

Thanks for the feedback! [Undo](#)
We'll use your feedback to review ads on this site.

<https://www.sciencedaily.com/releases/2016/05/160530153302.htm>



Science News

from research organizations

Print Email Share

Dancing hairs alert bees to floral electric fields

Date: May 30, 2016
Source: University of Bristol
Summary: Tiny, vibrating hairs may explain how bumblebees sense and interpret the signals transmitted by flowers, according to a study by researchers at the University of Bristol.
Share: Facebook Twitter Google+ LinkedIn + Email

RELATED TOPICS

Plants & Animals

- > Agriculture and Food
- > Insects (including Butterflies)
- > Food and Agriculture
- > Biology
- > Animals
- > Developmental Biology

RELATED TERMS

- > Itch
- > Orchidaceae
- > Comparative psychology
- > HPV vaccine
- > Willow tree
- > Molecular biology

Thanks for the feedback! [Undo](#)

We'll use your feedback to review ads on this site.



This is a a bumblebee covered in body hairs.

Credit: University of Bristol

Tiny, vibrating hairs may explain how bumblebees sense and interpret the signals transmitted by flowers, according to a study by researchers at the University of Bristol.

Although it's known that flowers communicate with pollinators by sending out electric signals, just how bees detects these fields has been a mystery -- until now.

Using a laser to measure vibrations, researchers found that both the bees' antenna and hairs deflect in response to an electric field, but the hairs move more rapidly and with overall greater displacements.

Researchers then looked at the bees' nervous system, finding that only the hairs alerted the bee's nervous system to this signal.

The findings, published in the international journal *Proceedings of the National Academy of Sciences (PNAS)* today, suggest that electroreception in insects may be widespread.

Electroreception may arise from the bees' hairs being lightweight and stiff, properties that confer a rigid, lever-like motion similar to acoustically sensitive spider hairs and mosquito antennae.

Dr Gregory Sutton, a Research Fellow in the University of Bristol's School of Biological Sciences, led the research. He said: "We were excited to discover that bees' tiny hairs dance in response to electric fields, like when humans hold a balloon to their hair. A lot of insects have similar body hairs, which leads to the possibility that many members the insect world may be equally sensitive to small electric fields."

Scientists are particularly interested in understanding how floral signals are perceived, received and acted upon by bees as they are critical pollinators of our crops.

Research into these relationships has revealed the co-evolution of flowers and their pollinators, and has led to the unravelling of this important network which keeps our planet green.

Electroreception is common in aquatic mammals. For example, sharks are equipped with sensitive, jelly-filled receptors that detect fluctuations in electric fields in seawater which helps them to home in on their prey.

The research was funded by the Biotechnology and Biological Sciences Research Council (BBSRC) and The Royal Society.

Story Source:

The above post is reprinted from materials provided by **University of Bristol**. Note: Materials may be edited for content and length.

Journal Reference:

1. G. P. Sutton, D. Clarke, E. L. Morley, and D. Robert. **Mechanosensory hairs in bumble bees (*Bombus terrestris*) detect weak electric fields.** *Proceedings of the National Academy of Sciences*, 2016

Cite This Page:

MLA APA Chicago

University of Bristol. "Dancing hairs alert bees to floral electric fields." ScienceDaily. ScienceDaily, 30 May 2016. <www.sciencedaily.com/releases/2016/05/160530153302.htm>.

Share This Page:



See Also

- | | | | |
|---|----------------------------|---|----------------------------|
| 1 | Top 10 Hair Moisturizer | 4 | Hair Tricks |
| 2 | Hair Dye for Permed Hair | 5 | Hair Straightening Effects |
| 3 | How to Treat Thinning Hair | 6 | Best Hair Growth Vitamins |



Related Stories

 Bees Are Born With the Ability to Collect Pollen by Buzzing, but Practice Makes Perfect

Apr. 18, 2016 — Wild bumblebees are born with the ability to remove pollen from nectarless flowers using high-frequency vibrations, researchers have found. This study is the first to show that the ability to vibrate ... [read more »](#)

 Bees Able to Spot Which Flowers Offer Best Rewards Before Landing

July 30, 2014 — Bumblebees are able to connect differences in pollen quality with floral features, like petal color, and so land only on the flowers that offer the best rewards, according to a new ... [read more »](#)

 Flowers' Polarization Patterns Help Bees Find Food

June 5, 2014 — Bees use their ability to 'see' polarized light when foraging for food, researchers have discovered. This is the first time bees have been found to use this ability for something other than ... [read more »](#)

 Floral Signs Go Electric: Bumblebees Find and Distinguish Electric Signals from Flowers

Feb. 21, 2013 — Flowers' methods of communicating are at least as sophisticated as any devised by an advertising agency, according to a new study. The research shows for the first time that pollinators such as ... [read more »](#)

1:1000
LEVERAGE!

Trade Forex like an expert!



START TRADING

Your capital is at risk. You may lose more than you invest.



Strange & Offbeat

PLANTS & ANIMALS

 Dancing Hairs Alert Bees to Floral Electric Fields

 Hawk Moths Have Second Nose for Evaluating Flowers

Rapid Bone Growth and Underwater Breathing: Putting the Science of Harry Potter's Universe to the Test

 Tiny 'Vampires': Paleobiologist Finds Evidence of Predation in Ancient Microbial Ecosystems

EARTH & CLIMATE

 Methane-Producing Microbes in California Rocks

 In Changing Oceans, Cephalopods Are Booming

 Human-Eating Monster Crocodile May Be Florida's Newest Invasive Species

 Mighty Mealworms: Solution for Food Insecurity, Pollution

FOSSILS & RUINS

 New Horned Dinosaur Species With 'Spiked Shield'

 Ancient Irish Musical History Found in Modern India

 New Evidence Connects Dung Beetle Evolution to Dinosaurs

Medieval Women Better Dressed Than Men

 **Regenesys Business School**
Awakening Potential

Make your career in **South Africa.**
Enroll for **BBA/MBA**

Only a Few Seats Are Left



Print Email Share

Free Subscriptions

Get the latest science news with ScienceDaily's free email newsletters, updated daily and weekly. Or view hourly updated newsfeeds in your RSS reader:

- Email Newsletters
- RSS Feeds

Follow Us

Keep up to date with the latest news from ScienceDaily via social networks:

- Facebook
- Twitter
- Google+
- LinkedIn

Mobile Apps

Get the latest news from ScienceDaily via our free mobile apps, available for download on the following platforms:

- iPhone/iPad
- Android

Have Feedback?

Tell us what you think of ScienceDaily -- we welcome both positive and negative comments. Have any problems using the site? Questions?

- Leave Feedback
- Contact Us