

Frankensquid creature roamed seas 480m years ago (w/ Video)

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Reconstruction of the giant filter-feeding anomalocaridid *Aegirocassis benmoulae* from the Early Ordovician (ca 480 million years old) of Morocco feeding on a plankton cloud. *Aegirocassis* reached a length in excess of 2 m, making it one of the biggest arthropods to have ever lived, and foreshadows the appearance much later of giant filter-feeding sharks and whales. Credit: Marianne Collins, ArtofFact

A 480-million-year-old relative of the lobster, cockroach and tarantula was a sea monster which snared food with spine-covered protrusions on its head, researchers said Wednesday.

The two-metre (seven-foot) creature used spiny appendages to filter morsels from ocean water, said a study in the journal *Nature*.

The technique is similar to the method used by modern-day ocean giants like baleen whales. But the bizarre beast also shared features with today's arthropods, the family of invertebrates with exoskeletons that includes spiders, insects, crustaceans and centipedes.

It had pairs of "flaps", possibly for swimming, along the length of its segmented body.

Aegirocassis benmoulae is the earliest giant filter feeder yet discovered.

"This would have been one of the largest animals alive at the time," said study co-author Allison Daley of Oxford University.

The creature, which lived in the Palaeozoic era, is named after sea god Aegir from Norse mythology, the Latin for helmet (cassis) and a Moroccan fossil hunter, Mohamed Ben Moula, who discovered its remains.

The creature's anatomy was pieced together by studying fossils unearthed at Morocco's Lower Fezouata Formation and kept in the collection of the Yale Peabody Museum of Natural History in Connecticut.



Dorsal view of a complete specimen of *Aegirocassis benmoulae*, a giant filter-feeding anomalocaridid from the Early Ordovician (ca 480 million years old) of Morocco, preserved in three dimensions in a concretion. Note the presence of two sets of lateral flaps, providing critical new insights into the origins of modern arthropod limbs. Credit: Peter Van Roy, Yale University

One particularly well-preserved, three-dimensional [fossil](#) was gently pried from surrounding rock using tiny needle-like tools, an Oxford University statement said.

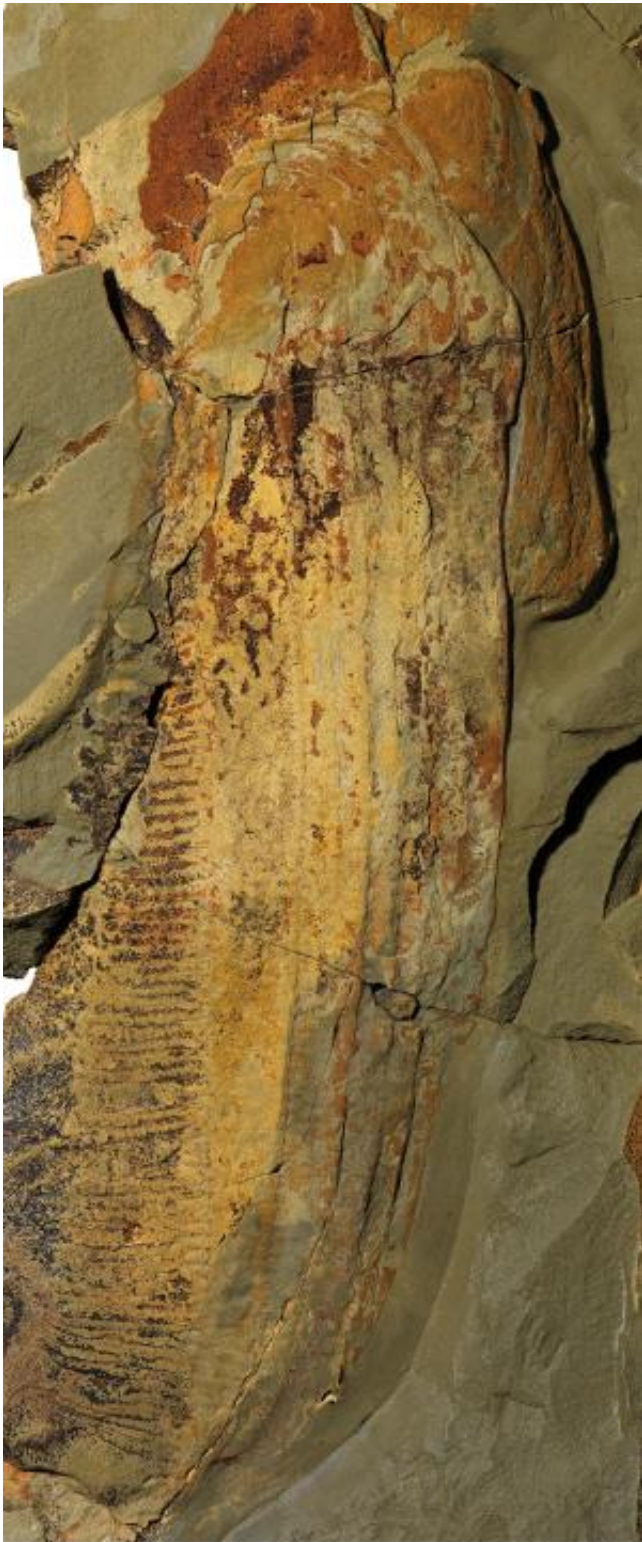
An artist's impression reveals an animal with a protruding, squid-like head attached to a body resembling that of a shrimp but with two pairs of flaps per segment, both upward- and downward-pointing, instead of legs.


The reconstructed *A. benmoulae* had side-facing eyes and two articulated appendages jutting from the "mouth" area, covered in a comb of spines with which it captured plankton.

"While filter feeding is probably one of the oldest ways for animals to find food, previous filter feeders were smaller, and usually attached to the sea floor," said Daley.

Gentle giant

"We have found the oldest example of gigantism in a freely swimming filter feeder," Daley said.



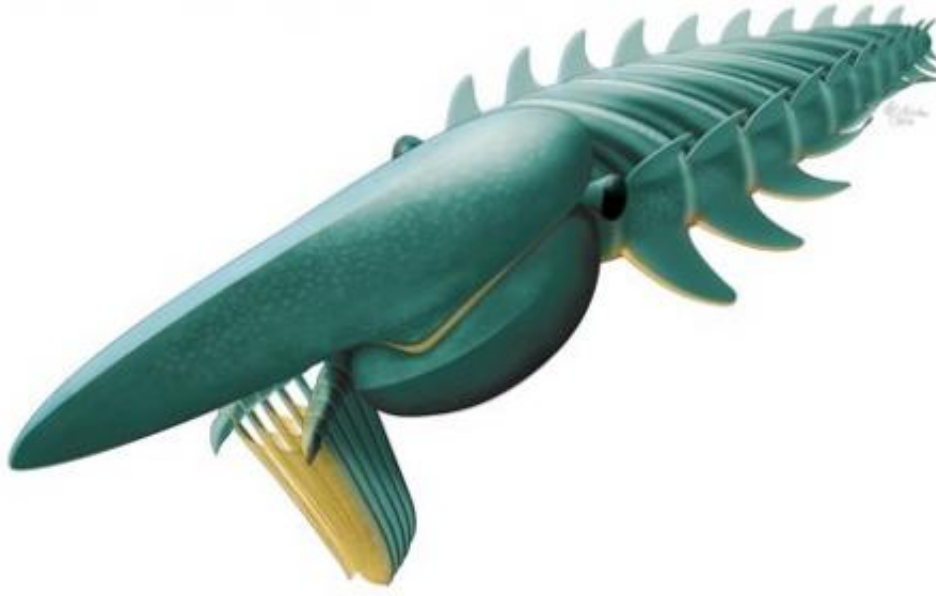

10 mm

Complete filter-feeding appendage of *Aegirocassis benmoulae*, a giant filter-feeding anomalocaridid from the Early Ordovician (ca 480 million years old) of Morocco. Note the extreme length of the ventral spines of the appendage. Credit: Peter Van Roy, Yale University

The new species belonged to a now-extinct clan of marine animals called anomalocaridids which first appeared on the scene about 520 million years ago.

Most of *A. benmoulae*'s older and contemporary cousins, however, were apex predators with sharp-toothed mouths.

The researchers said the creature's flaps were likely the precursors of the double-branched legs of today's arthropods, "but at a stage before they fused together into one leg".



This artist's rendering provided by Marianne Collins shows the filter-feeding anomalocaridid *Aegirocassis benmoulae* from the Early Ordovician (ca 480 million years old) of Morocco feeding on a plankton cloud. *Aegirocassis* reached a length in excess of 2 meters, making it one of the biggest arthropods to have ever lived, and foreshadows the appearance much later of giant filter-feeding sharks and whales. Credit: ArtofFact, Marianne Collins

Arthropods are *A. benmoulae*'s closest living relatives, and use their versatile legs for everything from walking and sensing their environment, to eating and mating.

The Palaeozoic period lasted from about 570 to 250 million years ago—from the rise of the first [invertebrates](#) with hard external skeletons, to the dominance of reptiles.

It ended with the greatest extinction event in the history of Earth, which then had a single continent, followed by the Triassic period and the rise and fall of the dinosaurs.

More information: Anomalocaridid trunk limb homology revealed by a giant filter-feeder with paired flaps, *Nature*, (2015) [DOI: 10.1038/nature14256](https://doi.org/10.1038/nature14256)

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