

Cenomanian-Campanian (Late Cretaceous) mid-palaeolatitude sharks of *Cretalamna appendiculata* type

Mikael Siversson, Johan Lindgren, Michael G. Newbrey, Peter Cederström, and Todd D. Cook
Acta Palaeontologica Polonica 60 (2), 2015: 339-384 doi: <http://dx.doi.org/10.4202/app.2012.0137>

The type species of the extinct lamniform genus *Cretalamna*, *C. appendiculata*, has been assigned a 50 Ma range (Albian–Ypresian) by a majority of previous authors. Analysis of a partly articulated dentition of a *Cretalamna* from the Smoky Hill Chalk, Kansas, USA (LACM 128126) and isolated teeth of the genus from Cenomanian to Campanian strata of Western Australia, France, Sweden, and the Western Interior of North America, indicates that the name of the type species, as applied to fossil material over the last 50 years, represents a large species complex. The middle Cenomanian part of the Gearle Siltstone, Western Australia, yielded *C. catoxodon* sp. nov. and “*Cretalamna*” *gunsoni*. The latter, reassigned to the new genus *Kenolamna*, shares several dental features with the Paleocene *Palaeocarcharodon*. Early Turonian strata in France produced the type species *C. appendiculata*, *C. deschutteri* sp. nov., and *C. gertericorum* sp. nov. *Cretalamna* teeth from the late Coniacian part of the Smoky Hill Chalk in Kansas are assigned to *C. ewelli* sp. nov., whereas LACM 128126, of latest Santonian or earliest Campanian age, is designated as holotype of *C. hattini* sp. nov. Early Campanian deposits in Sweden yielded *C. borealis* and *C. sarcoportheta* sp. nov. A previous reconstruction of the dentition of LACM 128126 includes a posteriorly situated upper lateroposterior tooth, with a distally curved cusp, demonstrably misplaced as a reduced upper “intermediate” tooth. As originally reconstructed, the dentition resembled that of cretoxyrhinids (sensu stricto) and lamnids. Tooth morphology, however, indicates an otodontid affinity for *Cretalamna*. The root is typically the most diagnostic feature on an isolated *Cretalamna* tooth. This porous structure is commonly abraded and/or corroded and, consequently, many collected *Cretalamna* teeth are indeterminable at species level.

Key words: Lamniformes, Otodontidae, Cretaceous, Australia, France, Sweden, USA.

Mikael Siversson [mikael.siversson@museum.wa.gov.au], Department of Earth and Planetary Sciences, Western Australian Museum, 49 Kew Street, Welshpool, WA 6106, Australia; Johan Lindgren [johan.lindgren@geol.lu.se], Department of Geology, Lund University, Sölvegatan 12, SE-223 62 Lund, Sweden; Michael G. Newbrey [newbrey_michael@columbusstate.edu], Department of Biology, Columbus State University, Co-lumbus, Georgia

31907-5645, USA; Royal Tyrrell Museum of Palaeontology, Box 7500, Drumheller, Alberta, T0J 0Y0, Canada; and Department of Biological Sciences, University of Alberta, Edmonton, Alberta T6G 2E9, Canada; Peter Cederström [peter.cederstrom@eslov.se], Axelvoldsvägen 27, SE-241 35 Eslöv, Sweden; Todd D. Cook [tdc15@psu.edu], School of Science, Penn State Erie, The Behrend College, 4205 College Drive, Erie, PA 16563, USA.

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 \(3,433.8 kB\)](#)