



Fig. 4. *Leptogenys* sp. 1: above: numbers of workers and brood leaving from and returning to the former bivouac during a nest relocation (incl. end of the preceding raid); □ workers out; □ workers in; ▨ workers carrying pupae; ■ workers carrying larvae; below: □ rate of prey-laden workers

pupae were carried ventrally (Fig. 5). The ants usually moved in a single file while they were carrying brood.

The majority of the pupae were transported during the first third of the emigration; the transport of larvae began later and reached its maximum in the second third. When disturbed by heavy rain, the workers laid down the pupae in sheltered places for a while until they were able to continue with the nest relocation. After most of the brood had been transported to the new site, the number of unladen ants leaving the old nest increased. Among the "rear-guard" many callow workers were observed. As long as ants were still leaving the old bivouac site, other workers continued to return to it. Eventually the emigration column ended abruptly. The course of a typical colony emigration is documented in Fig. 4. During the emigrations we counted 12400–31000 workers ( $\bar{x}$  = 19050,  $n$  = 12) leaving the old bivouac site. These fluctuations seemed to be due mainly to the fact that many raiding workers did not return to the previous nesting site, but instead joined the emigration column to the new bivouac.



Fig. 5. Emigration column passing a group of guarding workers (arrow: ptiliid beetle)

The queen was not protected by workers when she followed the emigration trail. However, at a distance of some meters from each other, we observed several large groups of up to 100 workers that guarded the emigration trail at both sides. They remained motionless with their heads turned towards the worker column and their mandibles opened (Fig. 5). The passing ants were checked with the antennae.