

## Honey Ant Adaptations

Bloated bellies are storage vessels for the colony

For the complete photos with media resources, visit:  
<http://education.nationalgeographic.com/media/honey-ant-adaptations/>

The big, **bloated** bellies of honey ants like these serve as “living **larders**” for their entire **colony**. Too big to move, **specialized** honey ants called **repletes** hang from the roofs of nests dug deep in the cool earth. In the dry season, these ants are “drained” to provide **nourishment** for the rest of the colony.

Honey ants are common in **deserts** and other **arid climates** around the world. This species, *Myrmecocystus mexicanus*, is indigenous to the southern United States and Mexico. Other species of honey ants can be found in southern Africa and throughout Australia.

Only some honey ants become “living larders.” They are part of the “worker” **caste** of honey ants. Other castes include soldiers, who protect the colony from **predators**; princesses and drones, who **mate** to form new colonies; and the queen—usually the mother of all other ants in the colony.

During the **rainy season**, when food is **abundant**, other worker ants feed repletes. Honey ants’ main source of food is sweet **nectar** gathered from desert flowers. Sometimes, workers will feed repletes liquids from insects killed by the colony (body fat from wasps or other ants, for example). Repletes are fed these liquids mouth-to-mouth, drop by drop.

During a **drought** or **dry season**, **nutrients** become more **scarce**. Fewer flowers bloom, and fewer insects approach the colony. Honey ants turn to their living larders, now swollen to the size of grapes.

When the colony needs the nutrient-rich liquids, a worker ant will stroke a replete’s **antennae**. This signals the replete to **regurgitate** the liquid. A worker can eat the liquid itself, or carry it to another member of the colony.

### Instructional Ideas

Consult National Geography Standard 10.1 (8th grade): *The characteristics, distribution, and complexity of Earth's cultural mosaics. There are many different cultures, each with its own distinctive characteristics.*

- Discuss how societies define culture, such as the development of language, history, and spirituality. Both questions in the “Questions” tab explore how and why the honey ant is a part of some Aboriginal Australian cultures.

### QUESTIONS

- The honey ant is a major character in the dreamings of some Aboriginal Australian cultures. Dreamings are creation myths, or traditional stories of how people or places were created. What characteristics of honey ants might make them good symbols for the creation of underground reservoirs or intermittent springs?  
Honey ants are **able to store liquid beneath the seemingly barren ground, just like a reservoir.**
- What characteristics of honey ant colonies might make them good symbols for a desert’s human communities?

Honey ant colonies have **successfully adapted to the harsh desert climate**. Human characteristics can easily be attributed to the colony: they work together; create a “sweet” cool space where many different members perform different duties; and can function in both wet and dry seasons.

**FAST FACTS**

- Many insects store sweet liquid for later use. Honeybees, for instance, store liquid in their combs. Honey ants, however, are the only insects to store the liquid in their own bodies.
- Honey ants are a sweet treat! Their bodies are bite-sized balloons of sugary syrup that serve as delightful delicacies for cultures indigenous to arid climates, such as Aboriginal Australians. Western naturalists, such as filmmaker David Attenborough and “The Bug Chef” David George Gordon, also attest to their “marvelously sweet” flavor.
- The dark, rectangular patches on the belly of a replete are actually the hard exoskeleton plates that normally protect the ant’s abdomen. It is the clear connective tissue that distends the replete’s body.

**VOCABULARY**

<b>Term</b>	<b>Part of Speech</b>	<b>Definition</b>
<b>Aboriginal Australian</b>	<i>noun</i>	people and culture native to Australia and its surrounding islands. Also called Aborigine.
<b>abundant</b>	<i>adjective</i>	in large amounts.
<b>antenna</b>	<i>noun</i>	one of a pair of thin, moveable sensory organs on the heads of insects and some other organisms.
<b>arid</b>	<i>adjective</i>	dry.
<b>bloated</b>	<i>adjective</i>	swollen or puffed-up.
<b>caste</b>	<i>noun</i>	specialized type of social insect that carries out a specific function in a colony, such as a worker, drone, or queen.
<b>climate</b>	<i>noun</i>	all weather conditions for a given location over a period of time.
<b>colony</b>	<i>noun</i>	group of one species of organism living close together.
<b>desert</b>	<i>noun</i>	area of land that receives no more than 25 centimeters (10 inches) of precipitation a year.
<b>drought</b>	<i>noun</i>	period of greatly reduced precipitation.
<b>dry season</b>	<i>noun</i>	time of year with little precipitation.
<b>earth</b>	<i>noun</i>	soil or dirt.
<b>fat</b>	<i>noun</i>	material found in organisms that is colorless and odorless and may be solid or liquid at room temperature.
<b>food</b>	<i>noun</i>	material, usually of plant or animal origin, that living organisms use to obtain nutrients.
<b>indigenous</b>	<i>adjective</i>	native to or characteristic of a specific place.
<b>larder</b>	<i>noun</i>	room or place where food is kept.
<b>nectar</b>	<i>noun</i>	sweet plant material that attracts pollinators.
<b>nourishment</b>	<i>noun</i>	substance that provides materials or nutrients for life and growth.

<b>nutrient</b>	<i>noun</i>	substance an organism needs for energy, growth, and life.
<b>predator</b>	<i>noun</i>	animal that hunts other animals for food.
<b>rainy season</b>	<i>noun</i>	time of year when most of the rain in a region falls.
<b>regurgitate</b>	<i>verb</i>	to vomit or throw up undigested or partly digested food.
<b>replete</b>	<i>noun</i>	caste of worker ant with distensible crop (organ for food storage) in which liquid is stored for later use by the colony.
<b>scarce</b>	<i>adjective</i>	rare.
<b>specialize</b>	<i>verb</i>	to study, work, or take an interest in one area of a larger field of ideas.

## For Further Exploration

### Images

- BBC: Filmmaker John Brown spends two years with honeypot ants
- Myrmecos: Myrmecocystus (honeypot ants)

### Video

- Life on Earth: Honeypot Ants

### Websites

- AntArk: Honey Pot Ant



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