

## PROVENANCE OF FOURTAU'S EGYPTIAN ARCHAEOCETE

P.D. GINGERICH

Museum of Paleontology  
The University of Michigan  
Ann Arbor, Michigan 48109-1079 (U.S.A.)

KEY WORDS: Archaeoceti, — *Prozeuglodon* — *Dorudon* — Egypt — Fayûm — Eocene

Professor Pilleri's (1985) discovery of an Egyptian archaeocete rostrum in the Paleontology Museum of the University of Florence is important, and several details warrant amplification and clarification in view of limited information concerning provenance and circumstances of collection known for the specimen. According to Prof. Pilleri, the Florence specimen is labelled: "Wâdi-el-Nutrûn, donated by Fourteau 1920, IGF-13010," and this is the only information that accompanies the specimen.

The donor (and presumably collector) was the French engineer-geologist-paleontologist René Fourtau (not Fourteau), who lived and worked in Egypt most of his life. Fourtau was educated as a civil engineer in France and moved to Egypt initially to work for the Egyptian railway. His first published paper was on artesian wells and boreholes of Egypt, and in the latter part of the nineteenth century he wrote extensively on the geology of Egypt. Fourtau received the 1903 "Prix Savigny" in anatomy and zoology from the French *Académie des Sciences* (séance du 21 Décembre) for his extensive contributions to knowledge of the fossil echinoids of Egypt. Fourtau later joined the Geological Survey of Egypt and published the *Catalogue des Invertébrés Fossiles de l'Égypte Représentés dans les Collections du Musée de Géologie au Caire* (published in parts from 1913—1924). During this period he also published his *Contribution à l'Étude des Vertébrés Miocènes de l'Égypte* (first published in 1918 and reprinted with appendices in 1920). René Fourtau died in Florence in 1921, which helps to explain how a fossil he possessed became part of the University of Florence collection.

The specimen in question, IGF-13010, is a cranial rostrum with some upper cheek teeth preserved on both sides of the maxilla. The form of the rostrum and the complexity and relative size of posterior teeth indicate that the specimen is clearly an archaeocete cetacean. Archaeocetes are well known in Egypt, but it is very unlikely that an archaeocete can have been found in or near Wâdi-el-Nutrûn. Archaeocetes became extinct at or near the end of the Eocene. Wâdi-el-Nutrûn has yielded a late Miocene or Pliocene vertebrate fauna (ANDREWS, 1902; STROMER, 1913, 1921), and the oldest sediments within 50 km of Wâdi-el-Nutrûn in any direction are Miocene in age (Geological Map of Egypt, 1981).

IGF-13010 is an archaeocete, however, it compares more closely with *Prozeuglodon atrox* ANDREWS (1906) that it does with *Dorudon osiris* (DAMES, 1894). The specimen is immature, preserving deciduous premolars  $dP^{1-2}$  and  $dP^4$  and permanent molar  $M^1$  on the left side, and deciduous premolars  $dP^{1-3}$  on the right side. These homologies are determined by the position of the infraorbital foramen above the front root of  $dP^3$ , spacing between the teeth and the form and relative size of each tooth. Teeth labelled  $pm_3$  and  $pm_4$  by PILLERI (1985: plate I) are  $dP^4$  and  $M^1$ , respectively. Right  $dP^3$  has the long low crown and large posteromedial pillar or inner root that distinguish deciduous from permanent premolars. Teeth of IGF-13010 are too large to belong to *Dorudon osiris*, but they compare closely in size to teeth of *Prozeuglodon atrox*. British Museum (Natural History) specimen M. 9266 illustrated by ANDREWS (1906: text-fig. 82) it at a similar stage of development and it is a good specimen for comparison, showing the inner roots of deciduous teeth clearly.

Assignment to *P. atrox* is further confirmed by the distribution of these two species. After four seasons of field work collecting archaeocetes in Egypt, we now know that most specimens of *D. osiris* are adults, and all come from the late Eocene Qasr el Sagha Formation in the Fayûm Province of Egypt. Most specimens of the larger *P. atrox* are juveniles, and most come from the late middle Eocene Gehannam and Birket Qarun formations in Fayûm Province. Fortau was an authority on the Eocene and worked in Fayûm Province at various stages in his career. Thus it is likely that he collected IGF-13010 from the Birket Qarun Formation of Fayûm. It is very unlikely that the specimen came from Wâdi-el-Nutrûn.

## REFERENCES

- ANDREWS, C.W. 1902 — Note on a Pliocene vertebrate fauna from Wadi Natrûn, Egypt. *Geological Magazine*, vol. 9, pp. 433—439, London.
- ANDREWS, C.W. 1906 — A descriptive catalogue of the Tertiary Vertebrata of the Fayûm, Egypt. British Museum (Natural History), pp. 1—324, London.
- DAMES, W. 1894 — Über Zeuglodonten aus Aegypten and die Beziehungen der Archaeoceten zu den übrigen Cetaceen. *Geol. Pal. Abh.*, v. 1, pp. 1—36, Berlin.
- FOURTAU, R. 1918 — Contribution à l'étude des vertébrés miocènes de l'Égypte. *Geological Survey and Mineral Research Department*, pp. 1—122, Cairo.
- GEOLOGICAL MAP OF EGYPT, 1981 — Egyptian Geological Survey and Mining Authority, 1 sheet, Abbassiya.
- PILLERI, G. 1985 — Record of *Dorudon osiris* (Archaeoceti) from Wâdi-el-Nutrûn, lower Nile Valley. *Investigations on Cetacea*, ed. G. PILLERI, v. 17, pp. 35—37, Berne.
- STROMER, E. 1913 — Mitteilungen über Wirbeltierreste aus dem Mittelpliocän des Natronales (Ägypten). *Zeit. Deutsch. Geol. Gesell.*, v. 65, pp. 350—372, Berlin.
- STROMER, E. 1921 — Mitteilungen über Wirbeltierreste aus dem Mittelpliocän des Natronales (Ägypten). *Nachtrag. Sitz. Bayer. Akad. Wissensch., Math.-Phys. Kl.*, v. 1920, pp. 345—370, Munich.