



Figure 11. *Camponotus (Karavaievia) belumensis* ♂ walking in a destroyed pavilion which was fully packed with larvae.

lions is covered with particles. *C. (K.) asli*, *C. gombaki*, *C. belumensis*, *C. micragyne* and *C. texens* were shown weaving additional nests between leaves. *C. (K.) striatipes* pavilions were found in folded leaves that are woven together with the aid of larval silk. The pavilions of most of the newly described species (*C. striatipes*, *C. melanus*, *C. gentingensis*, *C. belumensis*, *C. nigripes*) consist of merely one chamber like those of *C. asli* and *C. texens*. Only the pavilions of *C. micragyne* were found to consist of more than one chamber like those of *C. gombaki* and especially those of *C. orinus*. Nearly all hitherto investigated *Karavaievia* species contain in at least most of their pavilions scale insects as trophobionts. This is valid for *C. texens*, *C. gombaki*, *C. asli*, *C. orinus*, *C. melanus*, *C. belumensis*, *C. gentingensis*, and *C. nigripes*. Only the few (3) pavilions that were found as well of *C. micragyne* as of *C. striatipes* contained no trophobionts. Pavilions of *C. belumensis* were found to be fully packed with pupae of this species (Fig. 11). An extensive investigation on nest building of *C. texens*, *C. gombaki*, and *C. orinus* is in progress [9].

On the geographic and vertical distribution of the *Karavaievia* species nearly nothing can be said as well as on the supposed number of species in this subgenus. Any niche factors which would separate the different sympatric species are hitherto unknown. The reason is that there were found only very few colonies of the various species. The species that was found most often is *C. texens* from which 4 colonies were found in the Gombak valley (about 25 km north

of Kuala Lumpur), 1 near Kuantan (eastern part of Peninsular Malaysia) and another one in Sumatra (Ketambe Park). *C. asli* was found in the Gombak valley (1 colony), in Belum (2 colonies) and in Pasoh Forest Reserve (1 colony); *C. gombaki* only in the Gombak valley (3 colonies); *C. orinus* in the Gombak valley at an elevation of about 700 m (3 colonies) and in the Cameron Highlands at an elevation of 900 m (3 colonies); and *C. melanus* is known from 1 colony in the Pasoh Forest Reserve (Peninsular Malaysia) and 1 from Borneo (Sarawak, Lambir Park). *C. gentingensis* is known only from 1 colony found in the Gombak valley, *C. striatipes* from Pasoh Forest Reserve with 1 colony, and additional as prey of *Aenictus laeviceps* [10] (there *C. striatipes* is called *Camponotus* sp. 19), and from Borneo (Sabah, Poring Hot Springs). *C. belumensis* (2 colonies), *C. nigripes* (only 1 pavilion), and *C. micragyne* (3 pavilions) were only found in Belum.

Concerning the vertical distribution of the *Karavaievia* species, the few findings do not justify any conclusions. The *C. texens* colonies and those of *C. gombaki*, *C. asli*, *C. melanus*, *C. belumensis* and *C. orinus* were found on small trees (2-5 m in height). The findings of *C. striatipes* were made in heights of about 30 m, and those of *C. gentingensis*, *C. micragyne*, and *C. nigripes* were made on fallen branches. This means that *Karavaievia* spp. at most are canopy dwelling ants. So it is impossible to say, whether or not the crown regions of the rain forest trees contain *Karavaievia* colonies in a larger scale. From the fact, however, that the recent *Karavaievia* findings revealed more new colonies than of already known species, one can conclude that the number of species in this subgenus is probably still considerably higher than already known. The discovery of 12 new species (including a yet undescribed species already mentioned in the accompanying key) in addition to the 2 formerly known in this ant taxon demonstrates very convincingly how diverse rain forest canopy fauna can be and how little is known about it.

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