African fossil cichlids are known from deposits ranging in age from Eocene through to Quaternary. The Eocene cichlids, five species of *Mahengechromis*, are from deposits in Tanzania, dated at 45 My old (Murray, 2000). Fossil cichlids probably of Oligocene age, *Macfadyenia dabanensis* and four indeterminate forms, have come from Somalia (Van Couvering, 1982). Van Couvering (1982) also reported on isolated elements from the Early Miocene of Uganda which were identified as representing two or more species referred to *Pelmatochromis*, and articulated skeletons of similar age from Kenya, which she described as *Palaeofilu kaluensis*, *Nderechromis cichloides* and *Kalyptochromis hamulodontis*. Deposits in Kenya have also produced isolated elements of indeterminate cichlids dated as possibly Early and Late Miocene (Van Couvering, 1982). Late Miocene cichlids from Africa are *Oreochromis martyrni* from Kenya, *Palaeochromis darestei* and *P. rousselleti* from Algeria, and unnamed remains from Kenya, Tanzania and Tunisia (Greenwood, 1973; Van Couvering, 1982; Stewart, 1997). Pliocene and Pleistocene cichlid remains include isolated bones and fragments of indeterminate species (e.g., Murray and Stewart, in press), and more complete remains referable to Recent tilapiine genera (e.g., Murray and Stewart, 1999). Lack of fossil cichlids from western Africa is probably because of a lack of deposits of an appropriate age or nature. The only fossil remains of cichlids previously reported from Egypt are isolated elements, predominantly fin spines, pterygiophores, and vertebral centra, known from Pleistocene deposits at Wadi Natrun (Greenwood, 1972). Although a number of fossil cichlids are known from Africa, additional cichlid material is necessary to better document the range of cichlids in past times.

Fossil vertebrates including fishes have been reported from the Fayum Depression of Egypt, in the Western Desert about 80 km southwest of Cairo, for over 100 years. Although several teleostean fishes have been described from the Fayum, most of these are from the deposits of the Eocene Qasr el Sagha and Birket Qarun formations. These deposits are overlain by the Jebel Qatrani Formation, from which Dr. Elwyn Simons of Duke University has been actively collecting fossils for several decades.

The Jebel Qatrani Formation contains deposits ranging from Late Eocene through Oligocene in age. The only fish remains that have been reported from this formation are bones of catfishes and lungfishes (Stromer, 1916; Peyer, 1928). The collections made by Dr. Simons and his team include a large amount of fish material from several localities in the Jebel Qatrani Formation. From one of these sites, Quarry E, Dr. Simons collected a lower pharyngeal jaw of a fish that is here identified as belonging to a cichlid.

**GEOLOGY**

The Jebel Qatrani Formation was previously considered to represent fluvo-marine conditions (e.g., Peyer, 1928); however, Bown and Kraus (1988) found that the formation represents almost completely fluvid conditions. Kappelman et al. (1992) determined that the Jebel Qatrani was laid down in alluvial conditions during the retreat of the Tethys Sea. The formation is separated by the Barite Sandstone into upper and lower parts. Quarry E, from which came the pharyngeal jaw, is in the lower part, just below the Barite Sandstone, roughly 90–95 m above the base of the formation (Bown and Kraus, 1988). Quarry E is in the bottom quarter of the ‘upper gravelly sandstone’ which has been interpreted as channel and floodplain deposits with abundant meandering rivers and sinuous streams in an area that was not far from the coastline (Bown and Kraus, 1988). The environment of the area during deposition was probably that of a tropical forest with abundant vegetation that may have had monsoonal wet seasons (Bown and Kraus, 1988). The sediments from which the pharyngeal jaw comes have been dated as between 33.77 and 35.12 Ma based on paleomagnetic data (Kappelman, 1992), which places it in the earliest Oligocene.

**DESCRIPTION**

The specimen, from the collections of the Duke University Primate Center (catalog number DUPC 4973), is a lower pharyngeal jaw formed by the fused left and right fifth ceratobranchial bones (Fig. 1). The jaw is broken anteriorly and the left horn is missing. The complete right horn is short but slender, and the dentigerous surface of the lower pharyngeal jaw is triangular.

To the right of the midline in a longitudinal row are two large flattened teeth and two tooth sockets (Fig. 1A). Lateral to this row is a second parallel set of two slightly smaller teeth of similar morphology and two empty sockets. Both rows progressively decrease in size anteriorly. This pattern of teeth or sockets is reflected to the left of the midline. The surface of the preserved teeth show no signs of cusps or ridges. Many other tooth sockets, some with tooth bases, are present and diminish in size towards the periphery of the jaw. Modern cichlids usually bear more than one type of tooth on the lower pharyngeal jaw, and it is probable that these smaller marginal teeth would have been of a different form.

On the ventral surface of the jaw (Fig. 1B), the left and right halves are united by a sinuous interdigitating suture. The bone surface is partially broken through in two areas, with the hollow underside of the large flattened tooth visible through the hole on the right half. A keel is present on the ventral surface of the jaw (Fig. 1B, C).

**DISCUSSION**

Several groups of fishes are known to have a united left and right ceratobranchial forming a lower pharyngeal jaw, including members of the suborder Labroidei. Although the monophyly of the Labroidei has recently been disputed by a molecular analysis (Streelman and Karl, 1997), the lower pharyngeal jaw in these fishes can be distinguished from other fishes by the presence of a median keel on the ventral surface (Stiassny and Jensen, 1987). This keel is present in the Fayum specimen. The families contained within the Labroidei are the Embiotocidae, Labridae, Pomacentridae, and Cichlidae (the families Odacidae and Scaridae were subsumed as subfamilies of the Labridae; Kaufmann and Liem, 1982). As noted by Stiassny and Jensen (1987), the lower pharyngeal jaw in almost all cichlids bears an interdigitating suture on the ventral surface. In non-cichlid labruids there is complete fusion between the left and right fifth ceratobranchials which leaves no trace of a central suture, and in these families the lower pharyngeal jaw tooth rows are arranged with teeth located directly over the symphysis of the left and right halves (Kaufmann and Liem, 1982; pers. obs.). The Fayum specimen clearly shows a median interdigitating suture on the ventral surface, and there are no teeth positioned over the symphysis. Based on the nature of the suture and the placement of the teeth, the Fayum lower pharyngeal jaw is considered to have belonged to a cichlid fish. The environment of the deposits further supports this identification, as the only labroids found in fresh water are cichlids and a single embiotocid (Nelson, 1994).