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(HOMOPTERA: COCCOIDEA: MARGARODIDAE)

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A REDESCRIPTION OF *TESSAROBELUS GUERINI* MONTROUSIER

(HOMOPTERA: COCCOIDEA: MARGARODIDAE)

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ABSTRACT—A redescription of the little known margarodid *Tessarobelus guerini* Montrousier is presented along with a key to the genera of the tribe Monophlebulini. A small type of tubular duct is recorded for the first time in the Margarodidae.

Tessarobelus Montrousier has been virtually unknown since it was described from New Caledonia. Morrison (1928) did not see samples of the genus and was unable to include it in his comprehensive study of the family Margarodidae. He suggested, however, that *Tessarobelus* belonged in the tribe Monophlebulini. Recently I have examined several specimens and confirm Morrison's tentative assignment. There are three genera in this tribe, two of which occur in Australia.

The following key is adapted from Morrison (1928).

KEY TO THE GENERA OF THE TRIBE MONOPHLEBULINI

ADULT FEMALES

1. Ventral cicatrices in transverse rows on anterior abdominal segments; anal opening not surrounded by a dense band of short setae 2
Ventral cicatrices, if present, not forming transverse rows on anterior abdominal segments; anal opening surrounded by a dense band of short setae **Nodulicoccus** Morrison
- 2(1). Some antennal segments fused; tubular trilocular pores absent
..... **Tessarobelus** Montrousier
- Antennal segments not fused; tubular trilocular pores present
..... **Monophlebulus** Cockerell

Genus *Tessarobelus* Montrousier

Tessarobelus Montrousier, 1864:246. Type-species, *Tessarobelus guerini* Montrousier, orig. desig. and monotypy.

Tessarobelus contains only *T. guerini*. A Panama species, *Monophlebus championi* Cockerell, transferred to *Tessarobelus* by Cockerell (1902a) on the basis of the male, apparently belongs in the tribe Llaveiini (Morrison, 1928) and perhaps even in the genus *Llaveia* Signoret (MacGillivray, 1921).

Diagnosis. Adult female approximately 10 to 20 mm long. Anal tube with unspecialized dermal orifice and polygonal wax pores. Spines, setae, small tubular ducts, trilocular pores, and multilocular pores present on both body surfaces. Cicatrices present over venter except near body margin. Abdominal spiracles in 7 pairs; thoracic and abdominal pairs with pores in atria. Rostrum 2-segmented. Antennae with terminal segments fused.

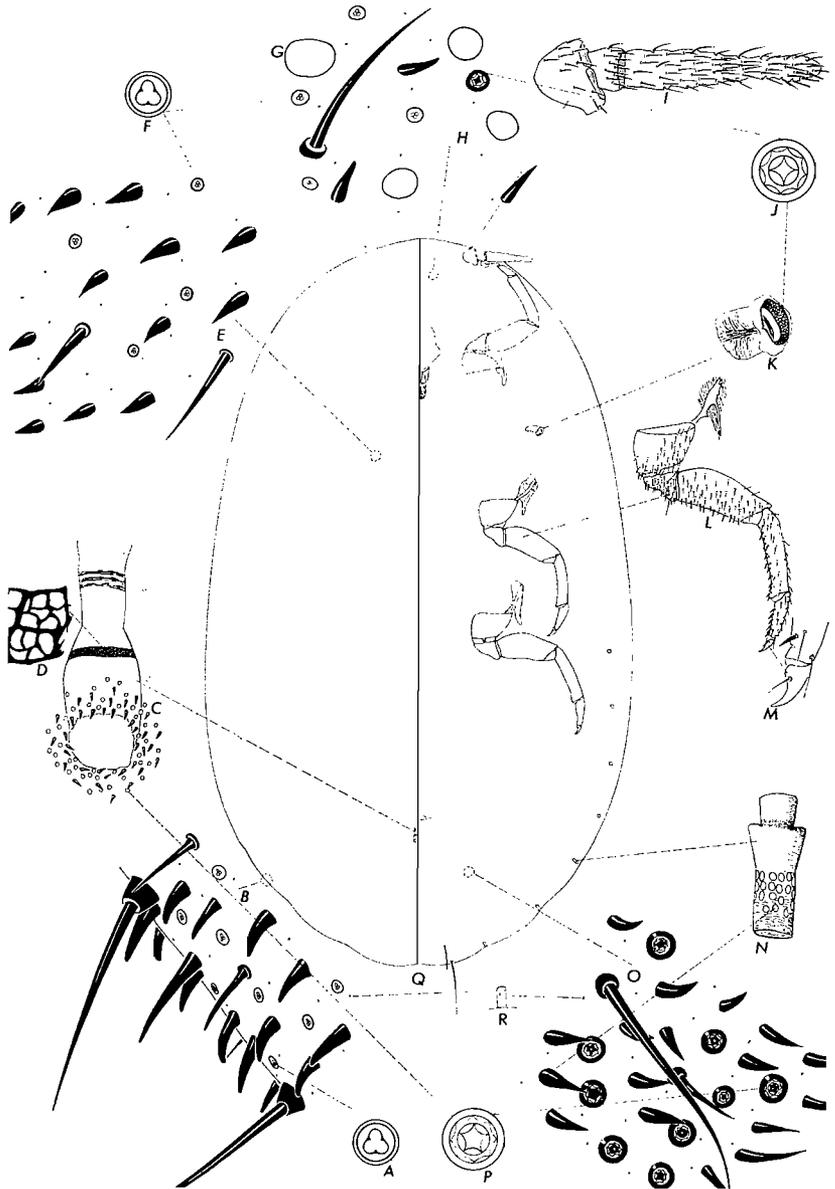


Fig. 1. *Tessarobelus guerini*, adult ♀: A and F, trilocular pores; B, enlarged section of indicated portion of lateral margin; C, anal tube; D, detail of polygonal wax pores of anal tube; E, enlarged section of indicated portion of dorsum; G, ventral cicatrix; H, enlarged section of indicated portion of venter; I, antenna; J and P, multilocular disk pores; K, thoracic spiracle; L, middle leg; M, claw; N, abdominal spiracle; O, enlarged section of indicated portion of venter; Q, body outline, dorsal and ventral surfaces; R, small tubular duct.

Tessarobelus may be distinguished from all other margarodid genera by the following combination of characters: with apical antennal segments fused, with tubular ducts, without tubular pores.

In addition to *Nodulicoccus* and *Monophlebulus*, *Tessarobelus* resembles *Monophlebidus* Morrison (tribe Monophlebini), but the latter genus lacks the above combination of characters and possesses a 3-segmented rostrum.

The presence of tubular ducts of the type shown in the illustration (fig. 1R) apparently has not been recorded in the Margarodidae. Tubular ducts do occur in genera such as *Matsucoccus* Cockerell, *Pityococcus* McKenzie, and *Desmococcus* McKenzie, but these ducts are very different from those in *Tessarobelus*. Examination of the available material within the subfamily Monophlebinae has revealed that the *Tessarobelus* type of tubular duct also is present in *Aspidoproctus* Newstead, *Monophlebidus* Morrison, *Monophlebulus*, and *Nietnera* Green.

***Tessarobelus guerini* Montrousier**

Tessarobelus guerini Montrousier, 1864:247.

Monophlebus guerini (Montrousier): Cockerell, 1902b:232.

Specimens of *T. guerini* apparently have been examined previously only by Montrousier and Cohic (1958). Though the name has appeared in the literature approximately 15 times, most of the references merely reiterate the original description.

Type Material: Apparently lost.

Field Features: The orange body of the adult female is covered with a white, cottony wax; the legs, antennae, and mouthparts are black. The known stages of the female occur on the foliage.

According to the original description, the red body of the adult male is lightly dusted with a white wax, the antennae are plumose and slightly shorter than the length of the body, the wings are gray and semi-transparent, and there are four fleshy tubercles on the posterior end of the abdomen.

Recognition Characters: Adult female, mounted, 10.8 to 21.0 mm long, 6.4 to 10.8 mm wide. Body elongate oval; anal lobes slightly protruding.

Dorsum densely covered with spines, most abundant near anal opening, those on lateral margins of abdomen longest and with rounded apices. Body setae lightly scattered over surface, longest setae present near anal opening, with single seta of approximately same size present on margin between anterior leg and anterior spiracle. Tubular ducts scattered over entire surface, approximately 4.0 μ long, 2.5 μ wide. Trilocular pores in nearly all areas except along body margin. Multilocular pores present only near anal ring; with 6 to 10 loculi in outside row of pores and 0 to 5 loculi in central hub. Small raised areas each possess cluster of indistinct cellular structures; raised areas present along body margin. Anal ring situated 8 to 12 times its diameter from abdominal apex; anal tube with dermal orifice unmodified; narrow collar of polygonal wax pores present on medial portion of tube; inner apex of tube with 0 to 4 lightly sclerotized rings.

Venter densely covered with spines, more slender and elongate than those on dorsum. Body setae more numerous than on dorsum, most abundant near anal opening. Tubular ducts less numerous and larger than on dorsum (approximately 7.5μ long, 5.0μ wide), most abundant on abdominal segment IX and along lateral margins. Trilocular pores present from abdominal segment V or IV through head. Multilocular pores present from abdominal segment IX through IV, with a few present on head. Raised areas present along body margin. Cicatrices present in transverse rows over entire venter except along body margin. Abdominal spiracles in 7 pairs, each spiracle with apical portion constricted and with complete band of multilocular pores in atrium. Thoracic spiracles with large cluster of multilocular pores in each atrium. Legs robust, densely matted with setae; digitules not extending to tip of claw. Antennae 3-segmented, third segment formed from fused 6 to 8 apical "segments." Rostrum 2-segmented.

Third instar female similar to adult except tubular ducts absent, multilocular pores less numerous, third antennal segment composed of fused 5 to 6 apical "segment."

According to Cohic (1958) and Matile-Ferrero (personal communication) the type material of *T. guerini* has been lost.

I feel confident that the specimens examined are *T. guerini*. Some specimens seen were collected on the host of Montrousier's type specimens; also, the species described above is the only monophlebine margarodid known from New Caledonia where it is widely dispersed and relatively common. The species agrees well with Montrousier's original description with one exception. Montrousier states that the antennae are 10-segmented in the female and at least 16-segmented in the male. In available specimens, the antennae of adult females possess only 3 distinct segments. However, it is impossible to determine the true segmentation without carefully examining the antennae under a microscope. Although I have been unable to examine males, it has been stated by Morrison (1928) that the antennae of margarodids are not more than 13-segmented. Therefore, it is probable that the original description of *T. guerini* is inaccurate in regard to the number of antennal segments.

Specimens Examined: New Caledonia—Amieu Pass Cascade, XII-20-67, on "wild rainy forest tree," P. Cochereau (17 ad. ♀♀); Ponerihouen, X-6-69, on *Jambosa pseudomalaccensis* (Myrtaceae), P. Cochereau (11 ad. ♀♀); Ouegoa, V-?-58, on *Melaleuca leucadendron* (Myrtaceae), F. Cohic (1 third instar ♀♀).

Specimens are being deposited in the collections of the British Museum (Natural History), London; Institut Francais d'Oceanie, Noumea, New Caledonia; Museum National d'Histoire Naturelle, Paris; University of California, Davis; University of California, Riverside; Virginia Polytechnic Institute, Blacksburg; Zoological Institute, Academy of Sciences of USSR, Leningrad; the U.S. National Museum, Washington.

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