Fig. 2. Cluster formed by workers of different age (arrow indicates a larva that is held by a worker)

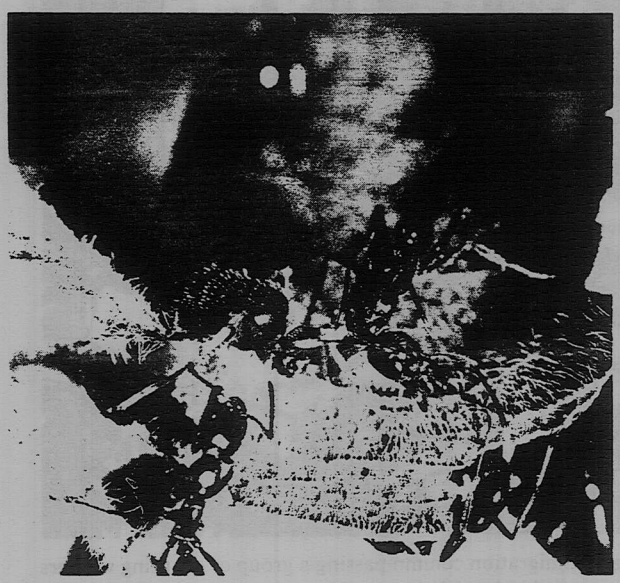

Fig. 3. Non-physogastric queen of *Leptogenys* sp. 1 groomed by a worker in an artificial nest (queen can be distinguished from the workers by the brighter color of her cuticle and her larger gaster)

Females. In 6 of the 12 emigrations of our observation colony we saw one ergatoid queen. The queen was wingless and of the same body length as the workers, but could be distinguished from the workers by her light brown cuticle, her thicker gaster, and her larger thorax (Fig. 3). During several of the observed emigrations, the queen was distinctly physogastric. In 5 emigrations of other colonies observed from beginning to end we saw only a single queen in each case. We also found a queen with strongly developed ovaries in the main observation colony that was captured.

Males. The number of males that were counted during emigrations in the main observation colony varied from 52 to 746 ($\tilde{x}=150$, $n=9$). They were carried by the workers. At dusk we often observed flying males leaving their colonies. In one case we watched a male approaching the entrance of a bivouac from outside by following a foraging trail. This behavior has already been described for other *Leptogenys* species (Maschwitz and Mühlenberg 1973, 1975). This male may have come from an alien colony, because it was attacked by the workers; nevertheless, it went back to the trail repeatedly.

Brood. The number of pupae that were counted during the nest relocations of the main observation colony over a period of 7 weeks ranged from 6400 to 16400 ($\tilde{x}=11200$, $n=12$). Since either one large larva or several small larvae or clusters of eggs were carried by a single worker, we recorded only the number of workers transporting larvae and eggs (2700–7600, $\tilde{x}=3300$, $n=12$). In the captured colony we found 4580 pupae, larvae of all stages, and eggs. Only the medium-sized and large larvae ($n=3254$), not the eggs and young larvae, were counted. In 21 further nest emigrations of ten other colonies of *Leptogenys* sp. 1 in different years, we also observed, in random checks, that pupae and larvae were always present at the same time, and that the number of workers transporting pupae exceeded the number of workers transporting larvae. Since pupae, larvae, and eggs were always present in about the same ratio, we conclude that in *Leptogenys* sp. 1 the brood is produced in an acyclic way.

Nest moving behavior

The frequent colony emigrations were preceded by at least one, sometimes two raids. The new bivouac site was always located in the area that had been raided previously. The emigrations started between 2000 and 0500 hours local time, often after the retreat of the preceding raid. At the beginning of a nest relocation, the number of workers that left the nest entrance increased. Ten to 20 min later the first pupae appeared. Before the emigration column was established, single workers carrying pupae were observed in the raiding column. These