

of excavated soil surrounding the nest entrance. The eastern species *dentata* will nest in rotten logs as well as soil but such flexibility in nesting habit is exceptional.
(p. 162)

Gregg (1958), published a new revision in which he included the description of ten new taxa. He also placed ten taxa in synonymy and the status of eight taxa was revised. Later, Gregg (1969) described another new species, *P. clementensis*.

Smith (1967) reported *P. moerens* from Alabama as yet another exotic species. This was the 71st *Pheidole* taxon reported for North America north of Mexico. Wojcik *et al.* (1975) reported that this species was also present in Florida.

MATERIALS AND METHODS. Three species of *Pheidole* (*P. dentigula*, *P. fallax obscurithorax*, and *P. greggi* n. sp.) included in this research were received from other collectors. All other specimens were collected by the author during several trips in the state or while at Tall Timbers Research Station in Leon Co., Florida, during the summers of 1974 and 1975.

Colonies of *Pheidole* spp. were located in several ways:

- a. Examining cavities under the bark of trees or examining grass behind the leaf bases of palms.
- b. Searching for nest craters, mounds, or any other modification on the soil surface likely to have been produced by ants.
- c. Searching for foraging majors or workers and following them to the nest location.
- d. Baiting with honey or dead arthropods and following trails of workers and majors to the nest location.
- e. Overturning stones, boards, or pieces of wood.

The two most successful methods were examining cavities under the bark of pine trees and looking for craters on the soil surface.

Colonies were collected by aspirating the ants once the chambers were located. Nests in the soil were excavated by removal of large blocks of soil, breaking it carefully and aspirating the ants found. The depth explored was variable, ranging from 30 to 50 cm for *P. metallescens* to over 1.5 m for *P. lamia*.

The ants were placed in snap-cap vials with 70% alcohol for preservation or kept alive in snap-cap vials with a piece of moistened cotton to ensure adequate survival. The snap-cap vials were placed in a styrofoam box to protect them against excessive changes in temperature during transport back to the laboratory.

The colonies were kept in chambers made from petri dishes modified to assure proper high moisture levels and ease of feeding and observation without disturbing the colony.

Plastic petri dishes 9 cms in diameter were used. A 0.5 cm hole was melted by a soldering iron toward the side of the bottom of one dish. A piece of artificial cotton matting was pushed half way through the hole and was coated inside with a mixture of plaster of paris (98%) and commercial cement (2%). The matting below the hole was kept continuously wet with distilled water and was retained in another petri dish bottom. It did not need to be replenished with water frequently. The nest chamber was formed by applying the petri dish top and sealing with tape. A small feeding chamber which remained dry was formed by affixing another petri dish bottom to the petri dish top of the nest

chamber with an interconnecting exit hole. This construction allowed colonies to be maintained in the laboratory for long periods with only infrequent attention. The dry feeding area separated from the nest chamber inhibited the growth of molds. Large numbers of colonies were thus kept in a small laboratory space.

Colonies were fed with freshly killed house-flies, fresh peanuts, and honey.

Whenever possible field observations were made concerning the ecology and biology of each species.

Types in the Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, and the National Museum of Natural History in Washington, D.C., of Nearctic and Neotropical *Pheidole* were studied.

All specimens were point mounted and studied by using a stereo microscope with magnification up to 160X. The pictures were taken using the scanning electron microscope of the Insects Attractants Laboratory, Agricultural Research Service, U.S.D.A., Gainesville, Florida.

Several measurements were made for the newly described species:

- a. Body length: the sum of the head length, thoracic length, pedicel and gastric lengths.
- b. Head length: lengths of the head in full face view (mandibles excluded).
- c. Head width: greatest width of the head in full face view.
- d. Thoracic length: greatest length of thorax in lateral view.
- e. Scape length: middle of antennal socket to the scape tip.
- f. Scape index: found by computing the formula:

$$\frac{\text{Scape length} \times 100}{\text{head length}}$$

The following abbreviations were used throughout this work:

MCZC - Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

USNM - United States National Museum, Washington, D.C.

AMNH - American Museum of Natural History, New York, N.Y.

KEY TO SPECIES OF *PHEIDOLE* OF FLORIDA (MAJORS ONLY)

- 1 a. Head cylindrical in cross section and obliquely truncate anteriorly, the truncation involving the clypeus, frontal area, anterior portions of genae, and mandibles.
(fig 1)..... *lamia* Wheeler
- b. Head not cylindrical in cross section and not truncate anteriorly..... 2
- 2 a. Antennal scape strongly bent, flattened and smooth at the base, the base nearly as or as broad as the distal portions of the scape (fig 2)..... 3
- b. Not as above, scape not flattened at base and usually distinctly narrower than distal portion; if thickened and strongly bent at base, obviously not flattened..... 4
- 3 a. First gastric tergite covered with very numerous long and short erect hairs; sometimes sparse, coarse, appressed, pubescence is present. (fig. 3, 4) ... *diversipilosa* Wheeler