



Honeypot Ants

*"Go to the ant, O sluggard;
consider her ways, and be wise.*

*Without having any
chief, officer, or ruler,*

*she prepares her bread in summer
and gathers her food in harvest"*

(Proverbs 6:6–8).

Lucien Tuinstra

HEARING THE word 'honey', our thoughts often go to bees. However, various species of ants known as 'honeypot ants'¹ do much justice to their name. Some of their members serve as storage for sweet nourishment to feed their fellow ants in times of need.²

Lean and fat

Saving is what we do when there is a surplus, so that in difficult times we can 'eat' into those savings. Think of Joseph who, as Pharaoh's Grand Vizier, ordered much grain to be stored in the seven 'fat' years. This then served as a food source for the nation during the seven 'lean' years. There was enough to also

feed those from other nations suffering famine who came to Egypt to buy grain (Genesis 41:57).

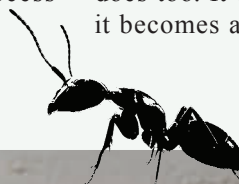
In like manner, a special group of workers within a honeypot ant species store food within their bodies to benefit the whole colony. This food, brought to them by others, is accumulated during the 'fat' times, and is available for distribution in the 'lean' times.

There are about 34 species of honeypot ants across seven genera. They are usually found in drier regions, where food is not readily available year-round, but is abundant after a rainy spell. They store this liquid nourishment in what is like a second stomach, called a *crop*—only theirs is greatly expanded compared to their colony fellows. All ant species have a crop, as do many other insects. The crop is an expandable pouch-like section of the digestive tract, before the stomach. It can store food, mostly in liquid form, which can later be expelled into the midgut to be digested. In most of the social insects like ants, the crop, often called the 'social stomach', can also be used for sharing food with others. A foraging worker returning to the nest with a full crop can regurgitate the contents 'mouth-to-mouth' to feed another colony member, a process known as *trophallaxis*.

In honeypot species, a variable number, up to about 20%, have a greatly enlarged and expanded crop. This special group are called 'repletes'—a suitable name for their function.³ Their only job is to act as mostly immobile food-storage reservoirs for the colony.

How are they filled or kept full? We saw that a worker returning from foraging with liquid food that is surplus to its own needs can share it with a non-foraging worker. The latter may sometimes transport this in its own crop to where the repletes are. This is to 'top up' one of these living storage vats, again by trophallaxis. The nourishment these workers preferentially transfer into the repletes is primarily of two types, both of them sweet and energy-rich. These are *nectar* collected directly from flowers, and *honeydew* excreted⁴ by aphids. The ants actively 'farm' these sapsucking insects, moving them between grazing spots on food plants and protecting them from certain predators to mutual advantage.

The outer covering of an ant's body is not a rigid shell, but a series of hard plates interconnected by flexible membranes. So, as their social stomach (crop) expands, the abdomen does too. It can stretch so much that it becomes about the size of a grape,



much larger than the original ant (fig. 1). These ‘gi-ants’ still have the plates visible on the outside of their highly stretched crop and abdomen (fig. 2). Not surprisingly, in some cultures these filled repletes are considered a delicacy.

Feeding the thousands

The repletes spend most of their lives suspended from the nest ceiling, so they use very little food themselves. In good times, the foraging surpluses are used to fill the repletes’ social stomachs to capacity. When times are hard, and the demand for food outstrips the external supply, the roles are reversed. This time it is the replete which uses the same process of trophallaxis to transfer some of this ‘ant honey’ to the needy worker.

Which individual gets to be a replete is not genetically predetermined; they are ‘chosen’ as young adults by older workers who then overfeed them. This causes their crop to enlarge, and their body to respond in other ways to adopt the passive role of the replete. The number chosen depends on the food available. This allows the colony to respond flexibly to its need for storage.

The entire process, including the ability to respond variably to environmental triggers such as being

overfed, is genetically preprogrammed in every member of the species. This involves much more than the biological specializations that allow this transformation, such as the remarkable expandability of crop and abdomen. It includes the instincts that trigger the workers to start the overfeeding, and the ‘algorithms’ (step-by-step instructions) that determine, e.g., when and how many new repletes are needed. It also includes the appropriate responses of the brain and body of the ‘novice replete’ to being overfed (including its willing cooperation in the process—and much more).

In social insects like ants, there are several instances where, as here, the individual seems to be behaving altruistically, or even sacrificially, for the good of its fellows. An extreme example is seen in insects that literally

blow themselves up to protect the colony—a process called *autothysis*. See p. 18, where our article highlights the serious difficulty of explaining such seemingly selfless suicidal behaviour by evolution, despite the theory of ‘kin selection’.

The difficulties may be only marginally less here. Merely explaining the steps by which the instincts governing this fascinating behaviour in honeypot ants supposedly evolved remains a formidable challenge.

This remarkable phenomenon instead points to a supremely intelligent Master Programmer—our Creator God. ■



References and notes

1. Inspired by: Honeypot ant facts, factanimal.com, acc. 20 Aug 2025.
2. Winnie the Pooh would approve.
3. Though colloquially uncommon today, ‘replete’ means filled, or well-supplied with something. 400 years ago, e.g., in Genesis 1:28 (KJV), ‘replenish’ meant to ‘make replete’, i.e., ‘fill up’. Now it means ‘re-fill’ or ‘fill again’—see creation.com/replenish-earth.
4. Sometimes mislabelled as *secretion*. The aphids *excrete* the honeydew, an unwanted byproduct of digestion, from their hindgut.

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FIG. 1.



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FIG. 2.



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