

An overview of the Cretaceous fishes of the quarries near Tepexi de Rodríguez, Puebla, México

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Abstract

Since 1981 workers at the Institute of Geology have been engaged in the collection and curation of an extensive fish fauna from the Tlayúa quarries. To date we have over 4,270 fossils of which 2,899 are fishes. The Halecostomi incertae sedis and Halecomorphi are known by 520 specimens which include: at least two species of *Lepidotes*, three genera of pycnodontids and two amiids. There are at least seven new species of Macrosemiidae, one of *Belonostomus*, and one of *Vinctifer*. The Teleostei with 2,468 specimens consist of: ichthyodectids; several Elopomorpha; at least two genera of Clupeomorpha; a large fish similar to *Bananogmius*; a new genus of gonorynchid; and a long-snouted teleost similar to the one described from the Cenomanian of Israel. At the present it is estimated that the ichthyofauna includes 45 new taxa. This assemblage is believed to be derived for the most part, from a nearby backreef lagoon, though there is a possibility of coral reef inhabitants, freshwater and open ocean, as well as autochthonous elements in the paleobiota. Since its discovery the number of specimens and new species has steadily increased.

Introduction

The following paper is meant to give a rather general view of the fish fauna that occurs in the Tlayúa quarries near Tepexi de Rodríguez, Puebla. The quarries are actively being worked today at a greater pace than anytime in the past. A recent trip (July 1993) to this locality produced what appeared to be three new taxa of fishes. The simple logistics of collecting, preparing and curating these new finds, have kept me and my students busy over the last 14 years. The importance of this new Lagerstätte deserves all of the attention that we can give it. Without a doubt these beds represent the most important discovery of fossils yet to be made in México, one of the world's great Mesozoic localities. At the present time we have just begun the task of describing this huge fauna. To accomplish this it has been necessary not only to train the workers in the quarries, but Mexican students who can work with these fossils.

History of the Tlayúa quarry

To better understand the occurrence and the uniqueness of the Tepexi fossil fishes it is important to discuss a bit the history of the find. The beds in which the fossil fishes were discovered were first quarried in 1959. During that same year, the first fossil fish, a pycnodont, was discovered (APPLGATE 1992). The beautiful red slabs of limestone in which the fishes occurred, found a ready market at first being sold along the road and later being trucked all over México. The fishes that were discovered at this time were either sold with the slabs or separately and some were just given away.

The Aranguthy family, who owns the land, has worked these quarries from 1959 to the present. Starting with the father, Don Miguel and his son Felix, the other younger boys Ranulfo, Faustino, Sebastian and Benjamin, as they matured, all worked in Tlayúa, as they do today. Only Felix, who is the director of the Museum Pie de Vaca, has given up the quarry work. At the end of 1981, these fossils were brought to my attention. I was working at the Geological Institute of the Universidad Autónoma de México, (UNAM)

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