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BY LIZ LANGLEY 28 AUGUST 2017

THESE ADAPTATIONS GIVE INSECTS A SURVIVAL ADVANTAGE

From ants that are living storage jars to moths that look like bird poop, these insects have amazing adaptations.

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Gone is the eight-hour workday. Everyone is stretching to do all they need to do, but however resourceful we are, some insects' adaptations make humans look like slackers.

Here are five bugs that we here at WAQ would hire to coach us on thinking outside the chrysalis. (Related: [World's First Female 'Penis' Found in Cave-Dwelling Bugs](#))

HONEY ANTS

Humans have devised lots of crazy contraptions for storing food, but none of them are alive.

Ranging in the southwestern U.S. and Mexico, some honey ants are called “repletes,” and for good reason. By gorging on flower nectar and fats from other insects, they transform themselves into larders for the colony's later use. (Related: Honey Ant Adaptations)

The repletes save the food in their abdomens—which can swell up to such an extent that they can’t walk—and then hang from the ceiling of the underground nest. When hunger strikes a worker, it will stroke the replete’s antennae, causing it to regurgitate the stored noms.

When new repletes are needed, the largest of the workers start filling up their bellies for about two weeks, and then take over the role.



Honey ants (Myrmecocystus mexicanus).

PHOTOGRAPH BY BRUCE DALE, NATIONAL GEOGRAPHIC CREATIVE

STALK-EYED FLIES

You know the saying “If looks could kill?”



Stalk-eyed fly (Cyrtodiopsis whitei).

*PHOTOGRAPH MARK MOFFET, MINDEN PICTURES, NATIONAL GEOGRAPHIC
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The male stalk-eyed fly’s eyes “are both an ornament and a weapon,” says [Christina Painting](#), a postdoctoral student of behavioural ecology at the University of Auckland.

The longer the eyestalk, the bigger the male, says Painting, and the more attracted the female is to him. She adds that when it comes to fighting for females, the males with longer eyestalks always win. (Related: [Stalk-Eyed Flies in Kenya](#))

The females' eyes aren't exaggerated like the males', but they can spot quality: [a study in the journal *Nature*](#) found that males with longer eyestalks were genetically superior.



Giant swallowtail larva (Papilio ctesiphontes), scent horns extended.

PHOTOGRAPH BY NATIONAL GEOGRAPHIC CREATIVE

POOP MOTHS AND CATERPILLARS

[Anto ´nia Monteiro](#) and her husband [William Piel](#), both biologists with [Yale-NUS](#) in Singapore, were working in peninsular Malaysia when Piel spotted [Macrocilix](#)

maia, a moth about 1.5 inches across whose dorsal markings look like bird droppings and **whose wings feature designs that look like flies dining on the poop buffet.**

“I think [the moth] got attracted to the lights at our hotel and landed on our doorsill,” says Monteiro, who says the species is quite rare in its range in Asia.

A visual predator, such as a bird, sees these markings and thinks, “Flies are over there eating poop. That’s not what I eat. I’m out,” says **Katy Prudic**, an entomologist at the University of Arizona. Poop mimicry can be a life-saving adaptation that gets passed on to offspring, becoming refined over time.

Some bugs even galvanise the scat illusion with scent.

Papilio caterpillars look exactly like bird droppings in their initial instars, or larval phases, and “make uric acid to smell like poop,” Prudic says.

In later instars some of these caterpillars step up their powers of illusion, taking on the look of a snake's face. You’d never guess they eventually become lovely, giant swallowtail butterflies.

GIRAFFE WEEVILS

There are two distantly related species of giraffe weevils, which are members of the beetle family: the smaller, **red-bodied Madagascar species**, and the **dusky brown, New Zealand species**. Males of both of these species use their long necks to battle for access to females and thus mating opportunities.

Sometimes males of the New Zealand giraffe weevil species **will use the jaws on the ends of their long necks to pull a mating male away from a female.** Their side-by-side grappling looks “like two knights on horseback jousting,” says Painting, who notes that “90% of the time,” larger males win.

Big males can be six times larger than small ones. So what chance does a little guy have? Only a stolen one.

Case in point: While a large male is guarding a female, a small male may “wedge himself” between the two and “mate with the female, literally under the nose of the bigger male,” Painting says.

Way to stick your neck out, man.

Header Image: *Macrocilix maia*, a moth in the Drepanidae family. PHOTOGRAPH BY ANTONIA MONTEIRO AND WILLIAM PIEL

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