

Although they are not as frequently encountered in undisturbed continental habitats, in tropical and subtropical areas they can be encountered anywhere.

The five most widespread ant species are the pharaoh's ant (*Monomorium pharaonis*), Argentine ant (*Linepithema humile*), crazy ant (*Paratrechina longicornis*), ghost ant (*Tapinoma melanocephalum*), and big-headed ant (*Pheidole megacephala*). Although these are the only species known to appear in every nonpolar biogeographic region (McGlynn 1999a), they have no functional group or taxonomic commonalities but do excel as human commensalist species. Although some species are dominant and have been known to maintain absolute territories (Haskins and Haskins 1965; Crowell 1968; Lieberburg et al. 1975; Holway 1995), others are opportunistic or cryptic, and are capable of coexisting with nondominant ant species (Hölldobler and Wilson 1990; Delabie et al. 1995).

Where dominant species (for example, *P. megacephala*, *L. humile*, *Wasmannia auropunctata*) are introduced, their impact upon native ants is obvious and drastic. Invasive ants exclude competing species from food resources and are known to raid heterospecific nests (Clark et al. 1982; de Kock and Giliomee 1989; Brandão and Paiva 1994). Studies of invaded areas show that noncryptic aboveground foraging ants are the most severely affected (Holway 1995; Human and Gordon 1996). In at least one instance, invasive ants have disrupted ant-plant mutualisms (Bond and Slingsby 1984). Clearly the areas that contain these ants will have a reduced native ant diversity. At the ecosystem level, at least one invasive ant (*Solenopsis wagneri* Santschi, formerly *S. invicta* Buren) has

decimated areas where it is introduced, affecting ecological interactions at the levels of soil cycling, fruit decomposition, and the biodiversity of the terrestrial arthropod community in general (Porter and Savignano 1990; Vinson 1991).

The long-term effects of introduced ants are not well understood. Accounts from the West Indies of invasions of a exotic ants dating back to the early nineteenth century demonstrate that there is a turnover in the species composition of the introduced ant fauna (Haskins and Haskins 1965). Wilson and Taylor (1967) suggest that the species composition of invasive ants on a given island changes over time. Invasive species are generally more successful in disturbed areas and do not create a monospecific stand of ant colonies in most localities.

Introduced ant species can serve as an excellent bioindicator for assessing the status of an ant community. The impact of human use may be indicated by the presence of introduced ants before any long-term community effects are observed. An excellent case study is in the Galápagos Islands (Clark et al. 1982), where the foci for the spread of the invader *W. auropunctata* were located in cities and campsites. As activity spreads throughout many of the Galápagos Islands, the introduced ant is marching in file with human activity.

ACKNOWLEDGMENTS

We thank Beth Norden for extensive bibliographic research. During the writing of this chapter, TRS was supported by a Smithsonian Institution Scholarly Studies grant and by National Science Foundation Award DEB-9707209; TPM was supported by the National Science Foundation Division of International Programs.