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## Pet Ants (Family Formicidae)

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### Nature's Little Workers and Armies

Ants belong to an extremely large and diverse group of insects generally found in nearly all biomes and habitats most of worldwide, from temperate to tropical areas, arid regions, and every habitat in between. Closely related to, and having evolved from wasps, bees, and similar members of the order Hymenoptera, there are an approximately 12,500 recognized species of ants found throughout the world, and as many as 22,000 or more estimated species. Most ants can be easily identified by their apparent three pairs of legs and antennae, and distinctive node like body structures consisting of a head, thorax, and abdomen with slender waists. Although a few ant species are solitary, and hunt and forage individually, most ants are extremely social and eusocial insects, often forming small, loosely connected to very large, tightly connected groups known as colonies depending on the species, where there is cooperative brood care and division of labor into reproductive and non-reproductive groups or statuses. Ant colonies can range in size and territory from only a few individuals localized to a particular area to thousands or even millions with vastly larger territories. Most colonies also have one or more fertile, winged females known as queens, fertile males known as drones, as well as workers, soldiers, and other specialized groups. These insects are also believed to comprise approximately 15 to 25% of Earth's entire terrestrial animal biomass! They have also co-evolved with many other different organisms in different areas of the world as well including mimicking, commensal, parasitic, and mutualistic relationships.

Much more can be described of the overall colony structure and all aspects of the natural history and biology of these fascinating insects. Depending on the species, colony status, sex, and age, ants can vary tremendously in color from black, red, yellowish, orange, brown, or many other colors. Some ants, namely reproductive females and males may also be winged. Some of the most commonly kept and available species in pet ant colonies are the black garden ant (*Lasius niger*), harvester ant (*Messor barbarus*), and the red ant (*Myrmica rubra*). Ants can have a tremendous array of impacts and relationships with humans, both positive and negative. They are sometimes eaten as foods or be used in medicine in their various life stages in some areas of the world, while in many others, they serve as model organisms in technology, science, and research. Ants can also commonly be household, garden, or agricultural pests, and at least in past decades, have also become popular educational pets and toys. Ants can also be used as feeders for several species of pet reptiles and amphibians with more specialized diets. As pets, ants can make for simple, fascinating, and enjoyable insects to maintain as colonies for children and adults alike.

\*It is important to note that in the U.S., it is unlawful to ship live queen ants in a colony across state lines, and farms or colonies available must be ensured there is no viable queen. This is to prevent the possible spread and introduction of nonnative, invasive species. Some ant species in

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Europe and the U.S. may also be protected and their keeping, purchasing, selling, and/or disturbance may also be unlawful or regulated.

### **Taxonomy**

**Life:** All living, physical, and animate entities

**Domain:** Eukaryota

**Kingdom:** Animalia

**Phylum:** Arthropoda

**Subphylum:** Chelicerata

**Class:** Insecta

**Order:** Hymenoptera

**Superfamily:** Formicoidea

**Family:** Formicidae

*\*Taxonomy subject to change and revision.*

### **Lifespan and Longevity**

Ant lifespans and longevity can vary depending upon a number of factors, including the species, colony, location of the colony, access to food, shelter, and other resources, and reproductive or colony status. Most ants generally have relatively short life cycles, in some cases ranging from only a few days, typically dying shortly after mating and reproduction, to as much as several decades in the case of queen ants or other reproductively viable colony members. Most ants typically live between several weeks to several months.

### **Distribution and Habitat**

Generally, ants can be found throughout most areas worldwide, from tropical to temperate, and even desert and arid regions, and every habitat, niche, and biome in between. Most of the commonly kept pet ant species can be found throughout all or portions of Europe and/or North America to Africa and South America depending on the species, where this can depend upon the species. They may occupy many microhabitats, from within the soil, to under stones or rocks, fallen logs, trees, leaf litter, and other vegetation and natural or artificial debris. Many species can be found within and around households and gardens or croplands as well. A few species can be more arboreal, living in colonies in tree canopies, tree cavities, or similar niches. Ants of some species or another occupy nearly every habitat and niche.

### **Conservation Status**

Conservation status dependent upon the species. Some species are IUCN Least Concern (LC). Some are IUCN Near Threatened (NT), Conservation Dependent (CD), Vulnerable (VU), Endangered (EN), to Critically Endangered (CE). Some Not Evaluated for the IUCN Red List (NE) or otherwise Data Deficient (DD).

### **Legal and Regulatory Status (\*Subject to Change)**

Consult your nearest United States Department of Agriculture (USDA) branch for any further, current federal regulatory or legal status. Also consult with your local, municipal, and state ordinances and regulations for any ownership restrictions.

### **Experience Level Required**

Novice/Beginner.

### **Size**

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Ants can vary considerably in size depending upon the species, colony and reproductive status and function, sex, age, and other factors. Generally, they range from 0.75 to 52 millimeters (or 0.030 to about 2 inches). Most ants, however, are relatively small insects falling in between this size range.

### **Housing and Enclosure**

Ants can be quite simple and inexpensive to house and maintain, although any enclosure that is used to house them should be sealed to prevent escape, and have adequate airflow and airspace, as well as ventilation. The type of enclosure used can depend upon the number of ants being maintained, or otherwise the size of the colony, ranging from a simple sealed glass test tube for up to approximately 25 ants to larger enclosures specifically designed for housing ant farms or colonies known as formicariums for up to 150 worker ants. These formicariums enable ant colonies to grow, and consist of several artificial nest chambers covered by a transparent or viewable glass slate, surrounded by a gypsum powder, soft clay, or concrete and sugar water ditches for hydration and humidity that should be refilled and monitored weekly. Ensure that the formicarium is covered using a dark paper or plastic to provide darkness and security to the colony. Do not use jelly mediums, as these mediums do not provide adequate security and will stress your ant colony. A connected outside, or surface area above the nest chambers with live or artificial plants, rocks, logs, driftwood, or other furnishings for foraging and above ground activity should also be provided. Formicariums can be acquired commercially or even mail ordered with most, if not all of the required components, or can be constructed and custom designed at home.

### **Temperature, Lighting, and Humidity**

The temperatures and humidity requirements for maintaining pet ants will vary depending on the species being maintained. Some species tolerate dryer conditions with lower humidity than others. Ensure that there is always an adequate temperature and humidity gradient inside the formicarium. Generally, temperatures inside the formicarium can range from 68 to 82 degrees F, with slight drops in nighttime temperatures being acceptable. Obviously, do not expose the colony to temperature extremes above or below this range for prolonged periods of time. Any supplemental heating that is needed can be provided using a low wattage under tank heating pad, overhead or incandescent light or bulb, or a radiant or ceramic heat emitter.

### **Feeding, Diet, and Nutrition**

*Variable*; Ants can have a tremendously diverse array of dietary and feeding habits and preferences depending on the species, age, sex, colony status and function, reproductive status, and many other factors. Some species can be solitary and carnivorous to predatory, feeding on other insects and invertebrates. However, most species of ants are generalist predators, scavengers, to indirect herbivores that rely upon one another in the colony to obtain their food. Many ants that practice indirect herbivory have evolved to rely upon specialized symbiotic processes with gut microbes to increase their food's nutritional value, while some others grow their own fungi within the colony from food collected elsewhere. Some members of the colony may not even eat or feed depending on their function and reproductive status. Many species of ants also have specialized jaws and mandibles depending on the many above mentioned factors for many different functions including grasping, chewing, tearing or slicing, carrying, preparation, or many other functions.

In captivity and as pets, ants can also vary tremendously in their diets depending on the species being maintained, among the many other above factors. In general, however, they are fairly simple insects to feed, and can be given live or dead feeder insects such as fruit flies, small crickets, small roaches, flies, moths, and aphids. Protein is an important component to most ant

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diets. Some species will also frequently consume seeds and grains as well. Many ants will also readily commercially available or homemade consume sugar-water or honey-water mixtures for food and hydration. Some fruits, vegetable matter, meats, pollen, or syrup can also be given on occasion depending on the factors. Be sure to replenish any water mixtures every two to three days to ensure an adequate, ongoing supply.

### **Handling**

Ants generally are small, fragile insects that can easily be stressed and/or injured as a result of handling, and any colonies or ant farms that are available are typically intended only observational use and enjoyment. Many ants are also capable of biting, stinging, and/or secreting formulaic acid as a defense or when threatened, and in some species, albeit not ones commonly kept, the bites or stings can be quite painful to even medically significant and potentially life threatening. Generally, handling pet ants is not recommended or necessary.

\*\*Also be sure to practice basic cleanliness and hygiene associated with proper husbandry after touching or handling any animals or animal enclosures to prevent the possibility of contracting salmonellosis or any other zoonotic pathogens\*\*

### **Contact**

Authored by Eric Roscoe. For any additional questions, comments, and/or concerns regarding this animal, group of animals, or this care sheet, please email and contact the Madison Area Herpetological Society at [info@madisonherps.org](mailto:info@madisonherps.org)

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