The dark colored typical *imparis* is much less abundant and probably represents a secondary adaptation to moist woods and firmer soil. This would account for the persistence of repletes in an ant inhabiting rather humid, shady localities.

Most ants of temperate, mesophytic regions have a mixed diet, consisting of insects, honey dew and plant excretions. When such species come to live in deserts or other arid regions, where the long droughts of summer and the cold of winter restrict plant and insect life to a brief season, they usually take on one of the four following adaptations:

1. They may exaggerate the insectivorous habits which they already possess, and become intrepid, ravenous, hunters. They thus manage to secure a sufficient amount of food even under unfavorable conditions. This adaptation is beautifully shown in the Old World *Myrmecocysti* which are represented by the greatest number of species, subspecies and varieties in the deserts of North Africa. The same tendency, however, is apparent in the American races *orbiceps* and *mendax*.

2. Many species have taken to eating and harvesting seeds — a very obvious adaptation to arid regions covered with a short-lived herbaceous flora, as is shown by the species of *Pogonomyrmex* in the New World, *Messor*, *Solenopsis* and *Pheidole* in both hemispheres, and *Holcomyrmex*, *Oxyopomyrmex*, *Goniomma*, *Meranoplus* and *Pheidologeton* in the Old World. These ants still feed upon insects when these are obtainable, but seeds furnish such an inexhaustible and nutritious food supply that the habit of collecting and storing them in the nests has become highly developed.

3. A number of species, the honey ants, which have been described in the foregoing pages, have taken to storing the sweet exudations of plants and the excretions of aphids and coccids in the crops of a physiological caste, the repletes.

4. Some ants manage to live and thrive in arid regions because they cultivate and eat fungi. This habit, which I have described in detail in a recent article (1907b), is peculiar to a single tribe of American Myrmicine ants, the Attii, and probably originated in the luxuriant rain-forests of the tropics. Thence several of the species have migrated into the deserts of Northern Mexico and the southwestern states, where they can always obtain the vegetable débris for the substratum on which to grow their fungi and where these delicate plants can be successfully cultivated some distance below the dry surface of the soil.