

AN OLIGOCENE (ORELLAN) SIRENIAN FROM THE BUCATUNNA FORMATION OF ALABAMA

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INTRODUCTION

Tertiary sirenians from the New World have been recently reviewed by Reinhart (1976) and Savage (1976). The earliest New World sirenians are known from the presence of pachyostose ribs in Eocene strata of the southeastern United States and from an Eocene skull and mandible from Jamaica. Eocene sirenians have been reported from the Gosport Formation (Bridgerian) of Alabama (Siler, 1964; Russell, 1955) and the Avon Park Limestone (Uintan) of Florida (Reinhart, 1976). The middle Eocene *Pro-rastomus sirenoides* is based on a single specimen from Jamaica. Several occurrences of Oligocene sirenians have previously been reported in the New World. Two pachyostose ribs were described from Chiapas, Mexico, by Mullerried (1932) and Maldonado (1953). A skull from the middle Oligocene of Puerto Rico was described as *Caribosiren turneri* by Reinhart (1959), and Trelles (1936) noted the occurrence of sirenians in the Oligocene deposits of Cuba. Arata and Jackson (1965) reported sirenians from the Oligocene Red Bluff and Chickasawhay Formations in Mississippi. The age of the Mexican records is uncertain, and Savage (1976) refers to these as "Eocene/Oligocene". The reference by Reinhart (1976, p. 236) to an Oligocene *Halitherium* from Florida is an error; elsewhere in this description these specimens are referred to the Miocene. The specimens described herein, therefore, represent the first Oligocene sirenians reported from Alabama.

In 1973 a field party from the University of Alabama led by D. E. Jones collected the first of the sirenian remains from the Lone Star Cement Quarry on the Tombigbee River 2.2 miles (3.5 km) northeast of St. Stephens, Alabama. Subsequent collections by R. C. Price and K. N. Whetstone produced several additional specimens including the figured portion of a right mandible. The specimens

were recovered from the top of the Bucatunna Formation at its upper contact with the Chickasawhay Limestone.

The Bucatunna clay in Alabama and Mississippi is predominantly composed of dark carbonaceous clays and silts. It is locally sandy and bentonitic (Murray, 1961) and is about 25 feet (7.62 m) thick at the Lone Star Quarry (Glawe, 1967). The Bucatunna is middle Oligocene (Orellan) in age and correlates with rocks of Rupelian age in Europe (Cooke *et al.*, 1943). Although the Bucatunna is sometimes grouped with the underlying Byram Marl and Glendon Limestone as the Byram Formation, we have followed Murray (1961) in considering these units to be separate formations.

Fossil vertebrates have not previously been described from Oligocene strata of Alabama, although Cooke (1926, p. 291) noted the occurrence of otoliths in the Byram Marl. The sirenian specimens from the Lone Star Quarry were associated with crocodylian scutes (GSA-V-1085), spines and dental plates of myliobatid rays (GSA-V-1083, 1084), sharks teeth of the genera *Odontaspis*, *Galeocerdo* and *Isurus* (GSA-V-1089), and vertebrae and otoliths of several teleost fishes. These specimens are catalogued into the collections of the Geological Survey of Alabama (GSA) and the University of Kansas (KUVV).

DESCRIPTION

The specimens reported here include part of a left ramus (KUVV 43130), part of a neural arch (GSA-V-1086), and several ribs (KUVV 43131, GSA-V-1090). They are from a small sirenian with very short pachyostose ribs. The mandible appears to be relatively short and moderately deep. The mandibular canal is large and exits posterior to the last molar just below the anterior edge of the ascending ramus. The portion of the ascending ramus preserved is straight but is not

complete enough to rule out the possibility that it may have inclined forward as in the manatee, *Trichecus*. The four roots preserved on the ramus are probably from two molars. The anterior tooth has two broad, flat roots, while the posterior tooth has a flat anterior root and a round posterior root indicating that this is the last molar. No alveolae occur anterior to the roots preserved on the fragment, and it would appear that only two molars were present.

Very few systematic inferences can be made from such fragmentary material. However, the apparent tooth reduction would suggest that it should not be referred to the Trichechidae. It is also not from a dugong as it possesses rooted teeth and short massive ribs. It might be related to *Hydrodamalis* as this genus is edentulous with very massive dense ribs (Simpson, 1932). Of the fossil taxa, *Metaxytherium* does not show the tooth reduction that appears to be present in the Alabama fossil. At the present time the best assignment that we can make for this material is Dugongidae, genus undetermined. If the tooth reduction suggested here should prove to be real, then a new generic taxon would be required.

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PLATE 1

Oligocene sirenians from the Bucatunna Formation of Alabama. 1. right mandible (KUVP 43130) in lateral (1a.), dorsal (1b.), and medial view (1c.); 2. and 3. ribs (KUVP 43131 and GSA V-1090 respectively). Scale is 2 cm.

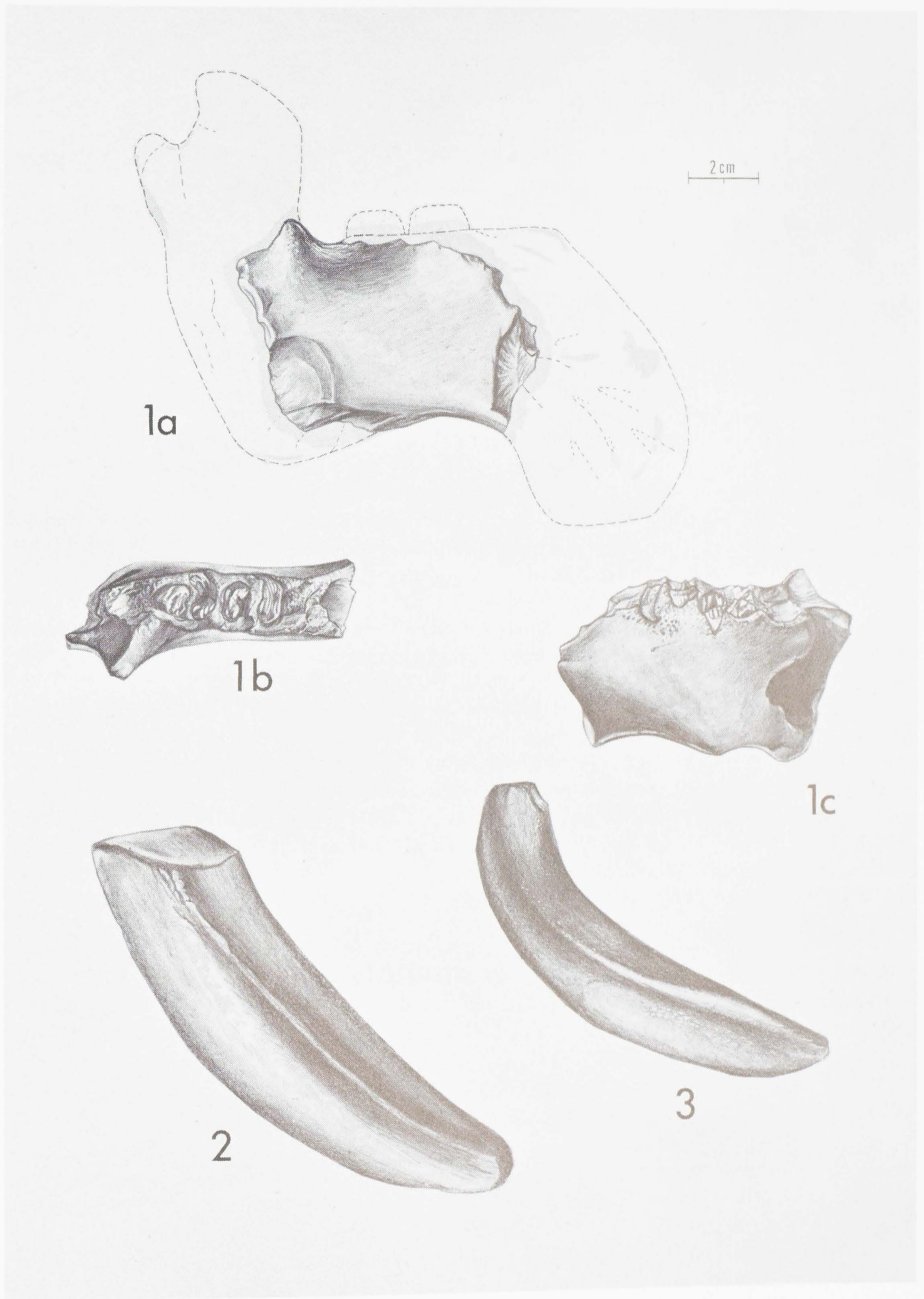


PLATE 1