

# A new gall midge, *Coccomyza leefmansii* sp.n., predaceous on the eggs of *Pulvinaria polygonata* in Indonesia

by

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We consider ourselves fortunate in being able at this time to be associated in honouring Dr S. LEEFMANS, whose entomological work in Indonesia and the Netherlands is so well known. For our part we vividly recall with gratitude his many kindnesses to us and his great contributions to the knowledge and control of the swede midge. It is indeed appropriate that the gall midge from Bogor to be described below by W. NIJVELDT shall bear his name, since Dr LEEFMANS was Head of the Instituut voor Plantenziekten at Bogor from 1927 to 1934.

The purpose of this paper is to describe a gall midge whose larvae are predaceous on Coccid eggs. It was discovered and reared by Mr TJOA TJIEN MO at Bogor and sent by him to Dr C. J. H. FRANSEN who kindly passed it to one of us (W. N.) for identification.

An examination indicates that this gall midge from Bogor clearly belongs to the tribe Dasyneurariae. It is interesting to note that most of the previously described coccid-eating gall midges belong to the tribe Cecidomyiariae or Itonididinae that contains the Bifila and Trifila.

Its correct generic placing however is more difficult. Among the Dasyneurariae the only genera that contain such predatory species are *Coccidomyia* Felt, *Microperrisia* Kieffer (now usually considered a synonym of *Dasyneura* Rondani) and *Coccomyza* Del Guercio. The species under consideration is clearly not a *Coccidomyia* since it possesses 4-segmented palps, whereas the possession of 2-segmented palps is one of the characteristics of the genus *Coccidomyia*. It is however exceedingly similar in many respects to *Microperrisia pulvinariae* Felt that was reared from *Pulvinaria* on citrus collected in Manila, Philippine Islands (1). It may for the time being be distinguished from *M. pulvinariae* by the shorter stems of the flagellar segments on the antennae in the male, the fact that only on the anterior legs are the claws toothed and the shape of the lamellae of the ovipositor. A re-examination of the type of *M. pulvinariae* together with a better knowledge of such forms may eventually indicate that only one species is involved. While we thus associate the Bogor species with FELT's *pulvinariae* we do not consider that he was correct in referring it, albeit tentatively, to *Microperrisia* and thus associating it with *M. brachypsectra* Kieffer.

There remains the genus *Coccomyza* Del Guercio to be considered. This genus was erected to contain the species *brittini* Del Guercio whose larvae and fully developed pupae were described and noted as being found in Eriococcid galls on the leaves of *Olea* in New Zealand (2). It is unfortunate that the descriptions of the adults were based only on specimens dissected from the pupae. However A. EARL PRITCHARD has recently described another species, *donaldi*, reared from larvae predaceous on *Pseudococcus bukobensis* Laing in the Gold Coast, W. Africa, and placed it, in spite of some discrepancies, in the genus *Coccomyza* (3). Likewise rather than raise a new genus for the Bogor midge we consider it preferable

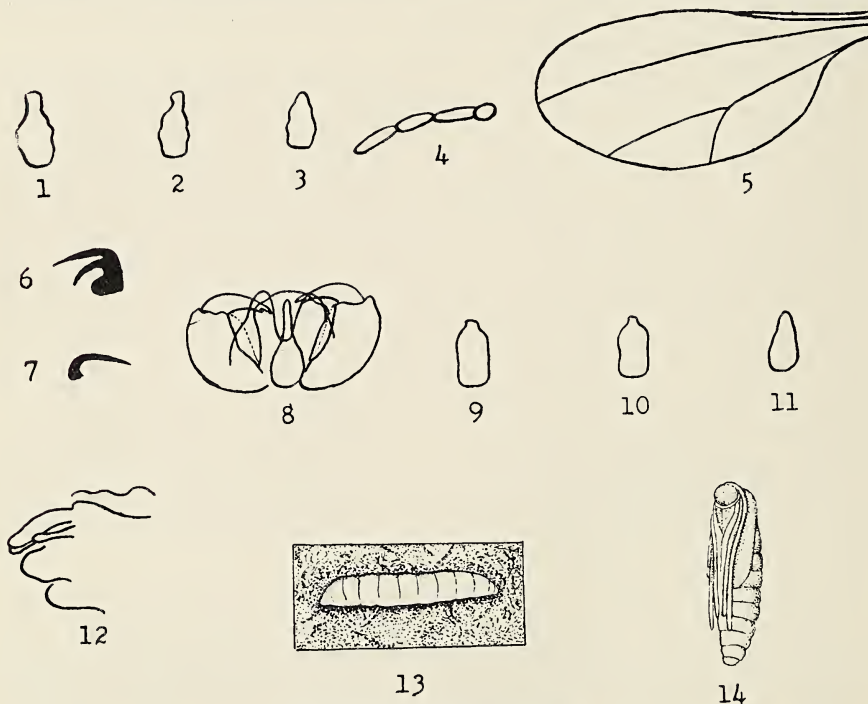
to place it for the time being in the genus *Coccomyza*. We fully realise that the species will not fall, in FELT's keys to the genera of the world, to *Coccomyza* because it does not possess toothed claws on all its legs. Actually on this character it would fall into the genus *Brachyneurella* Kieffer from which however it differs in having the fifth vein forked.

If ever the New Zealand *brittini* is rediscovered and reared it may become necessary to erect a new genus to contain *pulvinariae* Felt, the new species from Bogor and, possibly, *donaldi* Pritchard.

As stated at the beginning of this paper, we welcome the opportunity of naming this species in honour of Dr S. LEEFMANS and the following is Mr. W. NIJVELDT's description.

### *Coccomyza leefmansii* sp. n.

*Male*. — Length about 1.2 mm. Antennae: 2 + 12; first and second flagellar segments fused; each flagellar segment, except the twelfth, consists of a bead-like basal portion bearing long stout setae and a distinct neck as in *Dasynaura*; the neck of the third flagellar segment about  $1\frac{1}{2}$  times as long as broad (fig. 1), that of the tenth flagellar segment about 2 times as long as broad (fig. 2); twelfth segment obovate, about 3 to  $3\frac{1}{2}$  times as long as broad at its base (fig. 3). Palpi: 4 segments; the second segment about  $3\frac{1}{2}$  times as long as broad; the third about



### *Coccomyza leefmansii* sp.n.

Figs. 1, 2 and 3. Outlines of third, tenth and twelfth flagellar segments respectively on antennae of male. Fig. 4. Palpus. Fig. 5. Wing. Figs. 6 and 7. Claws on anterior and mid- or posterior legs. Fig. 8. Male genitalia. Figs. 9, 10 and 11. Outlines of third, tenth and twelfth flagellar segments respectively on antennae of female. Fig. 12. Ovipositor. Fig. 13. Larva. Fig. 14. Pupa.

3½ times as long as broad; fourth and terminal segment 6 times as long as broad (fig. 4). Face yellowish brown. Thorax dark ochreous. Wings hyaline; the third vein interrupts the margin at the apex of the wing; the fifth vein forked (fig. 5). Legs covered with hairs and scales: claws bent sharply at their base and toothed on the anterior legs, while those on the middle and posterior legs are simple (figs. 6 and 7). Abdomen: bright red, more heavily chitinised dorsally. Genitalia (fig. 8): basal clasp segment broadly expanded on exterior side and concave on inner side; distal clasp segment broad at its base but slender at the tip which is toothed; dorsal plate with deep triangular emargination, each lobe narrowly rounded; ventral plate entire, broadly rounded; style basally bulbous, narrow distally.

Holotype: Cecid. 525 in the NIJVELDT collection.

Paratypes: Cecid. 522-4 in the NIJVELDT collection.

Other specimens: Cecid. 8494-8 in the BARNES collection.

*Female*. — Length about 1.2 mm. Antennae: 2 + 12; first and second flagellar segments fused; each flagellar segment cylindrical with a distinct short neck and bearing long curved setae; first flagellar segment 2½ times as long as broad and distinctly longer than the second; third flagellar segment 2 times as long as broad (fig. 9); tenth flagellar segment 1½ times as long as broad (fig. 10); twelfth segment obovate, 2½ times as long as broad (fig. 11). Wings hyaline. Ovipositor with two upper and one lower lamellae, which are elongated (fig. 12). Otherwise about as in male.

Allotype: Cecid. 525 in the NIJVELDT collection.

Paratypes: Cecid. 526-34 in the NIJVELDT collection.

Other specimens: Cecid. 8499-505 in the BARNES collection.

In *C. leefmansii* sp.n., *C. donaldi* Pritchard and *M. pulvinariae* Felt the ventral plate is entire and not emarginate as in *C. brittini*. In *M. pulvinariae* it is presumed that the claws are toothed on all the legs; in *C. donaldi* each claw has two small teeth proximally; in *C. leefmansii* only the claws on the anterior legs are toothed, those on the remaining legs being simple. A further distinguishing feature between *C. donaldi* and *C. leefmansii* is the shape of the ventral plate which in the former species is spatulate, while in *C. leefmansii* it is as broad as long.

Mr. TJOA TJIEN MO has kindly supplied the following notes on the biology, larvae and pupae of this species: — "The larvae of this midge were predaceous on eggs of *Pulvinaria polygonata* (Coccidae) on djeruk (*Citrus*) at Bogor in October 1952. Four to twenty-three larvae could be found in one ovisac; the larvae are white with a yellow dorsal stroke. Length about 1.5—1.7 mm. (fig. 13). The pupa is brown; length 1.3—1.9 mm. (fig. 14)."

We wish to thank Mr. TJOA TJIEN MO who reared this species and supplied us with alcohol material and the above notes.

#### References

- (1) FELT, E. P., 1915, New Asian Gall Midges. *J. N.Y. ent. Soc.*, 23: 173—184.
- (2) DEL GUERCIO, G., 1918, Il moscerino di un Eriococcide gallogeno (*Coccomyza Brittini* n.g.n.s.p.). *Agricoltura colon.*, 12: 264—271.
- (3) PRITCHARD, A. Earl, 1952, A new gall midge predator of mealybugs, *Coccomyza donaldi* (Diptera: Cecidomyiidae). *Bull. ent. Res.*, 43: 477—478.