

INSECTS OF CAMPBELL ISLAND.
HYMENOPTERA : CYNIPOIDEA : EUCOILINAE

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Abstract: *Kleidotoma (Pentakleidota) subantarctica* n. sp. from Campbell I., is the first record of a cynipid wasp from the subantarctic islands. It is described from 128 specimens (104 ♀, 24 ♂).

The following new species is the first cynipid wasp to be recorded from a subantarctic island.

I wish to thank J. L. Gressitt, K. P. Rennell, and K. A. J. Wise for their material; also, I am grateful to R. L. Doutt, University of California at Albany for the loan of Kieffer's type specimens.

***Kleidotoma (Pentakleidota) subantarctica* Yoshimoto, n. sp.** Figs. 1, 2.

♀: Body length 1.2 mm long; forewing 1.5 mm.

Jet-black; legs with tibiae and tarsus fuscous. Malar space 1/2 height of eye (fig. 1b). Antennal segment 1 obconical, 3× as long as broad, longer than 2; segment 2 subcylindrical, as long as broad, shorter than 1; segment 3 elongate, 1.5× longer than 2; segments 4-8 subequal in length, shorter than 9; club 5-segmented, segments 9-12 subequal in length, gradually thickened toward apical segment; segment 13, 1.5× longer than 12, apex acuminate (fig. 2). Basal radial vein constricted in middle and apical margin of wing slightly emarginate (fig. 2a). Dorsal margin of pronotal plate hemispheric-shape. Scutellar disc broad, surface smooth, polished to striate, and rounded at margin; scutellar cup oblong, linearly convex, slightly raised above disc, posterior end with a moderate size pit in center (fig. 2f). Coxae striate; metaepimeral plate longitudinally striate at side view. Abdomen 1.5× as long as broad; thick, wavy, golden yellowish, ring hairs at base of tergite 2 (fig. 2k).

♂: Body length 1.2-1.4 mm long; forewing 1 mm. Similar to ♀ except as follows: antennal segment 3, 1.5× as long as 4, inner surface emarginate, gradually thickened apically; segments 4-15 subequal in length (fig. 2j). Scutellar disc striate. Forewing reduced in size (fig. 2e).

Holotype ♀ (D.S.I.R.), Beeman Hill, Campbell I., ex nest of sooty albatross, 11.XII.1962, Gressitt. Allotype, same data as holotype, Gressitt. Paratypes: ♂, Courrejolles Penin., 200 m, ex *Diomedea impavida*, 14.XII.1962, Gressitt, nest; ♂, Monument Harbor, 9.II.1963, Rennell; ♂, NW Bay, 5 m, beach rocks and kelp, 30.XII.1962, Rennell; ♂, Shoal Pt., 7. II.1963, Rennell; 4♂♂, Shoal Pt., 0-10 m, beach kelp, 5.I.1963, Rennell; 5♀♀, NW Bay,

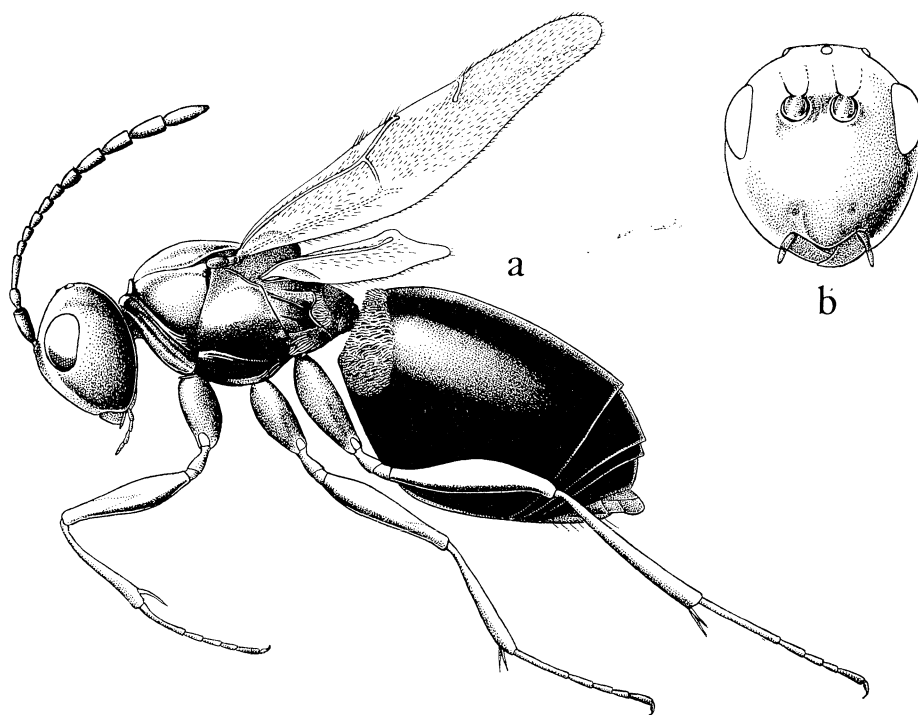


Fig. 1. *Kleidotoma* (*Pentakleidota*) *subantarctica* Yshm., n. sp. a, ♀ profile of body; b, frontal view of head.

5 m, beach rocks and kelp, 5.I.1963, Rennell; 5♀♀, NW Bay, 5 m, beach rocks and kelp, 5. I. 1963, Rennell; 65♀♀, Shoal Pt., 0–10 m, beach kelp, Rennell; 19♀♀, 16♂♂, Shoal Pt., 0–10 m, beach kelp, 18. XII. 1962, Rennell; 4♀♀, Shoal Pt., 7. II. 1963, Wise; 2♀♀, Venus Cove, Tussock, 2. II. 1963, Rennell; 8♀♀, Lookout Bay, Perseverance Harbor, 3. II. 1963, Rennell.

This is a unique species and differs from other members of *Kleidotoma* in the Pacific and Asia and from Kieffer's North American *Kleidotoma* type specimens at the University of California at Albany.

NOTE ON THE REDUCTION OF FORE WING

The study of *Kleidotoma* (*Pentakleidota*) *subantarctica* n. sp. represents a fascinating problem of evolution, particularly of the fore wings. This species is known from Campbell I. (52°30'S. Lat.) and the Auckland Is. (50°S. Lat.), but is not known from Macquarie I. (54°30'S. Lat.), the southernmost subantarctic island. It is highly probable that the ancestor of *Kleidotoma* originally came from New Zealand, the "subcontinent" (Gressitt *et al.*, 1961), by means of aerial dispersal. Somehow under the adverse climatological and isolated conditions, the gravid female of the ancestral *Kleidotoma* was able to become established on these islands.

From the standpoint of the reduction of the fore wings, the most conspicuous differences

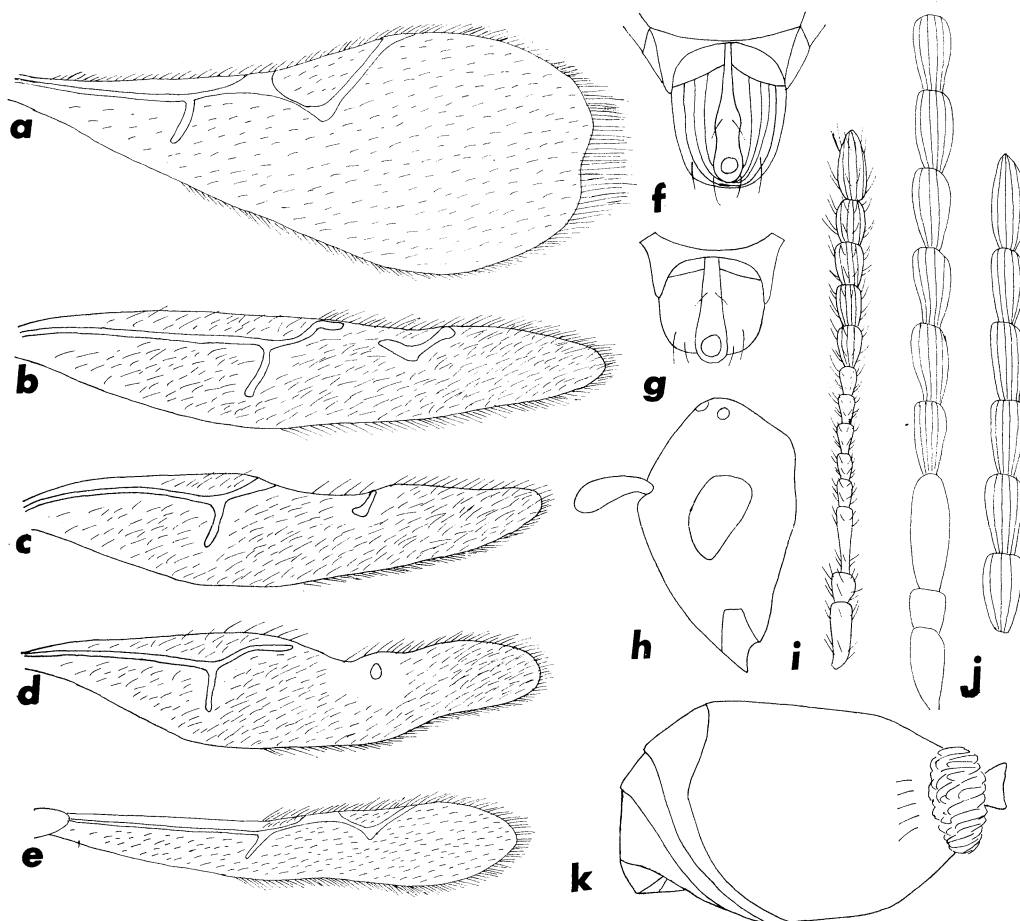


Fig. 2. *Kleidotoma (Pentakleidota) subantarctica* Yshm. a-d, ♀ fore wing; e, ♂ fore wing; f, g, ♀ scutellum; h, profile of ♀ head; i, ♀ antenna; j, ♂ antenna; k, ♀ abdomen.

Table 1. Incidence of radial cell reduction and scutellar disc striations of *K. (Pentakleidota) subantarctica*.

	Scutellar disc			Reduction of Radial cell			
	Striated	Partially smooth	Smooth	Fig. a Normal (no reduction)	Fig. b Radius 1 & 2	Fig. c Radius 2	Fig. d Radius 3
♂♂	16	4	1				
♀♀	90	11	3	1	11	66	26

in the extreme forms of the female from Campbell I. are wing size, and the shape and extent of the radial cell. A gradual gradation in the reduction of the radial cell is clearly shown among the 104♀♀ specimens in Table 1 and fig. 2 a-d. In the ♂, the fore wing

probably has undergone similar reduction as the ♀, but the loss of the radial cell is not evident. Under the rate of evolution that exists today, there probably is still a small incidence of the more generalized type form, since one specimen with fully developed wings was collected at Beeman (fig. 2a).

In all except 1 ♀ specimen examined, the apical 1/2 of the costal margin becomes suddenly narrowed and the apex comes more or less to a point. The subcosta is reduced to a short rod just beyond the fork of radius 1; radius 1 is "disjointed" at the base while 1/2 of radius 1 is branched at base of radius 2. Radius 2 is "split" at base and apex, forming a gap in the middle. The entire radius 1 and apical subcosta are greatly reduced, leaving a tiny portion or a short segment of the radius. In the specialized form, the apical 1/2 of the fore wing is covered with dense long hairs, whereas, in the generalized form it is covered with sparse short hairs.

Another point of interest besides the fore wing is the smooth surface of the scutellar disc present among the conventional striate ones (fig. 2f). Four out of 112 specimens possess smooth scutellar discs while 15 specimens fall into the category of a partially smooth disc or the intermediate form.