

Fossil discovery in Alps challenges theory that all deep sea animals evolved from shallow water ancestors

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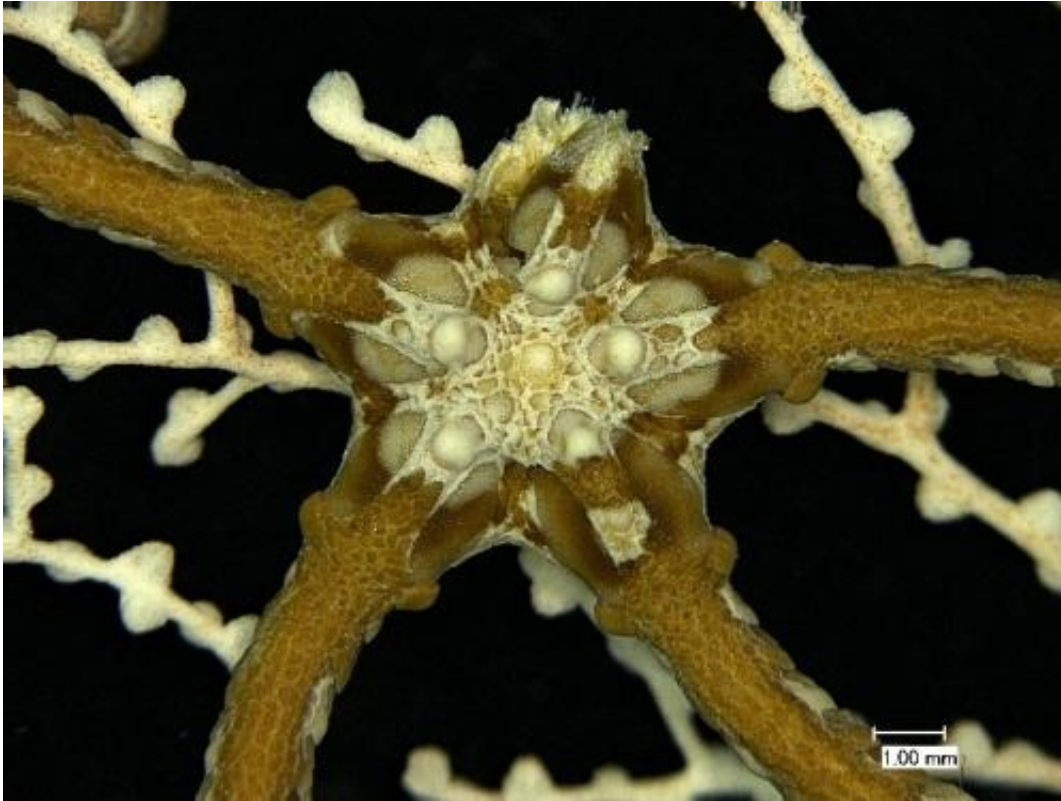
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(Phys.org) —A team of researchers with members from several European countries has published a paper in the journal *Proceedings of the Royal Society B: Biological Sciences*, arguing that new archeological

evidence suggests not all deep sea creatures evolved in shallow waters and then moved deeper. Fossil discoveries in the Austrian Alps, they claim, offer evidence that some deep sea creatures actually evolved in the deep sea and are the ancestors of many modern deep sea creatures.

For most of modern science, ocean scientists have believed that the open ocean is a near desert, with few living creatures in it. Because of that, the consensus has been that most of the animals that do live in the [deep sea](#) today, likely evolved in shallow waters and then migrated there over millions of years. In this new effort, the researchers report on an excavation in the Austrian Alps that has yielded many fossils from ancient [deep sea animals](#).

The team has thus far found over 2,500 fossils which have been identified as deep sea animal remains because they were clearly sea dwellers that were not light dependant. Also the rock in which they were found was similar to rock on ocean seafloors. Closer analysis of the fossils dates them back approximately 180 million years. Prior discoveries of ancient sea creature remains had been found in shallow waters, which was another reason scientists have believed [deep sea creatures](#) evolved from shallow water creatures. But the new [fossil](#) find predates any other existing find by 25 million years, suggesting they evolved from a deep sea ancestor. In comparing the deep sea fossils with fossils from shallow living creatures from the same time frame, the researchers made another discovery. The deep sea appeared to have more biodiversity millions of years ago, than more [shallow waters](#), turning conventional thinking on its head.



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The findings by the team add more credence to the more recent view that areas of the deep sea actually have some of the highest levels of biodiversity on the planet. But, they caution, such conclusions should not imply that the deep sea may be better able to withstand changes wrought by us humans, because no one really knows if that is true or not.



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More information: First glimpse into Lower Jurassic deep-sea biodiversity: in situ diversification and resilience against extinction, Published 21 May 2014 [DOI: 10.1098/rspb.2013.2624](https://doi.org/10.1098/rspb.2013.2624)

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