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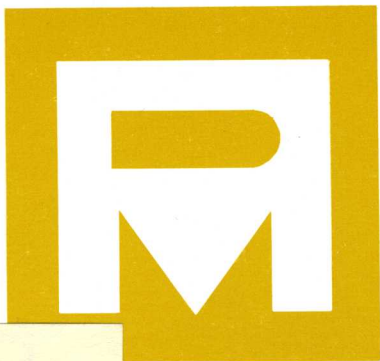
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A NEW SPECIES OF *APTERODON* (MAMMALIA,
CREODONTA) FROM THE UPPER EOCENE
QASR EL-SAGHA FORMATION OF EGYPT

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**A NEW SPECIES OF *APTERODON* (MAMMALIA, CREODONTA)
FROM THE UPPER EOCENE QASR EL-SAGHA FORMATION OF EGYPT**

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ABSTRACT

The mandible of a medium-sized carnivore discovered by a recent Yale paleontological expedition to the Fayum Province of Egypt represents a new species of the creodont *Apterodon*. The type and only specimen of this new species, *Apterodon saghensis*, comes from the Upper Eocene Qasr el-Sagha Formation and thus represents the earliest terrestrial carnivore yet described from the African continent. Unfortunately the specimen contributes little to our understanding of the origin and relationships of *Apterodon*.

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INTRODUCTION

From 1961 through 1967 a series of paleontological expeditions to the Fayum Province of Egypt was undertaken by Yale University field parties, and these expeditions have added considerably to our knowledge of the Paleogene mammalian faunas of Africa. The Oligocene faunas of the Jebel el-Qatrani Formation proved to be very rich and they have consequently received the most attention. Recent publications on these faunas include description of a new species of the primate *Parapithecus* (Simons, 1974), two new genera and species of carnivores (Simons and Gingerich, 1974), and a new genus and species of hyrax (Meyer, 1973). Detailed analysis of the sediments of the Jebel el-Qatrani Formation indicates that they were deposited on a low, featureless deltaic plain with gallery forests along the rivers and open savannah between (Bowen and Vondra, 1974).

Some attention was devoted to the underlying Qasr el-Sagha Formation by the Yale expedition. Study of the marine invertebrate fauna from this formation indicates that it is probably of late Bartonian age [ca. 40 million years (m.y.) B.P.] and correlative with the Mokattam and Maadi Formations of the Cairo region (Said, 1962, p. 102-103). Of particular interest is a fragmentary mammalian mandible found by one of us in an interbedded claystone, siltstone, and quartz sandstone facies of the Qasr el-Sagha Formation, which detailed sedimentary and stratigraphic analysis has indicated represents a prograding delta front (Vondra, 1974).

The new specimen, a very corroded mandibular ramus preserving the crowns of three teeth and parts of two others, is important as the first good record of a wholly terrestrial mammal from the Qasr el-Sagha Formation and the earliest confirmed record of a terrestrial carnivore from the African continent.

ABBREVIATIONS

CGM	Cairo Geological Museum, Cairo, Egypt
MNHN	Muséum National d'Histoire Naturelle, Paris, France
UCMP	Museum of Paleontology, University of California, Berkeley, California
UM	Museum of Paleontology, The University of Michigan, Ann Arbor, Michigan
YPM	Peabody Museum of Natural History, Yale University, New Haven, Connecticut

SYSTEMATICS

CLASS MAMMALIA
ORDER CREODONTA
FAMILY HYAENODONTIDAE
GENUS *Apterodon* Fischer, 1880

Apterodon Fischer, 1880, p. 288. Type species: *Apterodon gaudryi* Fischer.
Dasyurodon Andreae, 1887, p. 126. Type species: *Dasyurodon flonheimensis* Andreae.

Pterodon (in part), Andrews, 1904, p. 211.

INCLUDED SPECIES. *Apterodon gaudryi* Fischer, 1880; *A. flonheimensis* (Andreae, 1887); *A. macrogathus* (Andrews, 1904); *A. altidens* Schlosser, 1910; *A. saghensis* new species.

DISTRIBUTION. The type and only specimen of *Apterodon gaudryi* comes from the French Quercy Phosphorites of early or middle Oligocene age (ca. 32-37 m.y.) and *A. flonheimensis*, a possible synonym of *A. gaudryi*, comes from the middle Oligocene (ca. 32-34 m.y.) of Flonheim in the German Mainz Basin. *Apterodon macrogathus* and *A. altidens* both come from the lower fossil wood zone of the Jebel el-Qatrani Formation in Egypt (early to middle Oligocene, ca. 32-37 m.y.). *Apterodon saghensis*, described below, comes from the Egyptian Qasr el-Sagha Formation and extends the range of the genus into the late Eocene (ca. 40 m.y.) These approximate ages are based on Romer (1966, p. 335) and Berggren (1972, p. 198).

***Apterodon saghensis*, new species**

Figures 1, 2, 3C

?*Apterodon* sp. nov., Simons, 1968, p. 15.

TYPE. CGM 40006, a left mandible with the root of the lower canine, the crowns of P₂₋₄, and the damaged crown of M₁. Sharp casts of the type specimen are deposited at Yale (YPM 30241) and the University of Michigan (UM 63389).

HYPODIGM. Type specimen only.

TYPE LOCALITY. The type specimen was collected in 1963 by E. L. Simons from a locality in the Fayum depression of Egypt some twenty feet above the

base of the deltaic sandstone facies of the Qasr el-Sagha Formation and approximately one-half mile north or northwest of the Qasr el-Sagha temple, near the road up the escarpment leading to the overlying lower fossil wood zone of the Jebel el-Qatrani Formation.

ETYMOLOGY. Named with reference to the specimen's provenance, from the Qasr el-Sagha Formation near the temple Qasr el-Sagha.

DIAGNOSIS. *Apterodon saghensis* differs from the species previously described in being significantly smaller (see Table 1), and in having a higher, straighter, and less robust fourth lower premolar (see Fig. 3).

TABLE 1. Tooth measurements of the type specimen of *Apterodon saghensis* and a comparison with the Fayum species *A. macrognathus* and *A. altidens* from the lower fossil wood zone. All measurements in millimeters. Mandibular depth measured beneath M₁.

	<i>Apterodon saghensis</i> CGM 40006	<i>Apterodon macrognathus</i> UCMP 62218	<i>Apterodon altidens</i> YPM 18160
P ₂ L	8.5*	14.8	9.8*
W	4.2	8.3	5.7
P ₃ L	10.7	15.8	—
W	4.7	8.5	—
P ₄ L	12.0	18.7	15.1
W	5.9	8.9	7.1
M ₁ L	9.5	13.4*	12.7
W	5.5	7.0*	6.4
Mandibular Depth	18.1	39.0	26.6

*estimated

DESCRIPTION. The type and only specimen of *Apterodon saghensis* is a left mandible fragment six centimeters in length. The bone is highly corroded, but a portion of the symphyseal surface remains on the medial side of the mandible. The front of the jaw is missing, and no trace remains of the incisors or their alveoli.

The crown of the lower canine is also missing, but its root is preserved and measures 9.7 mm by 7.1 mm in cross section. The mandible is damaged above and lateral to the canine root and the first premolar is missing, though it was undoubtedly retained in this species.

The crowns of three premolars, P₂₋₄, are well preserved. P₂ has a single blunt protoconid cusp, with cristids extending anteriorly and posteriorly from

