

HOW THE QUEENS OF THE PARASITIC AND SLAVE-MAKING ANTS ESTABLISH THEIR COLONIES.



CONTINUATION of the author's study of temporary social parasitism among ants, briefly noticed a year ago in the AMERICAN MUSEUM JOURNAL (Vol. IV, p. 74), has brought to light some interesting facts concerning the establishment of formicaries in several of our species. It is now well known that an ant colony is started by a single fertilized female, or queen. This insect, after mating high in the air during her nuptial flight, descends, pulls off her wings, and proceeds to dig a tiny nest in the ground or in rotten wood. She closes the entrance behind her and remains secluded and without food for nine or ten months, while she lays a packet of eggs and cares for the larvæ when they hatch. Until the larvæ mature as workers, the queen feeds them with salivary secretion derived from her own fat-body and degenerating wing-muscles. These firstling workers are always small, because as larvæ they were insufficiently fed. They open the entrance to the nest, and go forth in search of food for their queen and themselves. The mother insect is now able to devote all her energies to assimilating nourishment and producing eggs, while the workers care for the brood and extend the galleries of the nest and give it whatever external architecture it may possess.

This method of colony formation, which is adopted by nearly all ants, may be called the typical method. There are, however, two other methods which are resorted to by the queens of certain species, one of a more complicated, or redundant, the other of a simpler, or defective type. The redundant type occurs among the leaf-cutting and fungus-growing ants (*Atti*) of tropical and subtropical America, in which the queen not only brings up a colony of workers by herself alone, but simultaneously keeps up a culture of the peculiar fungus which, so far as known, constitutes the only food of these ants. The defective type is found in certain ants whose queens, either because they are too small and infertile, or for some unknown reason, are unable to bring up a firstling brood without the assistance of workers of another