

Blind moles use beauty for function, not fancy

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Golden mole. Image: Wikipedia.

(PhysOrg.com) -- Scientists have long wondered why a blind mole that lives in underground darkness has beautiful iridescent hair. After all, many animals or birds with magnificent features exhibit their colorful beauty for mating purposes. Now, a new study shows that the iridescent hairs of the blind golden mole, Chrysochloridae, aren't for attracting potential mates. Instead, the shiny coats help the rodents function efficiently underground.

Colorful iridescent hues ranging from green to purple result from light reflecting off of the moles' flat hair. The smooth hair — discovered by UA biology honors alumna Holly Snyder, along with integrated bioscience Ph.D. student Rafael Maia, postdoctoral fellow

Liliana D’Alba and associate professor of biology Matthew Shawkey — helps the moles maneuver easily through dirt and sand.

“These moles are blind and live underground and, consequently, don’t use the colors to communicate with one another as they would typically do by way of color,” Shawkey says. Shawkey and his research colleagues discovered that the moles’ hair cuticles, arranged in multiple layers of thin material, bend light and create a spectrum of colors.

Using microspectrophotometry, electron microscopy and optical modeling, the researchers also found the moles’ hair is flat like a pancake, increasing the amount of surface area and light reflected.

“The color just might be an incidental byproduct,” Shawkey says. “These moles have evolved structures that have two distinct properties: color and wear-resistance. This could give us inspiration for developing new multifunctional materials. Who knows, maybe a hair-care company could apply these findings to make human [hair](#) iridescent!”

Findings of the research team, which also includes Allison Schultz, San Diego State University; and Karen Rowe and Kevin Rowe, Museum of Vertebrate Zoology, University of California, Berkeley, and Museum Victoria, Melbourne, Victoria, Australia, are published in the Jan. 25, 2012 issue of the Royal Society journal *Biology Letters* at [rsbl.royalsocietypublishing.org ... /rsbl.2011.1168.full](http://rsbl.royalsocietypublishing.org.../rsbl.2011.1168.full) .

Provided by University of Akron

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