ACTA PALAEONTOLOGICA POLONICA

A terrestrial snake from the lower Eocene of the mid-Atlantic region (Nanjemoy Formation, Virginia) of North America

Adam C. Pritchard, Jacob A. Mccartney, Georgios L. Georgalis, and Krister T. Smith
Acta Palaeontologica Polonica 70 (4), 2025: 817-826 doi:10.4202/app.01265.2025

We report on the oldest vertebra of a terrestrial snake from the Paleogene of eastern North America. The nearly complete trunk vertebra was recovered from the Eocene Nanjemoy Formation of Virginia and is referred to Constrictores, the clade including booids and pythonoids, as it bears a relatively broad centrum, high neural spine, and a relatively massive zygosphene compared to most other snake taxa. Although a combination of features of the specimen, including a dorsoventrally tall and transversely narrow neural canal and a relatively high neural spine mostly developed in the posterior half of the neural arch, are distinct from most other described Paleogene Constrictores, we refrain from naming a new taxon based on a single element. The discovery of this early Eocene snake in the north of the Paleogene Atlantic coast strengthens similarities with contemporaneous vertebrate assemblages in western North America, the Paleogene Gulf Coast of North America, and western Europe. It also extends the broad biogeographic range of the rich Paleogene radiation of Constrictores to the Atlantic coast of North America. The specimen also exhibits interesting taphonomic signatures (e.g., eroded outer layers of cortical and articular bone, specific damages of the zygantrum) indicating that it may have been digested prior to fossilization.

Key words: Squamata, Serpentes, Constrictores, Eocene, Paleogene, Virginia, USA.

Adam Pritchard [adam.pritchard@vmnh.virginia.gov; ORCID: https://orcid.org/0000-0001-8722-0011], Virginia Museum of Natural History, 21 Starling Avenue, Martinsville, Virginia, USA. Jacob McCartney [jmccart61@naz.edu; ORCID: https://orcid.org/0000-0003-3661-8518], Biology Department, Nazareth University, 4245 East Avenue, Rochester, NY 14618. Georgios Georgalis [georgalis@isez.pan.krakow.pl ; ORCID: https://orcid.org/0000-0001-7759-6146], Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Sławkowska 17, 31-016, Kraków, Poland. Krister Smith [krister.smith@senckenberg.de ; ORCID: https://orcid.org/0000-0003-1442-2944], Department of Messel Research and Paleobiology, Senckenberg Research Institute and Natural History Museum Frankfurt, Senckenberganlage 25, 60325, Frankfurt am Main, Germany.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (for details please see creativecommons.org), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.


Full text (529.6 kB)