DIS-Fossil-***Podokesaurus***

***Podokesaurus*** ("swift-footed lizard") was a small [carnivorous](https://en.wikipedia.org/wiki/Carnivore) [dinosaur](https://en.wikipedia.org/wiki/Dinosaur) that living during the Pliensbachian–Toarcian stages of the [Early Jurassic](https://en.wikipedia.org/wiki/Early_Jurassic) Period, and as such is one of the earliest known dinosaurs to inhabit the eastern [United States](https://en.wikipedia.org/wiki/United_States).[[1]](https://en.wikipedia.org/wiki/Podokesaurus" \l "cite_note-amnh-1)

## Etymology

The generic name *Podokesaurus* is derived from Greek word *podōkēs* (ποδώκης) meaning "swift-footed", an [epitheton](https://en.wikipedia.org/wiki/Epitheton) often used by [Homer](https://en.wikipedia.org/wiki/Homer) in the [Iliad](https://en.wikipedia.org/wiki/Iliad) to describe the hero [Achilles](https://en.wikipedia.org/wiki/Achilles), and *saura* (σαύρα) meaning "lizard"; thus "swift-footed lizard". The [specific name](https://en.wikipedia.org/wiki/Specific_name_(zoology)) refers to [Holyoke](https://en.wikipedia.org/wiki/Holyoke), a city in Massachusetts, in the [Connecticut River Valley](https://en.wikipedia.org/wiki/Connecticut_River_Valley).[[2]](https://en.wikipedia.org/wiki/Podokesaurus" \l "cite_note-2)

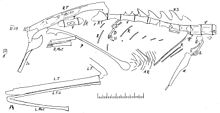
## Description



Possible skull bones

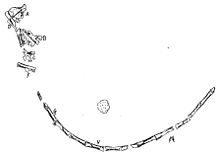
The type specimen suggests that *Podokesaurus* was a small, bipedal carnivore was about 90 cm (3 ft) long and 0.3 m (1 ft) tall. Its upper leg bone ([femur](https://en.wikipedia.org/wiki/Femur)) measures 86 mm in length, and its lower leg bone ([tibia](https://en.wikipedia.org/wiki/Tibia)) measures 104 mm in length. The tibia and other skeletal features of referred specimen BSNH 13656 (now on display at the [Boston Museum of Science](https://en.wikipedia.org/wiki/Boston_Museum_of_Science) and given the number MOS 2001.248) are nearly three times longer than the type specimen described above. This suggests that *Podokesaurus* grew to about 9 feet in length, provided that BSNH 13656 is in fact an example of this genus.[[3]](https://en.wikipedia.org/wiki/Podokesaurus" \l "cite_note-colbertbaird58-3)

## Discovery and occurrence



Interpretative drawing of the holotype

The only [fossil](https://en.wikipedia.org/wiki/Fossil) of the [type species](https://en.wikipedia.org/wiki/Type_species) *Podokesaurus holyokensis*, the full [species name](https://en.wikipedia.org/wiki/Specific_name_(zoology)), was recovered in 1910 by [Mount Holyoke College](https://en.wikipedia.org/wiki/Mount_Holyoke_College) professor of [geology](https://en.wikipedia.org/wiki/Geology) and [geography](https://en.wikipedia.org/wiki/Geography), [Mignon Talbot](https://en.wikipedia.org/wiki/Mignon_Talbot). It consisted of a split boulder found by Talbot and her sister Elly on a hillock near to the college.[[1]](http://www.mtholyoke.edu/~dalbino/books/lester/dinosaur.html) The hillock consists of material deposited by ice and having its probable origin in the [Portland Formation](https://en.wikipedia.org/wiki/Portland_Formation) in Massachusetts. The slab and counterslab showed a poorly preserved, incomplete [skeleton](https://en.wikipedia.org/wiki/Skeleton). Most of the skull is lacking. Talbot made pictures of the stones and sought advice from [Richard Swann Lull](https://en.wikipedia.org/wiki/Richard_Swann_Lull), an authoritative dinosaur expert. It was formally described in June 1911 by Talbot herself, who thereby became the first woman to name a non-avian dinosaur.[[4]](https://en.wikipedia.org/wiki/Podokesaurus" \l "cite_note-4) *Podokesaurus* was originally thought to have lived during the [Late Triassic](https://en.wikipedia.org/wiki/Late_Triassic) Period, which was later disproved. *Podokesaurus* was discovered in sediments deposited during the Pliensbachian–Toarcian stages of the [Early Jurassic](https://en.wikipedia.org/wiki/Early_Jurassic) Period, between 190 and 174 million years ago.



Skull and tail bones

In 1958 a second specimen, BSNH 13656 (MOS 2001.248), was referred to *P. holyokensis* by [Edwin Harris Colbert](https://en.wikipedia.org/wiki/Edwin_Harris_Colbert) and Donald Baird. It consists of natural casts in sandstone of a pubis, tibia, three ribs, and a possible vertebra, probably collected in Middletown, Connecticut. The bone casts are from an individual about three times longer than the [type specimen](https://en.wikipedia.org/wiki/Type_specimen).[[3]](https://en.wikipedia.org/wiki/Podokesaurus" \l "cite_note-colbertbaird58-3) [[5]](https://en.wikipedia.org/wiki/Podokesaurus" \l "cite_note-Getty2011-5) The type, therefore, might have been a juvenile.

## Classification



Pelvic bones.

Because of the poor preservation of the original type material of *Podokesaurus* it is hard to find much difference when compared to the material of the much better known [*Coelophysis*](https://en.wikipedia.org/wiki/Coelophysis). From this Colbert concluded in 1964 that *Podokesaurus* was not a distinct [genus](https://en.wikipedia.org/wiki/Genus) but in fact a [species](https://en.wikipedia.org/wiki/Species) of [*Coelophysis*](https://en.wikipedia.org/wiki/Coelophysis): *Coelophysis holyokensis*.[[6]](https://en.wikipedia.org/wiki/Podokesaurus" \l "cite_note-6) If so, it would by implication be a member of the [Coelophysidae](https://en.wikipedia.org/wiki/Coelophysidae). However, the name *Podokesaurus* is still commonly used to refer to the material, while being assigned to a more general [Coelophysoidea](https://en.wikipedia.org/wiki/Coelophysoidea), as the identity is hard to prove and *Coelophysis* dates from a different period. The matter is complicated because all the original fossil material of *Podokesaurus holyokensis* was destroyed in a [fire](https://en.wikipedia.org/wiki/Fire) in 1917, and only casts remain, including those in the Division of Paleontology at the [American Museum of Natural History](https://en.wikipedia.org/wiki/American_Museum_of_Natural_History) in New York, the [Peabody Museum of Natural History](https://en.wikipedia.org/wiki/Peabody_Museum_of_Natural_History) at Yale University, and the [Amherst College Museum of Natural History](https://en.wikipedia.org/wiki/Amherst_College_Museum_of_Natural_History) (now the Beneski Museum).[[7]](https://en.wikipedia.org/wiki/Podokesaurus" \l "cite_note-amnhmainpage-7)[[8]](https://en.wikipedia.org/wiki/Podokesaurus" \l "cite_note-peabodymuseum-8) Tykoski and Rowe noted that *Podokesaurus* likely possesses coelophysoid characters, but does not preserve any [derived traits](https://en.wikipedia.org/wiki/Derived_trait) that would unite it with *Coelophysis*, thus *Podokesaurus* is a valid genus separate from [*Coelophysis*](https://en.wikipedia.org/wiki/Coelophysis). With respect to its taxonomic group, *Podokesaurus* has been assigned to [Coelophysoidea](https://en.wikipedia.org/wiki/Coelophysoidea) [incertae sedis](https://en.wikipedia.org/wiki/Incertae_sedis) by Tykoski and Rowe.[[9]](https://en.wikipedia.org/wiki/Podokesaurus" \l "cite_note-tykoskirowe2004-9)

### Related genera

*Podokesaurus* shares the [Coelophysidae](https://en.wikipedia.org/wiki/Coelophysidae) taxon with [*Camposaurus*](https://en.wikipedia.org/wiki/Camposaurus) and [*Coelophysis*](https://en.wikipedia.org/wiki/Coelophysis). It may also be related to [*Liliensternus*](https://en.wikipedia.org/wiki/Liliensternus), [*Procompsognathus*](https://en.wikipedia.org/wiki/Procompsognathus), ?[*Pterospondylus*](https://en.wikipedia.org/wiki/Pterospondylus), ?[*Segisaurus*](https://en.wikipedia.org/wiki/Segisaurus) and ?[*Gojirasaurus*](https://en.wikipedia.org/wiki/Gojirasaurus).

### Distinguishing anatomical features

A diagnosis is a statement of the anatomical features of an organism (or group) that collectively distinguish it from all other organisms. Some, but not all, of the features in a diagnosis are also autapomorphies. An autapomorphy is a distinctive anatomical feature that is unique to a given organism or group.

According to Colbert and Baird (1958), *Podokesaurus* can be distinguished from [Coelophysis](https://en.wikipedia.org/wiki/Coelophysis), and other dinosaurs based on the fact that neural spines on its [dorsal vertebrae](https://en.wikipedia.org/wiki/Thoracic_vertebrae) are anteroposteriorly shorter than those in *Coelophysis bauri*. Colbert and Baird (1958) also noted that a hip bone, the [ischium](https://en.wikipedia.org/wiki/Ischium), is "differently shaped" in *Podokesaurus*, when compared to [*Coelophysis*](https://en.wikipedia.org/wiki/Coelophysis), but did not describe how it was different.[[3]](https://en.wikipedia.org/wiki/Podokesaurus" \l "cite_note-colbertbaird58-3)

## Paleobiology



Early illustration

The skull is virtually unknown in *Podokesaurus* but based on the available material which suggests placement in the family [Coelophysidae](https://en.wikipedia.org/wiki/Coelophysidae), it can be assumed that it was a small carnivorous theropod, that likely preyed on animals smaller than itself. Based on its skelletal morphology it can be ascertained that *Podokesaurus* was bipedal and, contrary to early illustrations, ran with its tail extended and off the ground. It has been estimated that *Podokesaurus* could run at 14 – 19 km/h (9 - 12 mph), hence the name "swift-footed lizard".

## See also

* [Timeline of coelophysoid research](https://en.wikipedia.org/wiki/Timeline_of_coelophysoid_research)

## References

 [*"Podokesaurus"*](http://paleo.amnh.org/fossil/show.html?cat_num=FR 2976). American Museum of Natural History*. Retrieved 8 August 2013*.

  Talbot, M., 1911, *Podokesaurus holyokensis, a new dinosaur of the Connecticut Valley*: American Journal of Science, v. 31, p. 469-479

  Colbert E.H. and Baird, D., 1958, "Coelurosaur bone casts from the Connecticut Valley Triassic", *Am. Mus. Novitates* **1901**: 1-11

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  Getty, P. R.; Bush, A. M. (2011). "Sand pseudomorphs of dinosaur bones: Implications for (non-) preservation of tetrapod skeletal material in the Hartford Basin, USA". Palaeogeography, Palaeoclimatology, Palaeoecology **302** (3–4): 407. [*doi*](https://en.wikipedia.org/wiki/Digital_object_identifier):[*10.1016/j.palaeo.2011.01.029*](https://dx.doi.org/10.1016%2Fj.palaeo.2011.01.029).

  Colbert, E.H. (1964) *The Triassic dinosaur genera* Podokesaurus *and* Coelophysis*. Am. Mus. Novitates 2168: 1-12*

  [*"Main Page"*](http://paleo.amnh.org/). American Museum of Natural History*. Retrieved 8 August 2013*.

  [*"Main Page"*](http://peabody.yale.edu/collections/search-collections?vp/). Peabody Museum*. Retrieved 8 August 2013*.

* 1.  Tykoski, R.S. & Rowe, T. (2004). "Ceratosauria". In: Weishampel, D.B., Dodson, P., & Osmolska, H. (Eds.) *The Dinosauria* (2nd edition). Berkeley: University of California Press. Pp. 47–70

## External links

* [Coelophysis](http://www.isgs.uiuc.edu/faq/dino-faqs/pdq256.html) - relation to Late Triassic *Coelophysis*, from the Illinois State Geographical Survey
* [Coelophysis](http://www.nhm.org/journey/prehist/saur/coelophysis.html) - relation to Late Triassic *Coelophysis*, from the Natural History Museum of Los Angeles