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IV.—On the Coccinellidæ of Japan

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Agama microterolepis.

Head rather small, much depressed. Nostril tubular, directed upwards and backwards, on the canthus rostralis. Upper head-scales smooth; occipital enlarged; sides of head near the ear and neck with groups of short spines; ear-opening large, larger than the eye-opening. Throat much plicate; no gular pouch. Body much depressed, covered with very small uniform scales, dorsals and laterals keeled, ventrals smooth; dorsal scales converging and increasing in size towards the vertebral line; 90 to 100 scales on the vertebral line from the origin of the fore limbs to the origin of the hind limbs, 150 to 160 round the middle of the body; a slight indication of a nuchal crest; no dorsal crest. Tibia a little longer than the skull. Digits moderate; fourth finger slightly longer than third; fourth toe slightly longer than third, fifth extending beyond first. Tail about twice as long as the distance from gular fold to vent, depressed at the base, slightly compressed at the end, with a rudimentary keel or low crest in the male; scales moderately large, strongly keeled, disposed quincuncially or forming irregular annuli. Male with a row of anal pores. Dark greyish olive above, with dark brown marblings and rings; vertebral line yellowish; tail with dark brown annuli, which are interrupted below; throat bluish grey; belly and lower surface of limbs bluish grey in the male, white in the female.

	millim.
Total length.....	270
Head.....	23
Width of head.....	23
Body.....	87
Fore limb.....	60
Hind limb.....	75
Tail.....	160

Three specimens from the Rustenburg District, Transvaal, collected by Mr. W. Ayres.

 IV.—*On the Coccinellidæ of Japan.*

By G. LEWIS, F.L.S.

BEFORE Mr. G. R. Crotch left for America in 1872 he determined the species of Coccinellidæ I then had from Japan, and furnished me with a list of the species. The list was afterwards published in the Ent. Month. Mag. x.

pp. 54-56 (1873); but only four of the species indicated as new were described as such in Crotch's 'Revision of the Coccinellidæ,' a posthumous work printed by the Syndics of the Cambridge University Press, and published in 1874. Since 1874 Weise has described five species as new from Japan, and Harold and myself one each; the present paper introduces eighteen more, and brings the total number known to fifty-seven. Twelve of these are either identical or similar to European species; the others are either known Oriental species or species of an Oriental type.

The synonymy of the Coccinellidæ as a family is long and perplexing, and I do not think it would serve any useful purpose to repeat any part of it here: students who wish for an elaborate list of names can easily compile one from the Munich Catalogue of 1874 and from the pages of the 'Zoological Record' for subsequent years. *Coccinella decempunctata*, L., requires two pages in the Munich Catalogue, which gives seventy names, but Crotch, in his 'Revision,' is content to cite nine; as a specialist in the group he deemed this sufficient. Neither have I noticed varietal names, as these also are recorded in the works named, and I consider all such names an unnecessary adjunct to a synonymy already confusing. Some varietal names have been given apparently under the assumption that particular species have certain similar aspects which are repeated in various individuals over and over again; but in *Ptychantis axyridis*, Pall., a curious variety may be found which may not occur again (the patterns of this insect are almost as diversified as those of the kaleidoscope), and a name given to such a variety would be a "specimen" name, and would have no right to a place in any catalogue. If varietal names are or have been given to specimens which ultimately prove to be good species, priority cannot be claimed for the names; they have no status unattached to known and described species to which the authors originally assigned them.

EPILACHNA, Chevrolat.

The species of this genus are phytophagous, and as such differ from the others of this series.

Epilachna niponica, sp. n.

Hemisphærica, parum opaca; capite disco nigro-maculato; thorace in medio triangulariter maculato, utrinque bipunctato; scutellum nigro vel rufo, dense punctulato; elytris 28-maculatis.

Mas. Segmento ventrali quarto canaliculato.

L. $7\frac{1}{2}$ - $8\frac{1}{4}$ mill.

Hemispherical, above reddish brown with a pinkish tinge, somewhat opaque; the head clearly and rather densely punctulate, with a discal, rather transverse, black mark; the thorax with a median somewhat triangular black patch, the pointed end of which touches the basal edge; on the disk it widens out transversely, leaving a clear margin behind the head more or less wide, near the base, in a line with the eye, are two black spots on either side; the scutellum red or black, usually red, densely punctulate; the elytra with shallow punctures and a faint alutaceous sculpture, and more generally over the whole surface is a fine punctuation, the twenty-eight spots occupy corresponding positions to those of a typical *E. 28-punctata*, Linn., but they are larger and the two behind the scutellum join, the two sutural spots on the disk also sometimes join, beneath in the epipleural fold there is a long irregular streak, black; the abdomen, fourth segment of male is canaliculate in the middle, surface of the channel usually red, rarely black, body beneath black; the legs, thighs with an elongate black spot or wholly infuscate. The apices of the elytra are less widely rounded off than those of *E. 28-maculata*, Motsch.

Hab. Nikko and Miyanoshita. Also found near the Junsai Lake feeding on a species of *Physalis*, and usually resting on the underside of the leaves. Fusan (*Leech*).

Epilachna 28-maculata, Motsch.

Epilachna vigintioctomaculata, Motsch. Etud. Ent. vi. p. 40 (1857);
Crot. Rev. Coc. p. 48 (1874).

Hemisphærica, parum opaca; thorace in medio nigro; scutello rufo; elytris 28-maculatis; metasterno infuscato.
L. 6½-7 mill.

Hemispherical, somewhat opaque, in colour similar to *E. niponica*; the head immaculate, somewhat densely but very finely punctulate; the thorax with a transverse black mark on the disk and a small spot midway between it and the basal edge; on either side of the discal mark are two other spots which sometimes join; the scutellum is usually red, faintly and finely punctulate; the elytra, surface sculpture similar to that of *E. niponica*, but sometimes fainter, with twenty-eight spots, the pair behind the scutellum are separated by a narrow sutural margin, the other spots agree with those of *E. 28-punctata*, Linn.; epipleural fold usually without a mark, but sometimes there is a faint infuscate streak; the fourth segment of the abdomen in male slightly impressed.

Hab. Yokohama and other places. Common.

Epilachna 28-punctata, Fabricius.*Coccinella 28-punctata*, Fabr. Syst. Ent. p. 34 (1775).

Crotch labelled some of my specimens from South Japan "*E. 28-punctata*, F.," and they are different to those I found near Yokohama and other places more in the north, and which I refer to *E. 28-maculata*, Motsch. The differences are chiefly in size and colour generally and in the form of the thorax, which in *E. 28-maculata* is more markedly transverse, and the shoulders also are wider. Crotch remarks of *E. 28-punctata*, F., "This species varies almost to infinity, and gradually runs into the common six-spotted type, so that I cannot give any structural differences;" but Crotch, so far as I know, never saw typical specimens of *E. 28-maculata* nor any examples from the north.

Hab. Nagasaki and Konosé. Oshima (*Oberthür*).

Epilachna admirabilis, Crotch.*Epilachma admirabilis*, Crot. Revis. Coc. p. 81 (1874).

This species is described by Crotch as being like *E. macularis*, Muls.; the head is immaculate and clearly punctulate; the thorax black, with the anterior angles red, lateral margins and anterior border also sometimes red; the scutellum black; the elytra ten-spotted, scutellar and discal sutural spots are common to both wing-cases, in the middle of each elytron is a third spot, the fourth is humeral, fifth on the middle of the elytra edge, the last is before the apex; all the spots are large, and in one example in thirteen the sutural-discal and the two outer spots join (this form agrees with Crotch's type, which I have seen); the under surface and legs usually pale, but the abdominal segments are sometimes partly infusate. I have not observed any sexual differences in the ventral segments.

Hab. Hakone, Nikko, and abundant at Shiba, near Tokio; China (*Crotch*).

Anisosticta kobensis, sp. n.

Oblongo-ovata, pallide flava; thorace 6-nigro-punctato; elytris 19-punctatis, distincte punctulatis.

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

The form and number of the spots agree very closely with those of *A. 19-punctata*, Linn., but the general colour is paler and the spots much larger; the elytral punctuation larger and much clearer, and the legs more slender. The outline of the body is narrower.

Hab. Kawasaki, near Kobé; a small series found under reeds in September. Also at Niigata and Honjo in Tokio.

Hippodamia 13-punctata, Linnæus.

Coccinella tredecimpunctata, Linn. Syst. Nat. p. 336 (1758).

Hab. Kawasaki and Nikko; two examples only. Common in Europe and some parts of Siberia.

Coccinella 12-maculata, Gebler.

Coccinella duodecimmaculata, Gebl. Mém. Mosc. ii. p. 76 (1832).

Crotch says the prosternal process is raised (Rev. Coc. p. 110), but in two specimens I have examined it is flat and bistriate; this character is therefore not constant, although I have seen it in Chinese examples.

Hab. Kashiwagi. Two examples only.

Coccinella 8-maculata, Fabricius.

Coccinella octomaculata, Fabr. Spec. Ins. i. p. 97 (1781).

In my former list the synonymic name of *C. arcuata*, F., 1787, was used.

Hab. Nagasaki. Four examples.

Coccinella 7-punctata, Linnæus.

Coccinella septempunctata, Linn. Syst. Nat. p. 365 (1758).

In Crotch's 'Revision' this species and *C. Bruckii*, Muls. 1866, are considered to be distinct species; but in a note Crotch says that the specimens from Japan "seem to afford a passage to *C. 7-punctata*, Linn." My series from Japan consists of both forms, and I think that *C. Bruckii*, Muls., is only a varietal name.

Hab. All the islands. Very common.

Coccinella transversoguttata, Faldermann.

Coccinella transversoguttata, Fald. Mém. Ac. Petr. ii. p. 454 (1835).

This species was first described from Siberia. Specimens from Eastern Asia and Japan are very finely but clearly punctulate on the thorax and elytra. I have some examples in the Gorham collection from Mexico (a locality given by Crotch, Revis. p. 116), in which this punctuation is obsolete.

Hab. Niigata, Hakodate, and Sapporo.

Coccinella ainu, sp. n.

Nigra, supra convexa, nitida; elytris rufis, 12-nigro-punctatis, parum dense punctulatis.
L. 5-5½ mill.

In colour very similar to *C. 11-punctata*, Linn., but more broadly oval, and the elytra have a humeral spot. The head black, with two yellow spots touching the interior edge of the eye, punctulate; the thorax, punctuation clearer than that of the head, anterior angles broadly pale; the pale patches are sometimes joined by a pale anterior narrow margin; the elytra, on either side of the scutellum is a pale triangular spot, and behind it a large black sutural spot common to both wing-cases; in the dorsal region, but quite clear of the suture, are four more black spots (sometimes the posterior pair are smaller than the anterior pair), on the lateral area are three smaller spots on either side, the basal or humeral spot is nearer to the intermediate spot than the intermediate spot is to the apical one. The surfaces of the elytra are more distinctly punctulate than in either *C. 11-punctata*, L., or *C. 7-punctata*, L. Beyond the pale thoracic margin noticed above I have not seen any variation of importance.

Hab. Sapporo and Mororan, in August 1880. Found abundantly in company with *C. Crotchii* in the flowers of "immortelles" growing in a dry river-bed.

Coccinella ronina, sp. n.

Oblongo-ovata, nigra, nitida; capite in medio flavo-maculato; thorace utrinque pallide marginato; elytris 4-maculatis, maculis flavis vel rufis.
L. 4-4½ mill.

Oblong-ovate, black, shining; the head black, with a pale median spot between the eyes, finely punctulate; the thorax punctulate like the head, with a pale lateral band or border rather broad and of equal width throughout; the scutellum very small and punctulate; the elytra also punctulate, each wing-case with two pale or red spots placed longitudinally in a line with each other near the centres of the wing-cases; a point between the spots would indicate the centre of each elytron; the epipleural rim is very narrow, especially near the humeral angle; the ventral segments are laterally pale or reddish.

Hab. Oyama in Sagami and Junsai in Yezo.

Coccinella 14-pustulata, Linnæus.*Coccinella quatuordecimpustulata*, Linn. Syst. Nat. ed. x. p. 368 (1758).*Hab.* Kashiwagi, Yokohama, Fukui, Fujisan, and Sapporo. Common.*Coccinella Crotchii*, Lewis.*Coccinella Crotchii*, Lew. Ann. & Mag. Nat. Hist. (5) iv. p. 466 (1879).

This species does not seem to vary much in colour.

Hab. Oyayama, Maiyasan, Awomori, and Sapporo.*Leis 15-maculata*, Hope.*Coccinella quindecimmaculata*, Hope, Zool. Misc. p. 30 (1831).*Hab.* Nagasaki. Two examples. Evidently confined to the south of Japan. Oshima (*Oberthür*).*Ptychantis axyridis*, Pallas.*Coccinella axyridis*, Pall. Iter. iii. p. 29 (1773).

The synonymy set forth by Crotch and Harold does not quite agree, and so probably requires adjustment. It consists of eighteen to twenty names.

Hab. All the islands and in China. Late in autumn, when this species assembles for hibernation, it may be seen congregating in countless multitudes. I saw it assemble in Kiu Kiang in 1863, its vast numbers filling the crevices of the large pagoda near the river. In 1880 I saw a similar multitude at Nikko lining the shutters of a house. The most dissimilar looking individuals I found *in cop*.*Anatis halonis*, sp. n.Breviter ovalis, supra convexa; elytris 16-punctatis; *C. ocellate* proxime affinis, sed pedibus robustioribus et colore dissimili. Long. $8\frac{1}{2}$ -9 mill.Shortly oval, convex, shining; body beneath black, ventral segments sometimes laterally pale; the head with somewhat acinaciform punctures, black, with a yellow spot on the inner edge of the eye and a smaller pale spot within the anterior ocular emargination; the thorax distinctly and densely punctulate, with the lateral rim best-marked at the base, anteriorly the rim is very feeble, pale yellow, with an irregular **M**-shaped mark in the middle, and exterior to it on either side before the posterior angles is an isolated black dot; the scutellum red or black; the elytra, the spots are similar in position to those

of *C. ocellata*, L., the scutellar pair are very small and round and equidistant from the scutellum and the suture, surrounded by a pale halo-like circle, the other spots correspond with those of *C. ocellata*, but are all small, being encroached upon by the pale margin, so much so, indeed, that in the median spot before the apex the black dot is obliterated or is very faint; the legs pale reddish brown, tarsi somewhat robust, posterior tibial carina almost obsolete.

Knowing how variable *C. ocellata* is, I should have considered this a variety of it had I not found the tarsi more robust and the tibial carina distinctly feeble. I have not, however, seen a specimen of *C. ocellata* coloured like the present insect.

Hab. Niohosan (Ent. xxi. p. 108, 1887) and Tsukubayama in June on firs.

Thea 12-guttata, Poda.

Thea duodecimguttata, Poda, Ins. Græc. p. 25 (1762).

Hab. Kobé, Kamiichi, and Yokohama.

Thea cincta, Fabricius.

Thea cincta, Fabr. Suppl. Ent. Syst. p. 77 (1798).

All my specimens (thirty-four in number) of this species agree in colour; there are two black spots on the basal edge of the thorax, and the elytra are immaculate. The anterior edge of the thorax is very thin and pellucid, and the black eyes are seen through it and appear like two additional spots.

Hab. Nagasaki, in great profusion, 29th May, 1881.

Calvia 10-guttata, Linnæus.

Coccinella decemguttata, Linn. Syst. Nat. p. 583 (1767).

Hab. Kashiwagi, Plain of Fujisan, and Sapporo; three examples. In Europe it is found in alders and sallows.

Calvia 14-guttata, Linnæus.

Coccinella quatuordecimguttata, Linn. Syst. Nat. p. 367 (1758).

Anisocalvia quatuordecimguttata, Linn., Crot. Revis. p. 144 (1874).

This species has three transverse spots on the anterior dorsal area, while *C. 15-guttata* has but two; but I cannot see any character to separate these two species from each other generically. Harold merges *Calvia* and nineteen other genera in *Halysia*.

Hab. Sapporo and on the Plain of Fujisan. Five examples.

Calvia 15-guttata, Fabricius.*Coccinella quindecimguttata*, Fabr. Gen. Ins. p. 217 (1777).

This species differs from the last in usually having two oblique spots on the thorax before the scutellum and only two transverse dorsal spots, as stated above.

Hab. Nagasaki, Tokio, and Niigata. In the British Museum there are some large specimens from China labelled *C. septenaria*, Muls.

Ceolophora inæqualis, Fabricius.*Coccinella inæqualis*, Fabr. Syst. Ent. p. 80 (1775).

Hab. Nagasaki. Only seen once.

Propylea japonica, Thunberg.*Coccinella japonica*, Thunb. Nov. Spec. Ins. p. 12, fig. 12 (1781).

In some of its varieties this species resembles *C. conglobata*, Linn., but as my Japanese specimens differ from those of Western Europe (being narrower and more variable in colour), I prefer to use Thunberg's name. Crotch thought my specimens belonged to the Linnean species. It is not easy to find two specimens exactly alike, and in recent years eight varietal names have been added to the earlier list by Sajó, Croissandeau, and Weise. One varietal name of Mulsant's which belongs to this form or species has been placed by Crotch under *P. dissecta*, Muls.

Hab. All the islands. Very abundant.

Verania discolor, Fabricius.*Coccinella discolor*, Fabr. Suppl. Ent. Syst. p. 77 (1798).

Hab. Nagasaki. Four examples.

Synonycha grandis, Thunb.*Coccinella grandis*, Thunb. Nov. Sp. Ins. p. 12, fig. 13 (1781).

Hab. Nagasaki and Simabara. Also found on Oshima, Rukiuan group.

Ithone mirabilis, Motschulsky.*Leis mirabilis*, Motsch. Schrenck's Reis. ii. p. 246, pl. ii. fig. 28 (1860).*Ithone mirabilis*, Sols. Hor. Ent. Ross. viii. p. 276 (1871); Lew. Ent. p. 153 (1893).*Aiolocaria mirabilis*, Crot. Revis. Coc. p. 178 (1874).

Ménétries and Mulsant placed this species in *Synonycha*,

and Crotch, apparently overlooking Solsky's paper, founded the genus *Aiolocaria* to receive it. I have examined Hope's types of *Coccinella hexaspilota* in the British Museum and some other Indian specimens similar in colour; but they appear so different to the Siberian and Japanese specimens (to which Hope's name is not appropriate), that I am reluctant to follow authors who consider the names synonymous. I have two specimens with the elytra entirely black and one with black elytra and a small red humeral spot. For the first variety the name of *nigra* has been recently suggested by a continental author; *nigripennis* would have been a better name.

Hab. Sannohé, Morioka, Sendai, and Shirakawa. Seen continuously in great multitudes in October on telegraph-posts during two days' travel. Now and then I stopped to look for varieties, but found only two specimens with the elytra entirely black.

Chilomenes 4-plagiata, Schönherr.

Chilomenes quadriplagiata, Schön. Syn. Ins. ii. p. 195 (1808).

Hab. Nagasaki and Kobé. Also China, Manchuria, India, Celebes, and Australia (*Crotch*).

Chilocorus rubidus, Hope.

Chilocorus rubidus, Hope, Gray, Zool. Misc. p. 31 (1831).

In my former list this species stood as *C. tristis*, a varietal name of Faldermann's, 1835. Some of my specimens are wholly reddish brown, others are black with a well-defined discal red blotch on each elytron; Crotch noticed this peculiarity.

Hab. Nagasaki and Yokohama. Siberia and China.

Chilocorus similis, Rossi.

Coccinella similis, Ross. Faun. Etr. i. p. 68, t. vii. fig. 4 (1790).

Crotch (p. 185 of his 'Revision') apparently overlooked Rossi's name, and employed Scriba's name of *C. renipustulatus*, which is two years later. Crotch says (Revis. p. 185) that the Japanese "specimens are exactly like *C. bivulnerus*, Muls., in the round punctiform dot exhibiting no trace of any transverse tendency."

Hab. Yokohama and other places. Common.

Chilocorus mikado, sp. n.

Hemisphæricus, nitidus, subtus brunneo-rufus; thorace elytrisque nigris; pedibus corpore concoloribus.

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

Hemispherical, shining; the head, body beneath, and legs brownish red; the thorax and elytra black, the latter not thickly punctulate on the disk, but distinctly and rather rugosely punctured laterally. Crotch considered this species belonged to *C. nigrinus*, Fabr., and recorded it as such (Revis. p. 184); but it does not agree with any Indian specimen I have seen in the punctuation of the elytra, and it also differs in having the scutellum more than as large again. The anterior tibiæ are angulate on the outer edge near the base.

Hab. Nagasaki.

Sticholotis Hilleri, Weise.

Sticholotis Hilleri, Weise, Stett. ent. Zeit. p. 238 (1885).

“Suborbicularis, sat convexa, ferruginea, supra glabra, nitida, crebre sat fortiter punctata; elytris sutura et margine laterali nigro-limbatis, maculis 6 nigris lunulisque 4 flavis signatis, in singulo striis 2 brevibus punctatis prope suturam.”

L. 3 mill.

I did not meet with this species, but Herr R. Hiller has kindly given me an example.

Hab. Hagi in Yamaguchi (*Hiller*).

Sticholotis substriata, Crotch.

Sticholotis substriata, Crot. Rev. Coc. p. 201 (1874).

This species has two dorsal rows of punctures, and it is the type of the genus *Sticholotis*.

Hab. Nagasaki, Kobé, and Yokohama.

Sticholotis punctata, Crotch.

Sticholotis punctata, Crot. Rev. Coc. p. 201 (1874).

Sticholotis rufosignata, Weise, Stett. ent. Zeit. xlv. p. 239 (1885).

Hab. Nagasaki, Kobé, and Yokohama. In February 1881 I found this and the previous species hibernating in large numbers in old *Camellie*.

Sticholotis pictipennis, sp. n.

Suborbicularis, convexa, nitida, supra distincte punctata; capite

rufo; thorace, angulis anticis exceptis, nigro; elytris rufis, 4-nigro-maculatis; subtus pedibus brunneis.
L. $1\frac{3}{4}$ mill.

This species is much smaller than *S. punctata*, Crotch, and the punctuation is much finer on the thorax; the head red; the thorax black, with the anterior angles obscurely red; the elytra red, with a discal black spot common to both wing-cases, two black lateral spots, one on each side on the middle of the border, and an apical spot which corresponds with the one on the dorsum; the underside and legs brown.

This is the only species of this series which has the bases of the elytra clearly red and without marking; it is a very distinct species.

Hab. Konosé and Ichiuchi in Higo.

Pentilia nigra, Weise.

Pentilia nigra, Weise, Deutsche ent. Zeit. xxiii. p. 149 (1879).

“Rotundata, modice convexa, nigra, pubescens; antennis, palpis pedibusque obscure ferrugineis.”

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

Hab. Nagasaki, Ichiuchi, Fukushima, and Oyama in Sagami.

Hyperaspis japonica, Crotch.

Cryptogonus japonicus, Crot. Revis. Coc. p. 203 (1874).

Hyperaspis testaceicornis, Weise, Deutsche ent. Zeit. xxiii. p. 149; Arch. f. Nat. p. 212 (1887).

Hab. Kuroheiji, Nagasaki, Kashiwagi, Miyanoshita, and Yokohama.

Hyperaspis asiatica, sp. n.

Ovalis, convexa, supra punctulata; fronte pallide rufa; thorace utrinque late rufo; elytris nigris, macula rotundata pone medium pallide rufa; prosterno lato, bistriato.

L. 3 mill.

This species closely resembles *H. reppensis*, Herbst, but it differs in the punctuation, colour of the head and thorax, and in having a much broader prosternum. The head, face pale red, base narrowly black; the thorax broadly pale red at the sides and narrowly pale on the anterior margin, disk and base black; the elytra with a reddish pale spot on either side well before the apex, but nearer the outer margin than the suture, surface clearly punctulate; the prosternum broad, with two

distinct raised lines on the keel, which start from the base and anteriorly join about the middle (these lines in *H. reppensis* are indistinct and longer, and do not join in front); the metasternum, punctures clear and distinct and larger than those of *H. reppensis*; the antennæ, anterior and intermediate legs pale red; hinder tibiæ pale, with the femora black.

Hab. Nagasaki.

Aspidimerus orbiculus, Gyllenhal.

Aspidimerus orbiculus, Gyll. Schön. Syst. Ins. i. p. 205 (1808); Crot. Revis. Coc. p. 203 (1874) (*Cryptogonus*); Weise, Best. Tab. ii. p. 63 (1885).

Schönherr, a contemporary of Gyllenhal, seems to have considered that this species belonged to Gyllenhal; I have not seen the original description.

Hab. Nagasaki and South Japan generally. Common.

Platynaspis Lewisii, Crotch.

Platynaspis Lewisii, Crot. Revis. Coc. p. 198 (1874).

The face of this species is sometimes wholly black and the spaces between the dorsal spots yellow. I have two specimens, both from high altitudes (Miyanoshita and Oyama in Sagami), in which the elytra are black, with a small red spot at the base on either side of the scutellum. Crotch omitted to mention that he had seen Japanese specimens of this species; in the 'Revision' he only refers to an example from Shanghai. Weise states (*Deutsche ent. Zeit.* p. 413, 1892) that *Microrrhymbus*, Gerst. 1871, = *Platynaspis*, Redt. 1843.

Hab. Tokio, Yokohama, and Kobé.

AMIDA, gen. nov.

Type *Scymnus tricolor*, Har.

This new generic name I propose for an insect which measures 4-4½ millim. and has most of its characters similar to those of *Scymnus*. The eyes, however, are very different, being large, more finely faceted, and the inner edges are straight and parallel to each other, leaving a bilateral facial space (very noticeable) between them; the antennæ long and slender, 11-jointed, first two large, bulbiform, and distinctly separate; terminal three joints form an elongate club; the terminal abdominal segment is very narrow and transverse; the tibiæ are swollen on the outer edge, the claws with a robust inner process.

Amida tricolor.

Scymnus tricolor, Har. Deutsche ent. Zeit. xxi. p. 87 (1877).

“Testaceus, thorace nigro-trimaculato; elytris basi suturaque, hac medio latius, rufis, utriusque maculis tribus marginalibus nigropiceis, una humerali, altera media majore, tertia apicali.”

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

Hab. Yamaguchi (*Hiller*), and at Nara, not common.

PLOTINA, gen. nov.

Type *P. versicolor*.

This generic name is proposed for a small species which superficially resembles a *Scymnus* without pubescence; but the eyes are small and somewhat coarsely faceted; the antennæ longer, two basal joints bulbiform and clearly separate, after the sixth joint the articulations become larger and form an elongate club, the tenth and eleventh joints appear to be connate and to form a conical mass; the anterior tibiæ are constricted at their bases, claws simple and but very feebly enlarged at the bases; the prosternum widens and flattens out immediately in front of the coxæ; there is no keel, but in the coxal area there are two short lateral striæ which diverge anteriorly; the mesosternum transverse and arched at the sides, anteriorly and posteriorly straight; the elytra, epipleural fold wide and only narrowing behind the posterior coxæ.

Plotina versicolor, sp. n.

Breviter ovata, convexa, testacea, nitida, haud pubescens; thorace basi transversim nigro-maculato; elytris 12-maculatis, maculis nigris.

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

The head clearly punctulate, brownish or testaceous, usually darker before the neck; the thorax yellowish brown, with a black transverse patch before the scutellum, the patch extends on either side to a point behind the eyes; the elytra rather paler than the thorax, with twelve black spots—one round on the humeral area, two other similar spots along each lateral margin, one more oblong in the centre of each wing-case, and two sutural spots on each elytron, the first just before the disk, the second well before the apex; the sutural margin is often brownish, and so also is the space between the oblong discal spot and the marginal spot in a line with it; the legs and surface beneath concolorous.

Hab. Oyama in Sagami. Five examples.

Scymnus pilicrepus, sp. n.

Breviter ovalis, convexus, dense griseo-pubescentis; capite rufo, vix dense et minute punctulato; thorace dense punctulato, margine laterali rufo; elytris sparse punctulatis, punctis grossis intermixtis, apice rufis; pedibus rufo-brunneis.

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

Shortly oval, convex, densely clothed with grey pubescence; the head red, densely but minutely punctured; the thorax black, with the lateral margin red, the red margin widens out towards the back of the eye, rather densely punctured, the punctures being distinctly largest before the scutellum; the elytra black, with the apices clearly red, surface punctured with rather large shallow punctures intermixed with a fine punctuation; the prosternum is bistriate, truncate between the striæ both before and behind, with the intermediate area somewhat roughly punctured; the meso- and metasternum are clearly punctured and with the first abdominal plate black, the second and third abdominal segments are infuscate in the middle, the others wholly red; the legs and tarsi reddish brown.

This is the largest species of *Scymnus* known from Japan, as *S. tricolor*, Har., is now placed in another genus.

Hab. Yokohama, Kiga, Ichiuchi, and Kashiwagi.

Scymnus sylvaticus, sp. n.

Breviter ovalis, convexus, dense griseo-pubescentis; capite thoraceque rufis; elytris nigris, apice rufis.

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

This species is as large again as *S. dorcatomoides*, Weise, but the coloration is very similar, although the apical red area is much broader and straighter towards the epipleuræ. The abdominal segments are red and the legs also, but the metasternum is infuscate. This species is perhaps closely allied to *S. apiciflavus*, Motsch., an Indian species.

Hab. Nagasaki and Yokohama.

Scymnus dorcatomoides, Weise.

Scymnus dorcatomoides, Weise, Deutsche ent. Zeit. p. 151 (1879).

"Oblongo-ovatus, convexus, niger, nitidus; capite, thorace, elytrorum apice plus minusve pedibusque rufo-flavis; abdomine toto vel apicem versus flavo; thorace dense subtilissime punctato; laminis abdominalibus integris.

"Long. $\frac{3}{4}$ lin."

Hab. Nagasaki and Chiuzenji. Common also at Yokohama.

Scymnus phosphorus, sp. n.

Ovalis, convexus, niger, nitidus, griseo-pubescentis; elytris bimaculatis, maculis rufis; pedibus parum infuscatis.
L. 2 mill.

This species agrees with *S. Hareji*, Weise, in form and size, but it is black, with two relatively large red spots on each elytron well before the apex; the spots leave a rather wide black margin both at the suture and on the lateral edge. The punctuation also is closer.

Hab. Tagami, near Nagasaki. Two examples only.

Scymnus Hareja, Weise.

Scymnus Hareja, Weise, Deutsche ent. Zeit. p. 150 (1879).

“Ovalis, convexus, griseo-pubescentis, niger, capite thoraceque rufiflavus, pedibus elytris gutta utrinque ad medium apiceque flavis: laminis abdominalibus abbreviatis.
“L. $\frac{3}{4}$ lin.”

Hab. Hagi (*Hiller*); Maiyasan, near Kobé.

Scymnus Hoffmanni, Weise.

Scymnus Hoffmanni, Weise, Deutsche ent. Zeit. p. 152 (1879).

“Ovatus, modice convexus, subnitidus, rufo-testaceus; thorace nigro, angulis anticis plus minusve rufo-testaceis; elytrorum marginibus (posticis exceptis) nigris. Laminis abdominalibus integris, dense fortiterque punctatis.
“L. $\frac{2}{3}$ lin.”

Hab. Kobé, Yokohama, and Nagasaki. Very common.

Scymnus niponicus, sp. n.

Breviter ovalis, brunneus, nitidus, griseo-pubescentis; capite rufo-brunneo; thorace ante scutellum infuscato, anticè lateribus rufo-brunneo; elytris infuscatis, in medio longitudinaliter obscure rufis; subtus parum infuscatus; pedibus testaceis.
L. $1\frac{3}{4}$ -2 mill.

This species is very similar to *S. subvillosus*, Goeze, but the thorax is narrower.

Hab. Yokohama and Nagasaki.

Scymnus hilaris, Motschulsky.

Scymnus hilaris, Motsch. Etud. Ent. p. 119 (1858); Weise, Deutsche ent. Zeit. p. 151 (1879).

Weise has determined this species. The original specimen Motschulsky had come from India, but the author's description is not satisfactory.

Hab. Nagasaki, Kiga, and Tokio. Widely distributed and common.

Scymnus paganus, sp. n.

Ovalis, convexus, brunneus, nitidus, griseo-pubescentis; thorace distincte punctato; elytris lateribus leviter punctulatis.

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

Oval, convex, uniformly brown, shining, with grey pubescence; the head obscurely punctulate; the thorax distinctly punctured, punctures rather coarse but not densely set; there is an extremely fine basal line seen under the microscope; the scutellum also punctured; the elytra are punctured similar to the thorax in the scutellar region, but gradually become finer to the apex and lateral margins, sometimes behind the scutellum there is a small sutural area, somewhat dusky; the prosternum has a flat keel, with a lateral stria on each side and the interspace rather roughly punctured; the mesosternum also punctured, but not densely.

This species is much more oval than any of the preceding, but not so oblong as the two following.

Hab. Nagasaki, Yuyama, and Oyama in Sagami.

Scymnus fortunatus, sp. n.

Oblongo-ovatus, piecco-brunneus, convexus; capite rufo; thorace in medio nigro; elytris nigris, transversim late bifasciatis, fasciis rufo-sanguineis.

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

Oblong-oval, body pitchy brown, convex above and distinctly punctulate, with a grey pilosity; the head red; the thorax red, with a median area black, the black marking extending along the base; the scutellum black; the elytra black, with a transverse red band over the metasternum, band anteriorly deeply bisinuous and externally not reaching the epipleural margin; at the suture a wider black margin is left, posteriorly near the middle of the wing-case it connects with a second rather smaller transverse band, apex widely black; the legs obscurely reddish brown.

I found a closely allied species to this in Ceylon; the colours are very similar as well as the general form.

Hab. Nagasaki, 25th May, 1881. One example only.

Scymnus patagiatus, sp. n.

Oblongo-ovalis, convexus, griseo-pilosus, capite thoraceque utrinque rufo-brunneis; elytris in medio testaceis, cum marginis nigris.

L. 2 mill.

Oblong-oval, convex, greyly pilose; the head minutely but clearly punctulate, reddish brown; the thorax infuscate, with the lateral margins rarely reddish brown; the scutellum black; the elytra with a large pale testaceous oblong area in the middle of each wing-case, which is somewhat parallel at the sides, surrounded by a blackish margin, which is broadest at the apices and near the scutellum; the legs testaceous.

Hab. Nagasaki. Not uncommon.

[*Scymnus ferrugatus*, Moll (Füssly, Neu. Mag. Heft ii. p. 183, 1785), a European species, has been recorded from Japan by Weise; but as he suggested, without any description, a varietal name for it, it is open to doubt whether Moll's species really occurs in Japan or only a species resembling it. Illiger also gave a varietal name to an insect he considered was *S. ferrugatus* from Siberia. I have not included it in the list.]

RODOLIA, Mulsant.

Rodolia, Mulsant, Spec. p. 902 (1851).

In the Ann. Soc. Ent. Belg. xxxix. p. 148 (1895), Weise rightly places the species hitherto included in *Novius* in this genus. The anterior tibiæ are widely and conspicuously emarginate in *Rodolia* on the inner edge.

Rodolia limbatus, Motschulsky.

Novius limbatus, Motsch. Bull. Mosc. i. p. 178 (1866).

“*Novius limbatus*, Motsch., statura *Nov. cruentati* sed rotundior. Subrotundatus, convexus, nitidus, brevissime cinereo-puberulus, niger, thoracis marginis, elytrorum limbo, basi suturaque rubris; thorace valde transverso; elytris thorace latioribus, subrotundatis.

“L. 1 $\frac{3}{4}$ lin.”

Hab. Nagasaki and other places, common; Pekin (*David*).

Rodolia naræ, sp. n.

Ovalis, subtus infuscatus, nitidus, dense griseo-pubescentis; capite nigro; thorace obscure bimaculato; elytris marginibus rufis, disco obscure brunneis, undique distincte punctulatis.

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

Oval, body dusky, above shining, and clothed with short and close greyish pubescence; the head dusky or black, obsoletely punctulate; the thorax reddish brown, with two somewhat obscure dusky blotches near the base but in a line with each eye, margins clearly red, surface without visible punctuation; the scutellum minutely punctulate, somewhat dusky; the elytra very distinctly and somewhat densely punctulate, broadly margined with red, the internal area of each elytron obscurely brown; the epipleural rim is very fine, finer than that of *R. limbata* and the others of this series.

The dorsal punctuation is a distinguishing character in this species.

Hab. Nara, 30th June, 1881.

Rodolia concolor, Lewis.

Novius concolor, Lew. Ann. & Mag. Nat. Hist. (5) iv. p. 466 (1879).

I have an example in which the thorax is marked with black and the scutellum wholly black.

Hab. Kobé and Nara.

Rodolia rufocincta, sp. n.

Ovalis, niger, griseo-pubescentis; elytris margine extus abdominisque segmenta rufis.

L. $5\frac{1}{2}$ – $5\frac{3}{4}$ mill.

Oval, black, with short and close greyish pubescence; the head and thorax feebly punctulate, lateral margins of the last obscurely reddish near the base, but distinctly red at the anterior angle; the elytra more distinctly punctulate than the thorax, with the lateral margins narrowly red; the red margin is broadest from the humeral angle to about one third of the elytral length, from whence it gradually narrows to the apex; the abdomen, segments above and below red; the legs blackish.

This species is distinctly more oval than either *R. limbatus* or *R. concolor*.

Hab. Kiga, Nikko, and Chiuzenji. Three examples only.

List of Species.

Epilachna niponica.	Chilocorus mikado.
— 28-maculata, <i>Motsch.</i>	Sticholotis Hilleri, <i>Weise.</i>
— 28-punctata, <i>F.</i>	— substriata, <i>Crot.</i>
— admirabilis, <i>Crot.</i>	— punctata, <i>Crot.</i>
Anisosticta kobensis.	— rufosignata, <i>Weise.</i>
Hippodamia 13-punctata, <i>L.</i>	— pictipennis.
Coccinella 12-maculata, <i>Gehl.</i>	Pentilia nigra, <i>Weise.</i>
— 8-maculata, <i>F.</i>	Hyperaspis japonica, <i>Crot.</i>
— 7-punctata, <i>L.</i>	— testaceicornis, <i>Weise.</i>
— transversoguttata, <i>Fald.</i>	— asiatica.
— ainu.	Aspidimerus orbiculus, <i>Gyll.</i>
— ronina.	Platynaspis Lewisii, <i>Crot.</i>
— 14-pustulata, <i>L.</i>	Amida tricolor, <i>Har.</i>
— Crotchi, <i>Lew.</i>	Plotina versicolor.
Leis 15-maculata, <i>Hope.</i>	Seymnus pilicrepus.
Ptychantis axyridis, <i>Pall.</i>	— sylvaticus.
Anatis halonis.	— dorcatomoides, <i>Weise.</i>
Thea 12-guttata, <i>Poda.</i>	— phosphorus.
— cincta, <i>F.</i>	— Hareja, <i>Weise.</i>
Calvia 10-guttata, <i>L.</i>	— Hoffmanni, <i>Weise.</i>
— 14-guttata, <i>L.</i>	— niponicus.
— 15-guttata, <i>F.</i>	— hilaris, <i>Motsch.</i>
Cœlophora inæqualis, <i>F.</i>	— paganus.
Propylea japonica, <i>Thunb.</i>	— fortunatus.
Verania discolor, <i>F.</i>	— plagiatus.
Synonycha grandis, <i>Thunb.</i>	Rodolia limbatus, <i>Motsch.</i>
Ithone mirabilis, <i>Motsch.</i>	— naræ.
Chilomenes 4-plagiata, <i>Schön.</i>	— concolor, <i>Lew.</i>
Chilocorus rubidus, <i>Hope.</i>	— rufocincta.
— similis, <i>Rossi.</i>	

V.—A Revision of the British Jurassic Bryozoa.—Part III.
The Genus *Berenicea*. By J. W. GREGORY, D.Sc., F.G.S.

[Continued from vol. xvi. p. 451.]

Family Tubuliporidæ (continued).

Genus BERENICEA, Lamouroux, 1821.

Diagnosis.—Tubuliporidæ in which the zoarium is a thin, flat, encrusting sheet. The zoecia are tubular. The peristome is either flush with the surface or somewhat raised.

Type species: *B. prominens*, Lamx. Syn. *B. obelia* (Johnst.).

1. *Berenicea spatiosa* (Walford), 1889.

Tubulipora spatiosa, Walford, 1889, Bry. Shipton, Part I., Quart. Journ. Geol. Soc. vol. xlv. p. 567, pl. xviii. figs. 10-12.