

the far smaller size of its colonies, the same behavior is true of *Ph. creightoni*. The matter becomes even more complex when it is necessary to deal with species which bring in insect remains during most of the year and gather seeds only at intervals. Such species are exceptionally difficult to handle for, unless they make a conspicuous chaff pile, which they often fail to do, the only way to prove that they have gathered seeds is to expose the seed chambers in the nest. This behavior is found in *Ph. bicarinata*, *cerebrosior*, *sitarches*, *rugulosa* and *xerophila*. It is only by stretching a point that these five species can be considered as harvesters, since their main reliance is on insect food. This leads directly to the problem of the strictly carnivorous species of *Pheidole*. In the writer's opinion there are considerably more of these than has been supposed. As early as 1908 W. M. Wheeler had recognized that *Ph. dentata* and *hyatti* are carnivorous and predacious (3). In 1955 Creighton and Gregg showed that *Ph. titanis* is termitophagus (4). In 1964 the writer pointed out that *Ph. (C.) clydei* is an entomophagus scavenger (5). But there are other species which can be added to this list. It should certainly include *Ph. grallipes* and *vallicola*, both of which are insectivorous and predatory. It also appears that *Ph. floridana* and *metallescens* belong here. In 1958 Van Pelt showed that both species are attracted to a variety of baits (6). But when they are not baited or allowed access to kitchen scraps, each brings insect remains to the nest. They have not been reported as seed collectors and the writer has been unable to find stored seeds in the nests.

The above discussion should show why it is misleading to characterize *Pheidole* as a genus of harvesters. There is obviously no possibility of applying such a designation to the growing number of carnivorous species, nor is the situation much better in the equally large number of species which utilize insect food at least as often as they do seeds. For the truth of the matter appears to be that species which subsist mainly on seeds are in the minority in the genus *Pheidole*. One further detail is pertinent in this connection. It now seems probable that the major of *Pheidole* functions more often as a guard than it does as a seed crusher. The writer has been able to observe the guarding function in the majors of *Ph. clydei*, *dentata*, *floridana*, *macclendoni*, *metallescens*, *militicida* and *ridicula*. Only in *ridicula* has the major also functioned as a seed crusher. It is obvious that the major of a carnivorous species can have no occasion to crush seeds and the fact that the guarding function cuts across food preferences would seem to indicate that it, rather than seed crushing, is the basic response of the major of *Pheidole*.