Studmuffin beetles boast bigger horns

Scientists once thought showy males were 'handicapped' by their unwieldy adornments, but the new study says otherwise. "It’s a sign that these males are thriving, made of some pretty sturdy stuff and certainly mate-worthy," says Dworkin. (Credit: Kevin Jones/Flickr)
MICHIGAN STATE (US) — The big horns that male elk and rhinoceros beetles use to attract females really are signs of superior health, according to a study of the bugs’ insulin levels.

Ian Dworkin, Michigan State University zoologist, was part of a team that for the first time ever showed why horns—from elk to rhinoceros beetles—and other decorative, mate-attracting structures are sensitive to changes in nutrition.

As reported in the current issue of Science, the key ingredient for this growth is insulin, Dworkin says.
Showy male adornments have evolved in various species, like these male beetles’ horns, and they all seem to rely on insulin dependence. (Credit: Michigan State University)

“Clearly elk antlers, peacock tail feathers, and beetle horns are very different, but it appears that they do share similar mechanisms to make these structures so big,” he says. “And lowering insulin levels dramatically reduced the size of their ornate structures.”

Sexual selection has roots back to Darwin’s research. Subsequent research revealed the so-called “handicap principle,” which labeled the males as burdened for toting such unwieldy baggage.

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Dworkin’s team, however, believes that when insulin-dependence is part of the picture, the showy males are not in fact handicapped. Instead this insulin-dependence of these big horns provides a way for the males to show how great they are.

“It’s a sign that these males are thriving, made of some pretty sturdy stuff and certainly mate-worthy,” says Dworkin, who conducted the research at BEACON, Michigan State’s National Science Foundation Center for the Study of Evolution in Action.

Dworkin and the team determined that each time such exaggerated traits evolve, they repeatedly, but independently, seem to use insulin-dependence. This suggests that the traits are more likely to have evolved as honest indicators of quality rather than handicaps.

“While more work needs to be done, our results provide and important way of linking genetic mechanism with the ultimate evolutionary reason for the trait exaggeration,” Dworkin says.

Researchers from the University of Montana and Washington State University contributed to this study.

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Tags: beetles, evolution, insects, insulin, Michigan State University, reproduction

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Warren Mockles
Jul 27, 2012 13:40

All the meaning of this article was lost in the writer’s attempts to fluff up the
source, which was hardly even a whole paragraph originally. Is this article about elk? Beetles? Studmuffins?

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