

Sponges squeezed off oldest branch of animal tree

December 12 2013, by Malcolm Ritter



This undated image provided by the University of Miami via the journal Science in December 2013 shows a *Mnemiopsis leidyi*, a species of comb jelly known as a sea walnut. A new study published online Thursday, Dec. 12, 2013 in the journal Science says comb jellies, a group of gelatinous marine animals, represent the oldest branch of the animal family tree. (AP Photo/University of Miami, William Browne)

Sponges are getting squeezed out of a distinctive role in evolution. A

new study says they don't represent the oldest branch of the animal family tree after all.

The DNA research gives the spot instead to comb jellies, a group of gelatinous marine animals with names like the sea walnut and the sea gooseberry.

All animals evolved from a single ancestor and scientists want to know more about how that happened. More than half a billion years ago, long before humans appeared, the first split in the tree separated one lineage from all other animals. Traditionally, scientists have thought it was sponges.

The evidence in favor of comb jellies comes from deciphering the first complete genetic code from a member of this group. Scientists were finally able to compare the full DNA codes from all the earliest branches.

The genome of a sea walnut, a plankton-eating creature native to the western Atlantic Ocean, was reported online Thursday in the journal *Science* by Andreas Baxevanis of the National Human Genome Research Institute with co-authors there and elsewhere. The work supports some earlier indications that comb jellies were the first to branch off.

Sorting out the early branching of the tree could help scientists learn what the ancestor of all animals was like. But despite decades of study and the traditional view favoring sponges, there is plenty of disagreement about which early branch came first.



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The question is "devilishly difficult" to answer, and the new paper is probably not the last word, said Antonis Rokas of Vanderbilt University, who did not participate in the new work.

"The results need to be taken seriously," he said, but "I'm pretty sure there will be other studies that suggest something else."

More information: "The Genome of the Ctenophore *Mnemiopsis leidyi* and Its Implications for Cell Type Evolution," by J.F. Ryan et al.

Science, 2013.

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