

INSECTS OF CAMPBELL ISLAND. HYMENOPTERA ; EULOPHIDAE¹

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Abstract: One new species *Ardalus campbellensis* (Hymenoptera, Eulophidae) from Campbell I. is described for the first time.

The Campbell I. eulophid described below is referred provisionally to the genus *Ardalus* Howard. The characterization given by Howard (1896)⁴ has not been improved upon since that date. The type species *aciculatus* Howard has the hind tibia with 2 spurs, but in other respects looks much like an *Elachertus* with the notauli, except near the fore margin of the mesoscutum, sharp and shallow and the scutellar furrows, which curve round and meet before hind margin, also shallow. The types of *A. laevigatus* and *politus*, described by Howard (1896), and *Diglyphus albipes* Ashmead, later placed in *Ardalus*, are in the British Museum (Nat. Hist.), and it is considered that these species do not belong to the same genus.

Gahan (1922)⁵ described a new species in *Ardalus* and associated an earlier described species of his own with that genus. From the descriptions it appears that both these species are closely related to *aciculatus* Howard.

In 1958, a short series of ♂ specimens, reared from *Epichorista emphanes* (Meyr.) (Lep., Tortricidae) was received from New Zealand. That species has the scutellar furrows absent, though there is a furrow before the hind margin, but on the basis of its general resemblance to the type species in other respects, it was determined as an *Ardalus*. The species now at hand is clearly congeneric with it. In some respects, these New Zealand forms are like a eulophine genus such as *Dimmockia* Ash. or *Necremnus* Thomson, but the antennal funicle segments are short, and in the ♂ quite unbranched. It is likely that they will later be transferred to some other genus but at present it seems best to give them the above provisional placing. The hind tibia bears 2 spurs.

Ardalus campbellensis Kerrich and Yoshimoto, n. sp.

Head, seen from above, shaped rather as in *Elachertus artaeus* (Walker) (Kerrich 1961, fig. 2)⁶ but more strongly transverse and as wide as thorax, very short in middle, the up-

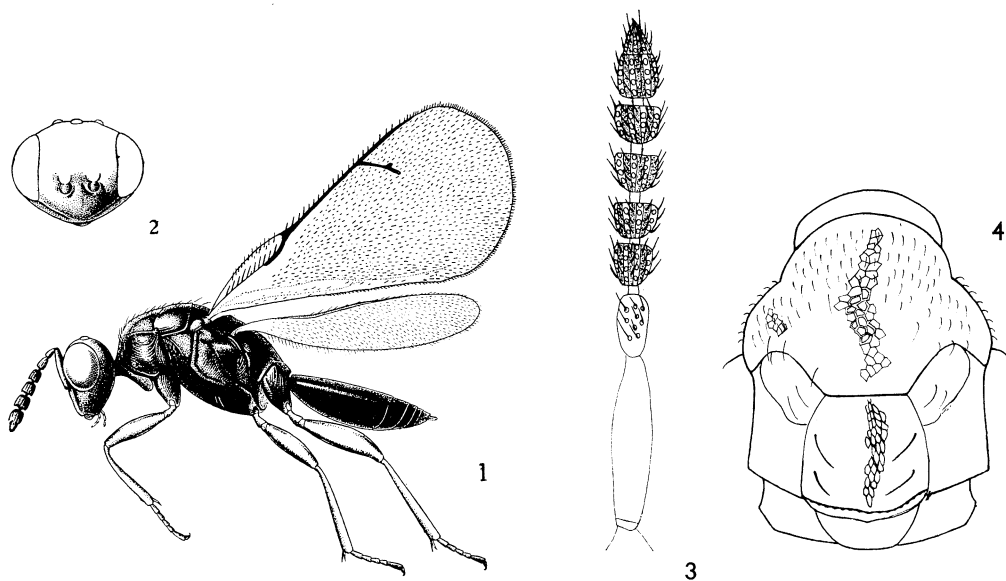
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per face and occiput both being deeply emarginate. Ocelli in a very obtuse triangle, POL being almost $2\times$ OOL. Head sculpture in greater part finely but very distinctly alutaceous, sparsely and very finely piliferous-punctate, the large scrobes strongly shining. Eyes moderately strongly but rather sparsely hairy.

Antennae of ♀ inserted at lower level of eyes; scape almost parallel-sided, about $4.5\times$ as long as broad; pedicellus almost $2\times$ as long as broad; 1 ring-segment (so far as we can see in dry mounts); postanellus about $1.5\times$ as long as broad, about equal in length to pedicellus; funicle segment 2 about quadrate, the 2 following shorter and broader: club 2-segmented with apiculus, hardly longer than the 2 apical funicle segments combined. Antennae of ♂ (fig. 3) inserted just below the lower level of eyes; scape shorter than in ♀, gradually broadening to near apex, about $3\times$ length of its greatest breadth; funicle segments more widely separated, *i. e.* more strongly petiolate, than in ♀.

Pronotum and mesoscutum scaly-reticulate and sparsely beset with fine punctures bearing hairs of moderate strength: reticulation wider on hinder $1/2$ of mid lobe of mesoscutum, and extremely fine near hind margin of pronotum and on axillae; strong bristles about as in *Elachertus* species; mid lobe of mesoscutum strongly produced back between axillae. Scutellum bearing 2 pairs of strong bristles, and a moderately strong furrow just before and following hind margin; reticulate sculpture much sharper and more outstanding than on mesoscutum (this condition often described as punctate), becoming only gradually weaker at sides, and tending to become more longitudinal in anterior $1/2$. Sculpture on postspiracular sclerite about as on anterior part of mesoscutum; on mesopleura, mesosternum, metanotum and propodeum finely alutaceous.

Petiolar segment smooth, rather pyriform, about $1.5\times$ as broad near apex as its length



Figs. 1-4. *Ardalus campbellensis* n. sp. 1, whole insect in sinistral view; 2, head in facial view (1-2, drawings by artist, Nagatani); 3, antenna of ♂ in dorsal view; 4, thorax seen from above (3-4, authors' text figures).

in ♀, but only slightly broader in ♂. Remainder of gaster almost circular in outline in ♀, obovate in ♂, the first large tergite about 2/5 its total length in both sexes.

Fore wings as in fig. 1, rather uniformly ciliate on apical 1/2, with stigma rather elongate; subcosta bearing 6-9 bristles; costal cell with a row of hairs on upper surface, extending more than half way from apex to base, and 3 rows on under surface.

Length 1.4-2.0 mm.

Head and mesonotum dark green with moderate brassy reflection; pleura, propodeum and gaster blackish, with weak, bright reflection. Antennae brownish black, with bright reflection. Legs rufotestaceous, paler towards apex, with superimposed metallic coloring which in ♀ is on coxae in greater part, femora and tibiae in part above and on sides, and tarsal apices, and in ♂ is still more extensive.

Holotype ♀, Campbell I., Beeman Lookout Point, 19.XII.1961; allotype ♂, Beeman Camp, 2-50 m, ex *Dracophyllum* flowers, 12-17. XII. 1961, Gressitt; 2♀♀, 2♂♂ paratypes, near Beeman Camp, 12-21. XII. 1961, Gressitt. Holotype and allotype in D.S.I.R, Nelson, New Zealand; 2♀♀, 3♂♂ paratypes in Bishop Mus.; ♀♂ paratype in British Mus. (Nat. Hist.).

Since the series recorded below, from the South Island of New Zealand, was reared from a tortricid, it is likely that this species is a parasite of a similar small moth.

Ardalus sp.

Differs from *A. campbellensis* n. sp. as follows: reticulation on pronotum and mesoscutum very much coarser and more outstanding. Sculpture of scutellum becoming rather suddenly very much weaker at sides, which are almost shining. Pterostigma less elongate. Length 1.7-2.0 mm.

NEW ZEALAND: 3♂♂, South Island, Reefton, ex *Epichorista emphanes* (Meyr.) (Lep., Tortricidae), 1959, L. W. Newman.

Ardalus aciculatus Howard differs from *A. campbellensis* n. sp. principally as follows: head somewhat less transverse and with ocelli in a less obtuse triangle; more strongly hairy, the piliferous punctures rather strong; eyes strongly and densely hairy. Antennae (♀) inserted just above lower level of eyes; all funicle segments much longer than broad. Pronotum and mesoscutum with punctation much denser, and the hairs arising from the punctures decidedly stronger. Mid lobe of mesoscutum produced back very little. Scutellum with 2 pairs of strong bristles, and with a pair of distinct though rather shallow furrows that curve round and join before hind margin: sculpture longitudinal-reticulate in hinder 1/2, running into finer striae in anterior 1/2, Sculpture of postspiracular sclerite finely alutaceous: dorsellum much shorter; petiolar segment distinctly finely reticulate, strongly transverse. Remainder of gaster oval, considerably longer than broad. Fore wings altogether more strongly and sparsely hairy: costal cell with 2 rows of hairs on under surface. Metallic reflection on thorax more bronzy; gaster largely dull testaceous above and beneath near base; antennal scape yellowish; legs dull testaceous, with hardly any metallic coloring except on mid and hind coxae.

A ♀ paratype of *A. insuetus* (Gah.) has been received in exchange from the U. S. National Museum and has been compared with the holotype and one other specimen of *aciculatus* How. in the British Museum. The characters for separation given by Gahan (1922) seem to be of doubtful significance, but the sculpture of the mesoscutum is much more strongly outstanding in *insuetus*.