

On Some Lower Triassic Fishes from Ankilokaza, Madagascar*

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Introduction

Madagascar, which is situated off the east coast of southern Africa in the Indian Ocean, is one of the most famous localities for yielding Triassic fishes. Many fossil fishes from this area have been described by several investigators, resulting in some important monographs. Previous research on Lower Triassic fishes from Madagascar are listed in the bibliography section of LEHMAN (1952).

Drs. ASAMA, FUJIYAMA, and HASEGAWA were members of the team of the 1973 Paleontological Expeditions of Madagascar by the National Science Museum in Tokyo which collected about 130 fragments of fish fossils about 20 km south of Ambilobe in the region of northern Madagascar (ASAMA, 1977). These specimens were sent to Tokyo for examination and were returned to the Geological Survey of Madagascar in 1977.

The purpose of this report is to present the results of those observations on the fossil fishes collected by the team. I would like to express my sincere appreciation to Drs. Kazuo ASAMA, Ienori FUJIYAMA, and Yoshikazu HASEGAWA of the National Science Museum, Tokyo for collecting the material and giving me the opportunity to study these interesting Lower Triassic fishes.

All fragments of fish fossils collected were photographed, and drawings were made of some important features using a Wild binocular microscope equipped with a drawing device.

The following species were identified among the material. For the higher taxonomic categories, ROMER's scheme (ROMER, 1966) is adopted here.

Class Osteichthyes
Subclass Actinopterygii
Superorder Chondrostei
Order Palaeonisciformes

Family Palaeoniscidae

Pteronisculus cicatosus WHITE

Boreosomus gillioti PRIEM

* Contribution to the Paleontology of Madagascar, X.

Family Bobasatraniidae

Bobasatrania mahavavica WHITE

Family Pholidopleuridae

Australosomus merlei (PRIEM)

Order Acipenseriformes

Family Saurichthyidae

Saurichthys madagascarensis PIVETEAU

Superorder Holostei

Order Amiiformes

Family Parasemionotidae

Parasemionotus labordei PIVETEAU

Description

Family Palaeoniscidae

Pteronisculus cicatrosus WHITE

Pl. 1 C

Specimens A26, A29, A70, A121, A122, B4, B5.

The specimen A121 is probably a dorsal fin of *Pteronisculus cicatrosus*. It has 2 rows of pterygiophores. Six elements are visible in the proximal row and 11 elements in the distal row. In shape, the typical pterygiophore in the distal row is constricted at the middle and enlarged at both ends. Thirty-three lepidotrichia in total are present. The 20th ray appears to be the first branched ray. The anterior edge of the fin is covered by modified scales. Segmentation of each lepidotrichia starts from its base.

Family Palaeoniscidae

Boreosomus gillioti PRIEM

Fig. 1; Pl. 1B; Pl. 2

Specimens A16, A17, A18, A25, A56, A63, A64, A85, A93, A102, A111.

Specimen A16 is the anterior portion of the body. Five suborbital bones are clearly visible behind the orbit. Posterior to them, a part of the preopercular and anteopercular, and opercular bones are situated. The dermal ornamentation consists of grooves, ridges and minute depressions which run in a horizontal or radial fashion. Most of the scales have 10 to 13 grooves running horizontally. Minute teeth are present on the dorsal edge of the dentalosplenial. There are 23 longitudinal rows of scales on the 6th vertical row from the anteriormost one.

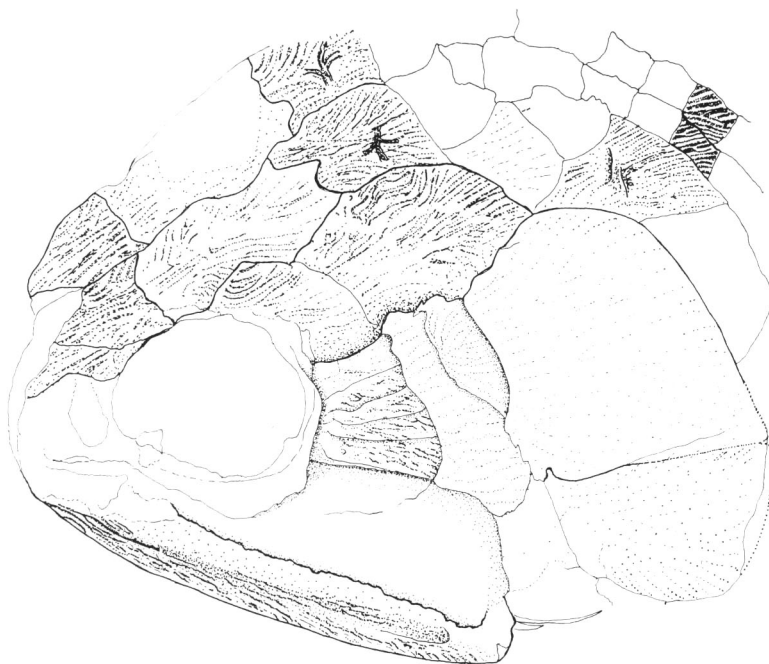


Fig. 1. Head of *Boreosomus gillioti* (specimen A16).

Family Bobasatraniidae
Bobasatrania mohavavica WHITE

Fig. 2; Pl. 1 A; Pl. 3 B

Specimens A4, A5, A11, A12, A13, A27, A30, A35, A36, A37, A38, A39, A40, A41, A43, A44, A45, A46, A47, A48, A49, A101, A104, A106, A108, A113, A116, A118, A124.

This species is represented in the largest number in the collection. There are at least 29 fragments of this species. The specimen A35 (Fig. 2) is the anterior portion of the species. It has a large cleithrum which expands at the lower ventral end. The area with tooth-like tubercles are recognizable at the anteroventral side of the orbit. These must be teeth on the pterygoids or branchial arches. The scales are vertically elongated and the ridges run vertically. The specimen A48 (Pl. 3 B) has about 53 dorsal rays and 16 scales along the dorsal base. The specimen A35 has about 15 spine-like scales in front of the dorsal fin, and has 6 predorsal scales. Below the apex of the dorsal contour, there are 13 longitudinal rows, and 14 scute-like scales are present at the ventral margin.

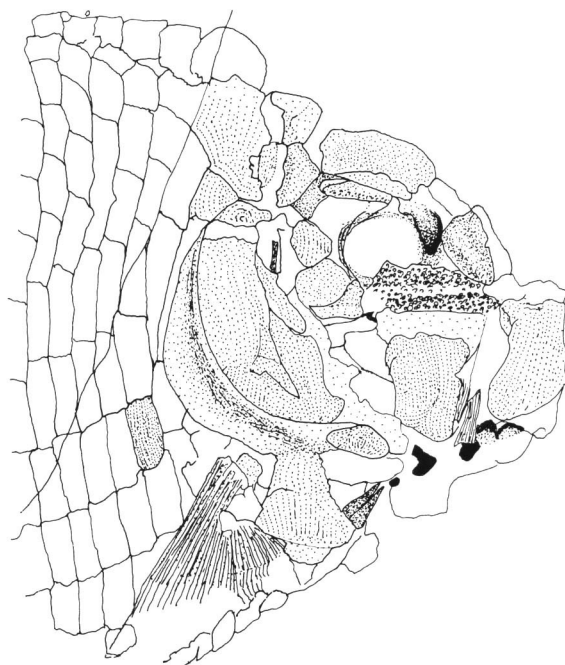


Fig. 2. Head and anterior portion of trunk of *Bobasatrania mohavavica* (specimen A35).

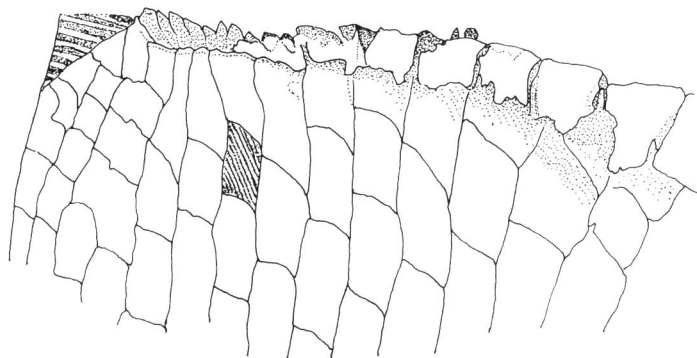


Fig. 3. Dorsal part of *Bobasatrania mohavavica* (specimen A35).

Family Pholidopleuridae
Australosomus merlei (PRIEM)

Pl. 1 D

Specimens A42, A117.

The specimen A42 is the middle portion of the body of this species. At the center there is a row of vertically elongated scales (12 of them are visible). The

width of these scales is less than $1/3$ of their length. The scales above and below these elongated scales are much shorter, becoming shorter and shorter towards the dorsal or ventral edge. There are 10 or more scale rows above and below the central row of elongated scales.

Family Saurichthyidae
Saurichthys madagascarensis PIVETEAU

Fig. 4; Pl. 3 A

Specimens A3, A6, A8, A22, A42, A74, A75, A76, A77, B18.

Specimen A22 is the head portion of the species. The long rostral extension is missing. Minute teeth are visible on the dentalosplenial and the maxillary. The dermal ornamentation consists of shallow grooves and ridges running parallel, and is observed on the lower jaw and the maxillary. The grooves and ridges on the opercular run in a semicircular fashion with focus on the anterior end (Fig. 4).

Specimen A42 is a portion of the trunk region and probably belongs to this genus. At the middle of the lateral side of the body, dorsoventrally elongated scales are arranged in a longitudinal row. Above and below the row, more than 8 rows of scales which are rhomboidal in shape, are present (Pl. 3 A).

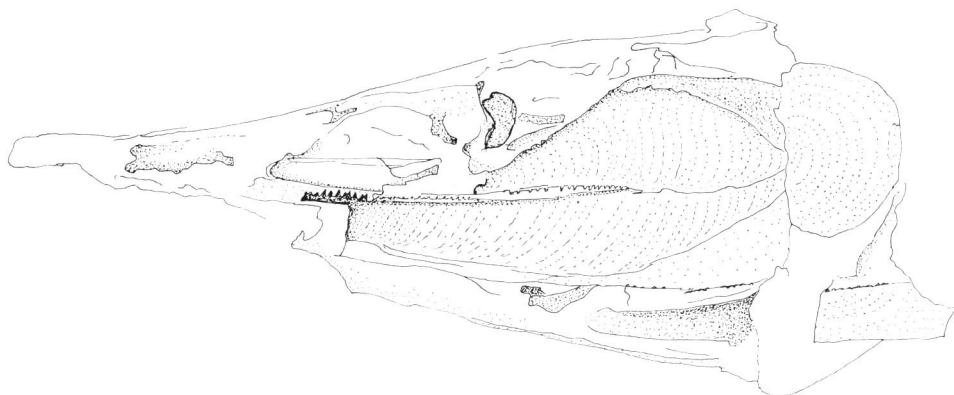


Fig. 4. Head of *Saurichthys madagascarensis* (specimen A22).

Family Parasemionotidae
Parasemionotus labordei PIVETEAU

Fig. 5

Specimen A50.

The specimen A50 is a middle portion of the body near the pelvic fins. Anterior scales are larger than posterior ones, and the width is greater than the depth, with a sharp spine at the dorsal edge. Posterior scales are diamond shaped.

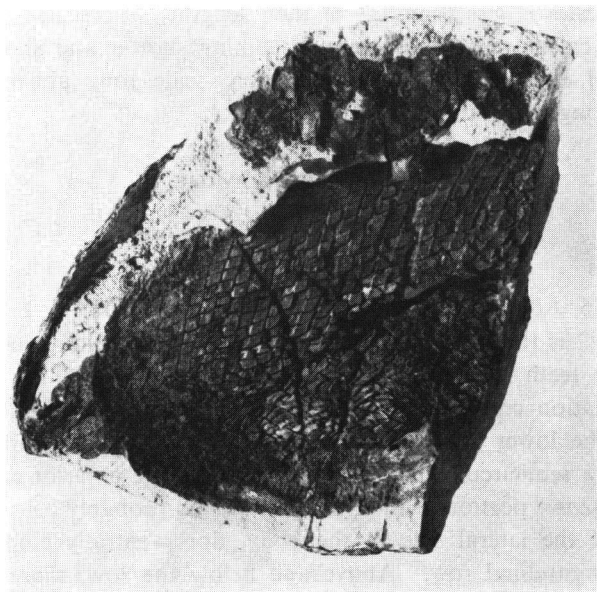


Fig. 5. A portion of the body of *Parasemionotus labordei* (specimen A50).

References

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Plate 1

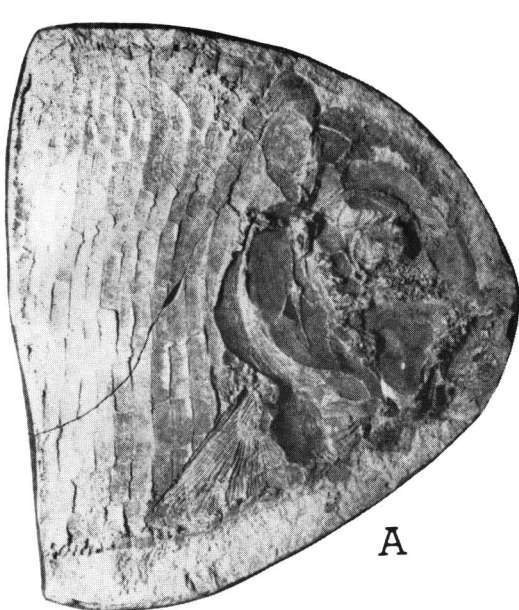
- A: *Bobasatrania mohavavica* (specimen A35), $\times 1$.
- B: *Boreosomus gillioti* (specimen A16), $\times 0.84$.
- C: Dorsal fin of *Pteronisculus* cf. *P. cicatrosus* (specimen A121), $\times 1.2$.
- D: A section of the trunk region of *Australosomus merlei* (specimen A42), $\times 1.3$.

Plate 2

- Boreosomus gillioti* (specimen A25), $\times 1$.

Plate 3

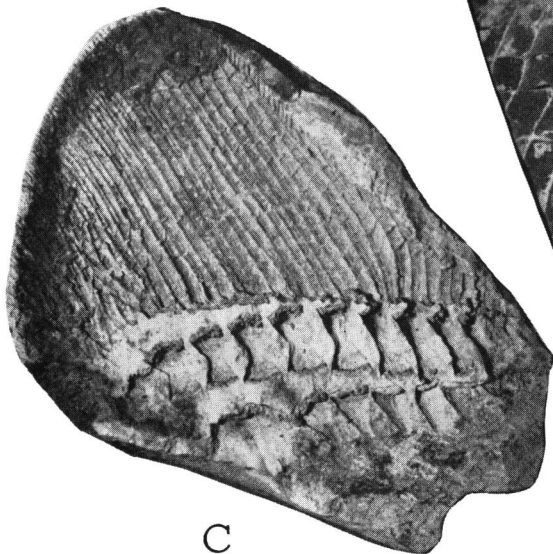
- A: Head of *Saurichthys madagascarensis* (specimen A25), $\times 1.3$.
- B: Posterior 2/3 of the body of *Bobasatrania mohavavica* (specimen A48), $\times 1.24$.



A



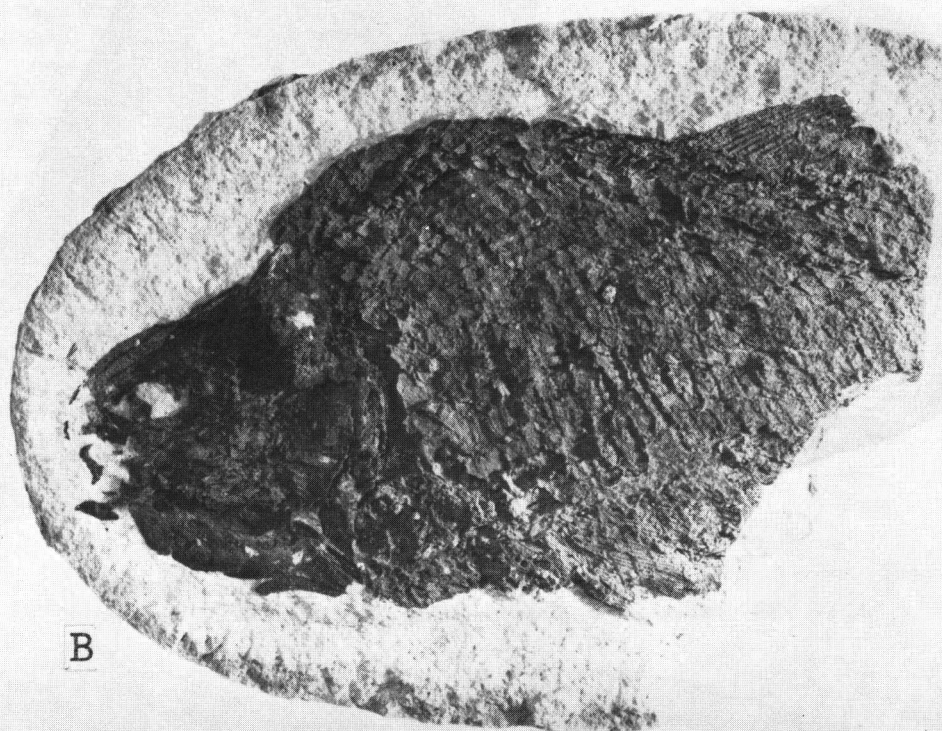
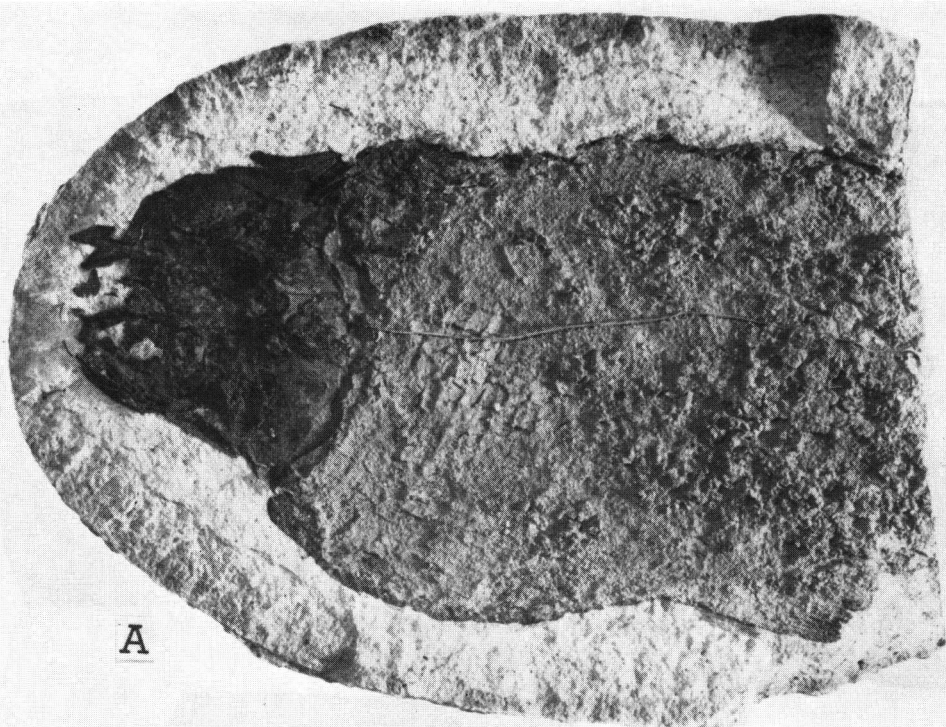
B



C

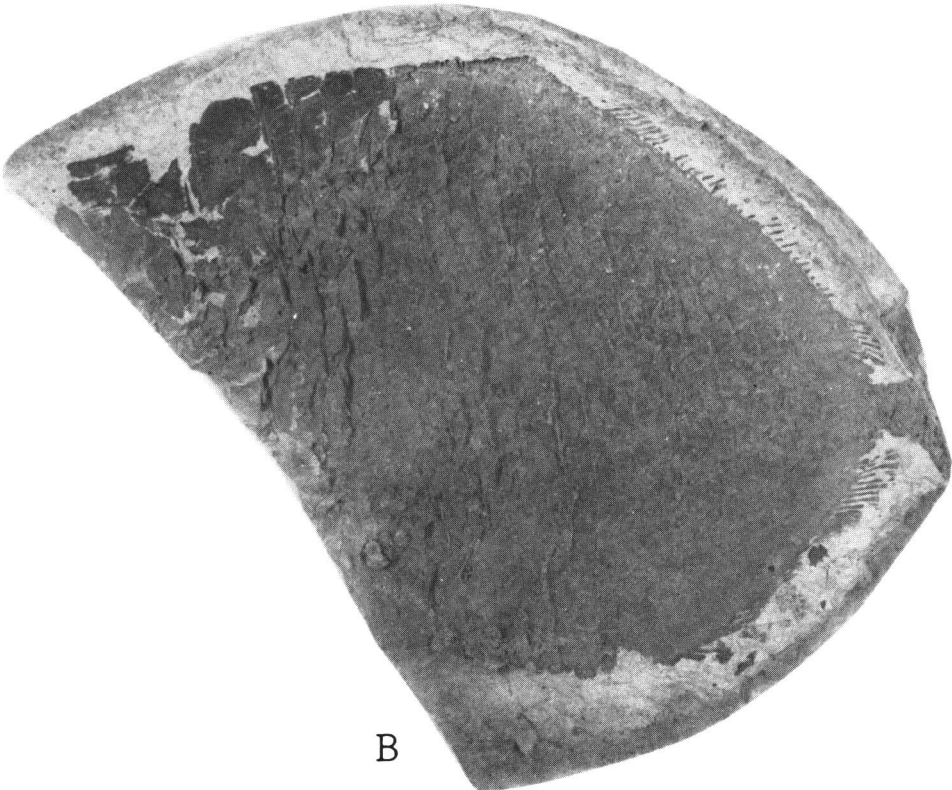


D





A



B

