

THE FIRST OCCURRENCE OF *POGONIAS CROMIS* (SCIAENIDAE, PERCIFORMES) IN THE LATE PLEISTOCENE OF MEXICO

EL PRIMER REGISTRO DE *POGONIAS CROMIS* (SCIAENIDAE, PERCIFORMES) EN EL PLEISTOCENO TARDÍO DE MÉXICO

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ABSTRACT: We describe a lower pharyngeal jaw of *Pogonias cromis* collected from lacustrine sediment of late Pleistocene age in the Laguna Madre, Tamaulipas, Mexico. This specimen represents the first fossil record of black drum fish in the Mexican territory, which amplifies the distribution range of the species during the Pleistocene and increases the knowledge of the family Sciaenidae.

Keywords: First occurrence, Sciaenidae, late Pleistocene, Tamaulipas, Mexico.

RESUMEN: Se describe la mandíbula faríngea inferior de *Pogonias cromis* colectada en sedimentos lacustres de edad del Pleistoceno tardío de la Laguna Madre, Tamaulipas, México. Este espécimen representa el primer registro fósil del pez corbina negra en el territorio mexicano, lo cual amplifica el área de distribución de la especie durante el Pleistoceno e incrementa el conocimiento de la familia Sciaenidae.

Palabras claves: Primer registro, Sciaenidae, Pleistoceno tardío, Tamaulipas, México.

INTRODUCTION

Pogonias (Lacepe, 1801), genus of the family of saltwater fish Sciaenidae, is represented by a single extant species, *P. cromis* (Linnaeus, 1766), which is the largest member of the family in the western North Atlantic Ocean (Jones & Wells, 1998), with a maximum size of 117 cm and weighing more than 50 kg (Takeuchi & Huddleston, 2008).

The black drum is usually found in or near shallow (10 m) brackish waters, lakes, and estuaries, though the older fish are more commonly found in the saltier areas of an estuary (closer to the ocean) near oyster beds or other plentiful food sources. The migratory behavior is almost nil (Simmons & Breuer, 1962), it but can be found from the American Atlantic ranging from the United States (from New England through Florida to Texas), Mexico, the West Indies (uncommon), passing through the southern shores of the Caribbean, and the Orinoco to San Matías Gulf in Argentina (Jones & Brian, 2000).

The first *Pogonias cromis* fossil recorded in North America is from the Hemingfordian Land Mammal age (early Miocene); it was found in the Torreya Formation at the Seaboard Air Line Railroad Company site in Leon County, Florida, dated at 18.4 +/- 1.0 Ma (Sr isotope) (Bryant et al., 1992). Other Miocene records are in Delaware, Maryland, North Carolina, Virginia and Florida (Olsen, 1964; Takeuchi & Huddleston, 2008). The Pliocene *Pogonias* was recorded only in the Lee Creek Mine, Yorktown Formation in North Carolina. But, in the Pleistocene black drum records are known in Kempsville (Virginia), Wailes Bluff (Maryland), Mayfair and Isle of Hope (Georgia); Leisey Shell Pit 1A, Oldsmar Borrow Pit 1, and Pit Tucker (Florida) (Alroy, 2000). However, the fossil record of *Pogonias cromis* outside the United States is sparse, and is basically found in South America: In the Pleistocene of Brazil (Barra do Chui and Santa Vitoria do Palmar, in Graxaim Formation) (Alroy, 2000; Souza-

Cunha & Nunan, 1980); In Argentina it is represented by fossils of late Tertiary, late Pleistocene and Holocene age (Cione & Torno, 1988; Cione et al., 2000; Fucks et al., 2005); while in Uruguay it is known only in the late Holocene (Cione & Torno, 1988). In this work we describe the pharyngeal jaw of *Pogonias cromis*, considered as the first fossil record of this taxon in Mexico.

Study area

The fossil was found during excavation work on an artificial pond near Delta Bravo and the Laguna Madre in Matamoros, Tamaulipas. The study area has a thorn scrub vegetation of coastal dunes and located at 25° 40' 44 N and 97° 16' 46 W latitude (Fig. 1). The material studied was extracted without a particular stratigraphic control. Nevertheless, the discovery was made at a depth of 4 meters in deposited lacustrine sediment, consisting of silt, clay, organic matter and some dissemination of salt and gypsum. These deposits are considered as Quaternary, between the late Pleistocene – Holocene, based on the geological-mining charter of Matamoros G14-6-9-12 (Sanchez-Bermeo et al., 2008). This specimen is in the process of cataloging.

SYSTEMATIC PALEONTOLOGY

Class: Actinopterygii (Nelson, 2006)
 Order: Perciformes (Johnson and Patterson, 1993)
 Family: Sciaenidae (Cuvier, 1829)
 Genus: *Pogonias* (Lacepède, 1801)
 Specie: *Pogonias cromis* (Linnaeus, 1766)

Description

The material of *Pogonias cromis* (Fig. 2) constitutes the lower pharyngeal jaw (5th ceratobranchial elements) of an adult judging by its size, and it is above the average of the species.

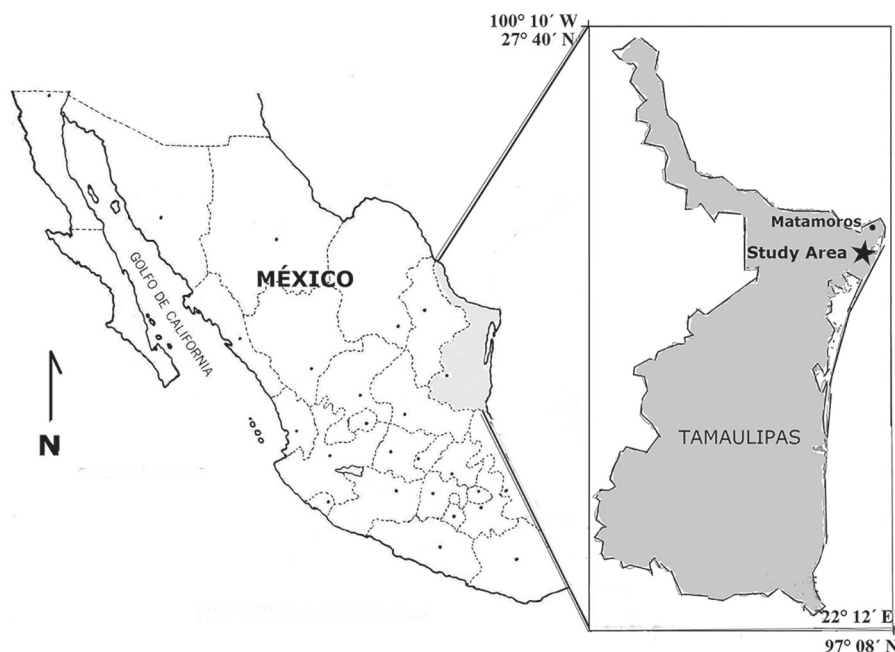


Fig. 1: Map of Tamaulipas, showing location of the study area where black drum fossil was found.

However, it has some juvenile characteristics such as the presence of molariform teeth in the central region and sharp denticles preserved on the postero-lateral angles. The jaw is in good condition but is not complete. The keel left of the ceratobranchial is totally torn, whereas the right keel is damaged in its edge. The dentition also is incomplete, and does not have many of teeth at the left central portion.

The center of the ventral lower pharyngeal jaw has a well-defined suture, with small undulations (Fig. 2). Its length along the outer margin is 83.79 mm, and the maximum width between the muscular processes (between postero-lateral angles) is 86.70 mm. In dorsal view (Fig. 3), the mandible is divided in two by a mandibular symphysis of 59.67 mm of length and 1.75 mm wide. The left lower pharyngeal has an incomplete dentition, possessing a total of 58 teeth, of which 44

are crushing teeth and 14 sharp teeth. The right lower pharyngeal also has an incomplete dentition, only 15 small crushing teeth in the lateral angle, with a maximum anteroposterior length of 5.31 mm and a maximum width of 8.86 mm.

CONCLUSIONS

Although it is currently common to find black drum along the Laguna Madre of Tamaulipas; this is the first fossil record of *Pogonias cromis* in the Mexican territory. With this discovery amplifies fossil area of *Pogonias cromis* distribution and increases awareness of Family Sciaenidae in the late Pleistocene. Additional, this finding indicates that the Laguna Madre was more extensive than today, probably explained by melting glaciers towards the end of the Wisconsin glacial episode.



Fig. 2: *Pogonias cromis* from Matamoros, Tamaulipas, México. Ventral view of the lower pharyngeal jaw. Its length along outer margins is 83.79 mm Visual scale 5 cm.

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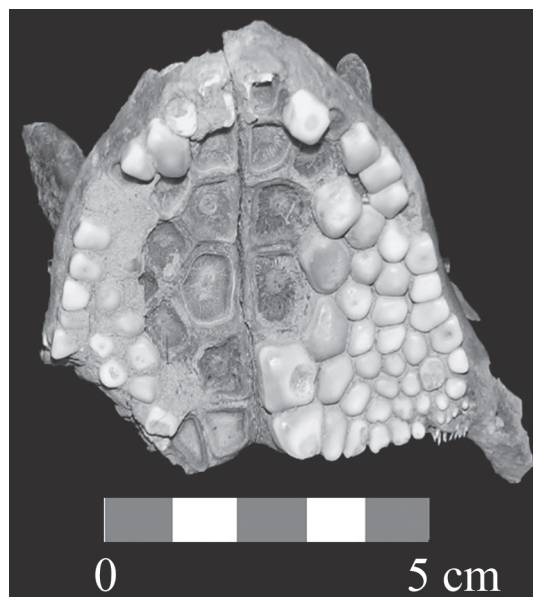


Fig. 3: *Pogonias cromis* from Matamoros, Tamaulipas, México. Dorsal view of the lower pharyngeal jaw. Visual scale 5 cm.

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