

PROCEEDINGS
OF THE
NEW ENGLAND ZOÖLOGICAL CLUB

A NEW LEPTOLEPID FISH FROM THE JURASSIC
OF CUBA¹

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THE presence of vertebrate fossils in the Valle de Viñales in the Province of Piñar del Rio, Cuba, was first discovered by Don Carlos de la Torre in 1908. This locality was later worked by Dr. Barnum Brown, and the specimens were studied by Prof. W. K. Gregory of the American Museum of Natural History. During the past few years Dr. Barbour, for the Museum of Comparative Zoölogy, and the Museo Poey of the University of Habana have obtained large collections from this area, so that an excellent series representing the fossil fauna of this region exists in these museums. On the basis of the now abundant material an analysis of the fossil fish fauna, with special reference to the cranial morphology of each species, is in progress. However, it seems desirable to present the description of this new form now, rather than delay it for an indefinite period.

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Without the assistance of Dr. Pedro Bermudas, Dr. Luis Howell Rivero, Dr. R. H. Palmer, and Dr. Guillermo Aguayo the large series of specimens now available for study would never have been accumulated.

The account of this species is based on fourteen specimens in the Museum of Comparative Zoölogy and the Museo Poey. The specimens are found in rather large, ovoid, bituminous limestone concretions, some of which weigh as much as thirty-five pounds. Unfortunately, none of the specimens are complete, and they usually consist of the skull and anterior portion of the body. Only one specimen representing the caudal half of a fish referable to this species has been found. There is little variation in size, and I have been unable to discover any characters which would justify separating them into more than one species.

Since this form does not fall into any of the known genera, without radically altering the definitions, it seems better to propose a new genus for it. In recognition of his very valuable assistance in securing specimens, it gives me great pleasure to name this genus in honor of Dr. Luis Howell Rivero of the Museo Poey.

Luisichthys gen. nov.

Genotype: vinalesensis sp. nov.

Diagnosis.—A large, short, heavy-bodied leptolepid with a hemiheterocercal tail, segmented to the tip; suspensorium nearly vertical; mandible as in *Pachythrissops*; teeth in a single series, conical, slender, and slightly recurved; those in maxillary about half as large as those in the premaxillary and dentary; a long, narrow gular plate present; two large supramaxillaries present, their combined length nearly equal to that of the maxillary; orbit circular and equidistant from the premaxillary and the preoperculum; operculum and preoperculum nearly equal in size; vertebrae 17 + 24; dorsals with

slightly constricted centra and divided neural arches; caudals with a lateral ridge on the centra and fused neural arches; intermyotomic bones present on dorsal and anterior caudal vertebrae; dorsal fin slightly nearer occiput than end of tail, originating anterior to the pelvic, 14 basal rays; anal nearer pelvic than caudal, number of rays unknown; pectoral fin with 9 and pelvic with 7 rays; scales cycloid with well developed annulae.

Luisichthys vinalesensis sp. nov.

Cotypes.—M.C.Z., no. 8345, anterior portion of a fish with good skull and pelvic fins; no. 8344, trunk of fish with tail missing and a badly damaged skull; no. 8349, caudal portion of fish.

Horizon and locality.—M. Jurassic, Oxfordian, from the calcareous shale just below the Viñales limestone; Valle de Viñales, Piñar del Rio, Cuba.

Diagnosis.—Same as generic. Length about 300 mm., head-length contained in total length three and three-fourths times, body depth at origin of dorsal fin contained in total length four plus times.

Owing to the refractory nature of the matrix, the exact relations of the dermethmoid and the premaxillaries could not be determined, nor could the details of the neurocranium. These details can only be learned from serial sections, for which material is available in the Museum of Comparative Zoölogy.

The affinities of this form are not altogether clear. It would seem that the heterocercal tail, the nearly vertical suspensorium, and the cheek being almost completely covered by regular dermal bones were primitive characters. Although it is not the earliest in time, this form is certainly the least specialized of any leptolepid which we know at all well.

EXPLANATION OF PLATE XIX

Fig. A. Restoration of *Luisichthys vinalesensis* gen. et sp. nov., based principally on M.C.Z., nos. 8345, 8344, and 8349. Teeth omitted.

Fig. B. Skull with cheek plates removed.

Fig. C. Dorsal view of neurocranium.

Fig. D. Gular plate, ventral view, left end anterior.

Fig. E. Mid-dorsal vertebra with intermyotomic bones.

Fig. F. Anterior caudal vertebra with intermyotomic bones.

EXPLANATION OF ABBREVIATIONS

| | |
|------------------------|------------------------|
| Art - Angulo-articular | Pmx - Premaxillary |
| Cla - Clavicle | Pop - Preoperculum |
| Cle - Cleithrum | Ps - Parasphenoid |
| D - Dentary | Pt - Pterygoid |
| Deth - Dermethmoid | Ptm - Post-temporal |
| Dsph - Dersphenotic | Ptot - Pterotic |
| Ecpt - Ectopterygoid | Q - Quadrate |
| Fr - Frontal | Scl - Supracleithrum |
| Hm - Hyomandibular | Smp - Symplectic |
| Mpt - Mesopterygoid | So - Suborbital series |
| Mx - Maxillary | Sop - Suboperculum |
| Op - Operculum | Sumx - Supramaxillary |
| Pa - Parietal | Vo - Vomer |
| Pal - Palatine | |

