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### VIII.—On a few new Bornean beetles of the Rutelid genera Milela and Anomala

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- Fig. 4. *Limnæa anceyana*, sp. n.  
 Fig. 5. *Unio angoniensis*, sp. n.  
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## PLATE V.

- Fig. 13. *Mutela cuneata*, sp. n.  
 Fig. 14. *Spatha approximans*, sp. n.  
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VIII.—On a few new Bornean Beetles of the Rutelid Genera  
*Mimela* and *Anomala*. By GILBERT J. ARROW.

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THE British Museum collection contains a very considerable number of species of the great genus *Anomala* from Borneo, few of which have at present been described. Some of the more interesting forms are here characterized and two species of the closely related genus *Mimela* are added. The group of species at the end of this paper form a new section of *Anomala*, distinguished by a sexual difference in the pygidium, of a kind hitherto unknown.

*Mimela pallidicauda*, sp. n.

Læte flava, lævissime æneo-micans, fronte, pronoto (lateribus exceptis), elytris, dorsoque, pygidii apice excepto, saturate viridibus, partibus illis flavo-viridibus, tarsis posticis viridi-æneis; ovata, sat convexa, modice nitida; clypeo lato, crebre punctato, fronte irregulariter punctata; pronoto fortiter, lateribus minus crebre, punctato, marginibus lateralibus post medium fere angulatis, angulis posticis rotundatis; scutello distincte punctato; elytris fortiter seriato-punctatis, interstitio secundo lato, irregulariter punctato; pygidio nudo, fortiter sat crebre punctato; mesosterno haud producto, metasterni lateribus dense punctatis, griseo-pubescentibus, medio lævi; abdomine subtus punctato; tibiis anticis fortiter bidentatis.

Long. 15 mm.; lat. max. 9 mm.

*Hab.* Labuan. Sumatra.

I have seen only two female specimens, the type in the

British Museum having been brought from Labuan, while the specimen from Sumatra was taken by Dr. A. R. Wallace and is in the Oxford Museum.

The colour is a deep grass-green, the legs and lower surface bright yellow, with a faint metallic-green lustre, and the clypeus, the sides of the pronotum, and the posterior part of the pygidium light green-yellow. The species is similar in size and general appearance to *M. xanthorrhina*, Hope, but of a deeper and richer green colour; while the elytra are not pale-bordered and are rather less coarsely and more evenly punctured, without costæ.

*Mimela margarita*, sp. n.

Ovalis, elongata, convexa, nitida, corpore supra roseo-viridi, margaritaceo, subtus cum pedibus testaceo, leviter auralento; clypeo rugose punctato, fronte prothoraceque subtiliter sat æqualiter punctatis, hoc brevi, lateribus arcuatis, angulis anticis acutis, posticis rotundatis; scutello lævissime punctato; elytris subtiliter sat regulariter seriato-punctatis, interstitio secundo irregulariter punctato; pygidio ventrisque segmento ultimo grossissime crebre punctatis; corpore subtus lateribus griseo-pubescenti, metasterni medio lævi, abdomine punctato; mesosterno haud producto; tibiis anticis fortiter bidentatis.

Long. 16.5 mm.; lat. max. 8.5 mm.

*Hab.* N. Borneo: Kina Balu.

I have seen only the single type specimen taken by Whitehead. It is an unusually elongate species, with the upper surface of a pale green colour suffused with a delicate pearly-pink lustre, changing according to the incidence of the light. The head and pronotum are more distinctly green than the elytra; the pygidium is of the same colour as the latter and is very coarsely and closely punctured. The puncturation of the rest of the upper surface is very fine.

*Anomala flutipes*, sp. n.

Flavo-testacea, rufo-brunneo-maculata, prothoracis plagis duabus, elytrorum humeris, regione circumscutellari partemque posticam (linea irregulariter obliqua delimitata), pygidio, pedibus partibusque inferioribus aut pallidis aut obscuris; ovata, sat lata, ubique profundissime punctata, capite dense et rugose punctato; pronoto grosse punctato, linea media lævi, lateribus confluentur punctatis; scutello minute punctato; elytris fortiter, hic et illic irregulariter et rugose, punctato-striatis; pygidio grosse et rugose punctato; corpore subtus subtilius punctato, lateribus haud dense griseo-hirsuto; mesosterno haud producto; metasterni lateribus

dense punctatis; tibiis anticis bidentatis, posticis basi angustis, deinde inflatis.

Long. 14 mm.; lat. max. 9 mm.

*Hab.* Sarawak: Matang (3600 ft., March-June).

This peculiar insect was taken in numbers by Mr. R. Shelford's native collectors. It is one of the best-marked species of the enormous genus *Anomala*, and cannot be compared to any other. It is a short, compactly built, species, with the hind tibia swollen in the middle and tapering to a slender footstalk at its attachment to the femur. The elytra have in both sexes a slight lateral depression behind the shoulder and are widest just behind this. The posterior half, the shoulders, and the region adjacent to the scutellum are rather bright reddish chocolate, and the prothorax bears two large spots of the same colour. The entire upper surface is very deeply and strongly punctured.

*Anomala prolixa*, sp. n.

Castaneo-brunnea, leviter æneo-micans, segmentorum abdominalium lateribus flavo-spilotis, corpore elongato, antice angustato, supra nitidissimo, pectore dense, abdomine pygidioque postice parcius, flavo-hirsutis; capite subopaco, rugose punctato; prothorace modice punctato, medio leviter sulcato, lateribus medio angulatis, angulis posticis fere productis; scutello lateribus distincte punctatis; elytris longis, fere ad apices dilatatis, antice disperse subtiliter punctatis, deinde magis regulariter, postice striato-punctatis, late membranaceo-marginatis; pygidio omnino rugoso; mesosterno antice haud prominenti; tibiis anticis bidentatis.

Long. 23 mm.; lat. max. 11.5-13 mm.

*Hab.* N. Borneo: Kina Balu (*Whitehead*).

I have seen only four female examples, which, like the two preceding species, formed part of the Alexander Fry Bequest to the British Museum. The shape of this insect is peculiar. Among the metallic species of *Anomala* it is unusually elongate, and the elytra gradually widen from the shoulders almost to the end. Their membranous fringes are wide and conspicuous, but the line of junction with the elytra becomes indefinite at the hinder part. The prothorax is rather small in proportion, rather abruptly narrowed towards the front angles, with the hind angles sharp. Each abdominal segment has a large yellow spot on each side, and an indistinct spot is sometimes traceable also on each side of the pygidium, which is prominent, rather finely rugose, and furnished with long hairs upon its posterior half.

*Anomala soror*, sp. n.

Castaneo-brunnea, aureo-micans, corpore subtus rufo-cupreo, segmentorum abdominalium lateribus flavo-spilotis; elongata, nitidissima, pectore sat dense, abdominis lateribus pygidioque postice parcius flavo-hirsutis; clypeo rugoso, fronte crebre punctata, prothorace distincte et æqualiter punctato; scutello ubique minute punctato; elytris subtiliter seriato-punctatis, angustissime membranaceo-marginatis; pygidio sat nitido, grossissime et confluentur punctato; mesosterno haud prominenti; tibiis anticis bidentatis. Long. 19 mm.; lat. max. 10 mm.

*Hab.* N. Borneo: Kina Balu (*Whitehead*).

A single female specimen was taken with the preceding species, to which it has the closest resemblance. It is a little smaller, of a similar elongate shape, but with the elytra less dilated behind, the hind angles of the prothorax less sharp, and the puncturation of the pronotum, scutellum, and elytra a little stronger and more evenly distributed. The coloration is exactly similar, but the quite different sculpture of the pygidium and the narrow membranous fringe to the elytra readily distinguish the present species.

It is remarkable to find two species so closely related inhabiting the same locality.

*Anomala matanga*, sp. n.

Testacea, capite, prothoracis medio, scutello (medio excepto), pectoreque partim metallico-viridibus, abdomine, tibiis tarsisque cupreis, elytrorum marginibus omnibus punctorumque fascia transversim nigris; elongata, deplanata, antice et postice attenuata, sat nitida; capite toto dense punctato, clypeo fere semicirculari; prothorace crebre punctato, punctis paulo transversis; elytris inæqualiter sulcatis, disperse punctulatis, postice fere planatis, separatim arcuatis; pygidio prominenti, transverse haud crebre rugoso-punctato, parce setoso; pectore fere nudo, abdomine parce griseo-hirto; mesosterno haud producto; coxis posticis latis, intus angulatum retro productis; tarsis posticis elongatis, quam tibiis multo longioribus; tibiis anticis bidentatis.

Long. 11 mm.; lat. max. 5 mm.

*Hab.* Sarawak: Matang (3600 ft., June 1900).

This small species, of which there are two males in our collection, is of very peculiar form. It is long and depressed, with the elytra flattened, the abdomen tapering and largely exposed behind the elytra, and the hind legs very long and slender. It is prettily marked, entirely metallic, except the elytra, which are testaceous, with black margins and four

median black spots upon each, forming longitudinal pairs, with a pale spot between each pair. There is sometimes a smaller black spot a little anteriorly. The pronotum and scutellum are bright green, the latter with a central yellow spot, the former with a yellow lateral border continued almost round the base.

*Anomala pulicaris*, sp. n.

Metallico-testacea vel ænea, elytris nigris, maculis plerumque flavis transversis ante medium, pronoti margine laterali pallido, postice plus minusve producto, scutelli medio plerumque flavo-maculato; parva, elongata, paulo deplanata, postice attenuata, corpore subtus toto parce griseo-piloso; capite crebre punctato, clypeo fere semicirculari; prothorace modice lato, subtiliter sat æqualiter punctato, punctis paulo transversis, lateribus arcuatis, angulis posticis distinctis; scutello toto punctato; elytris inæqualiter sulcatis, disperse punctulatis, postice parum convexis, separatim arcuatis; pygidio prominenti, leviter plicato, sicut corpore subtus parce hirsuto; mesosterno haud producto; tibiis anticis bidentatis; pedibus posticis validis, coxis latis, intus angulatim retro productis, tarsis longis.

Long. 7.5 mm.; lat. max. 3.5 mm.

*Hab.* N. Borneo: Kina Balu (*Whitehead*).

The Museum collection contains two males and one female, all different in coloration. In the female the head and pronotum are yellowish-green, with the clypeus and the margins of the pronotum paler, and the whole lower surface, with the pygidium and legs, are golden, only the hind tibiæ being golden-green. In the males the head and pronotum, except the outer margins of the latter, are very deep green, as well as all the tibiæ and tarsi. In one specimen the abdomen is also dark and the pale spots are absent from the elytra. In all the specimens the elytra alone are non-metallic, and the spots, when present, consist of a pair very near the suture before the middle, a smaller anterior pair distant from one another, and a posterior pair still more so.

*A. pulicaris* is closely related to *A. matanga*, but is very small, with the prothorax rather more convex and less narrowed in front.

*Anomala quadrigemina*, sp. n.

Pallide testacea, verticis maculis duabus, prothoracis maculis quatuor discoidalibus, sæpe longitudinaliter confluentibus, elytris punctis quatuor post-scutellaribus, his nonnunquam omnibus conjugatis, propygidio ventrisque medio plerumque rufo-piceis;

ovalis, convexa, sat nitida, capite crebre punctato, clypei margine omnino arcuato; prothorace fortiter et crebre punctato, lateribus arcuatis, angulis posticis rotundatis; scutello bene punctato; elytris profunde punctato-striatis; pygidio crebre et grosse punctato; corpore subtus fere nudo, modice punctato; mesosterno haud producto; tibiis anticis fortiter bidentatis.

Long. 7 mm.; lat. max. 4-4.5 mm.

*Hab.* North Borneo: Labuan, Sandakan.

This is another small and rather variable species. It is pale and not at all metallic, with reddish-brown markings, usually consisting of two spots upon the forehead, four upon the disk of the prothorax, and four forming a square behind the scutellum, together with the propygidium and the greater part of the abdomen beneath. There may be in addition on each side a lateral prothoracic spot, one on the shoulder, one behind it, and one near the apex of the elytron. The markings may partially or entirely disappear, and, on the other hand, sometimes increase and cover a large part of the surface. The discoidal thoracic spots on each side then unite, leaving a narrow pale median line, and the posterior pair of elytral spots develop into a large patch, leaving free only the region adjoining the scutellum (enclosing the anterior pair of spots) and an apical border.

*Anomala felicia*, sp. n.

Saturate viridi-cuprea, prothoracis lateribus, pygidio, femoribusque plerumque, pectoreque nonnunquam, aureo-flavis; elongato-ovata, corpore subtus haud dense flavo-pubescente; capite rugose punctato, clypeo lato, margine rotundato; prothorace brevi, æqualiter crebre punctato, omnino marginato, angulis anticis acutis, posticis obtusis; scutello bene punctato; elytris profunde et fortiter punctato-striatis, striis inæqualibus, secunda antice disrupta; pygidio grosse vix rugose punctato; metasterni lateribus dense, abdomineque toto disperse sed fortiter, punctato; mesosterno haud producto; tibiis anticis fortiter bidentatis.

Long. 11-13 mm.; lat. max. 6-7 mm.

*Hab.* Sarawak: Penrissen. N. Borneo: Kina Balu. E. Borneo: Sanga Sanga.

This seems to be a common and widely distributed Bornean species. It is of similar size and appearance to *A. assimilis*, Boisd., and *A. æneiventris*, Fairm., but the prothorax is shorter and less narrowed in front, and the pygidium is without hair and coarsely pitted instead of finely rugose.

The four species which follow form, with others, a group of



excessively similar forms characterized by a peculiar difference between the sexes. In the males the pygidium is very finely rugose and quite opaque, while in the females it is shining and punctured. All the species are bronzy and finely and closely punctured above, the elytra a little less densely punctured than the pronotum and entirely without striæ. The sides of the body are hairy beneath and the pygidium bears scanty hairs. There is no sternal process and the front tibiæ are bidentate.

*Euchlora aureola*, Hope, described from a single male, is a member of this group. Both sexes were found by Doherty at Perak. It is distinguished from all the following species by its very broad and conspicuous elytral membrane; but all the species of the group are so extremely close in their external characters that the examination of the genitalia of the males is necessary for their certain discrimination.

*Anomala silama*, sp. n.

Viridi-cuprea, prothoracis marginibus lateralibus vage pallidioribus, corpore subtus femoribusque cupreo-flavis, tibiis tarsisque rufo-cupreis; elongato-ovata, convexa, corpore supra toto crebre punctato, prothoracis angulis anticis acutis, paulo productis, pygidio parvissime ciliato:

♂, clypeo toto rugoso, pygidio minutissime rugoso, forcipis lobis dorsalibus brevibus, apice valde inflexis, subtus basi haud approximatis:

♀, clypeo dense punctato, pygidio modice, paulo transverse, punctato. Long. 22-23.5 mm.; lat. max. 11.5-13 mm.

*Hab.* N. Borneo: Silam (*S. B. J. Skertchley*). E. Borneo: Moorjawa (*H. D. Jensen*).

The colour is a deep coppery green like that of *A. aureola*, Hope, but the lower surface and femora are yellowish, with a slight metallic lustre, and the tibiæ and tarsi fiery red. The extreme lateral edges of the pronotum are also of a yellowish tinge. The shape is more elongate than that of *A. aureola* or of the two following species, and the front angles of the thorax are a little produced. The clypeus is rugose in the male and densely but distinctly punctured in the female. The pygidium bears only a few inconspicuous hairs, and is very finely granulated in the male, and punctured, not very coarsely, in the female.

*Anomala posticalis*, sp. n.

Obscure cuprea, femoribus castaneis, metallicò-micantibus, tibiis

tarsisque viridi-æneis; ovata, modice lata, convexa, corpore supra toto crebre punctato, elytris punctorum paulo majorum seriebus aliquibus præbentibus, prothorace modice angusto, angulis anticis acutis, paulo productis, pygidio longe hirtio:

♂, clypeo toto rugoso, pygidio opaco, minute rugoso, forcipis lobis dorsalibus brevibus, apice emarginatis, haud inflexis, subtus basi productis, approximatis:

♀, clypeo dense punctato, pygidio nitido, grosse punctato.

Long. 22–24 mm.; lat. max. 13–14 mm.

*Hab.* Sarawak: P. Burong (*R. Shelford*, April), Srai (*J. E. Lewis*, May).

This is a large ovate form, bronzy green above and beneath, with the femora reddish and the tibiae and tarsi dark green. The pronotum is moderately long and tapering, with the front angles a little produced. The elytra bear several longitudinal rows of punctures a little larger than the rest. The clypeus is rugose in the male and densely punctured in the female, and the pygidium is thinly clothed with long hairs, finely granulated in the male and very coarsely punctured in the female.

#### *Anomala biformis*, sp. n.

Rufo-cuprea, nitida, corpore subtus viridiore, pedibus igneo-cupreis; sat late ovata, convexa, corpore supra crebre punctato, utriusque sexus clypeo omnino rugoso, prothoracis angulis anticis acutis, haud productis, pygidio parce ciliato:

♂, pygidio opaco, rugoso, forcipis lobis dorsalibus longis, apice haud inflexis, subtus basi productis, approximatis:

♀, pygidio nitido, grosse punctato.

Long. 17–21 mm.; lat. max. 10–12 mm.

*Hab.* S.E. Borneo: Banjarmassin.

*A. biformis* is rather smaller than the two foregoing species, rather broadly oval in shape, and shining coppery red above, the colour being like that of *A. limata*, Cand., and *A. cantori*, Hope. The lower surface is more greenish and the legs are fiery red. The clypeus is entirely rugose in both sexes, the pygidium very thinly hairy, densely granular in the male and very coarsely punctured in the female. The front angles of the thorax are less acuminate than in the allied forms.

#### *Anomala whiteheadi*, sp. n.

Viridi-cuprea, pedibus igneo-cupreis; elongato-ovata, convexa, corpore supra toto crebre punctato, prothoracis angulis anticis modice acutis, parum productis, pygidio parcellissime ciliato:

♂, pygidio dense rugoso, forceipis lobis dorsalibus longis, apice inflexis, subtus basi productis, approximatis.  
Long. 21 mm.; lat. max. 11.5 mm.

*Hab.* North Borneo: Kina Balu (*Whitehead*).

I have seen only two male examples of this. Like *A. biformis*, it has the lower surface of the body coppery green and the legs metallic crimson, but the upper surface is more green and the body is proportionately narrower.

# IX.—*Notes on Fossorial Hymenoptera*.—II.

By ROWLAND E. TURNER, F.Z.S., F.E.S.

## *On a Collection from the Solomon Islands.*

THE species described here were collected by Mr. W. W. Froggatt, of Sydney, and sent to me for identification. One or two were sent to the British Museum by Mr. Woodford many years ago. As might be expected, they are nearly allied to New Guinea species, and many wide-ranging species were included, a list of which will be published by Mr. Froggatt.

### *Thynnus barbarus*, sp. n.

♂. Clypeus large, very broadly truncate at the apex, the angles not produced, longitudinally striated, deeply punctured between the striæ, pointed at the base and joined by a very short narrow carina to the broadly rounded apex of the inter-antennal carina. Labrum finely punctured and ciliate at the apex, narrowly truncate on the apical margin, not emarginate or bilobed, projecting much beyond the clypeus. Head finely punctured rugulose, a deep frontal sulcus not reaching the anterior ocellus, the space between the posterior ocelli and the eyes shining and almost smooth. Antennæ of almost even thickness throughout, shorter than the thorax and median segment combined. Thorax and abdomen closely punctured, most finely and closely on the pronotum and sides of the mesonotum, pleuræ finely punctured. Pronotum narrowed anteriorly; the anterior margin almost as wide as the head, raised, with a transverse groove behind it. Scutellum large, very broadly rounded at the apex and very feebly subtuberculate in the middle of the apical margin. Median segment obliquely truncate from the postscutellum, the surface of the