minutissimus. No workers belonging to the parasite species could be detected. The 45 colonies with *T. minutissimus* were collected at three nearby sites but were absent from many other surrounding areas, suggesting a patchy distribution. Most of these colonies were collected in open areas near the bases of large oak trees.

The original composition of the field-collected colonies is summarized in Tab. 1. Alate females were found in colonies collected in August – September and March – April, but not in May – June (no collections were made in July). There were usually only one or a few dealate *T. minutissimus* females, but in some colonies there were numerous dealate females and occasionally numerous alate *T. minutissimus* females as well (Fig. 1).

In the last column of Tab. 1, the laboratory production of the colonies is listed. By far not all colonies produced *T. minutissimus* offspring, or did so in only very low numbers. Just a few colonies reared a higher number of parasite females. Remarkably, extremely few males of *T. minutissimus* were found, both in the field-collected colonies (27 males, including male pupae vs. 441 females, including dealate and alate females and female pupae) and among the progeny of the laboratory colonies (14 ♂♂ vs. 129 ♀♀ = 0.11 ♂/♀). In the six colonies collected in August 2004, males were relatively more common and the sex ratio was 13 ♂♂ vs. 57 ♀♀ = 0.23 ♂/♀.

The exact number of parasite progeny could not be recorded in all lab-reared colonies, and the numbers are minimum values because specimens sometimes died and were consumed by their nestmates before a census could be made.

A brief history of the events in several particularly interesting and/or prolific colonies is presented in the Appendix.

A couple of marginal observations may be reported here: Queens of *T. minutissimus* (i.e. the reproductive specimens) not only were seen several times to crawl on top of the *T. curvispinosus* queens, sometimes licking them, but on three occasions a queen of *T. minutissimus* was seen to devour an egg (probably one laid by a host queen; however, it was not possible to differentiate between the eggs of host and parasite because both are of equal size and shape).

Two young, mated females of *T. minutissimus* that were introduced into a nest in which all females of *T. minutissimus* and the queen of *T. curvispinosus* had been dissected, were seen licking host workers (# 519).

Three colonies (# 900, # 1038 and # 3540) comprised both dealate and/or alate females of *T. minutissimus* as well as specimens of the slavemaking ant, *Protomognathus americanus*. Whereas in one colony only a single worker of *P. americanus* was found, the other two comprised both workers and a queen each of this slavemaker species.

Dissection of > 80 females of *T. minutissimus* revealed that they invariably had six ovarioles. In mated females the spermathecae usually were completely filled with sperm, though in a few instances (# 251, # 326) very few sperm was found, down to an estimated 10 % of the "normal" amount.

Finally, on a couple of occasions we observed a male of *T. minutissimus* mounting females in the nest and trying to mate. However, a true coupling was not observed.

Description of the male of *Temnothorax minutissimus*

Three males have been deposited in the United States National Museum of Natural History, Washington DC, USA.

Male: Total length ca. 2.15 mm, thorax length 0.76 mm, head width 0.45 mm, scape length 0.24 mm.

Particular characters: Sculpture of head punctate (as in queen); antennal scape comparatively longer than in male of *T. curvispinosus*; pronotum slowly ascending in comparison with steep ascend in *T. curvispinosus*; petioles shorter and stouter than in *T. curvispinosus*; propodeum with or (rarely) without pair of short, acute spines; compound eyes markedly smaller than in males of *T. curvispinosus* (Fig. 2 and Tab. 2).

Antennomeres: In *T. minutissimus* males reduced to 9 - 10 - 11 antennomeres (variable), as compared to *T. curvispinosus* males which have the usual 12 antennomeres.

Color: dark greyish-brownish (as compared to light yellow-brownish, pale males of *T. curvispinosus*).

Differential diagnosis: For differences to the male of the host species see above. Compared with the males of other (potential) parasites that may be encountered together with *T. curvispinosus*, the male of the slave-maker *Protomognathus americanus* (Fig. 2) is larger, has larger compound eyes, smaller mandibles, and lacks any propodeal spines. The male of the slave-making *T. duloticus* (Fig. 2) also is larger, has larger compound eyes, and has epinotal spines with a wider base, hence dentiform in shape. The male of *T. minutissimus* as yet is unique among the N-American Formicoxenini in having a reduced number of antennomeres (less than 12, sometimes as low as 9).

Discussion

Temnothorax minutissimus as yet has been found exclusively within colonies of the widespread and common independent species *T. curvispinosus*. Our observations confirm that *T. minutissimus* is an obligatory inquiline of this species. As most (if not all) inquiline ant species, *T. minutissimus* is strongly host specific, parasitizing exclusively *T. curvispinosus* (cf. HÖLLDOBLER & WILSON 1990). Slavemakers, on the