Leconte), eyes small; the thorax with large, round, and deep punctures, irregularly and not closely set, intermixed with smaller points, the punctuation anteriorly gradually lessening in size until the edge behind the neck, where it is very fine, the lateral edge is obscurely crenulate anteriorly, the crenulations gradually increase in distinctness until they form a series of denticulations round the posterior angles; the scutellum obsoletely punctulate; the elytra evenly punctate-striate, interstices smooth with crenulate edges; the metasternum is longitudinally subcanaliculate in the middle, with large punctures in the channel and a few on the side of the plate outside it; the legs, anterior tibiæ strongly tridentate.

Fig. 5.



Hab. Miyanoshita, Kiga, and Nikko. Four examples from old and decaying trees.

Saprosites naræ, sp. n.

Elongatus, parallelus, piceo-brunneus, nitidus; capite convexo, genis haud prominulis nec acutis; thorace subquadrato, punctato; elytris fortiter striatis, striis fortiter punctatis, interstitiis convexis, lævibus; mesosterno antice circulari impresso.

L. 3 mill.

This species is much smaller than *S. japonicus*, Waterh., and of a different colour. The cheeks are less prominent and

the sculpture above less coarse, but the most important difference lies in the anterior portion of the mesosternum. The mesosternum anteriorly in *S. japonicus* is raised and the elevated part has a securiform outline; in *S. naræ* this part is occupied by a circular impression more or less deep. The impression is usually well defined, but in one specimen out of twelve the impression is very shallow. The thorax also is distinctly less transverse.

Hab. Nara. On the 30th June, 1881, I found it abundantly under bark, and later in the year I obtained one specimen on Oiwake, a mountain on the Nakasendo.

Oxyomus jugosus, sp. n. (Woodcut, fig. 6.)

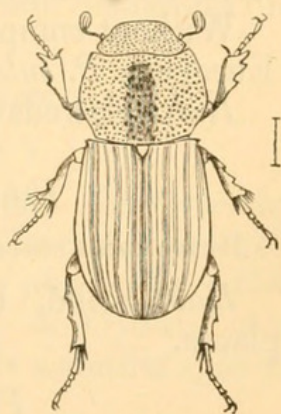
Oblongus, piceus, subnitidus; clypeo leviter emarginato, bituberculato; thorace rugoso; elytris 8-costatis.

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

Oblong, piceous, somewhat shining; the head, clypeus very transverse, feebly but widely emarginate, with a small tubercle on each side of the emargination, surface uneven, with an ill-defined marginal impression and a feebly-raised disk in the middle, rugosely sculptured with punctures of various sizes, cheeks obtusely produced; the thorax, anterior angles a little prominent, arched laterally, hind angles obsolete, sculpture rough and coarse and somewhat variolose, with a median impression before the scutellum; the scutellum small and triangular; the elytra 8-costate, with the sutural edges markedly elevated and the epipleural margin finely carinate, the second and fourth costæ are the most conspicuous, the second agreeing with the sutural costa, interstices not very distinctly sculptured, but the sculpture appears to consist of two longitudinal rows of short linear carinæ, humeral angle obtuse, elytra widest behind the posterior coxæ and rather narrower at the base; the legs pitchy brown, anterior tibiæ carinate, with small transverse ridges on the outer side of the carina.

Hab. Nagasaki. I took one specimen from under dead leaves near the Temple of Suwasama on the 23rd March, 1881.

Fig. 6.



Rhyssemus asperulus, Waterhouse.*Rhyssemus asperulus*, Waterh. l. c. p. 94.

Hab. Nagasaki, Kobé, Yokohama, and Nikko. I found this species in garden rubbish commonly as far north as Nikko; at Hakodate I took a broader insect, which may be a different species.

Psammodius ainu, sp. n.

Oblongus, niger, subnitidus; capite rugoso, obsolete punctato; thorace transversim 5-costato; elytris 9-carinatis, interstitiis seriatim punctatis.

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

Oblong, black, somewhat shining; the head very rugose, the rugosities obliterating the punctuation, before the neck are irregular transverse ridges, varying in distinctness in different specimens, clypeus feebly emarginate and reddish on the edge; the thorax with five transverse ridges narrowly broken in the middle; the elytra with nine longitudinal carinae (inclusive of the sutural and epipleural margins), the interstices have single rows of shallow punctures.

Without comparison this species might be mistaken for the European *P. sulcicollis*, Ill.

Hab. Hakodate. Four examples from the sand-hills.

Psammodius convexus, Waterhouse.*Psammodius convexus*, Waterh. l. c. p. 94 (1875).

Hab. Kobé, Kioto, Niigata, and Sapporo. In sandy places.

Psammodius japonicus, Harold.*Psammodius japonicus*, Har. Deutsche ent. Zeit. xxii. Heft i. p. 69 (1878).

“Elongato-oblongus, nitidus, piceus, subtus cum pedibus obscure rufo-piceus; capite æqualiter granulato; thorace parce punctato, ad latera antice transversim impresso; elytris punctato-striatis, interstitiis planis lævibus.”

L. 4 mill.

The thoracic impression is a distinctive character in this species.

Hab. Nagasaki and Enoshima. Hagi (*Hiller*).

Psammodius comis, sp. n.

Elongato-oblongus, niger, nitidus; capite rugoso-granulato, trans-

verso; thorace grosse punctato, utrinque foveolato; elytris punctato-striatis; pedibus piceis.

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

Elongate, oblong, black, shining; the head transverse, anterior outline broadly arched, not emarginate, edge narrowly reflexed; the thorax also transverse, with large punctures evenly distributed but not closely set and a fovea on each side well within the margin; the elytra deeply punctate-striate, interstices rather wide, convex, and smooth; the antennæ and mouth-organs reddish brown; the legs piceous, tarsi rather paler.

In general outline and size this species resembles *P. japonicus*, Har., but it is not opaque; the head more transverse and not emarginate and the thorax is without any lateral impression.

Hab. Nikko. One example from the bed of the river.

Ægialia nitida, Waterhouse.

Ægialia nitida, Waterh. l. c. p. 95.

This species measures $3\frac{1}{2}$ –4 mill., not 4 lines.

Hab. Hakodate, on the sand-hills. Four examples in September 1880.

Ochodæus maculatus, Waterhouse.

Ochodæus maculatus, Waterh. l. c. p. 95, pl. 3. fig. 1.

Hab. Kiushiu and on the main island. This species originally came from Simabara and Tagami close to Nagasaki. In May 1882 I caught two flying at dusk above Mogi also close to Nagasaki. Mr. Pryer found one on Oyama near Yokohama. In the British Museum there is a similar species from Java.

Bolboceras nigro-plagiatus, Waterhouse.

Bolboceras nigro-plagiatus, Waterh. l. c. p. 96, ♀.

The male of this species was not noticed by Waterhouse. On the head there is a somewhat stout and rugose horn, slightly emarginate at the apex; the thorax has a transverse ridge behind the neck, and on each side of it is a tubercle similar to those of *Copris lunaris*, L., or *C. pecuarius*, Lew. There is a specimen in the British Museum from Korea which is either a variety of this species or one very similar to it, the sculpture of the head and thorax is different and the dark coloration of the elytra extends to the middle of each wing-case.

Hab. Tokio, Yokohama, and Kobé. Not very common.

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Geotrupes auratus, Motschulsky.

Geotrupes auratus, Motsch. Etud. Ent. 1857, p. 31; Jekel, Ann. Soc. Ent. Fr. 1865, p. 587; Waterh. *l. c.* p. 97.

Geotrupes purpurascens, Waterh., Lew. Ent. 1893, p. 150.

Hab. Japan, common in all the islands. At Nanai near Hakodate, on the 17th September 1880, I observed it in great profusion. A note in my diary says "50 specimens occurred in one of their attractions and this repeatedly. Many scores were alive and crawling about without abdomens; a species of *Corvus* had been feeding on them, but only eating the softer part of their bodies." At Kashiwagi I found only the blue variety and captured about 30 examples. The colour-varieties are noticed in the Ent. p. 150 (1893). Waterhouse records specimens from Tartary and Heyden from Manchuria. Celebes has been given in error.

The colours of this species are blue-black, blue-green, blue, golden green, golden red, and bright copper, with some intermediate tints. The smallest specimen I have measures 14 mill., the largest 21 mill.

Geotrupes lævistriatus, Motschulsky.

Geotrupes lævistriatus, Motsch. Etud. Ent. p. 32 (1857), ♀; Waterh. *l. c.* p. 97 (1875), ♂ & ♀.

Geotrupes Deyrollei, Jekel, Ann. Soc. Ent. Fr. v. p. 586 (1865).

Geotrupes amæus, Jacobsohn, Hor. Soc. Ent. Ross. xxvii. p. 120 (1893), ♂.

Jacobsohn's description corresponds with the female characters of this species, but he states that his type is a male. The descriptions by Motschulsky, Jekel, and Waterhouse were presumably unknown to Jacobsohn, as they are not referred to by him.

Hab. Japan, abundant (in many varieties) in all the islands and occurs also in Manchuria. The locality "Celebes" has been given in error, owing to a small series of Japanese species in the British Museum being so labelled by Mr. Bowing before presentation to that institution. Occurs also on Ketoi, one of the Kurile Islands.

Trox chinensis, Bohem.

Trox chinensis, Bohem. Eugen. p. 52 (1858).

Trox obscurus, Waterh. *l. c.* p. 98.

This species is smaller than *T. inclusus*, Walker, but both species belong to the section of the genus in which the scutellum is coarctate at the base. The genus *Trox* is now divided into 4 or 5 genera.

Hab. Simabara. Four examples in 1869. I did not meet with it on my second visit to Japan.

Trox setifer, Waterhouse.*Trox setifer*, Waterh. l. c. p. 98.

Hab. I found this species in single examples at Nagasaki, Simabara, Nikko, and Hakodate; it has therefore a wide range in Japan.

Trox opacotuberculatus, Motschulsky.*Trox opacotuberculatus*, Motsch. Etud. Ent. p. 14 (1860); Waterh. l. c. p. 99.

This species has two wide circular depressions which occupied the median area of the thorax and two others on each side of them of corresponding size. Motschulsky's description should, I think, read "thorace transverso, antice et postice late trifoveolato," not "thorace transverso, antice et postice lato, trifoveolato"; but the depressions are not properly described as foveæ.

Hab. Nagasaki, Nikko, and on the plain of Fujisan. According to Kraatz (Deutsche ent. Zeit. xxiii. p. 231, 1879) it occurs in the Amur region.

Trox niponensis, sp. n.

Elongato-oblongus, opacus, clypeo semicirculari; capite punctato; thorace transverso, in mediolongitudinaliter canaliculato, utrinque obsolete bi-impresso; elytris striatis, striis minime profundis.
L. $5\frac{1}{2}$ mill.

Elongate oblong, opaque, setose; the head semicircular anteriorly, arched at the sides, punctate, with two transverse carinæ (somewhat obscure) in the middle in a line with the eyes; the thorax transverse, rather parallel laterally, anterior angles a little acutely produced, with a longitudinal median, rather shallow channel, and a fainter circular impression on each side of it rather nearer the base than the anterior edge, surface punctate; the elytra striate, striæ shallow with irregular edges, there is a sutural row of setose tubercles and on the third interstice similar but larger and more isolated tubercles, fifth and seventh interstices also tuberculate, the other interstices have smaller tubercles; the elytra somewhat parallel at the sides, but slightly widest behind the posterior coxæ; the legs, tibiæ not dilated, agreeing in this respect with *T. opacotuberculatus*, Motsch.

This small species in general outline agrees best with *Trox setifer*, Waterh., but the thorax is not bisinuous anteriorly, nor are the anterior tibiæ dilated. The scutellum is similar in form but relatively narrower. The scutellum in *T. opacotuberculatus* is nearly as wide again as in *T. niponensis*.

There are four specimens in the British Museum from St. Paul's Island in the Indian Ocean and one from Hakodate. One of the specimens is labelled "*Trox Eversmanni*, Kry. (*rugulosus*, Fald.);" but the thorax of *T. Eversmanni* is described as being subcordate and deeply punctate, and this does not apply to the Japanese species; Faldermann's name has not been published.

Hab. Hakodate. Taken from a dead animal on the sand-hills.

Anthypna pectinata, sp. n.

♂. Oblonga, ænea vel viridi-ænea, nitida, griseo-hirta; capite carinato; thorace granulato-punctato; elytris dense transverso-strigosis. Femina latet.

L. 9 mill.

Oblong, brassy or greenish brassy, shining, and clothed with long grey hair; the head, surface microscopically strigose, punctured, punctures not densely set and appearing sometimes as granules or little bosses owing to their rims being raised, each bears a hair, carinate before the eyes, the carina sometimes joins anteriorly, and in such specimens the carina can be traced in a bowed line behind the eyes; the thorax feebly sinuous on either side on the basal edge, hind angle obtuse with a concavity within it which reaches halfway along the thoracic edge; the scutellum rather densely sculptured; the elytra wholly strigose-rugose; the antennæ and legs greenish or coppery, claws and tibial spines reddish brown.

This genus, so far as I am aware, has hitherto only been represented by two Italian species and two Asiatic species described by Semenow in 1891.

Hab. Tokio. Six specimens found in a garden, all males.

Ectinohoplia obducta.

Hoplia obducta, Motsch. Etud. Ent. 1857, p. 33.

Hoplia sabulicola, Motsch. l. c. p. 34.

Ectinohoplia variolosa, Waterh. l. c. p. 99, pl. iii. fig. 2.

This species is very variable, Waterhouse's figure represents the commonest form, but specimens entirely velvety black above are very common, and intermediate varieties are often found. The remarkable claws in this species are noticed by Motschulsky.

Hab. Nagasaki, Hitoyoshi, Nikko. It is one of the most abundant species in Japan.

Hoplia gracilipes, sp. n.

Nigra, dense squamulis aureo-viridibus tecta; thorace angulis posticis subrotundatis, scutello parvo; pedibus longis et gracilibus, brunneis vel testaceis.

L. 7-8 mill.

This species is very similar to *H. Reini*, Heyd., and *H. communis*, Waterh. It differs from the first in the hind angles of the thorax being rounded, and from the second in being more elongate in form, thorax a little less wide, and (this is a very remarkable character) in the under rim of the thorax projecting out underneath the posterior angle, giving at first sight, when viewed from above, the impression that the hind angle is acute; the scutellum is one third less in size than that of *H. communis*, and the femora and tibiæ are much more slender and longer.

Hab. Oshima (*Ferrie*, 1895). Communicated by the kindness of Mons. René Oberthür.

Hoplia Reini, Heyden.

Hoplia Reini, Heyd. Deutsche ent. Zeit. p. 339 (1879).

This species is described as being similar to *H. parvala*, Krynicki, an insect I have not seen. It hardly differs from *H. communis*, Waterh., except that the hind angles of the thorax are angular, not rounded off. This, however, is a very marked distinction. I apparently overlooked this species, mistaking it when alive for *H. communis*, and I find I have only three or four specimens. Like Dr. Rein I found these in Kiushiu, near Hitoyoshi, early in May.

Hab. Kiushiu.

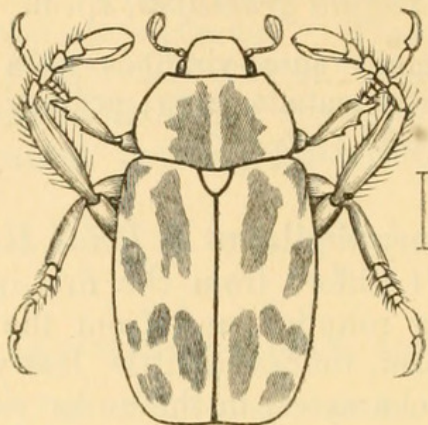
Hoplia maculata, Bates. (Woodcut, fig. 7.)

Hoplia maculata, Bates, Ent. Month. Mag. xxv. p. 298 (1889).

“*H. aureolæ* (Pall.) proxime affinis et quod formam simillima; differt supra squamis pallide fulvis haud metallicis et corpore subtus femoribus pygidioque læte aureis: oblonga, supra breviter sat sparsim setosa, thorace vittis duabus medianis, elytris utrinque striga irregulari haud procul a sutura postice divergenti maculisque tribus lateralibus (prima humerali) strigisque vagis marginalibus fusco-nigris; clypeo sicut in *H. aureola* brevi antice angustato margineque sinuato; thorace medio rotundato angulis posticis obtusis; tibiis et tarsis nigris sparsissime squamosis. Ungues sicut in *H. aureola*.”

♂. L. 8 mill.

Fig. 7.



Hab. Satsuma (*Leech*). I took an example on Mitsudake, near Nagasaki, in April, and nine examples from the flowers of the wild rose at Hitoyoshi, 3rd May, 1881. This species appears to occur only in Kiushiu. The drawing shows a position the insect usually assumes when resting in flowers.

SERICANIA, Motschulsky.

Sericania, Motschulsky, Schrenck's *Reisen*, p. 136 (1860).

The characters of this genus are very similar to those of *Serica*; I find no valid character except in the antenna of the male. Five terminal joints are foliate (Motschulsky's figure only contains four); the first leaflet is peculiar, being a shorter and more slender appendage than the others, and it rises from the base of a rather long joint, and this position separates it from the four terminal leaflets. The compilers of the Munich Catalogue did not notice that Motschulsky, in a note of "errata" at the end of the volume of Schrenck's '*Reisen*,' corrects the spelling of this genus. *Sericaria* is a misprint.

Sericania mimica, sp. n.

Elongata, piceo-rufa, nitida; capite rugose punctato, clypeo rufo-brunneo; thorace parum grosse punctato; elytris punctatis, punctis confluentibus.

L. 9-11 mill.

Elongate (outline similar to that figured for *Pellaplonyx flavidus*, Waterh.), pitchy red, shining; the head roughly and densely punctate, clypeus reddish brown, outer edge more or less raised, head dark brown between the eyes; the thorax bisinuous anteriorly, transverse, narrowest in front, widest behind, evenly arched at the sides, lateral edges narrowly raised, base feebly sinuous on each side, punctate, points larger

and less closely set than those of the head; the scutellum punctate, somewhat elongate, obtuse behind; the elytra with eight or nine shallow furrows occupied with confluent punctures, interspaces feebly convex and smooth; the pygidium irregularly, not densely punctured; the antennæ and legs concolorous.

Hab. Miyanoshita, Hakone, Subashiri, Ontake, Nikko, and Yokohama. Sixteen examples.

Sericania fuscolineata, Motschulsky.

Sericania fuscolineata, Motsch. Schrenck's Reisen, p. 136, tab. ix. fig. 10 (1860).

If I have determined this species correctly, it is very variable in colour. I have only one specimen, which agrees in having the dark lines on the elytra. The elytra are usually pale with the sutural interstice infuscate, or sometimes wholly pale; the head sometimes is, with the thorax, wholly æneous, but generally the clypeus is testaceous.

Hab. Yokohama and Chiuzenji; island of Askold (*Heyden*, 1884).

SERICA, MacLeay.

Serica, MacLeay, Hor. Ent. i. p. 146 (1819).

In this genus the intermediate coxæ of typical species are approximate and the antennæ usually 3-foliate; but I have included three species in it in which the antenna of the male is 4-foliate. The genus *Serica*, as it formerly stood, has lately been divided into three or four genera.

Serica similis, sp. n.

Oblongo-ovata, rufo-brunnea, subopaca; *Sericæ brunneæ* persimilis. L. $7\frac{1}{2}$ –8 mill.

This species has been standing in the Catalogue as *S. brunnea*, Linn.; but, although the colour agrees in both species, there are structural differences. In *S. similis* the eyes are smaller and less convex, the anterior thoracic angles are acute and less depressed, the elytra are shorter and less parallel, the mesosternum is wider between the intermediate coxæ, and the tarsi more slender. This comparison has been made with the males of both species. The head is sometimes wholly pale, sometimes black between the eyes, and some specimens are piceous beneath; the elytral sculpture also differs slightly in the two species.

Hab. Nagasaki, Hitoyoshi, Nikko, and on the Wada-togé. Rather common.

Serica grisea, Motschulsky.*Serica grisea*, Motsch. Bull. Mosc. i. p. 171 (1866); Waterh. *l. c.* p. 101.*Serica polita*, Gebler, Nouv. Mém. Mosc. ii. p. 52; Waterh. *l. c.* p. 102.

Whether the names above refer to one or two species I cannot decide. Both Motschulsky's and Gebler's descriptions seem to apply to one species; but I have given preference to the first because Gebler's species came from Dauria, and also because Motschulsky (Schrenck's Reis. p. 137) refers to *S. polita* as an insect known to him. *Serica grisea* is a very variable species in colour.

Hab. Kiushiu and main island.

Serica nigrovariata, sp. n.

Oblonga, nigra, griseo-pubescent, opaca; elytris brunneis, marginibus nigris, dorso nigro-guttato; antennis pedibusque infuscatis. L. 7 mill.

Oblong, black, opaque; the head, clypeus emarginate anteriorly, with the rim, especially at the sides, strongly raised, surface rugosely punctured and shining; the head between the eyes opaque, with scattered shallow punctures; the thorax punctured like the head, anteriorly bisinuous, with somewhat acute angles, posterior angles very blunt, lateral rim finely raised; the scutellum obscurely punctured, longer than wide, obtuse behind; the elytra striate, interstices somewhat roughened, black on the outer and sutural margins, within reddish brown with black markings; the antennæ and legs dusky or obscurely black.

Hab. Mayebashi. One example only.

The four following species in male have a 4-foliate antennal club:—

Serica angulata, sp. n.

Elongata, picea, opaca; capite grosse et dense punctato; thorace angulis anticis acute prominulis, utrinque bisinuato; elytris punctatis, interstitiis convexis; antennis pedibusque rufo-piceis. L. 10 mill.

Elongate, piceous, opaque; the head shining, clypeus very densely and somewhat rugosely punctate, between the eyes the punctures are larger and not quite so closely set; the thorax, anterior angles acute and prominent, lateral edge bulges out in the middle, forming sinuosities before and behind, punctures much smaller and more scattered than those

of the head, with an obscure reddish disk in the middle of the lateral edge and a narrow reddish margin at the base; the scutellum obtuse behind, impressed on the lateral margins, obscurely punctured; the elytra irregularly punctured, interstices 3 to 5 distinctly raised towards the base; the antennæ and legs pitchy red.

This species is remarkable in having acute anterior thoracic angles.

Hab. Oyayama. Two examples.

Serica quadrifoliata, sp. n.

Elongata, picea, opaca; capite sparse punctato; thorace lateribus obscure rufis; elytris irregulariter punctatis, interstitiis convexiusculis, lævibus; antennis clava 4-foliata.

L. 10 mill.

Elongate, piceous, opaque; the head, clypeus somewhat rough, with shallow irregular punctures, between the eyes the punctures are smaller and more scattered; the thorax punctured like the head on the disk and sides, but along the base, especially before the scutellum, the points are more closely set, bisinuous behind the eyes, feebly bisinuous at the base, narrowest anteriorly, widest behind, sides evenly arched and obscurely red laterally, anterior angles obtuse; the scutellum obtuse behind, wholly punctate; the elytra with lines of irregular punctures separated by interstices, somewhat convex and smooth, truncate behind; the antennæ and legs reddish brown.

Hab. Nikko. One male example.

Serica brevicornis, sp. n.

Oblonga, testacea, azureo-micans, parum nitida; capite thoraceque irregulariter punctatis; scutello triangulari; elytris striatis, interstitiis parum latis, lævibus.

L. 7-7½ mill.

Oblong, pale testaceous, opalescent in parts, somewhat shining; the head, surface uneven, irregularly punctured, punctures shallow and of various sizes, largest irregular in outline, not closely set; the thorax transverse, anterior angles depressed and obtuse, laterally somewhat bulging in the middle, and sometimes feebly emarginate before the hind angles, surface sculptured like the head; the scutellum punctured irregularly, triangular, three sides coequal; the elytra striate, with punctures faintly seen in the lines, interstices convex, smooth, and rather wide; the antennæ small and short, club usually infusate, palpi dusky; the legs pale.

In some examples the thorax is infusate in parts and the elytra in others are dusky on the second interstice, part of the lateral border, and, rarely, apically.

Hab. Nikko and Shinkano in July and August.

Serica higonía, sp. n.

Oblonga, parum nigra vel nigro-brunnea, azureo-micans, subnitida; capite thoraceque irregulariter punctatis; scutello elongato-triangulari; elytris obscure punctato-striatis, interstitiis convexis; pedibus brunneo-testaceis; antennis basi pallidis, clava infusata.

L. 6-6½ mill.

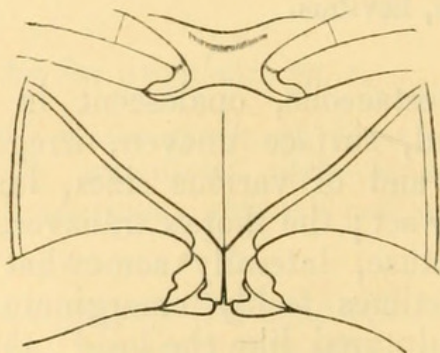
This species closely resembles *S. brevicornis* in facies and surface-sculpture, but the head is less robust, the antennæ are as large again, the thorax is more convex on the disk, distinctly emarginate before the hind angle, arched in front of the emargination, and without any anterior angle; the scutellum is nearly one third longer than wide; the antennæ are pale at the base, with the club dark. One example is reddish brown, with the head between the eyes, two blotches on the thorax, and the elytral, sutural, and outer margins dusky with an æneous tinge.

Hab. Hitoyoshi, Konosé, and Yuyama. Four examples.

ASERICA, gen. nov.

This generic name is proposed for a considerable number of species hitherto included in *Serica*. It differs essentially from *Serica* in having smaller eyes, the scutellum wide at the base, the hind femora considerably widened and truncate at

Fig. 8.



the apices, posterior tibiæ also dilated, tarsi more robust, and the intermediate coxæ widely separated. The antennæ are 3-foliate, and the other characters resemble those of *Serica*.

In *Serica brunnea*, L., and allies the intermediate coxæ are approximate. The form of the metasternum in *Aserica* and the wide area between the coxæ is shown in the accompanying woodcut. In the drawing (fig. 8) the mesosternum appears to be more narrow than it is, because it is almost perpendicular; in *Serica brunnea* it is only oblique.

The form of the femora and tibiæ correspond somewhat with those of a species of *Popilia*.

Type *Serica japonica*, Motsch.

Aserica japonica. (Woodcut, fig. 8.)

Serica japonica, Motsch. Etud. Ent. p. 15 (1860); Waterh. l. c. p. 102.

Serica piceorufa, Fairm. Rev. d'Ent. vii. p. 118 (1888).

Waterhouse notices Motschulsky's measurements; my measurements are $9\frac{1}{2}$ –11 millim. This species is rightly described by Motschulsky as "ovate" and the next species as "obovate." Some of my specimens are in colour light brown.

Hab. South Japan and Hongkong.

Aserica orientalis.

Serica orientalis, Motsch. Etud. Ent. p. 33 (1857); Waterh. l. c. p. 102.

"Obovata, convexa, punctata, opaca, picea, supra nigra, velutina; thorace antice angustato, lateribus minus arcuatis; elytris ovatis, striatis, interstitiis alterius læviter elevatis, sparsim punctatis; antennis testaceis.

"L. $3\frac{1}{2}$, lat. 2 lin.

"Cette espèce est extrêmement voisine de notre *S. holosericea*, mais elle est un peu plus grande, présente un corps plus élargi postérieurement, un corselet plus trapézoïde, une ponctuation moins serrée et une surface plus veloutée. Elle se rencontre aussi en Mongolie."

My measurements are 8 to 9 millim. I give Motschulsky's description, as Waterhouse omitted it.

Like the last species, it is now and then of a light brown colour.

Hab. Found throughout Japan and Mongolia, as above.

Apogonia niponica, sp. n.

Oblongo-ovata, brunnea vel piceo-brunnea; capite dense, scutello sparse et irregulariter punctatis; thorace angulis anticis parum acutis.

L. $6\frac{1}{4}$ – $7\frac{1}{2}$ mill.

Oblong-ovate, brown or piceous brown, shining, sometimes

with a faint greenish or coppery tint; the head, frontal area densely and rather clearly punctate, clypeus rather more densely and somewhat roughly punctate, edge narrowly reflexed and arcuate in outline; the thorax wholly punctate like the head; this punctuation is much more dense than that of *A. splendida*, Bohm., anterior angles rather acute; the scutellum is sparingly but irregularly punctured; the elytra, striæ more or less obsolete, punctuation (sometimes linear) larger and less dense than that of the thorax; the pygidium, form and punctuation similar to that of *A. splendida*; the legs and under surface darker than the elytra.

The more oblong form, colour, and size, as well as the dense punctuation, distinguish this insect at once from ordinary examples of *A. splendida*, Bohm.; but I have specimens of the last-named which are brown or piceous, and from these the somewhat acute angles of the thorax serve to separate it. *A. splendida* has an impunctate scutellum.

A. cupreoviridis, Kolbe, is said to differ from *A. splendida* (Bates, Proc. Zool. Soc. 1888, p. 375) in having a more arcuate outline to the clypeus, an outline which describes a segment of a circle, and is not flattened as in *A. splendida*. In this respect *A. niponica* agrees with it; but the form (oblong-ovate) and the punctuation of the scutellum &c. distinguish it. Kolbe gave two names to his species: one specimen, measuring $9\frac{1}{2}$ millim., he called *A. fusana*.

Apogonia mæsta, Knock (Schönfeldt, Ent. Nachr. xvi. p. 170, 1890), is said to occur in Oshima; but I have not seen the description, nor does Schönfeldt supply a reference to it. *Apogonia mæsta*, Burm. (Handb. iv. 2, p. 257, 1842), I consider a nondescript of a Sumatran species, as Burmeister's description is worthless; but Kolbe refers to it (Arch. f. Nat. i. p. 193, 1886), so I presume he has seen the type.

Lachnosterna inelegans, sp. n.

Ancylonycha parallela, Motsch. Etud. Ent. p. 64 (1854).

Elongata, nigro-picea, nitida; capite grosse parum dense punctato; thorace minus dense punctato, antice margine impunctato; scutello lævi vel parte punctato; elytris punctatis, obsolete costatis.

L. 16–20 mill.

Elongate, pitchy or pitchy black, shining; the head coarsely and somewhat densely punctate, the punctures on the clypeus are clearly separate, those on the forehead are in some examples confluent, the rim of the clypeus clearly elevated, the punctures more or less obscure on the frontal suture; the thorax

posteriorly rectangular, anterior angles obtuse, the lateral margin more or less bulges in the middle, the anterior margin is a narrow smooth rim, general surface less closely punctate than the head; the scutellum transverse, sometimes smooth, more often with a few irregular punctures variously placed in different specimens; the elytra, sutural margin smooth and convex, surface punctate, punctuation rough and irregular and more or less obliterates two or three longitudinal costæ; the pygidium punctate, punctures not densely set nor so deep as those of the thorax, rather wider just behind the base than the space from the middle of the base to the apex.

This species has been assigned by Waterhouse and others to *Ancylonycha parallela*, Motsch.; but Motschulsky's diagnosis applies equally well to *Holotrichia picea*, Waterh., and *Lachnosterna diomphalia*, Bates, and his specific name is preoccupied. Under these circumstances I have redescribed the species under a new name.

Hab. Throughout Japan and at Fusan, in Korea. Generally abundant.

Lachnosterna picea.

Holotrichia picea, Waterh. Trans. Ent. Soc. Lond. p. 103 (1875).

This species is easily recognized by the characters given by Waterhouse, especially by the transverse smooth margin to the neck. A minor character, but one which does not vary in my series of eight examples, is that the anterior rim of the thorax is not clearly free of punctures; the punctures encroach on the posterior edge. This rim or margin is quite smooth in *L. inelegans*, Lew.

Hab. Nagasaki, Chiuzenji, and Yokohama.

Lachnosterna diomphalia, Bates.

Lachnosterna diomphalia, Bates, Proc. Zool. Soc. p. 373 (1888).

“*L. parallela* (Motsch.) affinis et simillima, sed differt pygidio ♂ valde convexo ante apicem bicalloso.

“L. 20 mill.

This species is extremely like *L. inelegans*, Lew., and *L. picea*, Waterh., but it differs from the first in the scutellum which widens out at the base, and from both in the curious gibbosities on the pygidium. Bates only knew the male; the pygidium is bigibbous in both sexes.

Lachnosterna morosa, Waterhouse.

This species is peculiar in having the rim of the clypeus

very moderately raised and the raised edge ceases before the eyes; the pygidium is not transverse like the other species of this series, it is nearly as long as broad.

Hab. Nagasaki. Also at Chefoo in China.

Lachnosterna niponensis, sp. n.

Brunnea, parum parallela, convexa, subnitida; capite thoraceque punctatis; scutello lævi haud punctato; elytris punctatis, interstitiis parum convexis.

L. 19–21 mill.

Brown, subparallel, convex above, rather shining; the head roughly and closely punctate, punctures on the clypeus dense, especially in the middle of the base, anterior rim of the clypeus distinctly raised and feebly emarginate in the middle, neck smooth, but the smooth space is of irregular outline; the thorax irregularly punctate, punctures rather less closely set than those of the head, lateral edges widely crenulate, transverse and slightly bulging in the middle of the lateral edges, angles before and behind obtuse; the scutellum widest at the base, with anterior portion clothed with golden-tawny hair; the elytra, interstices uneven and punctate, punctures not so dense as those of the thorax, sutural margin rather broadly elevated from the base to the apex, the next raised costa is similarly broad but shortened before and behind, both smooth and almost impunctate, outside there are other costæ ill-defined and vague; the pygidium uneven and sometimes closely but shallowly punctured, rather broad and somewhat arched at the base, slightly convex; the legs, apices of thighs, and the club of the antenna dusky.

This species is the largest of the genus known from Japan; in colour it corresponds with *Serica brunnea*, L. The scutellum is quite smooth in some examples, irregularly punctate in others, and in one specimen closely punctate; sometimes it is rounded off behind, but usually it is obtusely acuminate.

Hab. Nagasaki, Goto Islands and Fusan in Korea. Forty specimens. Also in the collection of the British Museum.

HEPTOPHYLLA, Motschulsky.

The author of this genus says of it: "Antennes de 11 articles, dont le 4^{ième} très court; massue longue, de 7 articles." The basal joint of the antenna is long and very similar to that of *Rhizotrogus*; the second is apically bulbiform and constricted at the base; the third elongate, but not so long as the first, and is minutely angulate on the inner edge; the fourth is short, with a small acute appendage; the fifth is

foliate, but the appendage varies in size from a quarter to half the length of the one succeeding it; articulations 6 to 10 are leaflets, of which 8 and 9 are the largest. There are only ten joints, and the name is unfortunate. Just before the suture which indicates the limit of the clypeus is a well-marked transverse carina, which usually stretches from side to side; but in one of eighteen specimens it is interrupted in the middle. Motschulsky says:—"Carènes frontales transversales peu marquées et interrompues;" this is not the case usually.

Heptophylla picea, Motschulsky.

Heptophylla picea, Motsch. Etud. Ent. p. 32 (1857).

Holotrichia transversa, Motsch. l. c. p. 15 (1860).

I have united the two names above chiefly on the evidence relating to the frontal carina. If I am right, this is not the only instance of Motschulsky describing an insect twice and placing it in different genera.

Hab. Kiushiu, main island, and Yezo. Very common.

Rhizotrogus niponicus, sp. n.

Elongatus, pallide testaceus, nitidus; capite piceo vel rufo-brunneo; thorace sparse et grosse punctato; elytris punctatis, punctis interdum confluentibus; pygidio apice parum explanato.

L. 12 mill.

Elongate, pale testaceous, shining; the head piceous or reddish brown, surface uneven between the eyes, roughly and coarsely punctured, punctures less close along the anterior margin of the clypeus; eyes black and large as compared with those of *R. solstitialis*, L.; the thorax, surface uneven, crenulate laterally, anteriorly rectangular, posteriorly feebly angulate, punctate, punctures less closely set than those of the head; the scutellum transverse, irregularly punctured; the elytra punctate, somewhat similarly to the thorax, but punctures sometimes confluent, sutural margin convex, smooth, with two similar but shorter feebly raised costæ near the centre of the wing-case; the pygidium somewhat rugose, the rugosity nearly obliterating the shallow punctures, apical rim distinctly but narrowly explanate; the legs and antennæ pale, inner dentation of the claws on the first very conspicuous.

Hab. Gotoshima. Two males.

Polyphylla laticollis, Lewis.

Polyphylla laticollis, Lew. Ent. Mon. Mag. xxiii. p. 231 (1887).

Fairmaire in 1888 described two species of *Polyphylla* from China, which agree, I believe, with the above in having the

thorax transverse and much broader than that of *P. fullo*, Linn.

Hab. Three specimens obtained in the province of Sakami.

Granida albolineata, Motschulsky.

Granida albolineata, Motsch. Etud. Ent. p. 8 (1861); Waterh. Trans. Ent. Soc. Lond. p. 106, pl. 3. fig. 7 (1875); Har. Deutsche ent. Zeit. p. 71 (1878).

Polyphylla Schoenfeldti, Brenske, Ent. Nachr. xvi. p. 198 (1890).

After the lapse of twenty-nine years, and after being well figured by Waterhouse, this well-known and conspicuous species has been redescribed as a *Polyphylla* by Brenske. Schönfeldt has kindly sent me an example representing Brenske's type. Sometimes the female has three denticulations on the fore tibia, as seen in a specimen in the British Museum.

Hab. Nagasaki, Kobé, Niigata, and Akita. Also Oshima in the Ruikiuan group. I reached Niigata on the 4th September, 1881, and found the great stretches of sand which surround this port were strewn with the remains of this beetle, but I only found one (dead) good enough to preserve. I was told that three weeks before it was extremely abundant, flying into houses in the evening. There are examples in the British Museum from the Chinese islands to the south of the Ruikiuan group.

Phyllopertha irregularis, Waterhouse.

Phyllopertha irregularis, Waterh. l. c. p. 107, pl. 3. fig. 4.

Phyllopertha yezoensis, Lew. in litt. Cat. Jap. Col. no. 972 (1879).

There are examples in my collection wholly coppery green, and others with the thorax golden coppery and the elytra dark purple. In other specimens the elytra are pale, but I have not seen an example with an entirely pale thorax. The figure given by Waterhouse represents a very common variety. The dark variety has been mistaken for *P. horticola*, Linn.

Phyllopertha conspurcata, Harold.

Phyllopertha conspurcata, Har. Deutsche ent. Zeit. p. 71 (1878).

Phyllopertha arenaria, Waterh. (nec Brullé) l. c. p. 108 (1875).

Hab. Nagasaki, Hiogo, Hagi, and Tokio. Common. Korea (Kolbé).

Anomala geniculata, Motschulsky.

Anomala geniculata, Motsch. Bull. Mosc. i. p. 171 (1866); Lew. Ann. M. N. Hist. xix. p. 197 (1887).

Anomala daimiana, Har. Deutsche ent. Zeit. p. 354 (1877).

Anomala triangularis, Schön. Ent. Nachr. xvi. p. 171 (1890).

I have received specimens from Harold and Schönfeldt.

Hab. All the islands, including Oshima, and occurs in Korea.

Anomala Sieversii, Heyden.

Anomala Sieversii, Heyd. Hor. Ent. Ross. xxi. p. 266 (1887).

This insect should be placed next to *A. octocostata*, Burm. ; it is a species which does not vary in colour.

Hab. Tsushima, and at Fusan in Korea.

Anomala holosericea, Fab.

This well-known species occurs apparently rarely in Japan; it is constant in colour.

Hab. Chiuzenji and in S. Yezo. Only four specimens.

Anomala rufo-cuprea, Motschulsky.

Anomala rufo-cuprea, Motsch. Etud. Ent. p. 14 (1860); Bates, Proc. Zool. Soc. p. 373 (1888).

Anomala lucidula (*Rhombonyx*), Motsch. Bull. Mosc. p. 171 (1866), *nec* Guér. (1830), *nec* Faldm. (1835).

Anomala lucens, Ballion, Bull. Mosc. p. 155 (1871).

Anomala Motschulskyi, Har. Deutsche ent. Zeit. p. 351 (1877).

This species varies in colour from being entirely of a deep blue, green, or brassy green, and from a pale testaceous colour to others with a green thorax and testaceous elytra, and some examples are coppery red.

Hab. All the islands; the imagoes usually fed on the leaves of *Salix* and *Lespedeza*.

Anomala difficilis, Waterhouse.

Anomala difficilis, Waterh. l. c. p. 111.

This species has the thorax testaceous, wholly green, or ornamented with two green triangular blotches. My specimens measure 11 to 14 millim.

Hab. Kobé, Nikko, Chiuzenji, and other places.

Anomala orientalis.

Phyllopertha orientalis, Waterh. l. c. p. 108 (1875).

Anomala orientalis, Waterh., Har. Abh. Brem. p. 126 (1876); Heyden, Deutsche ent. Zeit. p. 345 (1879).

Phyllopertha xanthogastra, Har. MT. Münch. ent. Ver. v. p. 90 (1881).

A very common variety of this species is black with an æneous tinge and a few testaceous spots on the elytra. A rarer variety is wholly testaceous, with two spots on the head and two triangular blotches on the thorax green. In my series no two are precisely alike.

Hab. All the islands.

Anomala pubicollis, Waterhouse.

This species is not very variable.

Hab. Nagasaki, Kobé, Miyanoshita, Nikko, and Yokohama. Appears early in April.

Anomala mongolica, Faldermann.

Euchlora mongolica, Fald. Mém. Ac. St. Pétersb. ii. p. 379 (1835); Lew. Ent. p. 151 (1893); Bates, Proc. Zool. Soc. p. 374 (1888).

Bates considers this to be a species of *Anomala*, as it has the lower branch of the large anterior tarsal claw in the male angularly dilated, which he states is a character which separates the typical *Anomalæ* from *Euchlora viridis*, Fab., a common Chinese insect, and the type of *Euchlora*.

Hab. Niigata and Akita. A few examples.

Euchlora gracilis, Schönfeldt.

Euchlora gracilis, Schön. Ent. Nachr. xvi. p. 171 (1890).

Schönfeldt considers this a variety of *A. albopilosa*, Hope. The characters which, however, separate it appear to me to be constant, and I prefer at present to regard it as distinct. In my specimens the thorax has a pale lateral margin.

Hab. Oshima, the largest of the Ruikiuan group.

Euchlora multistriata, Motschulsky.

Heteroplia multistriata, Motsch. Etud. Ent. p. 7 (1861).

Euchlora multistriata, Motsch., Waterh. l. c. p. 112.

Anomala puncticollis, Har. Deutsche ent. Zeit. p. 351 (1877); Heyd. ibid. p. 344 (1879).

The colours in this species are not very variable.

Hab. All the islands.

Mimela lucidula, Hope.

Mimela lucidula, Hope, Trans. Ent. Soc. Lond. p. 113 (1835).

Mimela Gaschkevitchii, Motsch. Etud. Ent. p. 32 (1857).

This species is usually of a fine green colour, but it is often of a rich coppery colour, or green with a golden tinge on the elytra. Waterhouse records a black variety from Hakodate. At Numata, August 29th, 1881, I found it in large numbers on some sallows, and the examples were mostly of the copper-coloured variety.

Hab. All the islands.

[*Mimela simplex*, Bates, 1866, = *M. lucidula*, Burm., 1842.]

Popilia japonica, Newman.*Popilia japonica*, Newm. Trans. Ent. Soc. Lond. p. 43 (1841).*Popilia bisignata*, Sturm, Cat. p. 120 (1843).*Hab.* South Japan. Very common; but I did not meet with it north of Ontaki on the Nakasendo.*Popilia insularis*, sp. n.*P. japonicæ* simillima, sed paullo minor et thorace sparse punctato, elytrisque margine exteriore late viridi-metallicis.

Long. 10-10½ mill.

Oval; head, thorax, scutellum, and pygidium brilliant green like those of *P. japonica*, Newm.; the elytra are widely margined with a band of metallic green, which leaves the second to the fifth and part of the sixth interstices from the base to the middle of the dorsum yellowish brown. There is not much variation in colour between the examples before me. The head, margin of clypeus well and evenly raised, punctures on the clypeus close and somewhat rugose, punctures between the eyes more distinct, but many confluent, punctures before the neck more sparse; the thorax, anterior angles less acute than in *P. japonica*, and the punctuation finer and more scattered; the scutellum punctured very similarly to that of *P. japonica*, but distinctly less acutely pointed behind; the under surface and legs are wholly dark metallic green.

Hab. Oshima (*Ferrie*, 1895). Four examples examined.*Adoretus tenuimaculatus*, Waterhouse.

Harold and von Heyden consider this a variety of *A. umbrus*, F., a species with a synonymy of nine names in the Munich Catalogue; the localities given there are Senegal, Java, Sumatra, &c. I have allowed Waterhouse's name to remain, as I think the synonymy doubtful.

Hab. South Japan. Very common in July and August.

List of Species, with Synonymy.

SCARABÆIDÆ.

Panelus parvulus.

Temnoplectron parvulum,
Waterh.

Maraxes dentifrons.

Copris ochus (*Catharsius*), *Motsch.*— pecuarius, *Lew.*— tripartitus, *Waterh.*— acutidens, *Motsch.*Onthophagus Lenzii, *Har.*— fodiens, *Waterh.*— ater, *Waterh.*— japonicus, *Har.*— viduus, *Har.*atrypennsis, *Waterh.*— nitidus, *Waterh.*

— nikkoensis.

— vacerosus.

Onthophagus ocellato-punctatus,

Waterh.— jessoensis (Caccobius), *Har.*microcephalus (Caccobius), *Har.*— brevis (Caccobius), *Waterh.*Oniticellus phanæoides, *Westw.*excavatus (Onthophagus),
*Redt.*minutus (Phanæus),
*Motsch.*Aphodius apicalis, *Har.*— major, *Waterh.*— globulus, *Har.*var. bisectus, *Waterh.*— elegans, *All.*— lividipennis, *Waterh.*— Solskyi, *Har.* 1871.diversus, *Waterh.*castaneipennis, *Waterh.*rectus (Calamosternus),
*Motsch.*vitta (Chilothorax),
Motsch.— breviusculus, *Motsch.*— nigerrimus, *Waterh.*— 4-punctatus, *Waterh.*— uniplagiatus, *Waterh.*— uniformis, *Waterh.*— eccoptus, *Bates.*— impunctatus, *Waterh.*— lividus, *Oliv.*— pallidicinctus, *Waterh.*— obsoletoguttatus, *Waterh.*— pallidiligonis, *Waterh.*— punctatus, *Waterh.*— obsoletus, *Waterh.*— ovalis, *Waterh.*— rufangulus, *Waterh.*— urostigma, *Har.*— variabilis, *Waterh.*nigrotessellatus (Melinopterus), *Motsch.*— atratus, *Waterh.*— rugosostriatus, *Waterh.*— Lewisii, *Waterh.*Ammœcius nitidus, *Waterh.*

Cælius denticollis.

Saprosites japonicus, *Waterh.*

— naræ.

Oxyomus jugosus.

Rhysemus asperulus, *Waterh.*

Psammodius ainu.

— convexus, *Waterh.*— japonicus, *Har.*

— comis.

Ægialia nitida, *Waterh.*

GEOTRUPIDÆ.

Ochodæus maculatus, *Waterh.*Bolboceras nigro-plagiatus,
*Waterh.*Geotrupes auratus, *Motsch.*purpurascens, *Waterh.*— lævistriatus, *Motsch.*Deyrollei, *Jekel.*amæus, *Jac.*

TROGIDÆ.

Trox chinensis, *Bohem.*obscurus, *Waterh.*— setifer, *Waterh.*— opacotuberculatus, *Motsch.*

— niponensis.

GLAPHYRIDÆ.

Anthypna pectinata.

MELOLONTHIDÆ.

Ectinohoplia obducta.

Hoplia obducta, *Motsch.*— sabulicola, *Motsch.*Ectinohoplia variolosa,
*Waterh.*Hoplia communis, *Waterh.*

— gracilipes.

— Reinii, *Heyd.*— maculata, *Bates.*— mœrens, *Waterh.*

Sericania mimica.

— fuscilineata, *Motsch.*

Serica similis.

brunnea, *Waterh.*, nec
Linn.— grisea, *Motsch.*polita, *Gelb.*

— nigrovariata.

— angulata.

— quadrifoliata.

— boops, *Waterh.* (Ophthalmoserica, *Brenske*).

— brevicornis.

— higonina.

Aserica japonica.

Serica japonica, *Motsch.*— piceorufa, *Fairm.*

— orientalis.

Serica orientalis, *Motsch.*Apogonia major, *Waterh.*— splendida, *Bohem.*

— niponica.

- Lachnosterna inelegans*.
Ancylonycha parallela,
Motsch.
 — *picea* (Holotrichia), *Waterh.*
 — *diomphalia*, *Bates.*
 — *morosa*, *Waterh.*
 — *castanea*, *Waterh.*
 — *niponensis*.
Pollaplonyx flavidus, *Motsch.*
Heptophylla picea, *Motsch.*
Holotrichia transversa,
Motsch.
Rhizotrogus niponicus.
Polyphylla laticollis, *Lew.*
Granida albolineata, *Motsch.*
Schönfeldti (Polyphylla),
Brenske.
Hoplosternus japonicus, *Har.*
Melolontha japonica, *Burm.*
- RUTELIDÆ.
- Phyllopertha diversa*, *Waterh.*
 — *irregularis*, *Waterh.*
yessoensis, *Lew. in litt.*
 — *conspurcata*, *Har.*
arenaria, *Waterh.*, nec
Brullé.
Anomala costata, *Hope.*
 — *testaceipes*, *Motsch.*
costata, *Har.*, nec *Hope.*
 — *geniculata*, *Motsch.*
daimiana, *Har. 1877.*
triangularis, *Schön. 1890.*
- Anomala flavilabris*, *Waterh.*
 — *octocostata* (Rhombonyx),
Burm.
Phyllopertha 8-costata,
Waterh.
 — *Sieversii*, *Heyd. 1887.*
 — *holosericea*, *Fab.*
 — *rufo-cuprea*, *Motsch. 1860.*
lucidula, *Motsch. 1866.*
lucens, *Har. 1871*, nec
Ballion.
Motschulskyi, *Har. 1877.*
 — *difficilis*, *Waterh.*
 — *orientalis* (Phyllopertha),
Waterh.
xanthogastra, *Har.*
 — *pubicollis*, *Waterh.*
 — *mongolica*, *Faldermann.*
Euchlora cuprea, *Hope.*
 — *albopilosa*, *Hope.*
 — *gracilis*, *Schön.*
 — *multistriata*, *Motsch.*
puncticollis, *Har.*
Mimela lucidula, *Hope.*
Gaschkevitchii, *Motsch.*
Popilia japonica, *Newm.*
bisignata, *Sturm.*
 — *insularis.*
Adoretus tenuimaculatus, *Waterh.*
- DYNASTIDÆ.
- Xylotrupes dichotomus*, *Linn.*
Phileurus chinensis, *Faldermann.*

The following notes refer to previous papers on Japanese Coleoptera.

Cetoniidæ.

Cetoniidæ, Ann. & Mag. Nat. Hist. xix. pp. 196–202 (1887).

In the Deutsche ent. Zeit. p. 91 (1890), Kraatz has stated that *Cetonia brevitarsis*, Lew., = *C. intricata*, Saund. Saunders's type is in the British Museum, and belongs to the same section of the genus as *C. mandarinea*, Weber, and *C. culta*, Waterhouse. *C. brevitarsis* belongs to the group of which *C. submarmorea* is the best-known type.

Gnorimus 17-guttatus, Snellen v. Voll.

Trichius septemdecimguttatus, Snell. v. Voll. Tijdsch. Ent. Nederl. vii. p. 159; *Waterh. l. c.* p. 115, pl. iii. fig. 8; *Lew. Ann. & Mag. Nat. Hist. xix. p. 200* (1887).

This species should be placed in the genus *Gnorimus*.

Paratrichius duplicatus, sp. n.

Paratrichio longicorni simillimus, sed paullo minor; elytris 8-maculatis, maculis haud transversis.

L. 11-12 mill.

♀. Black, somewhat opaque; the head rugosely sculptured, without definite punctuation, the clypeus transversely red before the base, anterior edge reflexed and distinctly emarginate, feebly impressed; the thorax punctate, punctures large but not deep, and somewhat sparsely set, anterior angles obtuse, from the anterior angles to the middle of the lateral edge the thorax is more or less oblique, lateral edge and base margined with yellow, a median line which does not touch the edge before or behind and a bent line on each side of it also yellow; the elytra, epipleural rim, sutural margin, and the dorsal region on interstices 3 to 6 black, median black marking surrounded with a broad red band, on the ninth interstice close to the margin is a small yellow spot, and parallel to it behind the base is a large spot occupying interstices 4 to 6, behind the middle is a third blotch on interstices 4 and 5 and overlapping interstices 3 to 6, behind the last spot on the second interstice is a fourth yellow spot; the pygidium has a broad crescent-shaped yellow band at its base, disk black, apex red; the legs and antennæ reddish brown, tibiæ more or less infuscate. Another female is black, with yellow markings on the thorax and elytra similar to above; and a male before me is black, with similar markings, and the elytra in the region of the scutellum and the anterior edge of the thorax margined with yellow.

Hab. Oshima (*Ferrie*, 1895).

Paratrichius Donitzi, Harold.

Gnorimus Donitzi, Har. Deutsche ent. Zeit. xxiii. p. 366 (1879).

Paratrichius longicornis, Jan, Cist. Ent. ii. p. 611, pl. xi. fig. 1; Lew. Ann. & Mag. Nat. Hist. xix. p. 200 (1887).

The clypeus of this species in the male is excavated, with a well-marked lateral carina, the antennal leaflets are one third longer than in *P. duplicatus*, the scutellum is wider, and the elytral markings are irregular transverse lines, not blotches, and, so far as I know, the females alone are *entirely* black.

Buprestidæ.*Chalcophora japonica*, Gory.

Schönfeldt (Ent. Nachr. xvi. p. 172, 1890) has given the varietal name of *C. oshimana* to the bright examples of this species found in the Ruikiuan Islands.

Elateridæ.

CRYPTOHYPNUS.

Students of this genus should refer to Champion's note (Ent. Month. Mag. p. 93, 1895); and in the 'Biologia' some curious sexual characters will be noticed.

Athous virens, Candèze.

Athous virens, Cand. Mém. Liège, p. 24 (1873).

Athous subcyaneus, Motsch. Bull. Mosc. p. 166, 1866 (absque charact.).

I made an error of determination of this species in the Ann. & Mag.



Lewis, Graceanna. 1895. "LII.—On the Lamellicorn Coleoptera of Japan, and notices of others." *The Annals and magazine of natural history; zoology, botany, and geology* 16, 374–408. <https://doi.org/10.1080/00222939508680291>.

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