NOTES ON THE ANT *EURHOPALOTHRIX FLORIDANA*, WITH A DESCRIPTION OF THE MALE (HYMENOPTERA: FORMICIDAE)[1]

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ABSTRACT: The basicerotine ant *Eurhopalothrix floridana* is a relatively common woodland species in peninsular Florida. In small (2 liter) litter samples, *E. floridana* usually co-occurs with one or more of at least 32 other species of ants. There is some evidence that *E. floridana* may have been introduced into Florida. We provide a diagnosis and habitus illustration of the previously unknown male

The ant *Eurhopalothrix floridana* Brown and Kempf (Fig. 1) is the only U.S. representative of the tribe Basicerotini, a group of cryptic, slow-moving, pantropical myrmicines. *Eurhopalothrix* species are predatory, and observations of one species suggest that these ants may be somewhat specialized predators of termites (Wilson and Brown 1984). *Eurhopalothrix floridana* was described in 1960 (Brown and Kempf) on the basis of a single specimen, but the species is not nearly as rare as one might expect from the late date of its discovery. In this note we update the distribution and habitat information on *E. floridana*, consider the possibility that it may be an exotic species, and describe the previously unknown male.

DISTRIBUTION AND HABITAT

Eurhopalothrix floridana occurs throughout peninsular Florida (Fig. 2), based on about 130 collections from over 70 sites. Although we sampled leaf litter and rotten wood from all over Florida, we made no effort to sample evenly, and the distribution pattern in Fig. 2 reflects biases based on convenience and access. The total sampling effort, however, involved many thousands of Tulgren funnel extractions, collected in all regions of the state. We collected, for example, hundreds of samples from the western panhandle, without finding any *E. floridana*. The pattern of records reflects the distribution of woodlands in peninsular Florida, including the dry tropical hammocks of the Florida Keys, the Atlantic coastal ridge hammocks, the scrub forests and ecotonal hardwood forests of the southern and central ridges, and the mesic and xeric forests of the northern peninsula.

In a study of *E. floridana* using standardized, unsifted, approximately

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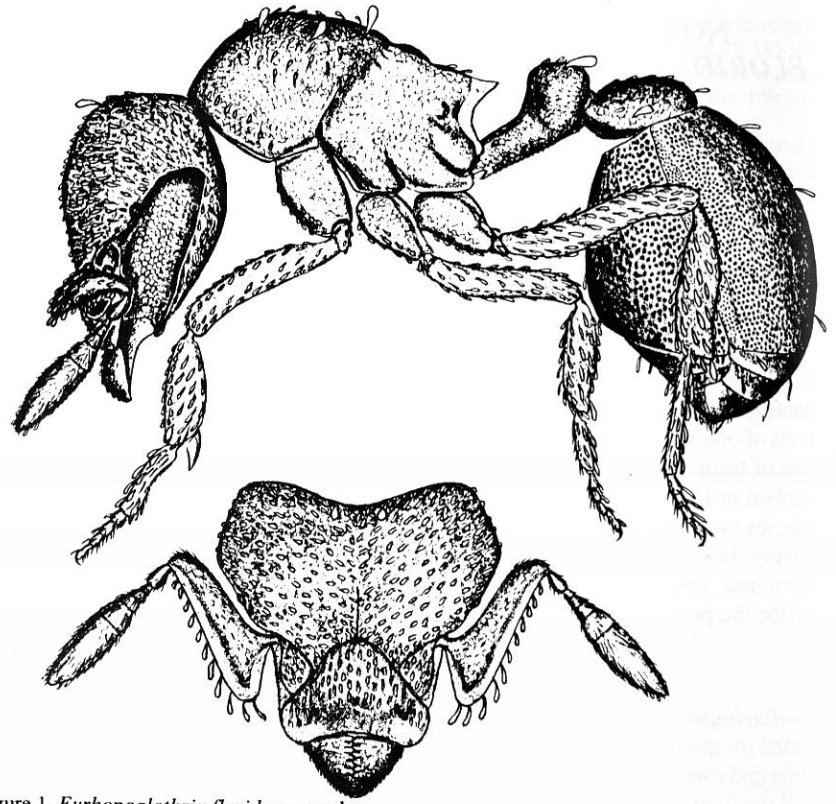

Figure 1. *Eurhopaalothrix floridana*, worker.

2-liter samples of litter, we found *E. floridana* in 65 samples on 32 occasions. The 32 habitat records include: 8 from xeric forest (old growth sand pine scrub, sandhill invaded by large oaks), 11 from mesic forest (usually mixed oaks and pines), 5 from wet forest (mixed pine and hardwoods, usually including oaks and magnolia); and 8 from coastal tropical hardwood forest. This is apparently a woodland species that is not particular about drainage.

The 2-liter litter samples used in this analysis were indexed by site and date, with an ant species list for each sample. This allows us to say that, out of 346 samples collected at a site and date where *E. floridana* was found, 65 (19%) contained in *E. floridana*. At a number of sites less than one out of 10 samples had *E. floridana*, so it is evident that in many cases at least 5, and often more, samples must be extracted to demonstrate the presence on this species at a particular site. This need for large numbers of samples to show

presence or absence of a species is a common problem in surveys of litter ants; many species are much rarer.

In our small litter samples, *E. floridana* is usually found with other species of ants, with which it must be somewhat compatible and with which it must share microhabitat requirements. The numbers of co-occurring species are as follows: 6 samples had no other ant species, 12 samples had 1 other species;

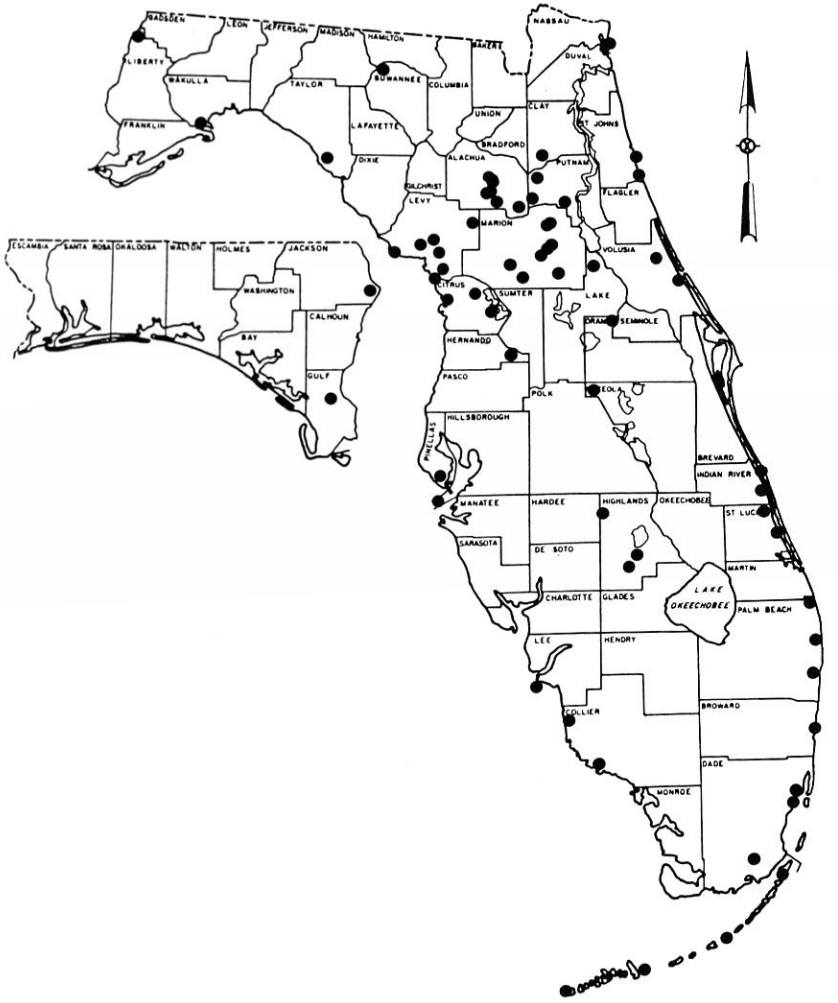

Figure 2. Known distribution of *Eurhopalothrix floridana* in Florida.

15 samples had 2 other species; 13 samples had 3 other species, 11 samples had 4 other species, 6 samples had 5 other species, and 2 samples had 6 other species.The list of 32 co-occurring species and their frequency of occurrence appears in Table 1. A statistically different frequency of species in the samples that did not have *E. floridana* (samples from the same place and date as those that did have *E. floridana)* might hint at another level of ecological relationships. Unfortunately, there were no sites where there were many samples with *E. floridana,* and comparisons between sites brings in larger scale biogeographic factors.

NATIVE OR EXOTIC?

Brown and Kempf (1960) suggest that *E. floridana* could be a recent introduction from the Neotropics. There is additional circumstantial evidence that supports this suggestion. Expanding ranges are typical of exotic species; *E. floridana* is now easily obtained in Alachua and Putnam counties (Fig. 2), where Van Pelt (1958) sampled extensively for dacetine ants without finding *E. floridana. Eurhopalothrix. floridana* has not been found in the West Indies, the source of almost all tropical ants that have, we assume, dispersed naturally to Florida. It is unlikely to be a native from the forests of the southern Appalachians, because such species usually have a large range to the north and west of Florida. *E. floridana* occurs in Mexico (W. L. Brown, Jr., 1985, pers. comm.), so there is a possible source of introduction. There are species of insects, including ants, that occur in southwestern North America, with a disjunct population or closely related congeners in Florida, but these are species of open, desert or savannah habitats, not woodlands (Deyrup 1990).

On the other hand, it could be native to Florida. The oldest record is a damaged specimen found recently by David Smith of the U. S. National Museum of Natural History. This specimen is from Key West (once a major commercial port), dated 1887, and is in the Pergande collection. A record of this antiquity coming from a less settled part of Florida might suggest that *E. floridana* is a native species, but in tropical Florida a great amount of entrepreneurial horticulture occurred well before 1887. Henry Perrine, for example, was in a good position in the 1830's to be an unintentional purveyor of cryptobiotic ants to the Miami area. Perrine displayed a missionary zeal in the importation of plants from southern Mexico, many in boxes or tubs of soil. Marjory Douglas (1978) cites a report of "more than 100 boxes of plants shipped from the Yucatan" by Perrine outside one building in the Miami area. *Eurhopalothrix. floridana* is a cryptic species that could have escaped being noticed by some collectors; it does not show any association with highly disturbed habitats, its ability to live in xeric woodlands might have allowed it to move to Florida from Mexico along with other upland species at the end of the Pliocene or in the early Pleistocene. We conclude that this species is probably introduced into Florida, but would like to see better documentation of the species in Mexico, especially southern Mexico.

Male of *E. floridana*

Diagnosis: the male (Fig. 3) generally resembles a male dacetine in its dense, reticulate sculpture, the facial projection trom which the antennae emerge, reduced venation, and long petiole. It is distinguished from Florida dacetines by the following features: 1.) The post petiole is twice as wide as the petiole, with a strongly concave anterior border and a conspicuous spatulate hair on each side. 2.) The first submarginal cell is clearly developed. 3.) The antennal scape has a strong bristle on the proximal corner of the large bulge on the inner side. This may be a character found throughout the genus (Brown and Kempf 1960) 4.) The size is relatively large.

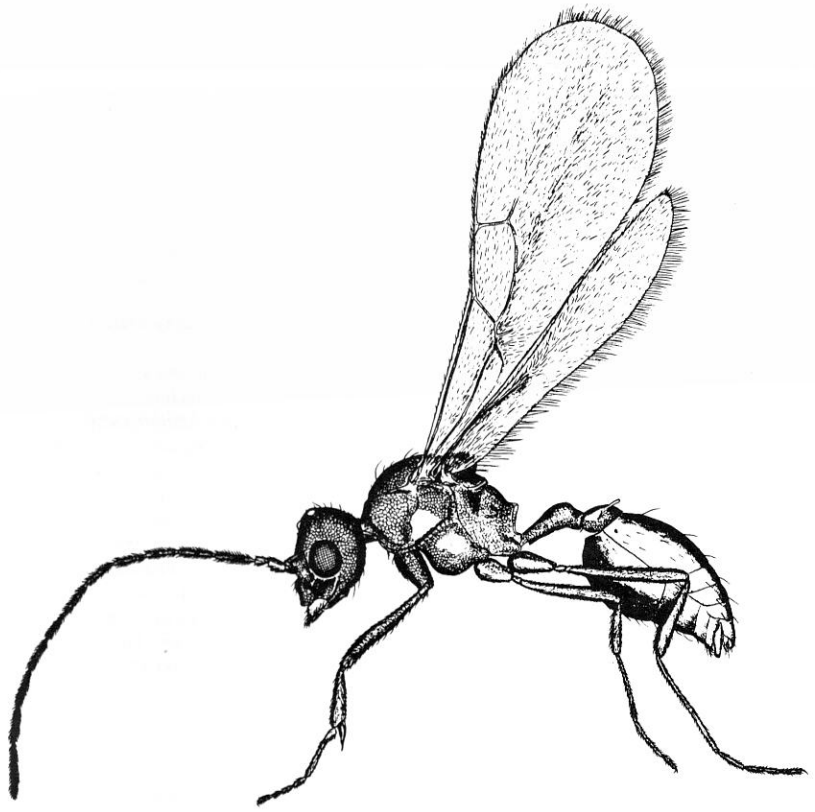

Figure 3. *Eurhopalothrix floridana,* male.

Total length: 2.02-2. 15 mm Length of forewing: 2.32-2.45 mm.

There are only 2 additional species of *Eurhopalothrix* (both Old World species) whose males have been described (Brown and Kempf 1960). *E. floridana* differs from these, according to the descriptions, in the smooth, shining areas on the mesopleuron (Fig. 3).

Seasonality of males: males were collected with workers on 12 July and 19 August. Fifty males were collected in Townes traps at several sites between 15 July and 5 December. Deposition of males: males, along with workers, have been deposited in the following collections: Harvard Museum of Comparative Zoology (Cambridge, MA), U. S. Museum of Natural History (Washington, D.C), Los Angeles County Museum, British Museum of Natural History (London), Florida State Collection of Arthropods (Gainesville), Canadian National Collection (Ottawa), Collection of Mark Dubois (Washington, IL), Collection of William MacKay (El Paso, TX), Archbold Biological Station Collection of Arthropods (Lake Placid, FL).

Table 1. Species of ants found together with *E. floridana* in small litter samples.

No. of Co-occurrences	Species
28	*Hypoponera opacior*
22	*Solenopsis abdita*
19	*Pheidole dentigula*
11	*Strumigenys eggersi*
8	*Solenopsis tennesseensis*
7	*Strumigenys louisianae*
6	*Pheidole moerens, Smithistruma talpa*
5	*Brachymyrmex depilis, Pheidole dentata, P. floridana, Smithistruma ornata, Wasmannia auropunctata*
4	*Aphaenogaster miamiana* or *carolinensis, Paratrechina faisonensis, Quadristruma emmae*
3	*Solenopsis carolinensis*
2	*Myrmecina americana, Odontomachus brunneus, Pachycondyla stigma, Strumigenys rogeri*
1	*Aphaenogaster fulva, Cyphomyrmex minutus, C. rimosus, Hypoponera inexorata, H. punctatissima, Odontomachus ruginodis, Paratrechina guatemalensis, P. wojciki, Smithistruma brevisetosa, S. dietrichi, Trichoscapa membranifera.*

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BOOK REVIEW

FIELD GUIDE TO NORTHEASTERN LONGHORNED BEETLES (COLEOPTERA: CERAMBYCIDAE). Douglas Yanega. 1996. Illinois Natural History Survey Manual 6, Champaign, Illinois.

This field guide has an ambitious goal – to assist nonspecialists in making species determinations of cerambycids. What makes this manual so successful is that it is focused on this goal. It does not attempt to be more than an identification manual. But that is not a criticism. Rather, this book succeeds in its task so well that it may change the format of future field guides for nonspecialists.

The book starts with a brief introduction to beetle terminology using the unique morphological details of the cerambycids. It does not go into any detail that is not easily seen with the naked eye or a 10X hand lens, as that would be of little help with species identification.

Next follows a brief section on the natural history of the Cerambycidae including information on biogeography, climate, life histories, phenology, reproduction, interactions with other species, and variation. There is also a short section on collecting techniques and the curation of specimens. All of this information is presented in the first 23 pages!

The field guide covers 342 species of longhorned beetles which includes all the northeastern species save one which is undescribed. The species identifications are presented in an unusual manner compared to other field guides. Yanega does not use keys in the formal sense. Keys in technical books tend to be of little use to the nonspecialist because they do not convey a sense of confidence for the user. Rather, Yanega presents a system that assumes that the user will scan photographs to compare with the specimen. This is where the manual is exceptional. The author has taken considerable care in finding the best specimens to photograph. Photographs of both sexes are presented and small arrows point to diagnostic features. I have tested the manual with undergraduate students and they had no difficulty in determining the species and the sex of beetles they had collected.

In addition to the photographs, Yanega provides a synopsis of each species giving its flight period, larval feeding habits, size, and general notes. The information is brief. If the user needs more detailed information, then s(he) is referred to the original description and other works.

This field guide is a successful manual in that it is accessible to the nonspecialist and recognizes how nonspecialists go about the process of determining an identification. Anyone interested in cerambycids will benefit from this book and I am sure that it will be the first field guide to be consulted to determine the identification of an unknown cerambycid.

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