



ScienceWatch –Man’s Best Friend Is a Bird

“Honeyguides provide the information and get the wax, humans provide the skills and get the honey.” - C. Spottiswoode

The greater honeyguide (*Indicator indicator*) is a woodpecker-like bird found in Africa that has an unusual relationship with humans. In 1588 a Portuguese missionary in present-day Mozambique described a bird he observed eating the wax from candles in his church. He also noted that the bird had another unusual habit of leading native people to beehives and eating the beeswax after the humans smoked out the bees and raided the nest.

This interaction is a very rare example of mutualism—a relationship between two species that benefits both—between humans and free-living wild animals. Now a report in the July 22, 2016 issue of *Science* shows that it is also an extraordinary example of reciprocal communication between humans and wild birds.

The research team headed by Claire N. Spottiswoode, a behavioral ecologist at the University of Cambridge, Cambridge, UK, found that humans and honeyguides communicate with each other by a specific exchange of sounds to form a cooperative partnership, one that probably predates our love affair with dogs by many hundreds of thousand years.

When a honey hunter from the Yao people of northern Mozambique wants to recruit a honeyguide in the forest he will issue a specific call, a trill-grunt, which sounds like “brr-hmm.” This is often followed by a honeyguide flying up close and chattering loudly to indicate its readiness to be a guide. Upon locating a hive, often in a towering tree, the bird flies from tree to tree in the direction of the hive, loudly chattering and flicking its tail to show the hunter where it is. After collecting the honey for himself the hunter then lays out the wax combs to reward the bird. “It’s decidedly odd to eat wax, but if you’ve got the metabolism to break it down, it’s a good source of calories,” said Dr. Spottiswoode.



Spottiswoode and her colleagues wanted to know if the human-bird collaboration was spontaneous or a specific response to the calls made by the honey hunter. She walked through the forest playing the “brr-hmm” call or a control human sound or another control animal sound. If a honeyguide showed up she followed it, while continuing to produce the appropriate sound. The “brr-hmm” call was more than twice as effective in attracting a honeyguide as either of the controls. In addition, honeyguides attracted by the “brr-hmm” call were more than three times as likely to find a bee hive as those attracted by control calls. “Our experiments showed that it really works. Giving the [honey-hunter] sound doubled the chances of being guided by a

honeyguide, and tripled the overall chances of actually finding a bee's nest. Honeyguides really are paying attention to signals that humans communicate back at them," said Spottiswoode.

Even when a honeyguide was recruited by either of the control sounds it tended to cease guiding behavior before finding any bees more often than when it was attracted by the honey-hunting sound. The success rates were 81.3%, 66.7% and 50% for the honey-hunting call, the human control sound and the animal control sound, respectively.

How the partnership began remains a mystery but many believe it is quite ancient. "It appears to depend on humans using fire and hand-axes," said Richard Wrangham, a biological anthropologist at Harvard University. Those talents date back to the lower Paleolithic, "so the relationship could be more than a million years old."

According to Dr. Wrangham, the bird may have even played a role in making us into modern large-brained humans by supplying us with enough calories in the form of honey to feed our energetically-demanding brains.

Move over fido!

Saul Scheinbach