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INSECTS OF MACQUARIE ISLAND. DIPTERA: DOLICHOPODIDAE

By Marian A. Kohn

DEPT. ZOOLOGY, UNIVERSITY OF WASHINGTON, SEATTLE, WASH.

Reduced wings of flightless Diptera are usually modified into short strap-like or pad-like appendages. Modification of wings to long, narrow strap-like structures, i. e. of normal length but greatly reduced width, is much less common, occurring to my knowledge only in some members of the Drosophilidae (Frey, 1954) and Dolichopodidae (Lamb, 1909; Grimshaw, 1913; Adachi, 1954) inhabiting oceanic islands.

Lamb (1909) based his original description of *Schoenophilus pedestris* on two specimens collected on Macquarie Island in 1894. Because the specimens were badly shrivelled, no figures accompanied the scant description; the reduced wings serve as the only diagnosis.

The following redescription of *S. pedestris* is based on 100 specimens from Bishop Museum collected by Dr. J. L. Gressitt and 134 specimens from the 1960–61 Australian National Antarctic Research Expeditions (to be deposited in Entomology Museum, Commonwealth Scientific and Industrial Research Organization, Canberra, Australia).

Genus **Schoenophilus** Mik

Schoenophilus Mik, 1878, Dipterol. Untersuchungen 9.

Schoenophilus pedestris Lamb Fig. 1, a–e.

Schoenophilus pedestris Lamb, 1909, The Diptera of the Subantarctic Islands of New Zealand, Art. VII. In Chilton, The Subantarctic Islands of New Zealand **1**: 132.

Male (fig. 1a). General coloration black with coppery green metallic sheen, dusted with gray.

Head: Eyes not contiguous; face 3× longer than wide. Front devoid of bristles; ocellar bristles long, as well developed as pair of vertical bristles. A pair of small postverticals present behind the ocellar bristles. Antennae black; segment 3 slightly longer than wide; arista dorsal. *Thorax*: 5 pairs of well developed dorsocentral bristles present, sometimes with a weak 6th pair. Acrostical bristles absent. Other pairs of bristles are: 1 strong humeral, sometimes with a weak 2nd bristle; 2 posthumeral; 2 notopleural; 1 supra-alar, and 1 postalar. Scutellum with 2 pairs of closely placed bristles, the subapical pair being 1/4 the length of the apical pair. Wings brown fumose, greatly reduced in width, forming a slender appendage. Costa extending around the apex with long apical spine; 2 veins discernible forming a loop at their bases and fused toward the apical 1/4 of the wing

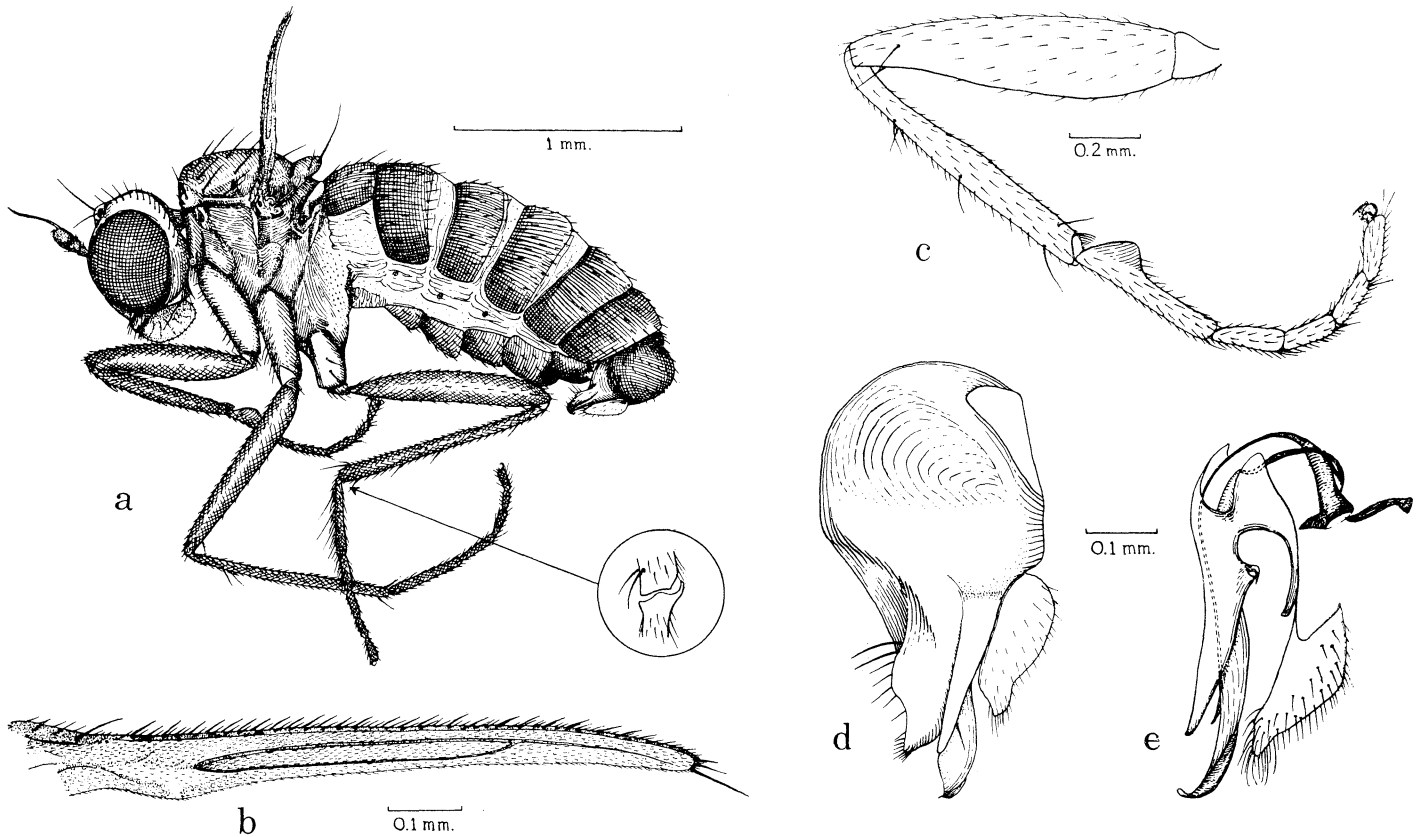

Fig. 1. *Schoenophilus pedestris* Lamb. *a*, ♂, lateral view, drawn from specimen preserved in alcohol; *b*, wing; *c*, foreleg; *d*, lateral view of ♂ genitalia, with segment 8 removed; *e*, inner structure of ♂ genitalia, with tergite 9 removed. The structures shown are: left, shield of aedeagus (sternite 10?); center, aedeagus; right, cercus.

(fig. 1b). Bases of halteres brown, knobs bright yellow. *Legs*: Same color as body. Front basitarsus enlarged on basal 1/2 (fig. 1c), somewhat flattened and concave on posterior surface; its length equals 1/2 that of tibia or a little longer than the combined lengths of the next 2 tarsal segments. Mid femur with 1 anterior and 1 posterior preapical bristles. Mid tibia of equal length with femur; mid tibia with 1 dorsal and 1 anterodorsal bristles on basal 1/5, and with 4 apical bristles, 1 anterior, 1 dorsal, and 2 ventral. Hind femur with 1 anterior and 1 posteroventral preapical bristles. Hind tibia slightly longer than femur and with the following chaetotaxy: 2 anterior bristles, 1 on basal 1/5 and the other apical; 4 dorsal bristles, 1 each on basal 1/4, above middle, apical 1/4, and at apex; 2 apical ventral bristles. Hind basitarsus 1/3 the length of tibia or 2× that of the tarsal segment 2; basal posterior margin with a spur curved upward toward tibia (fig. 1a, inset). *Abdomen*: Concolorous with rest of body. Genitalia as shown in figs. 1d and 1e. Cerci flat, leaf-like in posterior view, covered with gray powder in contrast to the shiny dark brown segment 9.

Female: Similar to ♂ except for genital segments and the modifications of front and hind basitarsi. Basal 1/4 of front femur with a row of 4–5 ventral bristles.

Length: Body, 2.3 mm; wings, 0.8 mm.

DISTRIBUTION: Macquarie Island.

Specimens have been examined from the following localities: Aerial Cove, 17. I. 1961, 8.V.1961, 23. XI. 1961, K. Watson; nr. Bauer Bay, 6. XII. 1960, J. L. Gressitt; Douglas Bay, 26. I. 1961, Watson; Finch Creek, 30. XII. 1960, Watson; First Gully, 4. IV. 1961, Watson; Gadget Gully, 17. XII. 1960, K. Watson, and 4–7. XII. 1960, Gressitt; Garden Cove, 5 and 8. XII. 1960, J. H. Calaby, 2 and 24. XI. 1961, 8. XII. 1961, Watson; Handspike Pt., 14. I. 1961, Watson; Hasselborough Bay, 9. XI. 1961, Watson; Heard Pt., 4–7. XII. 1960, kelp, Gressitt; Isthmus, 14. XII. 1960, Watson; nr. Isthmus, 4–7. XII. 1960, kelp, Gressitt; Lambing Gully, 12. V. 1961, Watson; Langdon Point, 2. I. 1961, Watson; NE coast, 1–3 m, 4–10. XII. 1960, on moss nr. beach, Gressitt; North Head, W. side, 7. XII. 1960, *Colobanthus*, Gressitt; North Head, E. side, 7. XII. 1960, *Colobanthus*, Gressitt; North Head, 4. XI. 1961, Watson; Plateau (N), 200–400 m, 6. XII. 1960, *Pleurophyllum*, Gressitt; Plateau (NE), 280 m, 9. XII. 1960, Gressitt; Plateau, 26. I. 1961 and 25. XI. 1961, Watson. Wireless Hill, 4. XI. 1961, Watson.

This unusual modification of the wings is also found in a group of Hawaiian dolichopodids of the genus *Emperoptera* Grimshaw; these flies are found in the mountains on the forest floor under dense vegetation; they move mainly by hopping. The radial veins are clearly developed in *Emperoptera*, and in *E. bryophila* Adachi (1954), the medial veins form a loop at their bases. The reduced venation in *S. pedestris* makes it difficult to ascertain the particular veins forming the loop.

The general structure of the male genitalia resembles that of the only known apterous dolichopodid, *Acropsilus borboroides* Oldroyd, from Campbell Island (Oldroyd 1956: fig. 3).

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