

THE ANNALS  
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BEING A CONTINUATION OF THE "ANNALS" COMBINED WITH  
MRS. LONDON AND CHARLESWORTH'S "MAGAZINE OF NATURAL HISTORY."

WITH SIX PLATES.

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## EXPLANATION OF PLATE IV.

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XII.—*Notes on Fossorial Hymenoptera*.—XLI.

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

## Family Scoliidæ.

## Subfamily ANTHOBOSCINÆ.

*Anthobosca silvicola*, sp. n.

♀. Nigra, pallide fulvo-pubescent; tergitis secundo tertioque fascia angusta mediana, in medio late interrupta, pallide flava; tarsi fusco-ferrugineis; metanoto apice sordide flavo; alis fusco-hyalinis, venis fuscis.

Long. 16 mm.

♂. Niger, albido-pubescent; mandibulis dimidio basali, clypeo, apice nigro, pronoto macula transversa utrinque, metanotoque fascia transversa flavis; mandibulis apice, femoribus tibiisque anticis subtus unguiculisque fusco-ferrugineis; tarsi anticis pallide ferrugineis; alis hyalinis, leviter infumatis, venis fuscis, stigmatibus fusco-ferrugineo.

Long. 14 mm.

♀. Clypeus truncate at the apex, convex and longitudinally subcarinate at the base, with a broadly triangular depression before the apex; mandibles with long fulvous setæ on the outer margin. Head shining, rather sparsely punctured, the

punctures much closer above the base of the antennæ. Pronotum coarsely and closely punctured, mesonotum and scutellum as strongly, but much more sparsely punctured. Propleuræ shallowly, mesopleuræ more strongly punctured; median segment both on the dorsal surface and on the sides very finely and closely punctured. Tergites shining, closely and finely punctured at the base, sparsely and more coarsely at the apex, the second sternite shining and almost smooth in the middle, the apical margin of the sternites with a fringe of long pale fulvous hairs. Pygidium densely clothed at the base with coarse black hairs, the apex broadly rounded. Tarsal unguis bifid; hind coxæ almost contiguous. Radial cell rather narrowly rounded at the apex; third abscissa of the radius as long as the first and second combined.

♂. Clypeus convex, subtruncate at the apex, not toothed; eyes widely and very feebly emarginate on the upper part of the inner orbit; the head closely punctured and clothed with pale long hairs. Third joint of the flagellum as long as the first and second combined, antennæ short (5.5 mm.) as compared with the length of the costa (10.5 mm.). Thorax rather finely punctured, more strongly and sparsely on the mesonotum than elsewhere, pleuræ finely and closely punctured. Abdomen very minutely and closely punctured on the basal tergites, more strongly on the two apical tergites; the hypopygium linguiform. Tarsal unguis bifid. Wings clothed with very minute dark hairs; the scar dividing the first cubital cell distinct.

*Hab.* Port St. Johns, Pondoland; 1 ♀, January 1924, 1 ♂, December 1923.

One of each sex taken in dense forest.

I have been able to examine specimens of Cameron's *Anthobosca* (*Odontothynnus*) *bidentatus*, and find that the tarsal unguis are deeply bifid, not simple as he states.

*Anthobosca bidentata*, Cam.

*Odontothynnus bidentatus*, Cam. Rec. Albany Museum, i. p. 162 (1904). ♂.

*Anthobosca natalica*, Turn. Trans. Ent. Soc. London, p. 85 (1908). ♀.

I took both sexes of this species at Umtata in February 1923, and have no doubt that the sexing is correct. The colour is very variable, some of the males having tergites 2-5 broadly banded with yellow, instead of wholly black as in the typical form; and in one specimen of the female the second and third abdominal segments are bright ferruginous red instead of black.

*Anthobosca hematura*, sp. n.

♀. Nigra; mandibulis fusco-ferrugineis, apice nigris; orbitis internis linea brevi maculæque parva utrinque supra oculos pallide flavis; tergitis quinto sextoque sternitoque sexto rufo-ferrugineis; alis fusco-hyalinis, venis fuscis.  
Long. 13 mm.

♀. Clypeus moderately convex, subtruncate at the apex; head punctured, very sparsely and finely on the vertex and round the ocelli, more strongly and closely on the front. Pronotum closely and rather strongly, mesonotum and scutellum more sparsely punctured; median segment subopaque, very closely and minutely punctured, a small space in the middle of the basal margin almost smooth, a low oblique carina on each side from the base to the stigma. Tergites shining minutely punctured, almost smooth at the apex, the punctures on the sternites large but sparse; sixth tergite broadly rounded at the apex, coarsely punctured and closely clothed with golden setæ. Radial cell broadly rounded at the apex, second abscissa of the radius long, only a little shorter than the third, which is about equally long on the cubitus and the radius.

*Hab.* Portuguese East Africa, Valley of Kola River, Mt. Chiperone, 1500-2000 feet, April 6, 1913 (*S. A. Neave*).

*Anthobosca iheringi*, Sauss.

*Cosila iheringi*, Saussure in Grandidier, *Hist. Madagascar*, xx. p. 234 (1892). ♀.

In a previous paper I sank this name as a synonym of *A. antennata*, Sm., but this is incorrect, the antennæ of the male in *iheringi* measuring fully two-thirds of the length of the costa of the fore wing, whereas in *antennata* they are not more than half the length of the costa.

The length of the antennæ in the male is a most important character in this genus, as also in *Myzine*.

Subfamily *Elmidae*.*Elis (Mesa) enryclea*, sp. n.

♀. Nigra; capite thoracæque rugoso-punctatis, sparse fusco-hirtis; segmento mediano subnitido, coriáceo, apice crasse punctato, lateribus striato; abdomine nitido, sparse punctato, sparissime albido-piloso; pygidio rugoso-striato; antennis aurantiacis; mandibulis ferrugineis, apice nigris; alis atro-cæruleis.  
Long. 17 mm.

♀. Head and thorax very coarsely rugosely punctured; the clypeus finely punctured, with a low median carina; scape with large setigerous punctures beneath, very sparsely punctured above. Median segment coriaceous at the base and almost shining, with the usual margined longitudinal groove, the extreme apex and the oblique posterior slope strongly and closely punctured, the sides of the segment strongly striated. The segment measured in the middle is considerably longer than the scutellum, in this point, as well as in the sculpture, differing from the similarly-coloured but smaller *E. xanthocera*, Gerst. Abdomen shining, very sparsely punctured; fifth tergite more closely but finely punctured; pygidium longitudinally rugose-striate, with punctures at the base. Sternites 3-5 more closely punctured, the sixth sternite finely punctured. Hind tibiae very strongly spinose without, calcaria white; basal joint of the hind tarsi with a scopa of short whitish hairs beneath. Second abscissa of the radius about equal to the third.

*Hab.* Mlanje, Nyasaland, February to April (*S. A. Neave*); Valley of Kola River, near Mt. Chipirone, Portuguese East Africa, April 1913 (*S. A. Neave*).

Described from eight females, seven of which, including the type, are from Mlanje.

Very similar in colouring to *E. xanthocera*, but is a much larger species, differing also in the sculpture and length of the median segment, in the sparser puncturation of the abdomen, and in the longer second abscissa of the radius. The male cannot yet be associated with the female, though *E. diversicornis*, Turn., occurs in the same locality at the same season.

*Elis (Mesa) xanthocera*, Gerst.

*Elis (Mesa) xanthocera*, Gerst. Arch. f. Naturg. xxvii. p. 353 (1870). ♀.

*Elis (Mesa) incerta*, Turn. Proc. Zool. Soc. London, p. 710 (1912). ♂.

I took both sexes in large numbers at Queenstown in January 1923 on *Mimosa*-blossom.

*Elis (Mesa) capitata*, Sm.

*Myzine capitata*, Sm. Cat. Hym. B.M. iii. p. 74 (1855). ♂.

*Elis (Mesa) auriflua*, Turn. Proc. Zool. Soc. London, p. 705 (1912). ♀.

I took both sexes at Aliwal North in December 1922, and have no doubt that they belong to the same species, which has a rather wide range on the South Africa tableland.

*Elis (Mesa) longiventris*, Turn.

*Elis (Mesa) longiventris*, Turn. Proc. Zool. Soc. London, p. 712 (1912). ♂.

♀. Nigra, punctata, albo-pilosa; tergito quarto, basi infuscato, quinto sextoque, sternito tertio apice, quarto, quinto sextoque rufo-ferrugineis; alis hyalinis, venis luteo testaceis.

Long. 9-12 mm.

♀. Head and thorax strongly punctured, the punctures well separated and not confluent, the punctures sparser on the sternum; median segment much more finely and shallowly punctured; in the middle, at the base the punctures almost disappear. Abdomen not very closely punctured, the punctures larger and sparser on the sternites than on the tergites; sixth tergite rather sparsely punctured at the base, finely aciculate on the apical portion. Spines of the tibiae and tarsi whitish, basal joint of hind tarsus with a row of spines beneath.

*Hab.* Mossel Bay and Ceres; common; a single pair of small size taken at Aliwal North.

Can be taken at nearly all times of year. A variety taken at Montagu has the abdomen entirely black, excepting the brown apex of the sixth tergite. This cannot be *hottentota*, Sauss., in which the sixth tergite is striolate, and the colour of the pubescence does not agree with the short description of *capensis*, Lep.

The wings in some specimens are faintly tinged with fuscous.

*Myzine bonavespei*, sp. n.

♂. Niger; mandibulis, apice excepto, clypeo, scapo macula apicali subtus, pronoto margine anteriore angustissime, fasciaque marginis posterioris, tegulis, tergitis 5 basalibus fascia apicali integra, sexto fascia apicali lateribus emarginata, septimo maculis tribus, sternitis 3-6 fascia apicali integra, secundo septimoque maculis tribus, femoribus basi nigris, tibiis tarsisque flavis; alis hyalinis, venis fuscis, stigmate ferrugineo.

Long. 15 mm.

♂. Pubescence white and rather long, fairly dense on the head and thorax. Antennae long (9 mm.) as compared with the length of the costa (12.5 mm.). Antennae, as usual in the genus, with only twelve visible joints, the first visible joint of the flagellum half as long as the third, the latter distinctly longer than the second. Pronotum somewhat narrowed anteriorly, the anterior margin almost straight and

distinctly raised. Mesonotum a little longer than the pronotum. Abdomen slender, the apical aculeus long, the apical incision of the seventh tergite broader at the apex than deep, the lateral processes narrowly produced and very narrowly rounded at the apex. Third abscissa of the radius shorter than the fourth and much shorter than the second, the third cubital cell receiving the second recurrent nervure at about one quarter from the base.

*Hab.* Spes Bona Farm on the Karroo, 38 miles east of Ceres, November 17-25, 1924.

*Myzine pacificatrix*, Cam.

*Plesia pacificatrix*, Cam. Ann. Transv. Mus. ii. p. 118 (1910). ♂.

I took males of this species both at Queenstown and Aliwal North. I consider that it will prove to be the male of *Myzine perornata*, Turn., but the evidence is as yet insufficient. Specimens of *M. perornata* taken at Queenstown in January 1923 have the basal tergites black, not suffused with ferruginous as in the type, but do not differ otherwise.

*Myzine ceresensis*, sp. n.

♀. Nigra, sparse nigro-pilosa; antennis piceis; mandibulis tarsisque fusco-ferrugineis; alis fuscis; cellula cubitali secunda obsoleta.

Long. 5 mm.

♂. Niger; albo-pilosus; mandibulis, apice excepto, pronoto fascia lata postice, tegulis 2-5 fascia apicali utrinque late interrupta, tibiis basi, tarsisque apice infumatis, pallide flavis; alis hyalinis, stigmatibus luteo-ferrugineo, venis fusco-ferrugineis.

Long. 5-8 mm.

♀. Mandibles bidentate at the apex; head subquadrate, smooth and shining; the clypeus finely punctured and narrowly emarginate anteriorly; interantennal tubercles strongly developed. Pronotum longer than the mesonotum and scutellum combined, nearly as long as its posterior breadth, very slightly narrowed anteriorly, smooth and shining, the anterior slope and the neck closely punctured and clothed with long black hairs. Mesonotum and scutellum smooth and shining, the scutellum with a short and shallow median groove not quite reaching the middle. Median segment rather strongly punctured, more sparsely in the middle than at the sides, with a narrow median groove which extends to the median depression on the posterior slope. Pleuræ rather sparsely punctured. Abdomen shining, with

a few very small and shallow punctures on the tergites, the punctures on the sternites larger and piliferous. Second cubital cell absent; stigma dark fuscous, situated close to the middle of the costa.

♂. Head and clypeus finely punctured, the clypeus rather strongly convex. Antennæ ( $3\frac{1}{2}$  mm.) much shorter than the costa ( $5\frac{1}{2}$  mm.). Third joint of the flagellum (second apparent joint, the first being concealed) about half as long again as the second and a little shorter than the fourth. Pronotum a little longer than the mesonotum, narrowed anteriorly, the anterior margin straight. Thorax more strongly punctured than the head; median segment rugosely punctured. Abdomen slender, the first segment beyond the petiole longer than its apical breadth, swollen and slightly constricted at the apex; second segment a little shorter than its apical breadth. Seventh tergite rather coarsely punctured, shining in the middle on the apical half, the apical incision rather shallow, broader apically than deep, the lateral processes broadly rounded at the apex. Sternites 2-5 with a small yellow apical spot and also a small spot at each apical angle. Second abscissa of the radius longer than the third, second recurrent nervure received near the middle of the third cubital cell. Cubital nervure only continued beyond the cells by an extremely short stump, discoidal nervure not continued beyond the cells.

*Hab.* Ceres, Cape Province, 1500 feet, 1 ♀ in January 1925; a long series of males from January to April.

The male is very similar to *M. swalei*, Turn., from Rhodesia, but differs in the paler colour of the stigma in the proportion of the abscissæ of the radius, which, however, is not a very constant character in the genus, and in the much more broadly rounded lateral processes of the seventh tergite, and in the less convex tergites.

#### Family Psammocharidæ.

##### *Calicurgus namabatashane*, sp. n.

♀. Nigra; mandibulis, flagello tarsisque anticis brunneo-ferrugineis; alis hyalinis, anticis fusco-bifasciatis, apiceque extremo infusentis.

Long. 7 mm.

♀. Head and thorax opaque, coriaceous; the clypeus narrowly and shortly produced at the apex, the small produced portion shining and shallowly emarginate; a row of punctures along the margin of the clypeus, from each of



which springs a pale yellowish hair; the mandibles beneath clothed with similar hairs. Second joint of the flagellum a little longer than the third, but not as long as the first and third combined. Pronotum strongly rounded anteriorly; the hind margin arched, not angulate in the middle. Median segment rounded posteriorly, with a median sulcus from base to apex, the posterior slope gradual, the segment opaque and coriaceous, not striate. Abdomen shining, the transverse groove on the second sternite well developed; sixth tergite clothed with pale yellowish hairs. Hind tibiae serrate, their longest spur about half as long as the basal joint of the hind tarsus. Second abscissa of the radius much longer than the third, but the second cubital cell is shorter on the cubitus than the third, both the second and first transverse cubital nervures being strongly sloped inwards from the radius. Cubitella originating considerably beyond the nervellus, postfurcal. The basal fuscous band of the fore wing crosses the wing irregularly from the base of the first cubital cell; the second band occupies the basal half of the radial cell, almost the whole of the second and third cubital cells, and the apical third of the second discoidal cell.

*Hab.* Port St. Johns, Pondoland, October and December 1923; two females.

Another specimen taken at Mossel Bay in November 1921 has the anterior margin of the clypeus straight, the posterior portion of the median segment distinctly transversely striated; the fuscous bands of the fore wing are broader and the cubitella originates a little nearer to the nervellus.

This probably will prove to represent a western race of the species.

#### Family Sphegidae.

##### Subfamily *MISCOPHINÆ*.

##### *Nitela henrici*, sp. n.

♀. Nigra; fronte pallide auro-piloso; mandibulis, scapo, flagello articulis duobus basalibus, pedibusque ferrugineis; alis hyalinis, venis ferrugineis; thorace crasse reticulato.  
Long. 3.5-4 mm.

♀. Front opaque, rather strongly punctured, clothed with pale golden pubescence, sparsely on the upper portion, densely on the concave area round the base of the antennae and on the clypeus. Anterior margin of the clypeus convex, the median area strongly carinate longitudinally in the middle. Vertex and occiput punctured-rugose; pronotum, mesonotum,

and scutellum very coarsely reticulate; the anterior angles of the pronotum acute, distinctly produced and pointed; pleuræ much more finely reticulate. Median segment longitudinally striate-reticulate, but less coarsely sculptured than the mesonotum, the posterior slope hollowed in the middle and finely transversely striate, the sides of the segment obliquely striated. Abdomen smooth and shining. Posterior ocelli separated from the eyes by a distance less than half of their own diameter. Hind coxæ black above.

*Hab.* Colombo, Ceylon (*G. M. Henry*), August 16, 1923.

On a bamboo bored by Scolytids. Doubtless nesting in abandoned beetle-burrows.

Most nearly related to the Australian *N. sculpturata*, Turn., but is a much smaller species; the angles of the pronotum are more strongly produced, the reticulation of the thorax is coarser and more clearly defined, the head is narrower, and the colour of the frontal pubescence different. It differs much both in colour and sculpture from the only other species of the genus I have seen from Ceylon—near *N. fallax*, Kohl,—of which there is a specimen in the British Museum taken by Mr. Rutherford at Peradeniya, as well as others from Pusa in N. India.

XIII.—On some African *Papilios*, with Descriptions of new Forms. By LORD ROTHSCHILD, F.R.S., Ph.D.

WHEN the late Mr. Henley Grose-Smith described his *Papilio erithonioides* in vol. vii. of the *Ann. & Mag. Nat. Hist.* for 1891, he had two insects mixed up in his series, and described the ♂ of one and the ♀ of the other as being the sexes of his *erithonioides*. This is why in the description the ♀ is stated to be very large and to have long tails.

When arranging my African *Papilios* the other day, we found among the ♂♂ *erithonioides* a ♀ with no tails and of the same appearance as the ♂♂, while the single-tailed very large insect, received from Mr. Grose-Smith as a ♀, on examination proved to be a ♂.

Mr. Joicey very kindly lent me the ♀ type of *erithonioides*, Gr.-Sm., for comparison, and the tailed form turns out to be an undescribed species. It is very curious that, while the whole of Africa is inhabited by a single species, *Papilio demodocus*, Esp., and the whole of the Indo-Australian