

Arthropod 'family tree' gets bigger through evolution studies

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Scarab beetles are among the most massive insects alive today, as well as some of the most beautiful. Insects are now considered to be in the same branch of arthropods as crustaceans. Credit: James Waters

Would you be just as comfortable nibbling on a cricket or cockroach as you would be eating a crab?

While insects and crustaceans have long been considered by scientists to be separate branches of the arthropod "family tree," Arizona State University School of Life Sciences researcher and professor Jon

Harrison reports that new findings, along with decades of [genetic data](#), show they actually belong together.

In an article in the journal *Science*, author Elizabeth Pennisi writes that at an annual meeting of the Society for Integrative and Comparative Biology, Harrison and others reported there are "...new insights about what it took for an ancient aquatic [crustacean](#) to give rise to insects..." which now live on land. Harrison is an environmental physiologist who studies how insects function, interact with their environment and evolve.

The researchers discovered that two big changes had to occur in order for crustacean ancestors to become insects. The first change involved respiration, and the second involved compound eyes.

"When I think about traits in [insects](#), I now have a context for where they came from. It's a total change," Harrison said in the article. He has been investigating the respiratory and metabolic aspects of insect physiology for decades.

More information: "All in the (bigger) family" *Science* 16 January 2015: Vol. 347 no. 6219 pp. 220-221 [DOI: 10.1126/science.347.6219.220](#)

Provided by Arizona State University

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