

Eocene Tarpons from the North Sea Region, Denmark and UK

Maria E. C. Leal¹, Bo P. Schultz², Henrik Madsen³, Chiara Villa⁴, Niels Lynnerup⁴, Niels J. Rosenkrants⁵, Ulrik Veje⁵ & Niels Bonde^{2,6}

¹ *Lab. de Paleontologia, Departamento de Geologia, Universidade Federal do Ceará, Bloco 912, 60455-760 Fortaleza, CE, Brazil*

² *Fur Museum (Muserum Salling), 7884 Fur, Denmark*

³ *Molermuseet, Skarrehagevej, Sejerslev, 7900 Nykøbing Mors, Denmark*

⁴ *Lab. Biological Anthropology, Department of Forensic Medicine, Frederik d. 5.'s Vej 11, 2100 Copenhagen Ø, Denmark*

⁵ *Aarhus Universitetshospital, 8000 Aarhus C, Denmark*

⁶ *Zoological Museum (Biodiversity, SNM), 2100 Copenhagen Ø, Denmark*

There are very few tarpons (family Megalopidae) and other elopiforms (fam. Elopidae) recorded in the Tertiary. The records are mainly from the Eocene, and more abundant in the 'North Sea Region' in Early Eocene, as for instance the large Danish forms. They are also found in late Early Eocene in London Clay, in Late Eocene in Caucasia, and in Miocene of SE-Asia, although none were described from the famous Bolca fauna (early Mid Eocene).

However, there is a large, still undescribed 'tarpon-like' fish in the Bolca Museum (obs. MECL & NB 2014). There are even fewer described from the long Cretaceous period, 4-5? genera, including the large *Paraelops* from Romualdo Formation, Araripe Basin, NE-Brazil, and a large undescribed megalopid from Tlayua, Pueblo, Mexico, both 'Mid Cretaceous'. The oldest elopiforms are from Late Jurassic Solnhofen Limestone.

The large Danish 'tarpons' come from 'cementstones' in Fur Formation (earliest Eocene, ca 55 m.y.), and here we report an almost complete specimen which is c. 110 cm long; however, big isolated scales found in this formation indicate fishes at least twice as big (comparable in size with the living *Tarpon atlanticus* - over 2. m). This specimen has a heavy skull lacking the lower jaw, and is preserved in 3-D. It was split in the midline and acid prepared, being then CT-scanned in Aarhus and reconstructed in the Laboratory of Biological Anthropology, Copenhagen University, to attempt precise, detailed comparisons with modern skulls and with the 3-D skulls preserved in concretions from the London Clay.