

NEW SPECIES OF SEPIIDA (MOLLUSCA, CEPHALOPODA)
FROM THE EOCENE OF THE GULF COAST

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One species of *Belemnosella* Naef, 1922, and three species of *Belosaepia* Voltz, 1830, are described as new. Reports of both genera from the Jackson Group, upper Eocene, raise the stratigraphic range of each to that level from the previously reported Claiborne Group, middle Eocene age.

The author gratefully acknowledges the assistance of the following persons: Dr. J. A. Jeletzky, Geological Survey of Canada, for furnishing specimens and references not previously seen; Dr. Harold E. Vokes and Dr. Emily H. Vokes, Tulane University, who have loaned reference material, contributed specimens, and most graciously furnished the photography for the plates herein. Dr. Katherine V. W. Palmer, Paleontological Research Institution, who has been a constant source of inspiration, guidance, and help in more ways than can be enumerated. To her this paper is most gratefully dedicated.

SYSTEMATIC DESCRIPTIONS

Phylum MOLLUSCA

Class CEPHALOPODA Cuvier, 1794

Subclass COLEOIDEA Bather, 1888

Order SEPIIDA Zittel, 1895, *emend.* Naef, 1916 [nom. correct. Jeletzky, 1965 (*pro* Sepioidea Zittel, 1895, *emend.* Naef, 1916)]

Family BELEMNOSEIDAE Naef, 1921

[nom. correct. Jeletzky, 1966 (*pro* Belemnosidae Naef, 1921)]

Genus BELEMNOSELLA Naef, 1922

Belemnosella NAEF, 1922, Die Fossilen Tintenfische, pp. 48-50.

Type species, *Belemnosis americana* Meyer and Aldrich, 1886, by monotypy.

Advena PALMER, 1937, Bulls. Amer. Paleontology, v. 7, no. 32, p. 510. [Not *Advena* Gude, 1913, Malac. Soc. London, Proc., v. 10, p. 391 (Mollusca).]

Type species, *Advena floweri* Palmer, by original designation.

Anevda PALMER, 1940, Jour. Paleontology, v. 14, no. 3, p. 285.

Type species, *Anevda* [= *Advena*] *floweri* Palmer, by original designation.

Diagnosis: "Phragmocone long and straight, reaching almost to the tip of sheath, sutures

nearly straight; fairly sturdy sheath obtusely conical in apical quarter, quadrangular in cross section in anterior three-quarters, dorsal surface flattened." (Jeletzky, 1966.)

Discussion: As Jeletzky (1966, p. 107) pointed out, this genus is characterized by an orthoconic phragmocone. He thus corrected the misconception of the genus as reconstructed by Naef (1922, p. 49, text fig. 12). It is unfortunate that Fischer (1952, p. 390-391, text fig. 9-44) copied Naef in the description of the obscure genus and gave wide circulation to an erroneous concept.

BELEMNOSELLA FLOWERI (Palmer)

Plate 1, figs. 1-3

Diagnosis: "Belosepion small, composed of an elongate sheath, containing a rounded body cavity, a short rostrum and a fine, flattened dorsal callus. The tip of the rostrum is broken. The dorsal callus is finely rugose, expanded and flattened over the whole dorsal surface. The alveolus has an inner calcareous layer. The cavity becomes constricted posteriorly, its entire surface is covered by the calcareous inner layer. The tip of the alveolus may curve ventrally. The calcareous inner layer has definite, concentric septae as in *Belosaepia*. Ventrally, the sheath, anterior to the rostrum is enlarged, expanding laterally but with a deep, short concavity at the margin of the alveolus. The surface of the enlarged area is minutely granular as is most of the surface of the sheath." (Palmer, 1937.)

Dimensions of holotype: Length, 15 mm; greatest width, 6.5 mm.

Holotype: PRI 3402.

Type locality: Alabama River at Claiborne, Monroe County, Alabama.

Figured specimen: PRI 27548, length 18 mm; greatest width, 8.5 mm; locality: Red River below Montgomery Landing, Grant Parish, Louisiana.

Occurrence: Middle Eocene, Gosport Sand, uppermost Claiborne Group. Upper Eocene, Moodys Branch Fm., Jackson Group.

Discussion: This is the first report of the genus *Belemnosella* above the middle Eocene Claiborne Group of the Gulf Coast Eocene and accordingly extends its range both stratigraphically and geographically.

BELEMNOSELLA PALMERAE Allen, n. sp.

Plate 1, figs. 4-6

Diagnosis: Sheath and phragmocone typical of the genus. Proostracum missing as is the tip of the rostrum. Rostrum long, tapers evenly and

curves very slightly dorsally. The dorsal shield reaches its maximum width slightly anterior to the greatest width of the ventral callus and from that point tapers anteriorly. The anterior tapered portion of the dorsal shield is approximately 25% of the total length of the shell.

Known only from a single specimen.

Holotype, PRI 27549.

Dimensions of holotype: Length 27 mm; greatest width, estimated, 7.5 mm.

Type locality: Red River below Montgomery Landing, Grant Parish, Louisiana.

Occurrence: Upper Eocene, Moodys Branch Fm., Jackson Group.

Discussion: *B. palmerae* is closely related to *B. floweri* and as both species are present at the same locality additional material that would furnish a complete series may prove them to be conspecific. *B. palmerae* is herein specifically separated because of the difference in the seating and shape of the rostrum and the much more slender and elongate form of the sheath. The rostrum of *B. floweri* is short, tapers abruptly, and is slightly curved ventrally. That of *B. palmerae* is much longer, tapers evenly, and is slightly curved dorsally.

This species is named in honor of Dr. Katherine V. W. Palmer, Paleontological Research Institution.

Family SEPIIDAE Kerferstein, 1866

Subfamily BELOSAEPIINAE Naef, 1921

[nom. correct. herein (*pro*
Belosepiinae Naef, 1921)]

Genus BELOSAEPIA Voltz, 1830

Belosaepia VOLTZ, 1830, Mem. Soc. Hist. Nat. Strasbourg, v. 1, pp. 22-23.

Type species: *Beloptera sepioidea* Blainville = *Belosaepia cuvieri* (d'Orbigny), by original designation.

BELOSAEPIA VOKESI Allen, n. sp.

Plate 1, figs. 7-10

Diagnosis: Belosepion of medium size. The rostrum is short for the size of the shell; curved dorsally and regularly tapered in the lateral view; laterally compressed and tapered abruptly as seen in the dorsal view. The shell is laterally expanded anterior to the rostrum. Dorsal callus

finely rugose posteriorly becoming more rugged anteriorly where it is characterized by a series of longitudinal ridges with prominent pits and transverse ridges between covering the entire dorsal surface. Ventral plate wide, striated, with concentric threads that give the striations a dentate appearance under the lens. The ventral plate is strongly marked on its projected dorsal surface and the shell is sculptured with strong furrows and rugosities above the ventral plate anterior to the base of the rostrum. Internal septae weakly marked and somewhat irregularly spaced.

Dimensions of holotype: Length 21 mm; greatest width 13 mm.

Holotype: PRI 27550.

Type locality: Claiborne Bluff on the Alabama River, 1/4 mile below the bridge on U. S. Highway 40, Monroe County, Alabama.

Occurrence: Middle Eocene, Gosport Sand, uppermost Claiborne Group.

Discussion: *B. vokesi* is apparently closely related to *B. ungula* Gabb, as figured by Cossmann (1893, pl. 2). Rostrum is more compressed laterally, shell expanded more strongly anteriorly and the dorsal callus is neither as prominent nor formed as abruptly anterior to the rostrum.

Named for Dr. Harold E. Vokes, Tulane University, the collector.

BELOSAEPIA STENZELI Allen, n. sp.

Plate 2, figs. 1-8

Diagnosis: Belosepion small, short and much expanded laterally in proportion to length of shell. Rostrum short, sharp and hooked dorsally. The entire dorsal surface is deeply rugose. Ventral plate narrow, generally smooth with a few radial ridges. Internal septae strongly marked.

Dimensions of holotype: Length 11.2 mm, greatest width 14 mm. Paratype: Length 12.4 mm, greatest width 12 mm.

Holotype: PRI 27551; paratype: PRI 27552.

Type locality: Mouth of Saline Bayou, St. Maurice, Winn Parish, Louisiana.

Occurrence: Middle Eocene, Cook Mountain Fm., Saline Bayou Member, Claiborne Group.

Discussion: *B. stenzeli* may be readily separated from any described American or European species by the short, hooked rostrum. Except for the presence of the ventral plate the species bears a remarkable

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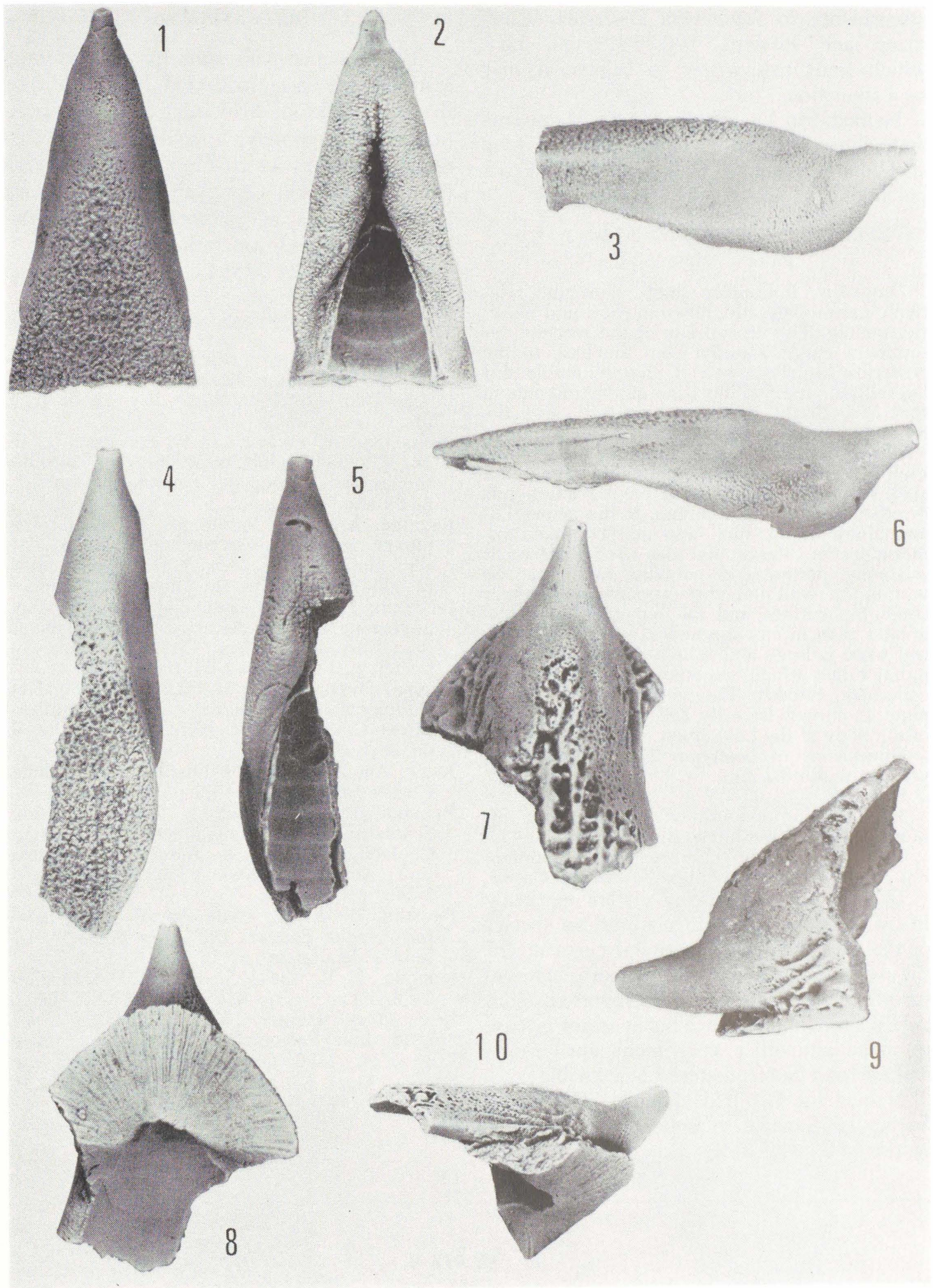


PLATE 1

resemblance to *Sepia vera* Deshayes (Cossmann and Pissarro, 1907-1913, pl. LX) which leads this writer to believe it may be a transitional form.

Named for Dr. H. B. Stenzel, Louisiana State University, in recognition of his long and distinguished career in Gulf Coast paleontology.

BELOSAEPIA JELETZKYI Allen, n. sp.

Plate 2, figs. 9-12

Diagnosis: Belosepion small, short and relatively narrow laterally. Rostrum short and blunt; tip missing. The ventral line of the rostrum describes a curve dorsally from the base to the posterior tip. The shell is sharply constricted laterally anterior to the base of the rostrum so that in both the dorsal and ventral views the rostrum appears to be swollen.

The dorsal callus is prominent, making the shell higher than its maximum width. The entire shell surface is smooth with no rugosities, pits or other irregularities common to the genus. Examinations of the shell wall at the broken anterior section shows that the shell material is relatively porous and contains small cavities within the wall but they apparently nowhere reach the surface and the resulting density is greater than in any species examined. The ventral plate is large and is somewhat folded with radial ridges which are crossed by microscopic, concentric threads. The ventral surface of the plate is curved laterally following the contour of the body of the belosepion.

Dimensions of holotype: Length 15.6 mm, greatest width 8.4 mm.

Holotype: PRI 27553.

Type locality: Mouth of Saline Bayou, St. Maurice, Winn Parish, Louisiana.

Occurrence: Middle Eocene, Cook Mountain Fm., Saline Bayou Member, Claiborne Group.

Discussion: *B. jeletzkyi* differs markedly in two respects from other American species of the genus. The strong lateral curvature of the ventral plate and the smooth external surface of the belosepion may represent more than a specific difference but it seems unwise to make any other assignment until more, and perhaps better, material is available.

Named for Dr. J. A. Jeletzky, Geological Survey of Canada, to honor his exhaustive works on the Coleoidea.

BELOSAEPIA sp.

One specimen, too poor to serve as type material, has been collected by the author from the Jacksonian Moodys Branch Formation at Montgomery, Louisiana. The occurrence is noted as the first report of *Belosaepia* from the Jackson Group of the Gulf Coast Eocene and may alert other workers to the collection of additional material.

Specimen: PRI 27554.

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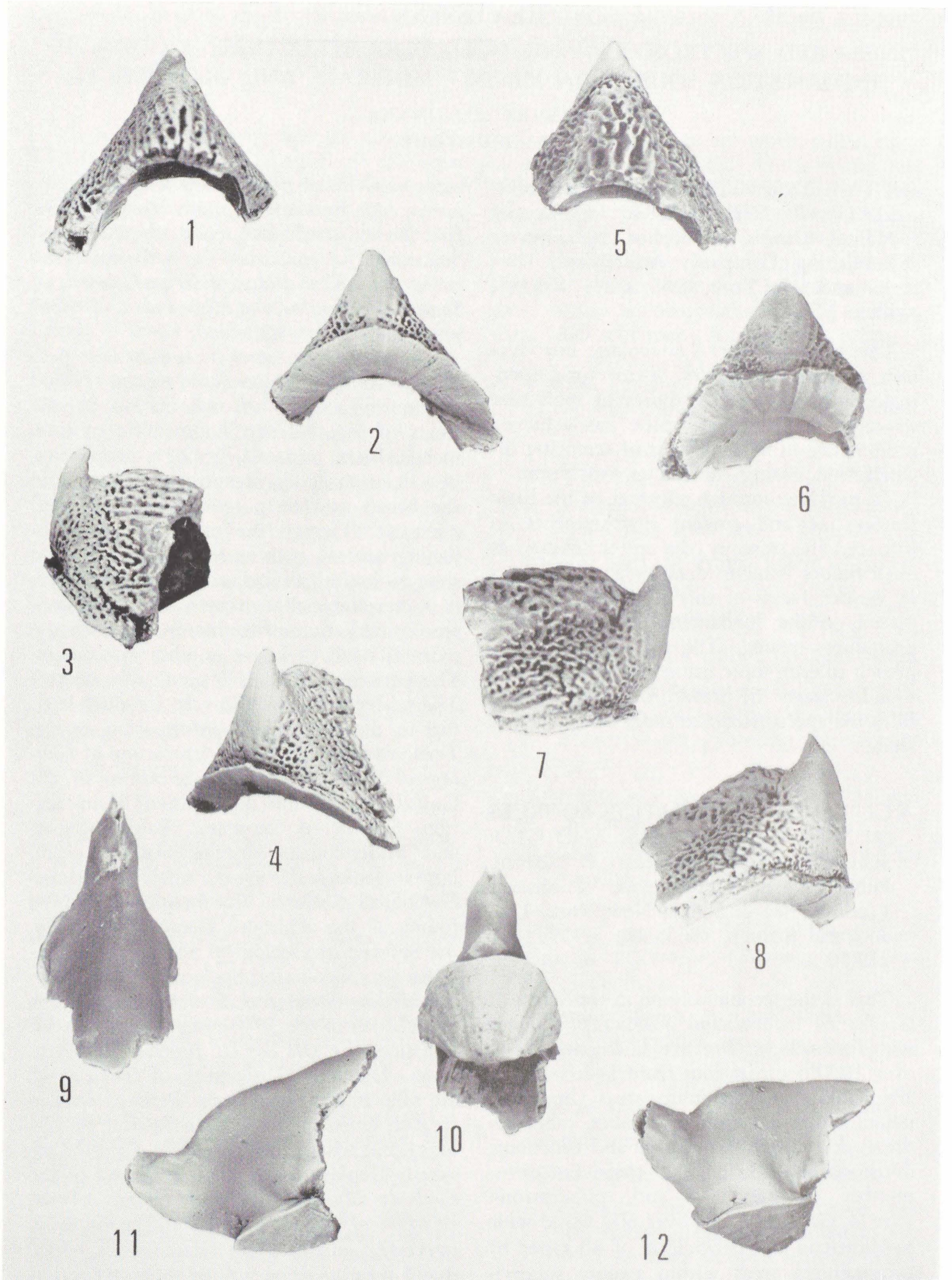


PLATE 2