

***Gebrayelichthys* (novum), an extraordinary genus of neopterygian fishes from the Cenomanian of Lebanon**

J. Ralph NURSALL & Luigi CAPASSO

Abstract

Gebrayelichthys, gen. nov., comprising one or more species, is remarkable in appearance. Specimens are laterally compressed and the body is from 1.8 times to about twice as deep as long ($MD/SL \geq 1.8$). Head and trunk contribute about equally to the length of the body. The trunk is extended dorsad by a tall, narrow crest, which is supported anteriorly by a stout, dermal bony column of uncertain homology. The fleshy part of the dorsal crest carries the pterygiophores of the dorsal fin or its vestige, which extends the length of the trailing edge of the crest. Ventrally, the abdominal trunk forms a keel, also supported anteriorly by a stout, dermal bony column, and covered laterally by bony plates. The ventral keel extends about the same distance below the vertebral column as the dorsal crest extends above it. The trailing edge of the ventral keel is protected by plate-like scutes, each bearing a short, stout spine. The ventral keel contained much of the viscera. There is a prominent cloacal vestibule at the ventralmost part of the keel; the pelvic fins arise from the anterior wall of the vestibule. The pectoral fins arise posteriorly about two-thirds of the way up the keel. The caudal fin has not been preserved in any specimen seen. The skull has a pycnodontoid appearance, with orbits placed high beneath a frontal flexure, and an elongated, downward pointing snout. The vomer bears a few pointed teeth. The structure of the lower jaw is unclear in all the specimens; the mandible is either missing or much foreshortened. The notochord persists in the vertebral column. Scales are reduced to small, widely spaced dermal denticles, limited to the axial trunk and the base of the dorsal crest. *Gebrayelichthys* is envisaged as a drifting pelagic fish, feeding on plankton and feeble nekton. Given the conservatism of homeobox genes, it is suggested that experimental genetic manipulation of development of Recent fish might be useful to model the origin of some phylogenetically important characters of fossil fish.

Introduction

This paper will deal with previously undescribed fishes of extraordinary form, collected from Cenomanian (upper Middle Cretaceous) deposits near Haqel, Lebanon. These are generally considered to be *Plattenkalk* deposits or lithographic limestones (ALLISON 1988). There is a brief description of the Mount Lebanon localities in HAY (1903) and WOODWARD (1942). WOLFART (1967) dealt with the geology of Lebanon in general. HÜCKEL (1970) described in detail the fish-bearing strata at Haqel and suggested the nature of their depositional origin. HEMLEBEN (1977) extended that description by postulating high productivity in a marginal upwelling zone, with the possibility of occasional “red tides” causing mass mortality. HEMLEBEN & SWINBURNE (1991) reviewed and discussed *Plattenkalk* deposition.

Four specimens have been examined and are described herein. A fifth specimen has been shown in a photograph as a curiosity in a popular Spanish journal “Muy Interesante” (No. 229, June, 2000: 220). Undoubtedly, there are others in collections elsewhere. Fossils of these fishes are not common. In one estimate they comprise fewer than one in a million specimens seen at Haqel during the last decade (L.C.).

The shape of these fishes is remarkable. Each possesses a relatively large, pycnodontiform head with a high orbit, a pronounced frontal flexure and a long snout. At the posterior end of the skull, a bony mast rises to support a tall, narrow dorsal crest, carrying the basal elements of a dorsal fin. Immediately posterior to the mandible, the body is extended ventrally into a deep, laterally compressed keel. Between crest and

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