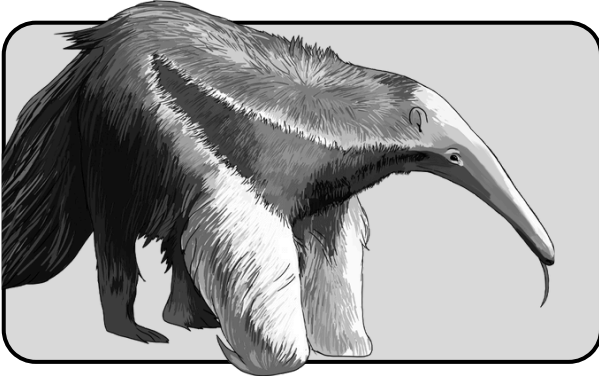


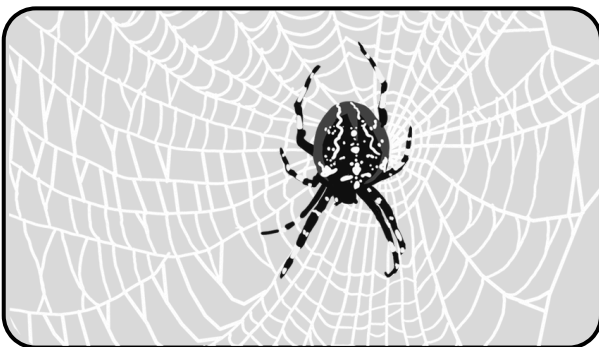
# ENEMIES OF ANTS



The **anteater** specializes in ants and termites as food. With its long, tubular snout and a sticky tongue that can grow up to 60 cm long, it penetrates ant nests and eats several thousand ants a day. Its powerful front claws enable it to break open ant hills and termite burrows. There are four species of anteater, including the large anteater (*Myrmecophaga tridactyla*), the tamandua (*Tamandua mexicana*, *Tamandua tetradactyla*) and the dwarf anteater (*Cyclopes didactylus*). Despite the defense mechanisms of some ant species, such as painful stings or aggressive bites, anteaters are protected against such attacks by their thick skin, fur and special adaptations in the stomach.



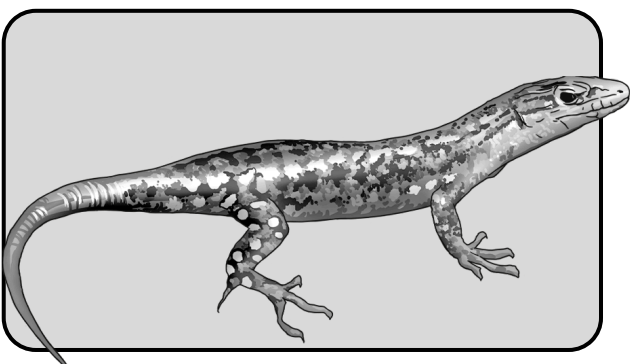
**Woodpeckers** are sometimes highly specialized in ants as a food source. They use their powerful beaks to hack open ant hills, rotten wood or tree bark to get at the ants and their brood. The green woodpecker (*Picus viridis*) in particular is known to feed on ants to a large extent and especially prefers their pupae. There are around 240 species of woodpecker worldwide that use ants as food to varying degrees. In addition to their specialized tongue, which is long, sticky and barbed, woodpeckers also have protective mechanisms against aggressive ants, such as a resistant skin and feather structure. Woodpeckers have a significant impact on ant populations and are therefore natural enemies of ants.



**Web spiders** are among the natural enemies of ants and are sometimes highly specialized on ants as prey. Certain species, such as the ant jumping spider (*Myrmarachne*), have even specialized in imitating ants (mimicry) in order to gain easier access to ant colonies and prey on them unnoticed. Other spider species deliberately lay their webs along ant trails or near the entrances to ant nests in order to intercept ants. There are over 50,000 spider species worldwide, several hundred of which regularly hunt ants. The effective catching technique and special adaptations, such as bypassing or neutralizing the ants' defence strategies, make web spiders extremely successful predators.



Some **bat** species feed partly or even predominantly on ants, although they are not exclusively specialized on them. Tropical insectivorous bats in particular, such as members of the genera *Myotis* and *Molossus*, prefer to catch ants during their swarming season, when winged ants swarm out in large numbers to mate. The bats hunt these flying ants in the air using their echolocation and excellent maneuverability. There are around 1,400 species of bat worldwide, but only a few of them specifically use ants as a food source. For bats, ants are an energy-rich and readily available seasonal food source, which is particularly important in tropical regions.

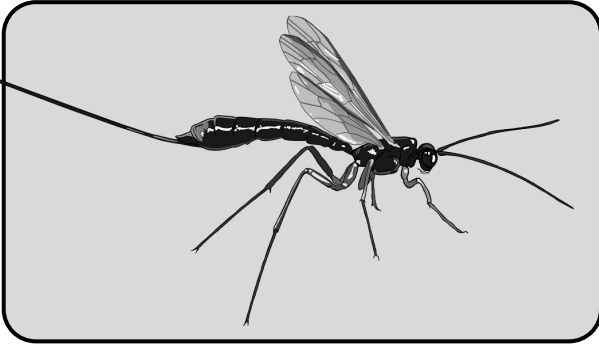


Many **lizard** species specialize in ants as part of their diet or are at least partially dependent on them. The so-called Ameiva lizards (*Ameiva*) and some species of sand lizards (*Lacerta*), which regularly prey on ants, are particularly well known for this. Lizards have fast reactions, good eyesight and a clever tongue to catch and eat ants before they can use their defenses (such as poison or acid). Around 6,000 species of lizards exist worldwide, with many catching ants regularly or occasionally. The protective scaly skin makes them more resistant to ant attacks and enables them to effectively prey on even aggressive species. In some habitats, lizards thus locally regulate the population size of ant colonies.

# ENEMIES OF ANTS



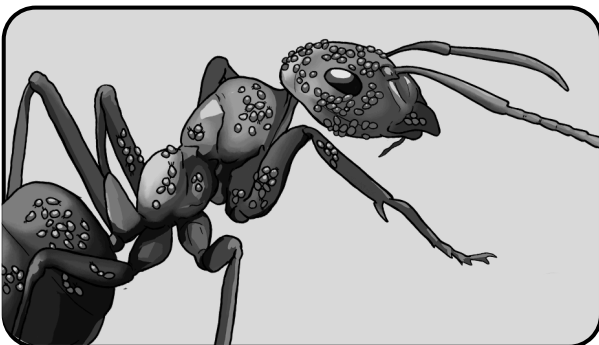
Some **monkey** species feed on ants occasionally or regularly, but usually not as their primary food, but as a supplement to their plant-based diet. Chimpanzees and capuchin monkeys in particular use sophisticated techniques to prey on ants. Chimpanzees are known for “ant fishing”. They use twigs or blades of grass as tools to lure ants out of their nests. Capuchin monkeys actively open ant nests with their hands or sticks to get at eggs, larvae and ants. There are over 500 species of monkeys worldwide, of which only a few, mainly great apes and some New World monkeys, regularly use ants as food. The proteins and nutrients from ants are valuable supplements for apes, especially in habitats where other animal foods are scarce.



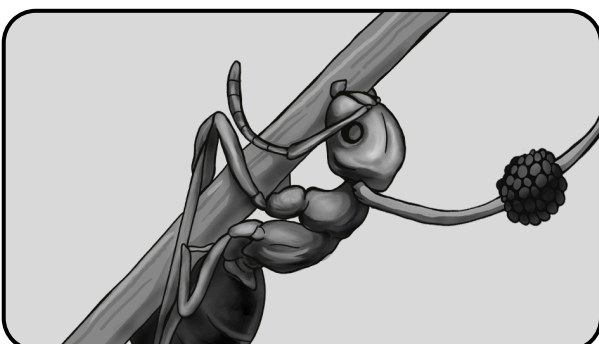
**Wasps** are also natural enemies of ants. Certain species, in particular chiggers (family Pompilidae), Sphecidae (“digger wasps”) and some ichneumon wasps (Ichneumonidae), are specialized on ants or at least regularly hunt ants as food for their larvae. Parasitic wasps paralyze ants by stinging them and transport them alive to their nests, where they serve as a living food supply for their offspring. Other wasps, especially some parasitic ichneumon wasps, lay their eggs directly in ants or their larvae and pupae. There are several thousand wasp species worldwide, many of which at least occasionally prey on or parasitize ants. This relationship contributes significantly to the natural control of ant populations.



**Ant lions** (family Myrmeleontidae) are specialized ant hunters in the larval stage. The larvae often live in sandy soil, where they create funnel-shaped trapping pits. If an ant or another small insect falls in, steep pit walls and sliding sand prevent them from escaping. The ant lions grab their prey with powerful mouthparts (mandibles), inject digestive juices and then suck them out. There are around 2,000 species of ant lion worldwide, many of which prefer to feed on ants. What is particularly striking is that the adult ant lions, unlike the larvae, do not eat ants, but are harmless, dragonfly-like flying insects. Their strong adaptation to hunting ants makes ant lions particularly effective natural opponents of ants.

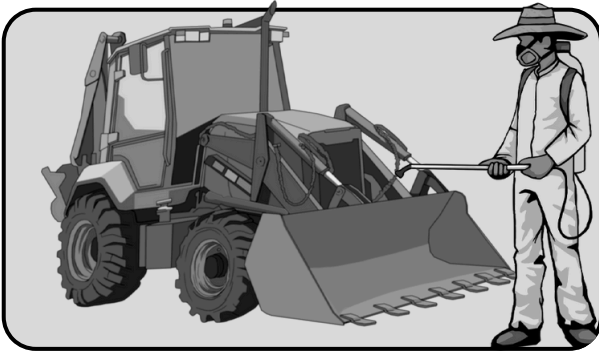


**Mites** (Acari) are common parasites or symbionts of ants. Some mite species have specialized on ants and live permanently on their body surface or even inside the nests. They feed on ant blood (hemolymph), body fluids, or waste products inside the nest. Due to their small size (often less than 1 mm), they remain undetected for a long time and can severely weaken ant colonies or transmit diseases. There are tens of thousands of mite species worldwide, hundreds of which are specially adapted to ants. However, not all mites harm ants; some live as harmless commensals or even as mutualistic partners, for example by keeping nests clean and thus providing an indirect benefit. Overall, mites as common companions significantly influence the health and populations of ants.



**Cordyceps**, the so-called ant fungus, is a parasitic fungus that specializes in ants. It infects ants by its spores penetrating their body and subsequently changing the host's behavior. Infected ants usually leave their nest and climb plants or branches before they die to ensure an optimal position for the fungus spores to spread. After the ant dies, the fruiting body of the fungus grows out of its body, releasing infectious spores again. Over 600 Cordyceps species are known worldwide, many of which are specifically specialized for certain ant species. This fascinating adaptation makes Cordyceps a particularly exceptional natural enemy of ants.

# ENEMIES OF ANTS



**Humans** are not specialized ant hunters in the narrower sense, yet they have a considerable impact on ants. They specifically control ants in living spaces, gardens and in agriculture using chemical or biological methods to prevent damage or nuisance. Humans also destroy the natural habitats of many ant species through construction, agriculture and deforestation. At the same time, certain ant species (such as leafcutter ants) are intensively controlled as they cause major damage to plantations and agricultural crops. Conversely, however, some ants benefit from their proximity to humans, for example invasive species such as the pharaoh ant or Argentine ant, which can spread worldwide as a result of human activities. Humans are therefore an indirect but extremely important factor influencing ant populations worldwide.