

castes, have the tergum and sternum of the second post-petiolar (fourth true abdominal) segment fused laterally to form a strong tubular structure and this is not so in the holotype of *palauensis*.

I have concluded that a queried assignment to the genus *Leptanilla* (subfamily Leptanillinae) provides the best placement for *palauensis*. A number of male-based species have been described in *Leptanilla* or in the possibly synonymous genus *Phaulomyrma* by Santschi (1907, 1908) and by G. C. & E. W. Wheeler (1930). However, none of the known leptanilline males were collected in definite association with workers, and until such specimens are available the status of the Wheeler and Santschi species must be questioned. The only presumed leptanilline male available here for comparison with *palauensis* is the holotype of *Phaulomyrma javana* Wheeler and Wheeler. The two specimens agree sufficiently well for relationship between them to be reasonably assumed: if *Phaulomyrma* is truly a leptanilline ant, then *palauensis* probably is also.

The holotype of *palauensis* resembles the presumed *Leptanilla-Phaulomyrma* males in the following features:

(1) The structure of the head, mandibles, frontoclypeal region, antennae, eyes and ocelli. The oral palpi are unfortunately not visible in *palauensis*.

(2) The torn wing fragments appear to have had extremely reduced venation, as in the leptanillines.

(3) The presence of one apical spur on the middle tibia and two on the posterior one, a feature characteristic of several of the described "*Leptanilla*" males.

(4) Fusion of the lateral mesosomal sclerites is more marked in *palauensis* than in the leptanillines, but the form of this tagma and of the petiole and gaster, is similar.

(5) The apparent absence of metapleural glands, which are not visible in the slide-mounted type of *Phaulomyrma*, even under phase-contrast examination.

(6) Workers and queens of available *Leptanilla* species do not have the sclerites of the fourth abdominal segment fused laterally. This is so in the *Phaulomyrma* male, and apparently also in the described *Leptanilla* males, as well as in the type of *palauensis*.

(7) The peculiar structure of the terminalia, especially that of the much enlarged non-retractile genital capsule, with its greatly elongated aedeagus. Wheeler & Wheeler (1930: fig. 2c) show a ventral view of the genital capsule of *Phaulomyrma*. In the specimen illustrated the apices of the gonoforceps are folded inwards in an apparently unnatural position; if they were unfolded the genital apex would closely resemble that of *palauensis*, as shown in Smith's figure 2. A similar folding of the gonoforceps evidently occurred in the specimens illustrated by Santschi, and with appropriate correction they too would resemble *palauensis*.

According to the diagnoses of Wheeler & Wheeler (1930), *palauensis* appears closer to *Phaulomyrma* in some features than to *Leptanilla*. However, placement of this species in *Leptanilla* seems sensible in view of the uncertainty surrounding the status of all these forms.

## VII. SUMMARY

The world fauna of *Probolomyrmex* Mayr is reviewed. Nine species are recognised: three African, three Indo-Australian and three Neotropical. The genus *Escherichia* Forel is placed in synonymy under *Probolomyrmex*. The male described as *P. palauensis* M. R. Smith is provisionally transferred to the genus *Leptanilla*. Three new species are described: *P. greavesi* (Australia), *P. guineensis* (Guinea) and *P. salomonis* (Guadalcanal). The male, larva and pupa of the genus are described for the first time, as well as queens collected in definite association with their workers. A key to the species is presented and all known castes of all species are figured, mostly from type material. Biological observations on *P. angusticeps* M. R. Smith (Panama) are reported. The larvae and pharate pupae are suspended from the nest ceiling by a