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LXII. — *Remarks on some Genera of the Scoliidæ, with Descriptions of New Species.* By ROWLAND E. TURNER, F.Z.S., F.E.S.

Genus ISWARA, Westw.

Iswara, Westw. Trans. Ent. Soc. London, (2) i. 7, p. 232 (1851), ♂.

Myzine, Radosz. Horæ Soc. Ent. Ross. xx. p. 40 (1886), ♂.

Komarowia, Radosz. l. c. p. 41, ♀.

Milluta, André, Bull. Soc. Ent. Fr. p. 143 (1898), ♂.

Magrettina, Ashm. Proc. Ent. Soc. Washington, iv. p. 144 (1901), ♂.

There is considerable variation in different species of this genus in the neururation, especially in the shape of the second cubital cell, which is sometimes pointed on the radial nervure as in typical *Milluta*, but longer than the third in *I. tartara*, Sauss. There seem, however, to be so many intermediate forms that I cannot regard the character of generic importance. The radial cell also varies in length and is more or less truncated at the extremity; Ashmead says that it is lanceolate in *nocturna*, Mor., but in the original description Morawitz distinctly says "die Spitze mehr oder weniger deutlich abgestutzt." The antennæ also vary much in length, but this might be expected in insects which have become adapted to nocturnal habits. I have not seen specimens of *Milluta chobauti*, André, or of *Magrettina nocturna*, Mor., the species given as typical of those genera; but a specimen in the British Museum from Ormarah, Baluchistan, corresponds well with André's description in most respects, the intermediate coxæ are, however, narrowly separated. Radoskowsky gives good plates of the male genitalia, which differ much from typical *Myzine*, but do not seem to show any affinity to *Methoca*. The only female I have seen, *Komarowia victoriosa*, Radosz. = *I. tartara*, Sauss., seems to me to show conclusively that the genus is nearest to *Myzine*. Much more material is required for a thorough study of the genus, but until this is available it is better to abstain from any attempt at generic subdivision. Mons. André has probably overlooked *Iswara* owing to Westwood's mistake in placing it in the Thynnidæ. I agree with him in treating the distinctions given by Ashmead for *Magrettina* as specific and not generic; but I cannot consider the genus correctly placed in the Mutillidæ.

Myzine clavicornis, sp. n.

♂. Clypeus short, very minutely punctured, convex, and longitudinally subcarinate at the base, the apical margin

truncate, a smooth obliquely depressed triangular truncation from the centre to the apex. Head closely and rather finely punctured, most closely on the front; the inter-antennal prominence absent, only represented by a small tubercle on each side above the base of the antennæ; eyes widely and rather deeply emarginate; the ocelli small, the posterior pair rather nearer to the eyes than to each other. Antennæ as long as the thorax and median segment combined; the scape shining, very sparsely punctured beneath and no longer than the third joint of the flagellum; the joints of the flagellum gradually increasing in thickness to the apex, the apical joint nearly twice as thick as the basal. Thorax deeply but sparsely punctured, the mesopleuræ more coarsely punctured; pronotum a little shorter than the mesonotum, considerably narrowed anteriorly; scutellum large and subtriangular, very narrowly truncate at the apex. Median segment a little shorter than the scutellum, almost vertically truncate at the apex, more closely punctured, with a longitudinal depression in the middle, the sides rugose. Abdomen slender, tapering slightly at the extremities, about one quarter longer than the head, thorax, and median segment combined; the basal segment smooth and shining, depressed anteriorly, with a short petiole; the other segments deeply but sparsely punctured, broader than long; the seventh dorsal segment deeply and narrowly emarginate at the apex for the reception of the long recurved aculeus; the ventral segments shining, with a few fine scattered punctures. Radial cell more than two and a half times as long as its greatest breadth, extending for about two-fifths of its length beyond the third cubital cell; the stigma a little more than half as long as the radial cell on the costa. Second cubital cell rhomboidal, more than twice as long on the cubital as on the radial nervure, the third cubital cell twice as long as the second on the radial, and more than half as long again on the cubital nervure; the two recurrent nervures received slightly beyond the middle of the second and third cubital cells.

Black, with sparse white pubescence; the mandibles (except at the apex), a triangular mark at the apex of the clypeus, a minute spot above the base of each antenna, the pronotum with a large black mark reaching from the anterior margin to beyond the middle, the tegulæ, a broad transverse band at the apex of dorsal abdominal segments 1-6 slightly sinuate anteriorly on the first segment, the tibiæ, tarsi, and the apex of the femora yellow; the first dorsal abdominal segment and the second more obscurely, ferruginous. Wings

hyaline, nervures colourless, the stigma and costa pale lutaceous.

Length 7, exp. al. 10 mm.

Hab. Deesa, N.W. India (*Nurse*). October.

Type in coll. *Nurse*.

The antennæ are proportionally shorter and much more strongly clavate than in other species of *Myzine*.

Myzine subpetiolata, Cam.

Plesia subpetiolatus, Cam. Journ. Bombay Nat. Hist. Soc. xviii. p. 135 (1907), ♂.

♀. Mandibles falcate, acute at the apex. Head smooth and shining, sparsely punctured on the front; the clypeus slightly produced and truncate at the apex; the antennæ as long as the thorax without the median segment, the scape smooth and shining on the inner side, punctured and with long setæ on the outer side, the first joint of the flagellum concealed, the second distinctly shorter than the third; the head subrectangular, slightly rounded at the posterior angles, a little broader than long and slightly convex; the ocelli in a triangle on the vertex, the posterior pair more than half as far again from each other as from the anterior, and nearly twice as far from the eyes as from each other. Thorax and median segment shining, with a few scattered setigerous punctures, the pleuræ very sparsely punctured; a few fine oblique striæ on the sides of the median segment near the base; the pronotum one-third broader posteriorly than anteriorly, as long as the breadth on the anterior margin and narrower than the head; mesonotum short, the scutellum a little shorter than the median segment. Abdomen as long as the head, thorax, and median segment combined, smooth and shining, with a few scattered hairs on the sides and on the apical margins of the ventral segments, the apical segment triangular. The second cubital cell is almost as long on the cubital nervure as the first, and extends along the transverse cubital nervure for rather less than half its length.

Ferruginous red; the apex of the mandibles, eyes, ocelli, and the dorsal abdominal segments black; the ventral segments of the abdomen, apex of the pygidium, mesosternum, and femora fusco-ferruginous; a large spot on each side of the second and third abdominal segments, and a smaller one on the fourth creamy white. Wings hyaline, nervures fusco-ferruginous.

Length 9, exp. 12 mm.

Hab. Quetta (Nurse). May.

This species and *Plesia baluchistanensis*, Cam., are undoubtedly incorrectly placed in *Plesia*. The male of the present species seems to be near *Meria ciliata*, Mor., which is only known to me by description, but *subpetiolata* is much more strongly punctured.

Myzine baluchistanensis, Cam.

Plesia baluchistanensis. Cam. Journ. Bombay Nat. Hist. Soc. xviii. (1907), ♂.

♀. Head nearly half as broad again as long, almost rectangular, smooth and shining, with a few punctures above the base of the antennæ; the clypeus advanced and rather broadly truncate at the apex. Scape above clothed with long fulvous hairs, the second joint of the flagellum scarcely longer than the first or third. A fringe of long pale fulvous pubescence on the posterior margin of the head. Pronotum smooth and shining, with a few scattered punctures near the anterior margin, much broader than long, and very little narrowed anteriorly; propleuræ sparsely punctured, with long, thin, greyish pubescence. Mesonotum and scutellum shining, the latter with a few large punctures near the apex, the mesopleuræ punctured and clothed with long greyish pubescence; a small round depression on each side near the base of the scutellum covered with very short greyish pubescence. Median segment shining, with a deep longitudinal sulcus. Abdomen shining, very sparsely and shallowly punctured, with sparse greyish pubescence on the sides. The second cubital cell extends along the transverse cubital nervure for less than one-third the length of that nervure.

Black; the abdomen bright ferruginous; mandibles and tarsi ferruginous; calcaria whitish; tegulæ testaceous; an obscure creamy spot, obsolete in some specimens, on each side of the second and third abdominal segments. Wings pale fulvo-hyaline, nervures fuscous, the stigma almost black.

Length 9 mm.

Hab. S.W. Persia (*Escalera*); Quetta (*Nurse*).

Pæcilotiphia albomaculata, Cam.

Pæcilotiphia albomaculata, Cam. Journ. Bombay Nat. Hist. Soc. xiv. p. 274 (1902), ♂.

A specimen sent by Colonel Nurse has three cubital cells

instead of two, as in the type. Colonel Nurse remarks: "It should therefore stand as *Myzine albomaculata*, Cam., and the genus *Pæcilotiphia*, founded on an abnormal specimen, must be suppressed." The same insect has been described by Nurse as the male of *Myzine apimacula*, Cam., which has the neurulation of *Plesia*, and although this association of the sexes is not quite certain, it does not seem improbable; though the male differs from other oriental species of *Plesia* in the short petiole and the deep slit in the apical dorsal segment. The female *apimacula* differs from most species of *Plesia* in the very feeble development of the sculpture of the apical dorsal segment, agreeing in this with the peculiar female, *P. tricolor*, Sm. The latter species may prove to be the female of *Myzine dimidiaticornis*, Bingham, which agrees with *Plesia* in the almost complete absence of the slit for the reception of the aculeus on the seventh dorsal segment, which is present in all true *Myzine* known to me. *Dimidiaticornis* agrees with *tricolor* in the length of the second cubital cell, the elongate head, and the colour of the antennæ. Specimens of *P. tricolor* from Assam have the head distinctly longer in proportion than the typical Borneo form. I fully agree with Nurse in sinking *Pæcilotiphia*.

Plesia nursei, sp. n.

♂. Clypeus slightly produced and very narrowly truncate at the apex, almost smooth, thinly covered with short white pubescence. Antennæ stout, as long as the head, thorax, and median segment combined; the scape closely and rather finely punctured, shorter than the third joint of the flagellum. Interantennal prominence bilobed, covering the base of the scape. Head closely and deeply punctured, more shallowly on the vertex than on the front, with sparse white pubescence, the eyes widely but not deeply emarginate. Thorax rather sparsely punctured; the pronotum nearly as long as the mesonotum, less than twice as broad as the length in the middle, narrower than the head, the anterior margin straight with slightly prominent angles. Median segment punctured-rugose, rounded, much longer than the breadth at the base. Abdomen elongate, slender, petiolate, the first segment as long as the second and third combined, the basal third of the segment very narrow and flattened, the apical two-thirds nodose, constricted at the extreme apex; all the segments shining and very sparsely punctured, the seventh dorsal segment not emarginate at the apex.

Black; the mandibles (except at the extreme apex), the

clypeus, the apex of the interantennal prominence, a very narrow transverse band at the apex of abdominal segments 2-5, broadly interrupted on the second segment, the anterior coxæ beneath, the apex of the mesosternum between the intermediate coxæ, the apex of the anterior femora, the anterior and intermediate tarsi and the tibiæ above, the base of the posterior tibiæ and the basal joint of the posterior tarsi pale yellow. Tegulæ yellow at the base. Wings hyaline, nervures black.

Length 13-14 mm.

Hab. Simla (*Nurse*). September.

Described from two specimens.

Near *P. mandalensis*, Magr., but the head is rather more coarsely punctured, the angles of the pronotum are more prominent and the first abdominal segment much longer. Also very near *P. extensa*, Turn., from Burma, but that species has a carina on the clypeus and the pronotum narrowed anteriorly; the third cubital cell in the present species and in *mandalensis* is only slightly longer than the second on the radial nervure, whereas in *extensa* it is nearly half as long again.

Plesia (Mesa) asmarensis, sp. n.

♂. Clypeus broad, very slightly produced, punctured and clothed with grey pubescence, the anterior margin subtruncate. Antennæ rather slender, as long as the head, thorax, and median segment combined. Head small, coarsely and closely punctured, the interantennal prominence raised into an oblique carina on each side above the base of the antennæ; the eyes broadly emarginate on the inner margin. Thorax shining, more finely and sparsely punctured; the pronotum narrower than the head, the anterior angles prominent; mesopleuræ and median segment coarsely punctured rugose; the median segment rounded, longer than the breadth at the base, and narrowed to the apex. Abdomen very slender, half as long again as the head, thorax, and median segment combined; the basal segment as long as the second and third combined, very slender, very narrow at the base, the apical two-thirds swollen and clavate, constricted at the apex, where the breadth is not more than one-fifth of the length of the segment; second segment longer than the third, gradually broadened to the apex, narrower than the third segment. All the segments shining, very minutely punctured, the seventh dorsal segment narrow, with a few large punctures near the apex, and a distinct, median, longitudinal

carina, the apex scarcely emarginate. The second and third cubital cells are about equal in length on the radial nervure; the first recurrent nervure is received just beyond the middle of the second cubital cell, the second at one-quarter from the base of the third cubital cell. The basal joint of the posterior tarsi is nearly equal in length to the second and third joints combined.

Black; a small spot at the apex of the clypeus, a small spot on each side at the apex of the second to fifth abdominal segments, continued in a very narrow band, interrupted in the middle, on the apical margin of the fourth and fifth segments, the anterior tibiæ and tarsi above, the basal joint of the intermediate tarsi and the spines of the tibiæ yellowish white. Wings hyaline, slightly iridescent, nervures black.

Length 10, exp. 14 mm.

Hab. Asmara, Erythrea (purchased from *H. Rolle*).

This is not a *Myzine*, but the male of a *Plesia*, and seems to be nearest to *clavata*, Sauss., from the Transvaal. The almost total absence of a deep slit in the seventh dorsal segment to receive the recurved aculeus of the hypopygium is noticeable in this group as in most of the Oriental species of *Plesia*.

Tiphia rufofemorata, Sm.

Tiphia rufofemorata, Sm. Cat. Hym. B. M. iii. p. 83 (1855), ♀.

Tiphia cassiope, Cam. Mem. Manchester Phil. Soc. xli. p. 46 (1896), ♀.

Described by Smith from Northern India. I have seen specimens from Simla (coll. Nurse) and Masuri, all much smaller than the type.

Length 6–12 mm.

Anthobosca moderata, sp. n.

♂. Clypeus short, not advanced, and very broadly truncate on the apical margin; minutely punctured, with a short, delicate, longitudinal carina which does not extend either to the base or the apex, thinly clothed with grey pubescence. Head rounded, finely and closely punctured, sparsely clothed with long grey pubescence; the antennæ inserted rather nearer to the eyes than to each other, shorter than the thorax and median segment combined, stout, slightly tapering to the apex and very finely pubescent; the third joint of the flagellum longer than the second. Posterior ocelli further from the eyes than from each other. Thorax and median segment very finely and closely punctured, opaque, the propleuræ shining and more sparsely punctured, the pronotum

very little narrowed anteriorly; scutellum more than half as long as the mesonotum and rounded at the apex; median segment nearly three times as broad as long, obliquely sloped posteriorly. Abdomen finely shagreened, fusiform, as long as the head and thorax combined. Second abscissa of the radius half as long again as the first and fully half as long as the third; the first recurrent nervure received just before the middle of the second cubital cell, the second just before the middle of the third cubital cell. The cubital nervure of the hind wing originates at the apex of the submedian cell.

Black; clypeus, posterior margin of the pronotum, a spot on the posterior margin of the mesonotum, a large spot on the postscutellum, the base of the tegulæ, two spots on each side at the apex of the median segment, a spot on each side of each of the five basal abdominal segments, the base of the seventh segment, the apex of the anterior femora, the anterior tibiæ above, the base of the intermediate and posterior femora, and the basal joints of all the tarsi yellowish white. Wings hyaline, the anterior pair with a faint fuscous tint, nervures black. The division of the first cubital cell is indicated by a colourless scar.

Length 12, exp. 17 mm.

Hab. Townsville, Q.

Anthobosca flavicornis, Sauss.

Cosila flavicornis, Sauss., Grandidier, Hist. Madagascar, xx. p. 233 (1892), ♀.

Hab. Victoria (*C. French*); Tasmania; Cairns, Q.

The specimen from Victoria seems to be typical; that from Tasmania has the scape and all the tibiæ and tarsi fulvous; that from Cairns whilst differing little in colour from the typical form has the second abscissa of the radius fully as long as the first, whereas the two southern specimens have it distinctly shorter. The wings are darker in the Victorian specimen than in the others.

As there is a good deal of confusion in connection with some of the Fabrician species of *Tiphia* and *Scolia* in the Banksian collection, a list of them with remarks may be useful.

Genus TIPHIA, Fabr.

1. *T. femorata*, Fabr.—The well known European species.
2. *T. quinquecincta*, Fabr.—Type in Banksian collection. This is

a female of the common North-American *Plesia* subsequently described by Fabricius as *Tiphia namea*, which name must sink. The locality given by Fabricius is of course erroneous.

3. *T. variegata*, Fabr.—Type in Banksian collection. This is the European *Palarus flavipes*, Fabr., described by Fabricius as *Crabro flavipes*. Both names appeared in the same work, but *variegata* has priority. The species must therefore stand as *Palarus variegata*, Fabr. The type has the scutellum and postscutellum yellow.
4. *T. hæmorrhoidalis*, Fabr.—The specimen in the Banksian collection, not the type, agrees with the short description, but is a *Stizus* which I identify with little doubt as *S. chrysorrhæus*, Handl.
5. *T. radula*, Fabr.—Type in Banksian collection. A common Australian species, now known as *Dielis radula*.
6. *T. collaris*, Fabr.—The specimen in the Banksian collection is marked, probably erroneously, as the type. It is the Oriental species now known as *Dielis fimbriata*, Burm.
7. *T. pedestris*, Fabr.—Type in Banksian collection, without the abdomen. A female *Thynnus* of the typical group. It seems to be still unique.

Genus SCOLIA.

1. *S. nigrita*, Fabr.—Type in Banksian collection. A common African species.
2. *S. quadrimaculata*, Fabr.—Previously figured by Drury as *Vespa maculata*.
3. *S. septemcincta*, Fabr.—Type in Banksian collection. A common Australian species. I have no hesitation in sinking the name, considering it to be the male of *Dielis radula*, Fabr.
4. *S. flavifrons*, Fabr.—A common South European species.
5. *S. ferruginea*, Fabr.—Type in Banksian collection. Locality, Cooktown, Queensland.
6. *S. quinquefasciata*, Fabr.—Type in Banksian collection. I am not sure that this is the same insect described by Saussure under the name, the description being too short for certainty.
7. *S. radula*, Fabr.—Previously figured by Drury as *Sphæx plumipes*.
8. *S. morio*, Fabr.—Type in Banksian collection. This is a female of the species now standing in the British Museum collection as *Scolia cyanea*, Lep.
9. *S. bicincta*, Fabr.—Type in Banksian collection. A common North American species.

10. *S. verticalis*, Fabr.—Type in Banksian collection. I have been unable to find specimens of this male in recent Australian collections.
11. *S. quadripustulata*, Fabr.—Type in Banksian collection. A common Oriental species.
12. *S. quadripunctata*, Fabr.—A well-known species.
13. *S. sexvincta*, Fabr.—The specimen in the Banksian collection, not the type, is the male of *Plesia quinquevincta*, Fabr. (*Tiphia* q.). Whether it is identical with the type I cannot say.

Family Mutillidae.

Subfamily MYRMOSINÆ.

Typhoctes guatemalensis, sp. n.

♀. Head subquadrate, a little broader than long, broader than the pronotum, punctured closely, the punctures tending to become confluent longitudinally, very thinly clothed with black pubescence; eyes extending rather nearer to the base of the mandibles than to the posterior margin of the head, elongate ovate; ocelli absent. Antennæ filiform, nearly as long as the thorax, the second joint of the flagellum half as long again as the first and a little longer than the third, the apical joints slender but short. Pronotum a little narrower than the head, as broad as the metanotum, from which it is separated by a deep transverse suture; longitudinally striated and sparsely clothed with long greyish pubescence. Pleuræ finely horizontally striate. Metanotum longer than the pronotum, longer than broad, obliquely sloped posteriorly, not truncate, longitudinally striated in the middle and at the base, obscurely punctured at the sides and apex. Abdomen shining, very finely and closely punctured, very sparsely clothed with long cinereous pubescence on the sides and apex, a transverse band of short whitish pubescence at the apex of each segment; first segment triangular, attached to the thorax by a short petiole, the second segment large, twice as long as the third, with a strong constriction between the first and second segments. Intermediate tibiæ with two apical spines.

Black; the two basal joints of the flagellum testaceous; the metathorax (except a large black spot at the base), the first abdominal segment (except a triangular black spot at the apex), the base of the posterior tibiæ, and the intermediate and posterior trochanters and coxæ ferruginous; calcaria white.

Length 7 mm.

Hab. San Geronimo, Guatemala (*Champion*).

Type in B. M., ex coll. Godman-Salvin.

I place this species in *Typhoctes* with some doubt, not having seen a typical female of the genus. It appears, however, to approach more nearly to that genus than to *Myrmosa*, especially in the shape of the first abdominal segment and the complete absence of ocelli.

LXIII.—*Two new Mutillidæ from Queensland.*

By the late Lieut.-Col. C. T. BINGHAM.

Mutilla (Ephutomorpha?) doddi, sp. n.

♂. Antennæ dark castaneous brown almost black, slightly paler at their apices; clypeus, cheeks, face in front, and head above covered with long dense golden yellow pile, beneath and the space behind the eyes with short black scattered hairs; pro- and mesonotum, the tegulæ, scutellum, post-scutellum, median segment, and abdomen dark castaneous brown covered with short erect hairs, black on the thorax, white on the median segment and 1st abdominal segment; on the 2nd and following segments the hairs are black with a tuft of long snow-white hairs laterally at base and apex of the 2nd and at the bases of the 3rd and 4th segments, apices also of the 3rd and following segments with a broad band of white hairs medially. Wings dark fuscous brown with little or no iridescent gloss, their bases up to the discoidal cell in the fore and to apex of median cell in the hind wing hyaline; the fore wing with one recurrent nervure only. Legs black with black pile, the intermediate and posterior legs with the femora above except at apex and the 1st joint of the tarsi at base with long white hairs. Head small, narrow, much narrower than the thorax; mandibles simple, acute; eyes round, very convex; antennæ minutely punctured, opaque; thorax densely and somewhat coarsely punctured, the prothorax dentate antero-laterally; mesonotum convex, with a deep, smooth, short, transverse sulcus between it and the scutellum, the latter conical, raised, rounded above; median segment depressed, very coarsely cribrate, the sides produced posteriorly into short triangular laminæ; abdomen finely and closely punctured.

Length, ♂, 17; *Exp.* 32 mm.

Hab. Queensland, North Australia.