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XLIX.—*Notes on the Longicorn Genus Glenea, Newm., with Descriptions of New Species.* By C. J. GAHAN, M.A., of the British Museum (Natural History).

THROUGH the kindness of M. René Oberthür I have been enabled to compare the series of types belonging to the genus *Glenea* which are contained in his collection, with the types in the British Museum, now largely augmented by the addition of those contained in the collection of the late Mr. Pascoe. As a result I have prepared a list of synonyms, which will show that the suspicions entertained by M. Oberthür and myself as to the identity of many of the species described by Thomson and Pascoe are fully confirmed. The close examination of species necessary in making these comparisons has led to the observation of certain characters, previously overlooked, to which I call attention in the following notes. Descriptions of some new species are added, and a new genus is characterized for the reception of two species hitherto placed in *Glenea*.

1. *On the Structure of the Tarsal Claws in the Genus Glenea.*

In a note appended to his description of the genus *Glenea* Lacordaire* writes in reference to the tarsal claws:—"Je les ai examinés chez un grand nombre d'espèces et les ai trouvés

* 'Genera des Coléoptères,' tom. ix. p. 843 (3).

simples dans les deux sexes, avec un léger feston, souvent absent, à leur base. M. Pascoe cite cependant certaines espèces (*amboinica*, *cyanipennis*) chez les mâles desquelles ce feston se convertit en une dent aiguë." Here two conditions of the tarsal claws are indicated—first, in which the claws are simple in both sexes; second, in which the claws of the female are simple, while those of the male are toothed or appendiculate at the base. Each of these two conditions is met with in a large number of species; but I find that a different structure of the claws prevails in almost as great a number.

In *G. pulchella*, Thoms., the anterior claw of the anterior and middle tarsi of the male is furnished at the base, a little towards the outer side, with a distinct tooth, all the other claws being simple. This condition, which is similar to that met with in many species of *Saperda*, occurs also in many other species of *Glenea*—e. g., *nicanor*, Pasc., *Diana*, Th., *voluptuosa*, Th., *Thomsoni*, Pasc., and *giraffa*, Dalm. In another series of species the anterior claw of the middle tarsi only is provided with a tooth at the base; this is the condition met with in nearly all the large species of the *picta* group, and in a number of smaller species, such as *egeria*, Pasc., and *distinguenda*, Gahan. This tooth is strongly developed in some species; and in *G. chalybeata*, Th., and *regularis*, Newm., it is of so large a size that the anterior tarsus of the male appears to be furnished with three claws instead of two. Another condition of the claws appears in a few species, in which the anterior claw of the anterior tarsi only is furnished with a distinct tooth at the base; this condition is best shown in *G. galathea*, Th., where the tooth is so strongly developed that the tarsus appears to have three claws. *G. galathea*, it may be remarked, seems in other respects closely allied to *G. indiana*, Th., and *canidia*, Th., in both of which species all the claws of the male are simple.

A further condition of the claws is met with in *G. novemguttata*, Casteln., *albolineata*, Th., *cæruleata*, Pasc., *lugubris*, Th., and other species. Here the anterior claw of all the tarsi in the male is furnished with a tooth or appendix at the base, while the posterior claw is either simple or carries a smaller and less conspicuous tooth than the anterior claw.

So far as I have at present observed, the females of *Glenea*, except in four species hitherto placed in the genus, always possess simple claws. In two of those four species—viz., *G. tenuilineata*, Th., and *G. camelina*, Pasc.—all the claws in the female are appendiculate at the base. The remaining

two—viz., *G. nigromaculata*, Thoms., and *G. glechoma*, Pasc.—are altogether exceptional in the character of their tarsal claws, and, moreover, differ from true species of *Glenea* in not having distinct lateral carinæ on the elytra: for the reception of these two species I have thought it desirable to found a new genus, *Heteroglenea*, which is further characterized below.

Leaving out of consideration the four species last mentioned, we may sum up our observations on the tarsal claws of *Glenea* as follows:—

In the female all the claws are simple. In the male either (1) all the claws are simple; (2) all the claws are appendiculate at the base; (3) the anterior claw of all the tarsi is appendiculate at the base; (4) the anterior claw of the anterior and middle tarsi is toothed at the base; (5) the anterior claw of the anterior tarsi only is toothed at the base; or (6) the anterior claw of the middle tarsi only is toothed at the base.

N.B.—The terms anterior and posterior as applied to the claws in this note and elsewhere in this paper refer to the position of the claws when the tarsus stands in a direction at right angles to the axis of the body. Inner and outer are the terms usually employed by entomologists, but seem to me objectionable, inasmuch as the inner claw of the front legs corresponds morphologically with the outer claw of the hind legs.

2. On Sexual Dimorphism in the Genus *Glenea*.

There is little or no difference in coloration between the sexes in the great majority of the species of *Glenea*, whatever difference of this kind there may be consisting chiefly of a greater depth or intensity of colour in the female. In certain species, however, the difference in colour or marking is so pronounced that in more than one instance the two sexes have been regarded as distinct species in spite of clear evidence in favour of the contrary view.

The most interesting and best marked examples of this sexual dimorphism are afforded by *Glenea fulvomaculata*, Thoms., and a few closely allied species. In the female of *fulvomaculata* the upperside of the body is of a deep dull black or dark brown colour, marked on the pronotum with three rather broad orange-tawny stripes, and on each elytron with two large and somewhat quadrate spots of the same colour—one spot placed in front of the middle and connected

at its outer side with a short tawny vitta, the other spot at the apex; the underside of the body is covered with a grey pubescence.

The male of *fulvomaculata* is almost entirely covered with grey pubescence, the underside being of an ashy-grey or nearly white colour, the upperside of a darker shade of grey. Wallace correctly indicated these dimorphic forms as sexes of the same species; he had in fact taken them *in coitu*. Pascoe, however, while calling attention to Wallace's indication of the true facts of the case, refused to consider the two forms as conspecific, and expressed his belief that a mistake had been made by the insects. I have carefully examined all Pascoe's specimens and all other specimens available, with the result that I could find no females among the grey forms, no males among the black forms with tawny spots and stripes; and I have further been led to the conclusion that Pascoe has mixed up under one name—*G. grisea*, Thoms.—male examples belonging to four closely related species or, as some might prefer to consider them, four clearly marked geographical races of one species, viz., *G. arouensis*, Thoms., *G. fulvomaculata*, Thoms., *G. papuensis*, Gahan (described below), and *G. grisea*, Thoms.

These four species are easily distinguished from one another by obvious differences in markings when the females alone are taken into consideration. The males, though so strikingly different from the females, are so much alike that it is not surprising to find that Pascoe placed them all in one species. Of the males which he thus included in *G. grisea*, Thoms., only those from Ceram and Amboina strictly belong to that species. (The females of this species have been described by Pascoe in his 'Longicornia Malayana' under the name of *Glenea interrupta*, Thoms. The species described by Thomson under the same name is, however, quite distinct, and, I believe, identical with the species subsequently described by him as *Glenea Boisduvali**) The males from Batchian are certainly males of *G. fulvomaculata*, Thoms., and those from the Aru Is. males of *G. arouensis*, Thoms.; while I consider a male from Salwatty, on account of its locality, to belong to the species or race which I have named *papuensis*. Though the males of these species are, as I have said, very much alike, slight

* The confusion of names indicated here seems to have arisen through the misplacement of a label. The specimen sent to me by M. Oberthür as the type of *G. interrupta*, Thoms., and labelled as such, belongs to the species described by Pascoe as *interrupta*, Thoms., while the locality, measurements, and description given by Thomson do not apply to it.

differences are observable in three of the species. The males of *G. grisea* are somewhat larger than the others, just as the females are also larger. In the males of *G. fulvomaculata* the deflexed sides of the elytra are not pubescent like the dorsal surface, but, being naked, lay bare the metallic-blue colour of the derm. This character, however, is uncertain, as it may possibly have been due to rubbing. In the males of *arouensis* the pronotum exhibits four faint black marks—two near the anterior border and two at the base—in positions exactly corresponding to those occupied by the distinct black marks on the pronotum of the females.

The next example of sexual dimorphism to which I wish to direct attention is furnished by *Glenea viridipustulata*, Thoms. The female is black, with two bands on the top of the head, three on the prothorax, the posterior half of the elytral suture, the apex, and five spots on each elytron, all of a bright silvery-green colour; and the tip of the third antennal joint is of a bluish-green colour. The male, described by Thomson as a distinct species under the name of *G. confusa*, Th., is scarcely to be distinguished from the male of *G. venusta*, Guér. It differs from the female of *viridipustulata* in having the antennæ entirely black, and the whole of the elytral suture bordered with green, while, instead of five spots on each elytron, there is a long dorso-lateral green vitta, and a short mid-dorsal vitta, near the end of which is placed a green spot. In the males the femora are as a rule yellowish testaceous in colour; but females also occur (these have been described by Thomson as a distinct species—*G. sparsa*, Th.) in which the femora are entirely testaceous.

The female of *G. venusta*, Guér., is described by Pascoe under the name of *G. viridinotata*, Blanch. It differs but slightly in markings from the male; the third antennal joint is circled with blue at the tip, and the green sutural vitta of the elytra does not extend to the base. Here again we seem to have as a result of evolution a clear differentiation in the markings of the females of two species, while the males have remained almost exactly alike. I must confess that in separating the males of the two species—*G. viridipustulata*, Thoms., and *G. venusta*, Guér.—I have been guided chiefly by the locality of the specimens, and not by any observed differences in their structure or marking. The specimens of the first species in the British Museum collection, including both males and females, are from the islands Batchian, Kaioa, Gilolo, and Morty; those of the second from the Aru and Ké Is., Dorey, Mysol, Waigiou, and Solomon Is.

A variety of *venusta*, Guér., differing slightly in the markings of the female, occurs in the island of Ternate.

From the fact that all the specimens of *G. obsoletepunctata*, Thoms. (= *ianthe*, Pasc.), in our collections are males and agree in localities with those of *G. anticepunctata*, Thoms., which are all females, I have been led to infer that those two series of specimens are merely sexes of one species. The females differ from the males in having a distinct tawny band along the vertex of the head and the middle of the pronotum. For similar reasons I conclude that *G. egeria*, Pasc., merely represents the male sex of *G. udefera*, Thoms., and suspect that *Glenea nymphe*, Thoms., will prove to be the male of *Glenea junco*, Thoms.

3. New Species of *Glenea*.

Glenea zalinensis, sp. n.

Cæruleo-pubescens, nigro maculata et plagiata; prothorace supra maculis quatuor nigris—duabus ante medium, duabus ad basin—et lateraliter utrinque macula rotunda nigra; elytris modice elongatis, postice gradatim angustatis, apice truncatis et extus breviter spinosis, utrisque maculis vel plagis quatuor nigris transversis signatis—duabus inter medium basinque duabus inter medium apicemque; latere deflexo cæruleo, macula nigra prope basin signato; corpore subtus pedibusque cæruleis, pectore utrinque macula nigra et abdomine utrinque maculis nigris transversis in serie ordinatis, signatis; antennis nigris, articulis tribus basalibus cærulescentibus.

Long. 17, lat. 6 mm.

Hab. Zaline River, Tenasserim.

Type (♀) in British Museum collection. Presented by Col. Bingham.

This species seems most nearly allied to *Glenea celia*, Pasc., to which it has much resemblance in colour, though differing from the latter in having six black spots on the prothorax—four above and one on each side,—and in having the two posterior black spots of each elytron as large as the anterior spots (in *G. celia* they are smaller). It differs also from *G. celia* in being a relatively narrower insect, with the antennæ longer and more slender, reaching in the female to the apex of the elytra, whereas in the same sex of *G. celia* the antennæ only reach to about the beginning of the posterior fourth of the elytra.

Glenea aluensis, sp. n.

♂. Capitis fronte lateribusque et prothorace flavescenti-pubescentibus, hoc medio macula triangulari nigro-velutina, capite supra

viridi-cyaneo, fere glabro, in medio sat valde punctato; elytris cyaneo-violaceis sat valde denseque punctatis, griseo tenuissime pubescentibus, apicibus truncatis, extus breve dentatis; thorace subtus viridi-cyaneo cinereo-pubescente; abdomine chalybeato et testaceo; pedibus flavo-testaceis; articulo primo tarsorum anteriorum intermediorumque dilatato; unguiculis omnibus appendiculatis; antennis nigris.

♀. Prothoracis dorso antice plaga magna viridi-nigra marginem anticam attingente; elytris maculis sex albis in hexagona ordinatis; abdomine toto testaceo.

Long. ♂ 15, lat. $4\frac{1}{2}$ mm.

Long. ♀ 17, lat. 6 mm.

Hab. Alu Island, Solomon Archipelago (*C. M. Woodford*).

This species is closely allied to *G. cyaneipennis*, Thoms., and may possibly be only a local race of that species. The female very closely resembles the same sex of *cyaneipennis* and is marked with six white spots, arranged similarly in the form of a hexagon, on the anterior half of the elytra: but it wants the additional white spot behind the middle of each elytron which is present in the latter. In the male of *G. cyaneipennis* there are eight white spots on the elytra, arranged as in the female but less distinct, and exhibiting a tendency to merge into the faint grey pubescence which covers the elytra. In the male of the present form the elytra have a darker but fainter pubescence and show no trace of white spots.

Glenea subsimilis, sp. n.

Violacea, albo-maculata, pedibus testaceis.

Long. 19, lat. 5 mm.

Hab. India. One ♀ example in Brit. Mus. collection (ex coll. Pascoe).

♀. Head strongly punctured all over, but with the punctures less closely placed on the sides than on the front and vertex; without spots or bands of any kind. Thorax closely and strongly punctured, dark violet with black indumentum, with a white patch on each side just above the coxal cavity; disk in the middle with a short linear white spot in front and a triangular spot at the base. Scutellum blackish, with a white spot behind. Elytra strongly punctured: each with four white spots between the base and middle, a quadrangular spot placed near the suture just behind the middle, and a transverse white spot or fascia a little in front of the apex. Of the four anterior spots three are in the same line along the middle of the disk, the first being quite close to the

basal margin, the fourth is external to and scarcely posterior to the third. Apex of each elytron truncate in a slightly oblique direction, with a short tooth at the outer angle. Breast and abdomen violaceous, with white spots or bands. Legs testaceous. Antennæ bluish black at base, dark brown towards the apex.

In size and appearance this species resembles *G. Diana*, Thoms., but may be easily distinguished by the different arrangement of the white spots on the elytra.

Glenea propinqua, sp. n.

Supra atro-violacea; capite prothoraceque albo-vittatis; elytris albo-maculatis, pedibus nigris, griseo tenuissime pubescentibus. Long. 27, lat. $7\frac{1}{2}$ mm.

Hab. Singapore. One ♀ example in Brit. Mus. collection.

Head black, with a large spot on each cheek, a narrow band on each side of the front, two closely approximated vittæ above, and a small spot on each side behind the eye white. Prothorax with three longitudinal white bands above, and a broader white band on each side just above the coxal cavity. Scutellum with a white spot. Elytra closely and strongly punctured above in the anterior two thirds, less strongly or closely punctured on the deflexed sides; each marked with four white spots and, near the apex, with a curved white band and a lateral spot. First elytral spot elongated, placed a little behind the base; second and third spots in a line with the first, the second a little in front of the middle, the third just behind the middle; the fourth spot about halfway between the middle and apex, and placed close to the lateral carina; the posterior band begins near the suture in a slightly oblong spot, and thence curves backwards and outwards, ending at the lateral carina; but below its outer end there is, on the deflexed side, another white spot; the form of this band being very similar to that of the band occupying a corresponding position in *G. voluptuosa*, Thoms. Apices of elytra emarginate-truncate, distinctly toothed at both sutural and outer angles. Body underneath banded and spotted with white in a manner similar to *G. elegans*, *venus*, *voluptuosa*, &c. Legs and antennæ black, with faint greyish pubescence; posterior tarsi somewhat testaceous.

This species most resembles *G. voluptuosa*, Thoms., but is somewhat larger; the basal elytral spot is shorter and less linear, and between this spot and the posterior band there are three, instead of two, spots on each elytron; the head is

marked with two distinct white bands above and a small spot on each side; and the dorso-lateral vittæ of the prothorax are much more distinct and not interrupted in the middle.

Glenea siamensis, sp. n.

Nigra; capitis fronte utrinque albo-vittata; prothorace albo-pubescente, disco antice macula magna transversim ovali nigro-velutina, lateribus utrisque macula parva rotunda nigra; scutello albo; elytris nigris, sutura, fascia transversa inter medium apicemque, et macula parva utrinque ad apicem, albescentibus; corpore subtus albo-pubescente, maculis ad latera meso- meta-thoracisque et abdominis nigris, segmento ultimo medio nigro, glabro; unguiculis omnibus tarsorum appendiculatis.

Long. ♂ $8\frac{1}{2}$, lat. $2\frac{1}{2}$ mm.

Long. ♀ 13, lat. 4 mm.

Hab. Siam.

Two examples (♂ and ♀) in British Museum collection. One (♀) in coll. Oberthür.

Head black, rather thickly punctured, marked with a whitish band on each side of the front. Prothorax yellowish white, with a large velvety-black spot, somewhat transversely oval in shape, on the anterior part of the disk and almost reaching to the anterior margin, and with a small round black spot on each side. Scutellum yellowish white. Elytra closely punctured, black, with the suture as far as the posterior band, this band itself, and a small spot at the apex of each elytron yellowish white. Body underneath with the pubescence along the middle rather faint and of a greyish colour, denser towards the sides and of a whitish colour, but interrupted by some black and nearly glabrous spots; last segment black, with a white spot on each side near the apex; legs black, with a faint grey pubescence. Antennæ black, longer than the body in both sexes. All the claws of the tarsi in the male furnished with a small tooth or appendix at the base.

Glenea albofasciata, sp. n.

♀. Atro-fusca; capitis fronte albo-bivittata; prothorace utrinque ad basin albo-fasciato, fasciis in medio basis pronoti angustim conjunctis; elytris fuscis, disco fasciis duabus albis sat latis—una basali, secunda paullo pone medium—et utrinque ad apicem macula alba; sterno medio griseo, lateraliter albo-plagiato; segmentis quatuor primis abdominis albo-fasciatis, quinto ad apicem albo-bimaculato; pedibus flavo-testaceis; antennis rufo-brunneis, gracilibus, quam corpore longioribus.

Long. 8-11, lat. $2\frac{1}{4}$ - $3\frac{1}{4}$ mm.

Hab. Java (*Horsfield*); Sumatra, Marang (*W. Doherty*).

Head dark brown, with cheeks and a vitta on each side of the front whitish. Prothorax dark brown, with a basal white band, which is tolerably broad on the sides, but is reduced to a very narrow basal border on the middle of the disk; fuscous areas of head and prothorax rather thickly and strongly punctured. Elytra dark brown, thickly and rather strongly punctured, with two yellowish-white bands across the disk (one basal, the other a little behind the middle), and a white spot on each side at the apex; apex of each elytron truncate, with a short acute tooth or spine at the suture, and a rather long sharp spine at the outer angle. Body underneath brown or brownish testaceous, with white bands on the sides of the thorax and first four abdominal segments; last segment dark brown, with a white spot on each side near the apical border. Legs yellowish testaceous. Antennæ reddish brown, longer than the body, by about two or three joints, in the female.

Glenea Wallacei, sp. n.

G. udeteræ (Thoms.) similis, sed differt prothorace lateraliter et corpore subtus omnino griseis.

Long. ♂ ♀ 11-13, lat. $3\frac{1}{4}$ -4 mm.

Hab. Sarawak (*Wallace*). Two examples (♂ and ♀) in Brit. Mus. collection.

Head grey-pubescent; the vertex marked with a tawny-yellow spot, which is narrower anteriorly where it fills the space between the upper lobes of the eyes, and wider posteriorly where it extends back to the anterior margin of the prothorax. Prothorax velvety black above, dark grey at the sides. Scutellum black, with hind margin yellowish tawny. Elytra with a transverse buff-yellow band across the disk of each, a little in front of the middle of its length, and with a much wider band of the same colour just before the apex; disk of elytra between these bands of a dark velvety-brown colour and exhibiting no punctures; disk, in front of the submedian band, testaceous, distinctly punctured, and covered with a faint greyish-tawny pubescence, the extreme base of the elytra, including the shoulders, of a dark brown colour; the deflexed sides of a brownish-testaceous colour, each marked with two rows of punctures; apex of each elytron furnished with a short spine at the suture and a longer spine at the outer angle. Body underneath with a greyish pubescence. Legs yellowish testaceous, with the tarsi of the two anterior pairs greyish pubescent over black on the upper surface. Antennæ brownish black, rather slender,

longer than the body in both sexes. Male with all the tarsal claws furnished with an angular tooth or appendix at the base.

This species is easily distinguished from *G. udetera*, Thoms., by the absence of white bands from the sides of the thorax and abdomen. In this respect it resembles *G. obsoletopunctata*, Thoms. (= *ianthe*, Pasc.), but is distinguished from the latter by the more extended testaceous area on the anterior half of the elytra, and the presence of a well-marked buff-yellow spot on the vertex of the head. In *G. anticepunctata*, Thoms., which I believe to be the female of the last-mentioned species, there is a buff-yellow band along the middle of the pronotum, which is continued on to the vertex of the head.

Glenea lineata, sp. n.

Nigro-fusca, cinereo-vittata; femoribus flavo-testaceis; capitis fronte lateribusque et vittis duabus verticis postice convergentibus; prothoracis vittis quinque; scutello elytrorumque sutura apice et vittis tribus utrinque (quarum duabus dorsalibus, tertia laterali) cinereis; corpore inferiore albo-cinerascente, pectore abdomineque medio nigro, subtiliter cinereo-pubescentibus, vitta pectoris utrinque nigra. (♂) Unguiculis anticis tarsorum anteriorum mediorumque basi valde dentatis.

Long. 9-11, lat. $2\frac{1}{2}$ - $3\frac{1}{2}$ mm.

Hab. Oshima, Loo-Choo Archipelago (*Ferrié*, 1895). In coll. Oberthür and in Brit. Mus.

Head with the sides, front, and two posteriorly converging bands on the vertex ashy grey; middle of the front with a fainter grey pubescence. Antennæ black. Prothorax with five ashy-grey bands, of which three are dorsal, the other two placed one on each side, and quite invisible when the thorax is viewed from above. Scutellum, suture, apex, and three bands (two dorsal and one lateral) on each elytron ashy grey; inner dorsal band reaching from the base to a little beyond the middle of the elytron, outer dorsal band reaching from the base to within a short distance of the transverse apical band; the lateral band reaching from a little behind the shoulder almost up to the apical band. Head and prothorax closely punctured, the elytra less closely but more strongly punctured, with the punctures most distinctly seen in the intervals between the grey bands; apex of each elytron emarginate-truncate, with tooth at suture and spine at the outer angle. Body underneath with a greyish-white pubescence, which is much less dense on the middle of the breast

and abdomen, while a short band on each side of the metasternum is almost entirely glabrous and black. Femora yellowish testaceous; tibiæ and tarsi black, with a faint greyish pubescence. In the male the anterior claw of the anterior and middle tarsi has a well-developed tooth or appendix at the base, this tooth being larger and more distinct on the middle than on the anterior tarsi.

Glenea assimilis, sp. n.

♂. Capitis lateribus fronteque (hac supra in medio excepta) et vittis duabus verticis postice convergentibus, albescenti-pubescentibus; prothorace atro-velutino, supra vitta mediana et lateraliter utrinque vittis duabus antice et postice conjunctis, albis; scutello albo; elytris brunneo-testaceis, postice fuscis, utrisque maculis sex albis, quarum quatuor anticis haud distinctis, duabus posticis distinctis—una prope carinam lateralem pone medium posita, altera ad apicem; corpore subtus albescenti-pubescente; pedibus antennisque testaceis; unguiculo antico tarsorum anteriorum mediorumque basi dentatis.

Long. $9\frac{1}{2}$, lat. $2\frac{1}{2}$ millim.

Hab. Sylhet in Assam. British Museum collection.

Head and prothorax black; sides and front of the head and two posteriorly converging vittæ on the vertex ashy white. Prothorax with a median dorsal white vitta, and two white vittæ on each side, of which one runs alongside the coxa, the second being closely approximated to it and uniting with it at the front and hind border. Scutellum white. Elytra brownish testaceous in the anterior two thirds of their length, on which area each elytron is marked in the male type with four small and very indistinct white spots; three of these spots appear as if forming part of a broken mid-dorsal band, the hindmost of the three being placed at about the middle of the length of the elytron; the fourth lies external to the middle one of these three and is close to the lateral carina. The two spots on the posterior part of each elytron are very distinct; one is close to the lateral carina at the beginning of the posterior third, the other just in front of the apex, and the area between them is of a dark brown colour. Apex of elytron with distinct spine at the outer angle. Underside of body covered with an ashy white pubescence. Legs and antennæ testaceous. Anterior claw of the anterior and middle tarsi toothed at the base, the other claws simple.

The characters given above apply to the male type. A female specimen from Mungphu in Sikkim probably belongs to the same species. Apart from the ordinary sexual differences, the only differences I find are as follows:—

Prothorax with only one white vitta—the lower or supra-coxal vitta—on each side. Each elytron with three instead of four small spots on the anterior half, the missing spot being the middle one of the three forming the inner or mid-dorsal row.

Glenea relictæ, Pasc., closely resembles this species both in colour and markings, and is characterized by a somewhat similar difference in the markings of the two sexes, the male having two widely separated white bands on each side of the prothorax, while in the female there is on each side only one short vitta which borders the coxal cavity. The spots on the elytra are five in number on each elytron in both sexes and arranged as in the female of *G. assimilis*. The antennæ are dark brown, and the legs, except at the base of the femora, are dark brown, with a faint grey pubescence. All the tarsal claws of the male are toothed or appendiculate at the base.

Glenea gratiosa, sp. n.

♂. Capitis fronte genisque albescentibus, vertice nigro-fusco; prothorace sat dense punctato, supra nigro, vitta mediana alba, lateribus griseo-sericeis; scutello albo; elytris brunneis, utrisque maculis albis quinque notatis—tribus ante, duabus pone medium, 1°, 3° et 4° prope suturam, 2° et 5° prope carinam lateralem; apicibus truncatis griseo-limbatis, et extus spinosis; corpore subtus fusco, plagis albis ad latera meso-, metathoracis et segmenti tertii abdominis notato; pedibus antennisque testaceis; unguiculis omnibus tarsorum simplicibus.

Long. 10, lat. 3 mm.

Hab. Sylhet in Assam. British Museum collection.

Head dark brown, with the cheeks and front white. Prothorax more strongly and thickly punctured than the head, black above, with a narrow median white band; the sides appearing black in certain lights, but covered with a silky pubescence of a greyish colour, which becomes evident in reflected light. Scutellum white. Elytra brown, distinctly punctured, each with five white spots, of which three lie between the middle and base, two between the middle and apex; the second and fifth spots are placed near the lateral carina, the remaining three nearer the suture; apex of each elytron truncate, with a spine at the outer angle; in front of the apical border there is a transverse spot or band of a greyish colour. Body underneath dark brown, with a white patch on each side of the mesothorax, a larger oblique patch on each side of the metathorax, and a transverse patch on each side of the third abdominal segment. Legs and antennæ testaceous. Tarsal claws of the male all simple.

Glenea griseoguttata, sp. n.

G. lachrymosæ (Pasc.) persimilis, sed differt fronte capitis latiore; elytris nigris haud chalybeatis, maculis elytrorum aliter ordinatis.
♂. Long. 9, lat. 3 mm.

Hab. Macassar (*Wallace*).

Head black, with the front, the cheeks, a border behind the eyes, and two parallel lines on the vertex ashy grey. Prothorax with two ashy-white bands (including the supra-coxal band) on each side and three grey bands on the disk. The two outer bands of the disk do not reach the base and are slightly constricted at about the middle of their length, so that each appears to be formed of two spots. Elytra black, with the base, the suture, the apical margin, and six spots on the disk of each grey; the third of these spots is largest and is placed at about the middle of the length of the elytron and close to the suture; the two spots in front of it lie obliquely, the first a little in advance of the second and nearer to the suture; the two spots next behind it—the fourth and fifth—are also placed obliquely, the fifth being close to the suture, the fourth near the lateral carina; the sixth spot is placed near the lateral carina, in a line with the second and fourth. Underside of body with an ashy white pubescence; legs testaceous, with a faint grey pubescence. Antennæ black.

Male with first joint of the anterior and middle tarsi slightly dilated; with all the claws of the tarsi simple.

Glenea papuensis, sp. n.

(♀) *G. fulvomaculata* (Thoms.) affinis et similis, sed differt vittis externis pronoti obsoletis.
Long. 10–11, lat. $3\frac{1}{2}$ –4 mm.

Hab. New Guinea, Dorey and Mysol (*Wallace*).

♀. Head black, punctured in front; vertex marked with a tawny ochraceous band. Pronotum black or dark brown, with a median tawny ochraceous band, which is continuous in front with the band on the vertex, and behind with an oblong spot on the scutellum; sides of prothorax grey. (A faint line is present in some specimens on each side of the pronotum in a position corresponding to that occupied by the external vitta in *G. fulvomaculata*.) Elytra metallic blue, but with this colour showing only on the deflexed sides, the dorsal surface being covered with a close-fitting dark brown tomentum, which is relieved by two tawny ochraceous spots on each elytron—one spot placed in front of the middle,

the other at the apex. Legs and underside of body with a light or dark brown derm, covered with a not very dense grey pubescence.

A male specimen from Salwatty may with some probability, on account of the locality, be referred to this species. It completely resembles the males of *G. fulvomaculata*, Th., which differ from those of *G. grisea*, Th., only by their somewhat smaller size and in having the deflexed sides of the elytra glabrous.

Glenea caelestina, sp. n.

G. laudatæ (Pasc.) sat similis, sed differt vitta laterali prothoracis ab vitta mediana minus distante, et antice interrupta, margine basali prothoracis tota et margine anteriore ad latera cæruleo-imbata, sutura elytrorum ex parte cærulea, antennis omnino nigris.

Long. 9-11, lat. $2\frac{1}{2}$ - $3\frac{1}{2}$ mm.

Hab. Java.

Head black, with the cheeks, the basal margin, and a vitta on each side of the front and two short closely approximated vittæ on the vertex between the eyes pale blue. Prothorax black, with three pale blue bands—one median, continued along the whole length of the pronotum, and one towards each side extending from the base to the middle; the anterior margin on each side from the sternum to a point opposite the extremity of the short dorso-lateral vitta bordered with blue; basal margin also bordered with a blue band, which is continued along the side of the prothorax, just above the coxal cavity, to join the anterior border. Scutellum blue. Elytra black; the disk of each with five blue spots—two placed obliquely between the base and the middle, the outer spot being a little in advance of the inner one, the third spot almost at the middle of the elytron, the fourth midway between this and the fifth, which lies just in front of the apex. Underside of the body dark brown banded with blue. Femora testaceous; tibiæ and tarsi brown, with a faint bluish-grey pubescence. Antennæ entirely black. Male with all the tarsal claws appendiculate.

In the Catalogue of Gemm. and Harold this species (= *G. caelestina*, Chev. MS.) is placed as a synonym of *G. laudata*, Pasc. (= *viridiotata*, Thoms., nec Blanch.), but it is in reality very distinct, as the characters given above will show. The locality of the second species is Borneo, as given by both Pascoe and Thomson, and not Java, which is the locality erroneously placed opposite *G. viridiotata*, Thoms., in the Catalogue.

Glenea suturalis, sp. n.

G. blandinæ (Pasc.) affinis et similis, sed differt vitta suturali elytrorum latiore et in colore fulvescentiore, maculis duabus anticis utriusque elytri obliquiter (non transversim) positis.

Long. (♂) $9\frac{1}{2}$, lat. $2\frac{1}{2}$ mm.

Hab. Penang (*Lamb*).

A male specimen of this species was noticed by Pascoe, who considered it to be, and described it as, a male of *G. blandina*, Pasc.; but I have found two female examples amongst his collections, and have seen a third, belonging to M. Oberthür, which agree with the male in those points in which it differs from the type of *G. blandina*. These points are:—(1) the sutural vitta of the elytra is much broader and is of a distinctly tawny brown colour instead of being grey; (2) the two anterior spots of each elytron are not placed side by side in a transverse direction, but one (the inner) lies a little in advance of the other; (3) the middle of the basal margin of each elytron is touched with blue, and there is a blue spot on each side just under the shoulder.

The four specimens of *G. suturalis* which I have seen are from Penang. In the male all the claws are simple.

The type of *G. blandina*, Pasc., and a second specimen which I have seen in M. Oberthür's collection, both females, are from Borneo.

Glenea chlorospila, sp. n.

Nigra; vittis duabus approximatis capitis vertice, vitta media et vitta laterali utrinque prothoracis, scutello, sutura et maculis septem utroque elytro argenteo-viridibus; capitis fronte lateribusque et corpore subtus viridescentibus; femoribus tibiisque subtiliter, et tarsis supra densius viridi-pubescentibus.

♂. Oculis majoribus, capitis fronte angustiore; unguiculis omnibus tarsorum basi dentatis, sed dente unguiculi antici tarsis anterioribus mediisque plus conspicuo.

Long. $9\frac{1}{2}$ –13, lat. $2\frac{3}{4}$ –4 mm.

Hab. Oshima, Loo-Choo Archipelago (*Ferrié*, 1895). In coll. Oberthür and in Brit. Mus.

Black, with silvery green spots and bands. Head closely punctured, with the cheeks, the base and sides of the front, and two closely approximated bands on the vertex (in some cases almost forming a single band) silvery green; middle of the front with a fainter greenish-grey pubescence. Antennæ black; a little longer than the body in both sexes. Prothorax closely and distinctly punctured, with a median dorsal

band and a band on each side (just visible from above) silvery green; lower part of sides also green. Scutellum green. Elytra with a narrow sutural band and seven spots on each silvery green; first spot (the smallest) placed at the extreme base not far from the scutellum; the third and fifth spots almost in a direct line with the first; while the second, fourth, and sixth are in line close to the lateral carina, the seventh spot is at the apex, and on its inner side touches the sutural band; the third, fourth, and fifth spots on each elytron occupy the angles of a nearly regular hexagon, whose posterior side would run transversely almost midway between the scutellum and the apex of the elytra; the elytra are rather strongly punctured, and, in addition to the lateral carina, a raised line runs along each side from a little behind the shoulder up to the outer apical angle; the apex is obliquely truncate, with a sharp angle or tooth at the suture and a short spine at the outer angle. In the male the claws of the tarsi are appendiculate, with the tooth or appendix of the anterior claw more strongly developed in the anterior and middle legs; the first joint of the anterior and middle tarsi is slightly dilated and a little longer than the two succeeding joints taken together; first joint of posterior tarsus a little longer than the three succeeding joints taken together.

Glenea signatifrons (Chevr. MS.), sp. n.

Nigro-fusca; elytris a basi usque ad medium rufo-brunneis, deinde ad apicem infuscatis; capitis fronte vitta alba utrinque, vertice inter oculos maculis duabus albis, prothorace supra vitta media et utrinque vittis duabus (quarum una supracoxali) albescentibus; scutello albo; elytris utrisque maculis tribus et linea indistincta albescentibus—macula prima pone medium prope suturam, secunda inter medium apicemque carinam lateralem fere attingente, tertia maxima fere ad apicem; linea in depressione inter discum et carinam lateralem; corpore subtus cinereo, albo et nigro variegato; pedibus rufo-testaceis; antennis nigris, articulis 7° 8°que albescentibus.

Long. 7-10, lat. $2\frac{1}{3}$ - $3\frac{1}{3}$ mm.

Hab. Java (*Horsfield*); Sumatra, Si Rambé (*Modigliani*); Marang (*Doherty*).

Head dark brown, with the cheeks, two narrow and widely separated vittæ on the front, and two linear spots on the vertex whitish. Prothorax dark brown, with a median dorsal and two lateral white vittæ, the lower lateral vitta being somewhat broader than the other and placed immediately above the coxal cavity. Scutellum white. Elytra

reddish brown from the base to a little beyond the middle, and thence to the apex dark brown; each marked with three white spots on the posterior half—the first spot close to the suture, the second almost touching the lateral carina, and the third (which is the largest) placed very close to the apical border; a faint white line, placed just above the lateral carina, is to be seen on each elytron running from near the base to a short distance beyond the middle. Antennæ slender, longer than the body in both sexes, black in colour, with the seventh and eighth joints covered with white pubescence.

HETEROGLENEA, gen. nov.

Allied to the genus *Glenea*, Newm., with which it has many characters in common, but differing as follows:—Anterior claw of all the tarsi in both sexes bifid, posterior claw simple. Elytra without distinct lateral carinæ, but furnished instead on each side with an obtuse costa which reaches neither the base nor the apex. This genus will include the following two species, of which the first is to be considered the type.

1. *Heteroglenea nigromaculata*, Thoms.

Glenea nigromaculata, Thoms. Systema Cerambycidae, App. p. 566.

Glenea? *amelia*, Gahan, Trans. Ent. Soc. 1889, p. 224.

Hab. Siam and Burma.

Thomson's description of this species is very brief, consisting of two lines of Latin. I have fully described the male sex in the place cited above, and a further reference to the species, giving the synonymy and sexual differences, will be found in the Ann. Mus. Civ. Genova, vol. xxxiv. p. 89. Both in this species and the next the elytra are more parallel-sided than is usual in the genus *Glenea*, and, though truncate at the apex, are not spined.

2. *Heteroglenea glechoma*, Pasc.

Glenea glechoma, Pasc. Longicornia Malayana, p. 409.

? (*Glenea fuscovirgata*, Fairm. Ann. Soc. Ent. Belg. xxvii. p. 53.—New Britain.)

Hab. Matabello (*Wallace*); Sumatra (*Modigliani*); Solomon Islands (*Woodford*); Philippine Islands (*Semper*).

The division of the anterior claw of the tarsi is less evident in this species than in the preceding one and might very easily be overlooked; this claw, when looked at from the

side, is seen to be thicker than the posterior claw and cleft at the apex, with the outer division rather shorter than the inner. In Fairmaire's description the claws are said to be simple—"unguibus simplicibus"; and I am therefore obliged to doubt the correctness of the synonymy given above, though his description, which is pretty full, applies in all other respects to the present species.

4. *Synonymic Notes.*

1. *G. acuta*, Fabr.
= *lineosa*, Guér. in Bélanger, Voy. aux Indes or. p. 489, pl. ii. fig. 8.
2. *G. adelpha*, Thoms.
= *occidentalis*, Jord. Nov. Zool. i. p. 251.
3. *G. albolineata*, Thoms. (type ♀).
= *subfasciata*, Thoms. (type ♂), = *psylla*, Thoms.
4. *G. anticepunctata*, Thoms. (type ♀).
= *obsoletopunctata*, Thoms. (type ♂), = *ianthe*, Pasc.
5. *G. basalis*, Thoms. — *Hab.* Celebes — Macassar and Menado.
= *concinata*, Pasc. (partim), Waterh. Aid, vol. ii. pl. cxxx. fig. 5.
6. *G. discoidalis*, Pasc. (type ♂).
= *simplex*, Thoms. (type ♂), Rev. Mag. de Zool. 1879, p. 20.
(?) = *alysson*, Pasc. (type ♀).
7. *G. elate*, Pasc.
= *brunnea*, Thoms. Rev. Mag. de Zool. 1879, p. 17.
8. *G. exculta*, Newm.—*Hab.* Philippine Islands.
= *coryphæa*, Thoms.
9. *G. extensa*, Pasc. (type ♀), Waterh. Aid, vol. ii. pl. cxxx. fig. 8.
= *mima*, Thoms. (type ♂), = *jubæa*, Pasc.
10. *G. fatalis*, Pasc.
= *biapicalis*, Thoms. Rev. Mag. de Zool. 1879, p. 11.
11. *G. Fortunei*, Saund.
= *chloromelas*, Thoms. *l. c.* p. 21.

12. *G. gabonica*, Thoms.
= *cana*, Jord. Nov. Zool. i. p. 252.
13. *G. grisea*, Thoms. (type ♂).—*Hab.* Ceram and Amboina.
= *interrupta*, Pasc. (type ♀), Trans. Ent. Soc. (3) iii. p. 397.
14. *G. heptagona*, Thoms. (type ♀).
= *cyrilla*, Pasc. (type ♂).
15. *G. illuminata*, Thoms. (type ♀).
= *irene*, Pasc. (type ♂).
16. *G. interrupta*, Thoms. (nec Pasc., *loc. suprà cit.*).—*Hab.*
Batchian, Borneo, and Singapore.
= *Boisduvalii*, Thoms.
17. *G. lugubris*, Thoms. (type ♂).
= *attalea*, Pasc. (type ♀), = *palæographa*, Thoms. Rev. Mag. de
Zool. 1879, p. 13.
18. *G. melissa*, Pasc.
= *mansueta*, Pasc.
19. *G. miniacea*, Pasc.
= *Danæ*, Gestro, Ann. Mus. Civ. Genov. vii. p. 1022.
20. *G. multiguttata*, Guér. (type ♀).
= *maculifera*, Thoms. (type ♂).
21. *G. myrrhis*, Pasc.
= *alcyone*, Thoms. Rev. Mag. de Zool. 1879, p. 14.
22. *G. myrsia*, Pasc. (type ♂).
= *corypha*, Pasc. (type ♀), = *Donovani*, Thoms. MS.
23. *G. myrsine*, Pasc.
= *areca*, Pasc.
= *cryllis*, Thoms. Rev. Mag. de Zool. 1879, p. 17.
24. *G. nicanor*, Pasc. (type ♀).
= *maia*, Thoms. (type ♂), *l. c.* p. 9.
25. *G. ochracea*, Guér.
= *ana*, Thoms.
26. *G. quadrinotata*, Guér.
= *nigrolineata*, Gahan, Ann. Mus. Civ. Genov. xxxiv. p. 88.

27. *G. quatuordecimmaculata*, Hope, in Gray's Zool. Misc. (1831) p. 28; Gahan, Trans. Ent. Soc. 1889, p. 222.
= *argus*, Thoms.
28. *G. regina*, Thoms.
= *neanthes*, Pasc.
29. *G. regularis*, Newm.
= *Kraatzi*, Thoms.
30. *G. scapifera*, Pasc.
= *trincomalica*, Thoms. Rev. Mag. de Zool. 1879, p. 12.
31. *G. strigata*, Thoms.
= *accasta*, Pasc.
32. *G. udetera*, Thoms. (type ♀).
= *egeria*, Pasc. (type ♂).
33. *G. venusta*, Guér. (type ♂).—*Hab.* Aru and Ké Islands, Dorey, Mysol, Waigiou, Solomon Islands, and Ternate.
= *concinata*, Pasc. (partim).
= *viridicineta*, Boisd.
= *viridiotata*, Blanch.
34. *G. viridipustulata*, Thoms. (type ♀).—*Hab.* Batchian, Kaioa, Gilolo, and Morty.
= *confusa*, Thoms. (type ♂).
= *sparsa*, Thoms. (type ♀).

G. palliata, Pasc., *G. sospita*, Pasc., and *G. eclecticica*, Pasc., are best placed in the genus *Daphisia*, Pasc., the elytra in each of these species being wholly devoid of a lateral carina.

The localities given for the following two species in the Catalogue of Gemm. & Harold are incorrect:—

- G. galathea*, Thoms.—*Hab.* Sumatra and Malay Peninsula (not Japan).
G. colenda, Thoms.—*Hab.* Philippine Islands (not Japan).

G. rubricollis, Hope, has been received from Kurseong and Mungphu in Sikkim, so that this locality may be added to that given in the Catalogue.