

kum, observed the wind and weather carefully, with reference to the greater or less intensity of the luminosity of the sea, and arrived at the result that only the wind and the strength of the waves exert any appreciable influence upon the manifestation of that beautiful phenomenon. In order that the phenomenon should present itself in all its splendour the wind must have set persistently for some days from the open sea on to the shore. If this condition coincides with a moderate motion of the surface of the sea the visitor to our North-Sea coast, who very often walks in vain upon the strand in the evening, may reckon with certainty upon the wished-for pleasure. In consequence of the sea-wind great numbers of *Noctiluca* collect in the immediate vicinity of the coast, while the animals are carried away from it by a land-wind. That a strong breaking of the waves does not allow the spectacle to attain its full beauty, notwithstanding the greater irritation to which the animals are subjected, is easily explained by the fact that in this case the *Noctiluca* are drawn down too far beneath the surface of the water, seeing that every particle of a wave describes a curve and descends the deeper in proportion to the height of the wave. I have found nothing to support the widely diffused opinion that the phenomenon is manifested especially in close sultry nights. On several evenings the island of Borkum was surrounded on all sides by thunderstorms, but no trace of luminosity was to be seen in the sea, because a land-wind had prevailed for some time. On the other hand, a high electrical tension of the atmosphere coinciding with a sea-wind gave rise to no particular intensity of the phenomenon. This opinion has consequently found acceptance only because on thundery evenings the sea is usually quiet, and thus favours the manifestation of the luminosity.

IV.—*The Staphylinidæ of Japan.*

By Dr. D. SHARP.

[Continued from vol. ii. p. 464.]

Subfam. *STAPHYLININÆ*.

Group *QUEDIINA*.

Algon grandicollis.

Algon grandicollis, Sharp, Trans. Ent. Soc. Lond. 1874, p. 23.

Miyanoshita, in May; Awomori and Hakodate, in September and October.

There is a second, still more remarkable, species of this genus in my collection, the locality being India.

Velleius setosus, n. sp.

Niger; thorace versicolore, elytrorum margine inflexo testaceo; antennis brevibus, intus biramosis, articulo ultimo brevi.

Long. 17 millim.

This differs conspicuously from the other two species of the genus by the shorter antennæ; these organs have long processes on the inner margins of joints four to ten, as in *V. pectinatus*; but unlike that species the terminal joint is short. The erect setæ of the upper surface are more numerous and conspicuous than in the congeners.

Mr. Lewis procured two examples of this insect at Junsai; I believe they are of the male sex, though there is scarcely anything in the abdominal structure to support this view.

Velleius dilatatus.

Staphylinus dilatatus, Fabr. Mant. Ins. i. p. 220.

Mr. Lewis found this insect at Nikko, Sapporo, and Junsai, thus completely removing all doubt of its being truly a Japanese species. The examples are undoubtedly conspecific with those of Europe. The species of this genus were all associated with the larvæ of *Cossus*.

Quedius præditus, n. sp.

Niger; antennarum apice tarsisque rufis; capite thoraceque nitidissimis; elytris scutelloque fortiter profundeque punctatis; abdomine versicolore, minus crebre punctato.

Long. 12 millim.

Antennæ slender, black at the base, red at the extremity.

This is closely allied to *Q. juno*, but in addition to the different coloration of the legs, palpi, and antennæ it has a remarkably deep coarse punctuation on the elytra.

Miyanoshita, in April and May; Junsai. Six specimens.

I have detected no sexual distinctions among the examples of this species and *Q. juno*; all have the front tarsi much dilated.

Quedius juno.

Quedius juno, Sharp, Trans. Ent. Soc. Lond. 1874, p. 24.

Miyanoshita, Hakone, Nikko, Kiga; rare, generally found under dead leaves, where there was fungal growth.

Quedius abnormalis, n. sp.

Piceus; oculis parvis; prothorace suboblongo, elytris longiore.
Long. 15 millim.

Antennæ obscure red, moderately stout, not thicker externally; penultimate joint as long as broad, as long as the terminal joint. Head suboblong, eyes not in the least prominent and occupying less than one third of the length of the sides, the space behind the eyes numerous punctate. Thorax a little rounded at the sides, hind angles distinct though very obtuse, in front on each side of the middle with three fine serial punctures. Scutellum very obsoletely punctate. Elytra deplanate, considerably shorter than the thorax, rather closely and finely punctate. Hind body closely and finely punctate. Legs long.

Found on the borders of the snow at Nikko in June and August; four specimens.

This peculiar insect may be placed in the subgenus *Ediquus*, Rey, as it is related to the European *Q. longicornis*, Kr. I am unacquainted with the male: one of the four individuals before me is considerably smaller than the other three, but does not differ very strongly in any other respect; although it is considerably darker in colour, this is no doubt due to the other examples being somewhat immature.

Quedius flavicornis, n. sp.

Nitidus, niger; elytrorum basi abdominisque segmentis singulis postice rufis; antennis, palpis pedibusque flavis; elytris lævigatis, singulo medio obsolete uniseriatim punctato.
Long. 6 millim.

Antennæ short and stout, clear yellow, sixth to tenth joints transverse. Head narrow, scarcely constricted at the neck; eyes small, occupying not one half of the sides. Thorax quite as broad as the elytra, not so long as broad, narrowed in front, very shining, reddish on the front margin, without serial punctures. Elytra longer than the thorax, shining, black, red at the base, and more indistinctly so along the suture, with three or four very fine punctures placed along the sutural depression and with a similar, still more indistinct series along the middle of each. Hind body not closely punctate, each segment broadly cingulate with red. The male has a feeble emargination on the last ventral plate.

Ichiuchi and Hitoyoshi, at the commencement of May; seven individuals.

This very peculiar species has somewhat the aspect of a *Bolitobius*; it lives under bark of beech trees.

Quedius laticollis, n. sp.

Minus depressus, niger; elytris antennisque rufis, pedibus piceis, tarsis rufis; thorace brevi, elytris multo latiore.

Long. 11 millim.

Antennæ short, red, with the basal joints piceous, sixth to tenth joints transverse, terminal joint acuminate. Head orbiculate, with two punctures on the middle of the front margin; eyes small. Thorax much broader than the elytra, nearly twice as broad as long, much rounded at the sides, without serial punctures. Elytra bright red, shining, rather sparingly and finely punctured. Hind body black, rather closely punctured. Male with an emargination of the last ventral plate preceded by a depression of the surface.

Found on an old tree at Sapporo; a single specimen.

This very remarkable *Quedius* may be placed near *Q. brevis* and *Q. ochripennis*, though not at all closely allied to them; the Japanese species of this genus form a series of remarkably distinct forms.

Quedius hirticornis, n. sp.

Piceus; capite thoraceque fere nigris; elytris, pedibus antennisque rufis, his setis exsertis, perelongatis, ornatis.

Long. 13 millim.

Antennæ rather short, loosely articulated, penultimate joints strongly transverse, all the joints furnished with very elongate conspicuous setæ. Head suborbiculate, eyes small. Thorax broad and short, considerably broader than the elytra. Elytra bright red, finely and rather sparingly punctured. Hind body rather closely and finely punctured, more rufescent at the extremity. Legs short, tibiæ stout, very setose.

A single example of this peculiar *Quedius* was found on an old tree at Mitzusawa, 18th October, 1880; it is a female. The species may be placed near *Q. laticollis*, though very peculiar on account of the setæ of its antennæ and legs.

Quedius imbecillis, n. sp.

Nigro-piceus, nitidus; antennis pedibusque rufis, illis brevibus; abdomine elytrisque parce punctatis; capite utrinque post oculos tripunctato.

Long. 8 millim.

Antennæ short, stouter externally, sixth to tenth joints

transverse. Head small, both short and narrow, only about half as broad as the elytra, on each side behind the eye with three very distinct approximate punctures; palpi yellow. Thorax scarcely so long as broad, piceous. Elytra shining, rather sparingly punctured, a little longer than the thorax; scutellum impunctate. Hind body a little versicolorous, the segments more or less red behind, the anal styles and hind part of the terminal segment rather bright red; sparingly punctate.

Miyanoshita, Dec. 22, 1880; one example.

This insect may be placed near *Q. umbrinus*, though very distinct.

Quedius annectens, n. sp.

Niger, nitidus; antennis, palpis, elytris pedibusque rufis, his tibiis fuscescentibus; elytris ad suturam et ad latera nigro-plagiatis, parce fortiter punctatis.

Long. 8 millim.

Antennæ with the penultimate joints about as long as broad. Head with two punctures on a line in the middle between the eyes. Scutellum not punctate. Elytra a little longer than the thorax, black along the suture, but not quite so far as the hind margin, also with a black mark at each side not extending quite to the base; the punctuation consists of a few distant punctures, which are scarcely serially arranged, and at the sides are finer and more numerous and diffuse. Hind body versicolorous, the terminal segments more or less red towards the extremity; rather closely punctate. The male has a slight emargination of the terminal ventral plate, preceded by a depression of the surface.

Miyanoshita; five examples.

Closely allied to *Q. japonicus*, but with the elytra shorter, differently punctate and coloured.

Quedius adustus, n. sp.

Piceo-rufus, nitidus; capite nigricante, antennis, palpis, pedibus abdominisque segmentorum marginibus rufis; scutello impunctato; elytris abdomineque sat crebre punctatis.

Long. 11 millim.

Antennæ slender, very slightly thicker towards the extremity; penultimate joint rather longer than broad. Head narrow, quite impunctate on the middle. Thorax rounded at the sides and much narrowed in front, on each side of the

middle in front with three large punctures; outside these two other punctures, and still nearer the margin a single puncture. Elytra black, shining, with very definite, not very close punctures, and sparingly pubescent. Hind body rather more sparingly punctate and pubescent. Legs slender, obscure red.

This is nearest to *Q. fulgidus*, but has numerous differences; the antennæ are much more slender, the eyes rather smaller, occupying less than half the length of the sides, the second of the postocular punctures farther from the neck, and the punctuation of the hind body more scanty.

Oyama, Nishi, Nara, Chiuzenji, Nishimura, and Numata; scarce.

Quedius multipunctatus, n. sp.

Niger; capite thoraceque subviridescentibus; elytris læte viridis; antennis, palpis pedibusque rufo-testaceis.

Long. 9 millim.

Antennæ clear yellow, short, scarcely thicker externally; penultimate joints each almost as long as broad. Head sub-orbicular, but a good deal narrower than the thorax, feebly bi-impressed in front, between the eyes with two transverse series of punctures, and with other punctures between the eyes and behind. Thorax about as long as broad, a little narrowed in front, with two series of six or seven punctures each along the middle, and with numerous punctures outside these. Scutellum impunctate. Elytra rather longer than the thorax, of a shining green colour, rather coarsely punctate. Hind body rather closely punctate, the hind margin of the last segment as well as the anal styles yellow.

Hakone.

The example is a female labelled "under bark, rare." I have seen no other. It is an elegant and very distinct species of the subgenus *Raphirus*.

Quedius brevipennis.

Quedius brevipennis, Fairm. Ann. Soc. Ent. Fr. 1859, p. 41.

Nikko, June 1880; one example.

Q. brevipennis is thought by some entomologists to be a brachypterous variety of the variable *Q. boops*, Grav. The example obtained in Japan has the elytra even shorter than they are in specimens found in the Pyrenees.

Quedionuchus planatus, n. sp.

Subdepressus, niger; elytris rufis; antennis fuscis, harum basi, palpis pedibusque testaceis; elytris subopacis, impunctatis.
Long. 9 millim.

Antennæ short and stout, fifth to tenth joints transverse. Head short and broad, rounded behind the eyes. Thorax about as long as broad, with very feeble opalescent reflexions. Elytra rather longer than the thorax. Hind body moderately closely punctate, the hind margins of the segments ferruginous. Hind femora slender, their spines conspicuous. Male with a very feeble emargination on the last ventral plate.

Nikko, August 12th; four specimens.

Allied to *Q. lævigatus*, Gyll., but only half the size.

Quedionuchus concolor, n. sp.

Subdepressus, niger, nitidus; antennis pedibusque piceis, tarsi dilutioribus; thorace opalescente; elytris subopacis, impunctatis; femora posteriora sat gracilia.
Long. 10 millim.

Antennæ a little thicker towards the extremity. Head broad and short, much narrowed behind the eyes. Elytra a little longer than the thorax. Hind body sparingly punctate. Male with a slight emargination of the last ventral plate.

Chiuzenji and Nikko; nine specimens.

This differs from *Q. planatus* in numerous minor points besides the colour.

Quedionuchus armipes, n. sp.

Depressus, niger, nitidus; thorace opalescente; antennis pedibusque rufo-piceis; elytris subopacis, punctis paucis setigeris seriatim dispositis; femora posteriora subtus dilatata longiusque spinulosa.
Long. 9 millim.

Antennæ short, fifth to tenth joints transverse. Head transverse, straight behind the eyes, which are not prominent. Thorax subquadrate, the angles less rounded than in the allied species. Elytra with a few wrinkles, a series of five or six setigerous punctures near the suture, a similar series near the outside, and one or two punctures between the series. Hind body rather broad and flat, moderately closely punc-

tate, the hind margins of the segments red, terminal segment broadly red behind. Tarsi short.

Shimidzu, Yuyama, Nikko ; four specimens.

Although bearing much resemblance to the Austro-Malayan species of *Belonuchus*, this is a true *Quedionuchus*. The remarkable armature of the hind legs is very like that of the Central-American *Q. femoralis*.

I do not see any characters to distinguish the male.

Heterothops rotundiceps, n. sp.

Nigro-piceus, nitidus, antennarum basi dilutiore, pedibus testaceis ; capite suborbiculato, oculis magnis ; elytris thorace brevioribus. Long. 5 millim.

Antennæ short, not thicker externally, three basal joints piceous, the others dark ; fifth to tenth joints differing very little from one another, each nearly quadrate. Eyes very large, extending nearly all the length of the sides. Thorax rather short, not quite so long as broad, a little narrowed in front. Elytra shorter than the thorax, unicolorous, not densely punctate. Hind body moderately closely punctate.

Nikko, Kiga ; two specimens.

This little insect has the appearance of a small *Quedius* of the *Raphirus* group, due no doubt to its large convex eyes.

Group STAPHYLININA.

Philonthus addendus, var.

Philonthus addendus, Sharp, Trans. Ent. Soc. Lond. 3rd ser. v. p. 440.

Two examples have been met with at Nikko, one in June 1880 another in July 1881, which do not differ apparently by any good character from European examples, although they do not agree quite satisfactorily therewith in all their details and differ a little from one another. More information must therefore be obtained before we can decide positively about these examples.

Philonthus cyanipennis.

Staphylinus cyanipennis, Fabr. Ent. Syst. i. p. 525.

Common in fungi in Japan. The specimens differ a little from those found in Europe, the thorax being more oblong, with less rounded hind angles.

Philonthus bicaudus, n. sp. (Group 4, Erichson.)

Niger; capite, thorace elytrisq[ue] nigro-subæneis; capite ovato; elytris abdomineq[ue] crebrius punctatis.

Long. 14 millim.

Antennæ rather slender, not thicker externally, tenth joint quite as long as broad. Head narrow, only about half as broad as the elytra. Thorax much narrowed in front; elytra and scutellum closely punctate; hind body rather closely punctate.

Only a single individual has been found—an immature female—but the species is so distinct that it will not be mistaken for any other; it resembles the species of the European *P. politus* group, but has a different structure of the front tarsi; these are (in the female) much dilated, and the apical joint is broad and deplanate and closely spinose beneath; the median lobe of the armature is remarkable on account of being divided into two long slender styles.

Found at Niigata on the 12th September, 1881.

Philonthus liopterus, n. sp. (Group 4, Erichson.)

Latiusculus, nitidior, parce punctatus, piceus; capite nigro; antennis pedibusq[ue] rufis.

Long. 9 millim.

Antennæ rather short and stout, but the basal joints rather elongate, the four or five penultimate joints strongly transverse. Head extremely shining, suborbiculate, with only a few coarse punctures. Thorax rather short, subquadrate, straight at the sides, piceous, very shining, the punctures of the dorsal series rather large. Elytra rather longer than the thorax, piceous black, very shining, quite sparingly punctured. Hind body also sparsely punctate, shining. Legs red, tibiæ infusate; middle coxæ moderately distant. The male front tarsi broadly dilated, apical ventral plate with a broad shallow excision.

A single example of this very distinct species was met with at Junsai, in Yezo.

Philonthus micanticollis, n. sp. (Group 4, Erichson.)

Niger, fusco-pubescens; elytris æneis; thorace sericeo-micante, pedibus testaceis, tibiis infusatis, antennarum basi palpisq[ue]

fusco-testaceis; antennis gracilibus; elytris abdomineque crebrius punctatis.

Long. $7\frac{1}{2}$ millim.

Antennæ slender, not thicker externally, the penultimate joint evidently longer than broad, the basal joint yellowish behind, the terminal joint scarcely paler than those preceding it. Head rather small, almost circular. Thorax not elongate, subquadrate, scarcely perceptibly narrowed in front, the four punctures of the dorsal series moderately large, the surface very shining and in a certain light exhibiting a strong sericeous reflexion. Elytra of a dilute brassy colour, longer than the thorax, rather closely and finely punctate. Hind body densely punctate, with some coarser punctures across the base of the three basal segments. Legs pale yellow, the tibiæ infusate internally. Middle coxæ moderately distant. Front tarsi of the male distinctly but not greatly dilated; last ventral plate with a small, rather deep excision.

This is not closely allied to any other Japanese species; but I have a very similar one from China. It comes nearer to the description of *P. albilabris* than any other I know.

A single example was found at Nagasaki on the 3rd March, 1881.

Philonthus depressipennis, n. sp. (Group 4, Erichson.)

Depressus, nigricans; elytris æneis; antennis fuscis, basi palpis pedibusque testaceis; capite majore, prothorace posterius angustato, linea marginali antèrius valde subtus inflexa; elytris abdomineque parce punctatis.

Long. 7 millim.

Head large, subquadrate, with numerous coarse punctures about the sides, eyes small. Antennæ moderately long, not stout, the penultimate joint not quite so long as broad, the two basal joints yellow. Thorax much narrowed behind. Elytra and scutellum sparingly punctate. Legs yellow, with the tibiæ rather more obscure, the tarsi short, the basal joint of the posterior shorter than the apical; the middle coxæ moderately separated.

Three examples have been found, two at Ichiuchi on the 1st of May and one at Konosè on the 17th of the same month.

This is an abnormal species, with the thoracic lateral line greatly deflexed, so that the longer tactile seta is remote from it. The front tarsi are simple probably in the two sexes, as from a difference in the size of the head I believe I have both before me.

Philonthus discrepens, n. sp. (Group 5, Erichson.)

Sat latus, niger; elytris saturate rufis, pedibus testaceis; antennis fuscis, basi apiceque sordide rufis; elytris abdomineque crebre punctatis.

Long. 8-9 millim.

Antennæ rather slender, dark in the middle, obscurely ferruginous at the extremity and sordid yellow at the base; penultimate joint as long as broad; palpi sordid yellow. Head moderately large, suborbiculate. Thorax shining black, a little narrowed in front. Elytra pale red, not closely punctate, shining. Hind body blackish, with faint metallic reflexions; hind margins of the segments above obscurely, below distinctly red, moderately closely punctate. Legs clear yellow, the coxæ fuscous; the middle pair a little separated.

In the female the front tarsi are a little and in the male a good deal dilated; in the latter sex there is a deep excision on the last ventral plate.

This is a distinct species, having the anterior puncture of the dorsal series more distant from the front margin than usual.

Five examples were found at Nikko, June 1880.

Philonthus erythropus.

Philonthus erythropus, Kr. Wieg. Arch. 1859, i. p. 88.

One example.

Philonthus virgatus, n. sp. (Group 5, Erichson.)

Angustulus, niger, pedibus testaceis; elytris vittis magnis duabus posterius conjunctis, testaceis; antennis fusco-rufis, tenuibus; abdomine densissime subtilissimeque punctato, segmento singulo margine posteriore ferrugineo.

Long. 8 millim.

Antennæ quite slender, the penultimate joints a little shorter, more slender and paler than those in the middle, the tenth evidently longer than broad; palpi pale fuscous. Head rather small, suborbiculate. Thorax shining black, a little narrowed in front, the punctures of the dorsal series rather large. Elytra not longer than the thorax, rather sparingly punctate, the base and outer margin black, the inner portion yellow, but divided by a longitudinal black mark not reaching the hind margin, the extreme edge of the

inflexed side margin yellow; the middle coxæ are nearly contiguous.

This is a very distinct species: five examples have been met with; they all have the front feet moderately dilated, their sex being uncertain; those examined beneath are apparently males, but have no notch on the last ventral plate.

Nikko, Chiuzenji, 22nd August, 1881.

Philonthus angustatus.

Philonthus angustatus, Kr. Wieg. Arch. 1859, i. p. 92.

This is perhaps not sufficiently distinct from *P. thermarum*, Aubé, though Fauvel's statement (Faune G. R. iii. p. 471) that the differences pointed out by Kraatz are absolutely illusory is at least exaggerated; I have not, however, seen sufficient examples to bring me to a positive conclusion on the matter.

Mr. Lewis met with an example at Nagasaki on the 28th May, 1881, and the individual from Northern China mentioned by me in speaking of *P. thermarum* (Trans. Ent. Soc. 1874, p. 44) is also to be referred to *P. angustatus*.

Philonthus sulcifrons, n. sp. (Group 5, Erichson.)

Minutus, niger, nitidulus; antennarum basi pedibusque testaceis; elytris pallidis, basi fuscis; capite oblongo, anterius impresso profundeque canaliculato; elytris parce punctatis, prothorace paulo longioribus.

Long. 4 millim.

This is the insect alluded to by me (Trans. Ent. Soc. 1874, p. 44) as possibly a variety of *P. thermarum*; but Mr. Lewis has now brought back a small series from which it would appear more probably to be distinct, the remarkable depression and channel on the front of the head being characteristic; it is also of darker colour, rather larger and broader, with stouter, differently coloured antennæ.

I have seen from various sources ten examples, six of which were captured by Mr. Lewis at Nagasaki on the 22nd February, 1881.

Philonthus pygmæus.

Philonthus pygmæus, Kr. Wieg. Arch. 1859, i. p. 93.

This is regarded by Fauvel (*l. sup. cit.*) as the same as *P. thermarum*, but appears to me more probably distinct.

Mr. Lewis met with a specimen at Kioto on the 4th July, 1881, differing from a Ceylonese example only in possessing a slight depression on the front of the head.

Philonthus debilis.

Staphylinus debilis, Grav. Col. Micr. p. 35.

Yokohama, Shirvi, Iwaki, Hakodate.

Philonthus nigrutilus.

Staphylinus nigrutilus, Grav. Col. Micr. p. 41.

The Japanese individuals of this widely distributed and variable species are far from agreeing exactly with our European varieties; they are remarkably elongate, with narrow head, slender oblong thorax, which is not narrowed in front, and brassy elytra; amongst the small series before me there are, however, some individuals which indicate that there will prove to be more than one variety or form in Japan.

Nagasaki, Miyanoshita.

Philonthus inconstans, n. sp. (Group 6, Erichson.)

Fuscus, capite nigricante, thorace rufo-piceo; antennis testaceis, basi pedibusque flavis; thorace oblongo, seriebus dorsalibus obsolete 5- vel 6-punctatis; elytris hoc fere brevioribus; abdomine crassiusculo, dense subtilissime punctato.

Long. $4\frac{1}{2}$ – $5\frac{1}{2}$ millim.

This species belongs to the subgenus *Rabigus*, Rey, and is allied to the European *P. tenuis*; but it is smaller, of a different colour, and has the antennæ yellow. Unlike the European species, it is extremely variable. Sometimes the thorax and head are of one piceous black colour, sometimes the head is quite black and the thorax bright red, and sometimes the elytra are obscure red; the elytra are sometimes much shorter than the thorax, but in some cases are about equal to them in length; the number of punctures in the dorsal series is apparently as often five as six. The fine pubescence on the hind body is somewhat flavescent in colour. The front tarsi of the male are only moderately dilated, and the last ventral plate has a broad shallow emargination preceded by a triangular membrane.

Found in several localities, but apparently rare. Osaka, Niigata, Yokohama, Oyama, Hakodate, Junsai.

Philonthus cunctator, n. sp. (Group 6, Erichson.)

Angustulus, niger, elytris æneis, antennarum basi apiceque pedibusque testaceis, abdominis segmentorum marginibus posterioribus ferrugineis; capite angusto ovato; elytris abdomineque dense punctatis.

Long. 8 millim.

Antennæ elongate, very slender, fuscous, with the two basal joints and the apical joint yellow; palpi yellow. Head very narrow, only half as broad as the thorax; this latter elongate, narrowed in front, the punctures of the dorsal series rather fine. Elytra closely and finely punctate. Hind body with the hind margins of the segments reddish, those at the base only narrowly so, those at the extremity broadly; terminal styles elongate, their extreme base and the median lobe red. Legs clear yellow, middle coxæ contiguous; male with the anterior tarsi slightly dilated and an extremely slight excision of the last ventral segment.

This species is allied to *P. fumarius*, though abundantly distinct by a number of characters.

A single example was met with at Yokohama on the 27th October, 1881.

Philonthus spadiceus, n. sp. (Group 7, Erichson.)

Elongatus, depressus, nigerrimus; antennis palpisque piceis, illis gracilibus, elongatis; elytris abdomineque crebrius punctatis, illis sat nitidis.

Long. 10–11 millim.

Antennæ rather longer than head and thorax, not thicker externally, quite slender, the penultimate joint much longer than broad. Head suboblong, densely punctate at the vertex and the sides of the eyes. Thorax elongate and slender, nearly parallel-sided, with a dorsal series of eight rather large punctures, this series more or less irregular, and frequently with one or two additional punctures intercalated. Elytra quite black, flat, very finely pubescent, finely punctate, a little shining. Hind body densely punctate. Femora picescent; middle coxæ rather narrowly separated; front tarsi of female a little, of male much, dilated; the latter sex with a rather broad, not deep, emargination on the last ventral plate.

This is allied to *P. prolatus*, but is readily distinguished by the longer and more slender antennæ, by the deeper black colour, longer and flatter elytra with less conspicuous pubescence, and by the additional puncture in the thoracic

series, this latter character being, however, not easily observed on account of the great irregularity of the series. The fact that the male tarsi are only about half as broad as they are in *P. prolatus* differentiates the species with certainty.

Rare, Kawasaki near Yokohama, Awomori, and Sapporo.

Philonthus macrocephalus, n. sp. (Group 7, Erichson.)

Depressus, niger; elytris rufis; antennarum apice, palpis, tibiis tarsisque rufescentibus; capite majore, fortiter disperse punctato; prothorace haud elongato, basin versus angustato, seriebus dorsalibus irregularibus circiter 8-punctatis; elytris abdomineque crebre punctatis.

Long. 13 millim.

Antennæ not elongate nor stout, blackish, becoming obscurely red towards the extremity; penultimate joint evidently shorter than broad. Head flat, subquadrate, with numerous coarse distant punctures, but with a broad space along the middle impunctate; underside impunctate. Thorax not so large as the head, anterior angles well marked, the discoidal series consisting of coarse punctures, placed more or less irregularly and varying in number from seven to nine. Elytra, scutellum, and hind body somewhat coarsely and closely punctate.

I am not able to point out any sexual characters; the front tarsi are slightly dilated, no doubt in each sex.

This species has the upper marginal line of the thorax greatly deflexed in front, so that the longer tactile seta is remote from it; this will ultimately require its removal from *Philonthus*. It has the aspect of a *Belonuchus*, but cannot be placed in that genus because of its unarmed femora and (slightly) dilated front feet.

A small series was found at Ichiuchi and Yuyama in May 1881.

Philonthus daimio, n. sp. (Group 8, Erichson.)

Niger; capite thoraceque nigro-subæneis; elytris fusco-æneis, abdomine subversicolore breviter flavo-pubescente; pedibus testaceis, tibiis plus minusve fuscis; capite thoraceque crebrius punctatis, hoc area longitudinali lævigata; elytris abdomineque dense punctatis.

Long. 9-11 millim.

Antennæ blackish, slender, each joint longer than broad. Head very numerous punctured, the punctures more scanty towards the middle, where there is a small glabrous space.

Thorax a little narrowed towards the front, with very numerous coarse punctures, leaving an irregular space along the middle smooth. Elytra and hind body closely and rather finely punctate.

Allied to *P. gastralis*, but with numerous differences in colour, punctuation, and size; the female has the front tarsi distinctly dilated, the male I do not know.

Two examples found at Otaru and one at Hakodate.

HESPERUS.

To this genus, recently established by Fauvel, I have to add an elegant Japanese species, as well as *Philonthus tiro*, previously described by me; this latter is rather aberrant, the form being elongate and *Philonthus*-like and the middle coxæ less widely separated.

Hesperus ornatus, n. sp.

Niger; antennarum apice tibiisque rufis; abdomine apicem versus rufescente; elytris rufis, ante apicem nigris, apice ipso albido-marginato.

Long. 11 millim.

Antennæ only moderately long, black, with the three terminal joints white; palpi elongate, piceous. Head shining black, coarsely punctate at the sides, a broad space on the middle smooth. Thorax oblong, shining black, coarsely punctate, with a straight, rather narrow space along the middle smooth. Elytra closely and not quite finely punctate, somewhat shining. Hind body rather sparingly punctate, black, with slight particoloured reflexions, the two terminal segments red. Legs slender, coxæ and femora piceous or nearly black, tibiæ white, fuscous at their extremity, tarsi yellowish. The male has a well-marked notch on the last ventral plate, and its front tarsi are a little dilated; in the female these feet are only very slightly dilated.

Rare, Hitoyoshi, Yuyama, and Nikko, in the month of May, under dead leaves with fungal growth.

Actobius inornatus, n. sp.

Angustulus, elongatus, subdepressus, niger; antennis fuscis, basi pedibusque testaceis.

Long. 5 millim.

Antennæ rather slender, but little thickened externally,

the penultimate joints scarcely transverse. Head coarsely and closely punctate, with only a small space on the disk glabrous. Thorax long and narrow, punctured like the head, with a broad, definite, longitudinal space smooth. Elytra elongate and narrow, rather closely and coarsely punctate, black, only the hind margin indefinitely fusco-testaceous.

A single example was found at Yokohama, 7th April, 1880.

Cafius rufescens, n. sp.

Rufo-brunneus; capite thoraceque nigricantibus; antennis rufis, pedibus fusco-testaceis, cinereo-pubescens, opacus; capite thoraceque dense, fortiter profundeque punctatis, linea longitudinali lata, arguta, glabra.

Long. 5 millim.

This species is allied to the European *Philonthus sericeus*, auct., but is distinguished by the colour and other characters apparently subject to but little variation. The head and thorax are much more deeply and coarsely punctate, and the glabrous line on these parts is broader, definite, and more shining, the antennæ are shorter, and the punctuation of the elytra and hind body is not quite so dense and fine. From *P. algarum* it is distinguished by the colour, the much less slender form, and much shorter and thicker antennæ. The male is distinguished by the possession of a setigerous pore on each of the second and third ventral plates and by a large excision of the terminal plate. The setigerous pores do not exist in the corresponding sex of the allied species.

Yokohama, Niigata, Hakodate, under seaweed, probably generally distributed in suitable localities on the coast. I have a specimen from Hong Kong in my collection.

[To be continued.]

V.—*Ophiopteron elegans*, a new, probably Natatory, Form of *Ophiurid*. By Dr. HUBERT LUDWIG*.

AMONG the Holothuriæ which Dr. J. Brock collected during his travels in the Indian Archipelago and entrusted to me to be worked up there was a single example of an Ophiuran

* Translated from the 'Zeitschrift für wissenschaftliche Zoologie,' Bd. xlvii. pp. 459-464 (with a plate).