

## Gallery of Geology - Cretaceous fossil fish from New Mexico?

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# Gallery of Geology—Cretaceous fossil fish, from New Mexico?

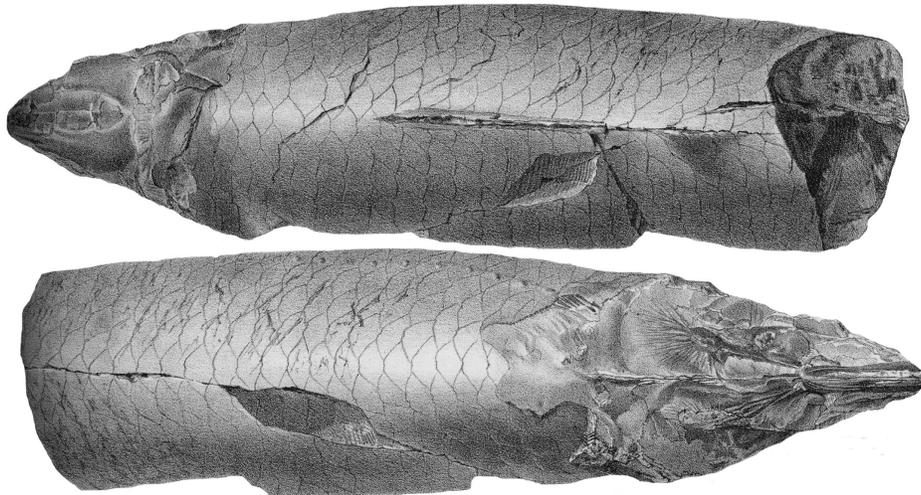
One of the first Cretaceous fossil fishes described from the Rocky Mountain region was *Syllaemus latifrons*. Cope (1875, p. 180) coined this name for the head and incomplete body of a fish preserved in three dimensions. According to Cope (1875, pp. 181–182), “The specimen was found by Lieutenant Marshall, of the Wheeler United States Geographical Survey, ‘near the summit of Pike’s Peak, Colorado’ and further noted that “The specimen has the appearance of having been derived from the Cretaceous or possibly Jurassic

in New Mexico.” However, what that “more full information” was has never been divulged. We know that the Wheeler Survey visited both Colorado and New Mexico in 1873 and 1874, but whether or not an archive contains field records of the samples collected by Lieutenant Marshall is unknown.

The fossil (holotype of *Syllaemus latifrons* Cope; see the photographs) now resides at the National Museum of Natural History (Smithsonian Institution), Washington, D.C., where it is cataloged



Photograph of the holotype of *Syllaemus latifrons*. Total length of fossil ~20 cm.



Cope’s (1877) lithographic illustrations of the holotype of *Syllaemus latifrons*. Total length of fossil ~20 cm.

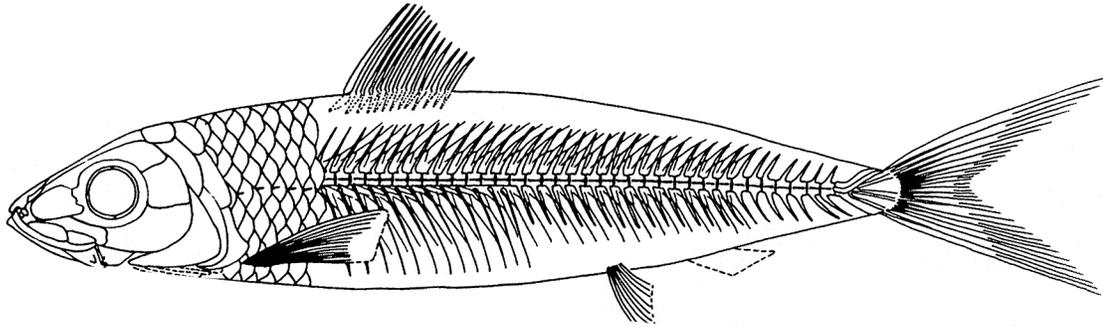
beds at the base of this granitic mountain, and its occurrence where found was doubtless accidental.” However, Cope (1877, p. 28) later changed the provenance of the fossil fish, stating that “more full information leads to the belief that it was obtained from some point

as USNM 4979. The only locality information the Smithsonian has is that the fossil was collected in New Mexico. (The actual catalog card with the fossil identifies the locality as “New Mexico?”). Cope’s (1877, pl. 23, fig. 1) lithograph of USNM 4979 accurately depicts the

three-dimensional fish fossil, which is approximately 20 cm long and has a maximum diameter of approximately 5.5 cm.

Students of fossil fishes (e.g., Dunkle 1958) long endorsed the idea that *Syllaemus* and some of the other fossil fish genera that Cope had named from the Cretaceous of the American

scales and bone over a light-colored limestone center—looks to us as plausibly Greenhorn Limestone of northern New Mexico. However, without further research that uncovers more detailed records of its discovery and collection, the provenance of the holotype of *S. latifrons* remains a mystery.



Restoration of *Apsopelix anglicus* (= *Syllaemus latifrons*) by Teller-Marshall and Bardack (1978).

West likely represent one genus, *Apsopelix*. Indeed, a complete revision of these fishes by Teller-Marshall and Bardack (1978) advocated *Apsopelix anglicus* as the correct taxonomic name for the fish from New Mexico (?) that Cope had dubbed *S. latifrons*. Teller-Marshall and Bardack (1978) reconstruct *Apsopelix* (see the drawing) as a robust fish with long gill rakers and a posteriorly located anal fin (this indicates that the gut was long) and infer that it was a pelagic plankton feeder.

*Apsopelix* is well known from the Turonian interval of the Greenhorn Limestone in western Kansas, though the genus has a broad geographic and stratigraphic range that begins in the Albian of France and extends through the Santonian of the USA; most records are Cenomanian in age (Teller-Marshall and Bardack 1978). The preservation of the holotype of *Syllaemus latifrons*—brown mineralized

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