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NEW RECORDS FOR *GHOSTUS FLORIDANUS* (COLEOPTERA: PTINIDAE) AND OBSERVATIONS ON ITS BEHAVIOR

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The myrmecophilus ptinid *Gnostus floridanus* Blatchley (Fig. 1) was described in 1930. The species was based on a single specimen beaten "from a large mass of Spanish moss attached to the limb of a dead pine snag" on 7-III-1927 two miles east of Dunedin, Pinellas County, Florida (Blatchley 1930). When Lawrence & Reichardt (1967) revised *Gnostus* and *Fabrasia* they examined only two specimens of this species: a second Florida specimen collected at Monroe Co., Plantation Key, with *Crematogaster ashmeadi* Mayr, and a specimen from Bahamas, New Providence Is., Clifton Point, with *Crematogaster sanguinea lucayana* Wheeler. To our knowledge no other specimens of this species have been reported in the literature, nor have any observations on the interactions between individuals of this species and their ant hosts been published.

On February 17, 1989, while observing a colony of *Crematogaster ashmeadi* on a dead longleaf pine (*Pinus palustris* Mill.) at Morningside Nature Center, a city park in Gainesville, Alachua County, Florida, R.W. Lundgren noticed a small beetle being carried in the mandibles of an ant. He collected the beetle and brought it to M.C. Thomas for identification.

Over the next several days eight additional specimens of *Gnostus floridanus* were collected at the park. All were found in the galleries of the bicolored form of *C. ashmeadi*. At the park, the ants nest in the bark of living *P. palustris*, often near old turpentine wounds or fire scars. The black form of *C. ashmeadi* that is found under the bark of

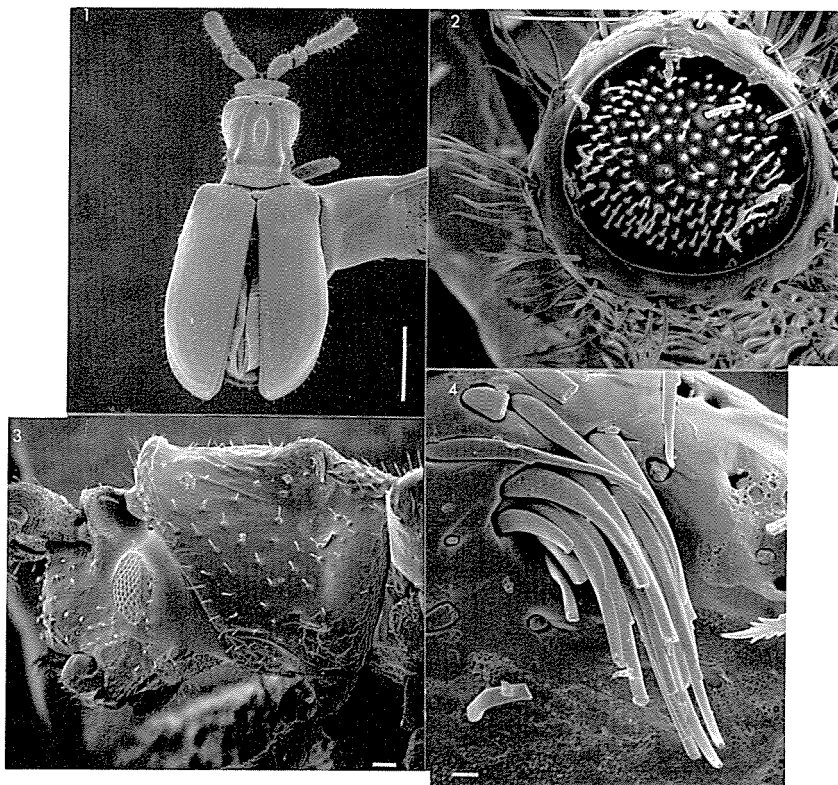


Figure 1-4. *Gnostus floridanus* Blatchley. 1) habitus; 2) view of distal end of antennae, showing supposed glandular tissue; 3) head and pronotum, showing position of trichome; 4) enlargement of trichome, revealing pore and associated setae, which probably function as a wick. Line = 500 μ for Fig. 1, 50 μ for Figs. 2-3, 5 μ for Fig. 4.

dead oaks produced no beetles in its nests at the same locality. The area of the park in which the beetles were collected is longleaf pine-turkey oak (*Quercus laevis* Walt.) scrub.

An intensive search of longleaf pines in a similar habitat about 20 miles west of Gainesville revealed numerous nests of *Crematogaster ashmeadi* but no beetles.

On 19-II-1990 Thomas and Robert Turnbow collected two specimens and on 22-III-1990 the authors collected 13 additional specimens of *G. floridanus* at the same locality and under the same conditions. The latter specimens were collected alive and, with ants and brood, were carried back to the lab for observation. At no time were any beetle larvae observed in the nests. Specimens listed in this paper are deposited in the FSCA and in the private collections of P.E. Skelley, R.W. Lundgren, and R. Turnbow.

Beetles, ants, and brood were placed in petri dishes on moist paper toweling and observed periodically under a dissecting microscope.

As Lawrence & Reichardt (1969) surmised for most myrmecophilus ptinids, adults of *G. floridanus* are true symphiles. Ants were observed many times "licking" or palpat-ing the beetles, especially the elytra and pronotum, and also performing grooming-like behavior: chewing on the legs and antennae. Often an ant took possession of a beetle, lying partially atop the beetle with its head resting on the elytra. It then periodically

licked the elytra and pronotum, pausing occasionally with its head on the beetle's elytra. If another ant approached, the ant in possession of the beetle often made aggressive motions to ward off the intruder. The pronotum and antennae seemed to be subject to the most licking or chewing and the ant sometimes took both antennae in its mandibles and partially lifted the beetle from the substrate; however, we did not observe the ants to carry the beetles by the antennae, although we have seen ants pick up the beetles by the prothorax and move them. The distal end of the antenna contains what appears to be glandular tissue (Fig. 2), and there are trichomes on the pronotum (Figs. 3-4).

During the grooming, which could continue for five minutes, the ant sometimes (but not always) fed the beetle by oral trophallaxis. We observed one instance where a beetle was groomed by one ant and immediately thereafter was fed by another.

We have not identified active solicitation by the beetles. In moving among the ants, the beetles bumped into ants and probed them briefly with their antennae, but this did not necessarily result in either grooming or trophallaxis.

The beetles did engage in a peculiar repertoire of movements that we feel is connected with their role in the colony. Periodically, a beetle raised its body off the substrate with the anterior end higher than the posterior, and then vibrated, or quivered, its body for a few seconds. Beetles often repeated this behavior several times in place and then wandered to another position to repeat the performance.

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