

Utatsusaurus, reached 3m in length.

... Mosasaurs and other Reptiles The largest known mosasaurs are *Mosasaurus* itself and *Hainosaurus*, both at around 18m in length. The big difference between them is that *Mosasaurus* was much bulkier than the slender, tylosaur type, *Hainosaurus*. Comparison with a Komodo Dragon, possibly the best living comparison to tylosaurs, still states a result of 17t in weight for a 18m long *Hainosaurus*. Other very large mosasaurs were *Tylosaurus* (15m) and *Plotosaurus* (13m).

The largest Metriorhynchoid ever was probably the Late Jurassic *Dakosaurus maximus*, which reached a length of 8m. By far the largest turtle ever was *Archelon* from the Upper Cretaceous, reaching nearly 5m.

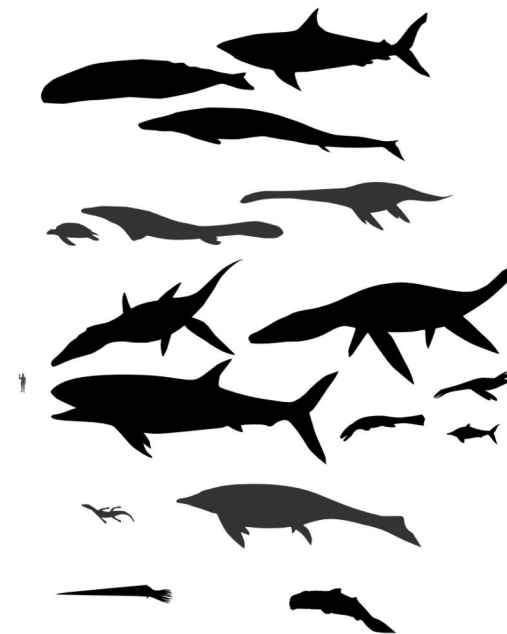
... Mammals It is a mammal that reaches the largest size of any marine animal, maybe the largest size of any animal ever: the extant *blue whale* (*Balaenoptera musculus*), likely rivaled by the questionable species *Balaenoptera sibbaldina* from the Pliocene epoch. The largest odontocete ever, except maybe for the extant *sperm whale* (*Physeter macrocephalus*), was the Miocene *Livyathan melvillei*, of which 40cm long teeth are known (the largest teeth of any animal when excluding tusks), which indicate a maximum length of 20m. The longest ever carnivore cetacean could have been the Eocene "Archaeoceti" *Basilosaurus* at up to 25m in length but with a slender built. By far the largest sirenian ever was the upper Pliocene *Hydrodamalis cuestasi* at 10m in length. The largest pinniped ever is the extant *sea-elephant* (*Mirounga leonina*), reaching nearly 7m and 5t

... "Fish" Both the largest bony fish and probably the largest "fish" ever was the Jurassic *Leedsichthys*, though size estimates vary between 12-27m. When it reached maximum size it would have been not only the largest "fish" but also among the heaviest animals ever, playing in one league with *blue whales* and sauropods. The biggest shark and thus the biggest predatory "fish" and one of the largest predators ever was the Neogene *Carcharocles megalodon*, with a maximum size of 20m and weighing in at 90t. The record for the largest Placoderm is held by the Devonian *Dunkleosteus* at 10m in length, the one for the largest sarcopterygian by *Hynieria*, also from the Devonian and up to 5m long.

... Invertebrates The largest ever Bivalvia was the Upper Cretaceous *Platyceras*, with a shell diameter of 3m. Record holder among gastropods is *Campanile giganteum*, reaching a shell length of 60cm. The largest Cephalopod ever may have been the orthocerid *Cameroeras*, with a total length of at least 11m, possibly more, and a weight of maybe 2-3 tons due to its massive shell. The title of the largest ammonite belongs to *Parapuzosia* from the Late Cretaceous, with a shell diameter of approximately 2,5m the one of the largest Neocoleoidea to modern day *Mesonychotheutis* with a mantle length of 4-5m and a weight of 400kg, and for Bellemnitoidea to *Megateuthis*, with an estimated total length of 3-5m. The largest ever arthropod is the Devonian eurypterid *Jaekelopterus*, with a body length of 2,5m, followed by the Silurian *Pterygotus* at 2,3m.

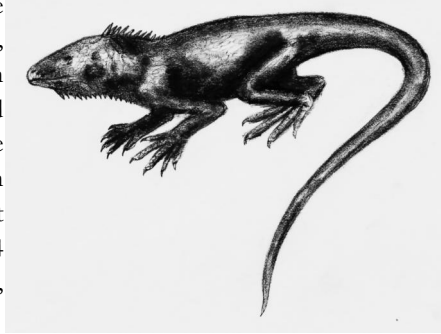


The Largest Seamonsters



Brasiliiguana prudentis

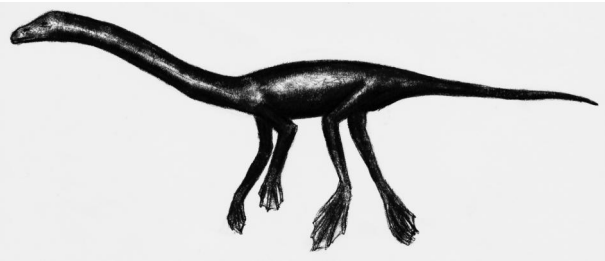
Brasiliiguana is a new genus of iguanian from the Turoonian to Santonian stages of the Upper Cretaceous. It was named by William R. Nava and Agustín G. Martinelli in 2011 after the holotype MN 7230-V, consisting of an isolated Maxilla, which was found at the Adamantina Formation in Brazil. So far, this is one of only six reported non-mosasaurian-squamate-collections from the Cretaceous of Brazil. The Maxilla bears ten partially preserved teeth, of which the largest one measures 0,9mm, and once bore at least 4 others. The whole fragment is about 6mm long, indicating an overall small lizard.



Augustaburiania vatagini and Protanystropheus antiquus

Augustaburiania is a new genus of tanystropeid from the Lower Triassic Olenekian stage of Russia. It is the oldest known member of its clade. The holotype 1043/587 after which it's type species *A. vatagini* was named by Sennikov in 2011 consists of one (probably the third) cervical vertebra, measuring 24 mm in length. Other remains include vertebrae, femora and fragments of a tibia. The femur was longer and more slender than in *Dinocephalosaurus*. Adult tanystropeids show a major variability in size, they kept growing without changing their proportions. The largest *Augustaburiania* probably reached a length of 2m or more. Many anatomical features of this animal indicate it to be a transitional form between tanystropeids and their prolacertilian ancestors.

Protanystropheus antiquus was originally assigned to *Tanystropheus* as *T. antiquus* but reclassified by



Sennikov in 2011. This large tanystropeid lived during the Middle and Late Triassic.

Neptunidraco ammoniticus

Neptunidraco is the oldest known Metriorhynchid. Fossils date back to the Bajocian or Bathonian stages of the Middle Jurassic. The 4m long crocodylomorph was found in Italy in a limestone layer. *Neptunidraco ammoniticus* was named by Andrea Cau and Federico Fanti in 2011, originally the remains were thought to belong to Metriorhynchus or Geosaurus.



The Largest...

... Sauropterygians

The question for the largest pliosaur is a heavily disputed subject in paleontology, because in many peoples minds it's closely linked to the question for the largest predator ever.

"The Cumnor Monster", known from an almost 3m long yet incomplete mandible (OUM J.10454) from Oxfordshire is often classified as a species of *Pliosaurus*, *P. macromerus* or as it's own genus, *Stretosaurus*.

It possibly reached a length of about 18m and a weight of 35-40t, making it far larger than even the largest theropods like *Spinosaurus*.

"The Monster Of Aramberri" is the nickname of the pliosaur specimen UANL-FCT-R2 from Mexico. A comparison of the 450mm long femoral head to the one of a smaller pliosaur states a length of about 16m and a weight of possibly 20t. The most extraordinary feature about this animal is it's skeletal morphology, like the not yet fused neural arches, that suggest that it was not yet fully grown when it died due to the bite of another, possibly even larger conspecific. Some scientists, however theorized all large pliosaurs to have retained a partly cartilaginous skeleton as adult animals, arguing that similar features were also discovered in some other large pliosaurs.

"The Weymouth Bay Pliosaur" is the name of another contender, possibly a member of the genus *Pliosaurus*. Size estimates lie between 12 and 14m. The animal is known from a 2,4m long skull found at the famous Jurassic Coast.

"Predator X" and "The Monster" are two congeneric specimen of giant pliosaurs from Norway, both measuring about 15m. Both of them are from the same geological formation and thus from the same time period. In anatomy, they closely resemble *Pliosaurus*, they possibly form a new species of the latter.

Notably, all of the above are known from the Late Jurassic period, which is clearly the peak of pliosaur diversity and dominance.

The largest rhomaleosaurid pliosaur was the Lower Jurassic *Rhomaleosaurus* with a maximum length of about 7m.

By far the largest long necked plesiosaur was *Manisaurus* with a length of up to 20m, of which more than half was neck. Among placodonts and nothosaurs, the record holders are the 2m long *Placodus* and the up to more than 4m long *Nothosaurus giganteus*.

... Ichthyopterygia

The largest ichthyopterygian ever was probably the Triassic shastasaurid *Shastasaurus sikanniensis*, measuring up to 23m in length, what would make it also the largest predator ever which is known from skeletal remains).

The largest Neochtyosauria was *Temnodontosaurus*, reaching a length of 15m the apex predator of its time, the Lower Jurassic period. Record holder among basal ichthyosaurs is *Cymbospondylus* from the Triassic, with at least 10m in length, even though it's slender built made it not a very heavy animal. Basal ichthyopterygians were usually small, the largest of them,