

fact, the vertebrae were so common in some areas that local residents used them as andirons. Lewis Harper mentioned in his 1857 report on the geology of Mississippi that the vertebrae were often used as foundation supports for cabins.

For many years, partial remains of these archaeocetes have been found in Upper Eocene sediments of Mississippi and Alabama. However, in June 1971 the Mississippi Gem and Mineral Society excavated the most complete specimen of an archaeocete whale found to date. The bones of this whale, *Zygorhiza kochii* (Reichenbach), were found in the bed of Thompson Creek in the Moodys Branch Formation near Tinsley, Mississippi; ap-

Excavation of a *Basilosaurus cetoides* (Owen) in Madison County, Mississippi.



Office of Geology staff plot the location of a *Basilosaurus cetoides* (Owen) skeleton by means of survey instruments.

proximately 80% of the skeleton was recovered. The discovery of this nearly complete skeleton sparked enough public interest that passage of Senate Concurrent Resolution No. 557 in 1981 designated "the prehistoric whale" as the official fossil of the State of Mississippi. This skeleton has been restored and is on display at the Mississippi Museum of Natural Science in Jackson.

Suggested Reading:

Carpenter, K., and D. T. Dockery, 1985, "... And the bones came together, bone to his bone." Ezekiel 37:7, The making of a state fossil: Mississippi Geology, v. 6, no. 1, p. 1-6.

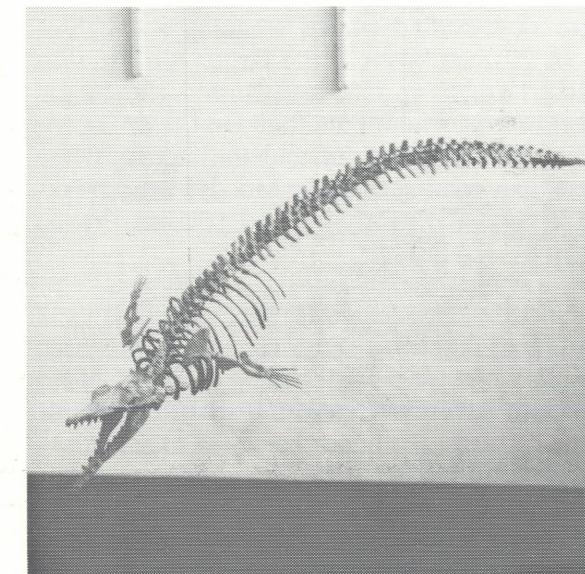
Carpenter, K., and D. White, 1986, Feeding in the archaeocete whale *Zygorhiza kochii* (Cetacea: Archaeoceti): Mississippi Geology, v. 7, no. 2, p. 1-14.

Dockery, D. T., and J. E. Johnston, 1986, Excavation of an archaeocete whale, *Basilosaurus cetoides* (Owen), from Madison, Mississippi: Mississippi Geology, v. 6, no. 3, p. 1-10.

Frazier, M. K., 1980, Archaeocetes: whale-like mammals from the Eocene of Mississippi: Mississippi Geology, v. 1, no. 2, p. 1-3.

Thurmond, J. T., and D. E. Jones, 1981, Fossil Vertebrates of Alabama: The University of Alabama Press, University, AL, 244 p.

Reconstructed skeleton of *Zygorhiza kochii* (Reichenbach) on display at the Mississippi Museum of Natural Science in Jackson, Mississippi.



FOSSIL WHALE

State Fossil of Mississippi

John E. Johnston

Pamphlet 3

Mississippi Department of Environmental Quality
Office of Geology
2380 Highway 80 West
P. O. Box 20307
Jackson, Mississippi 39289-1307
(601) 961-5500

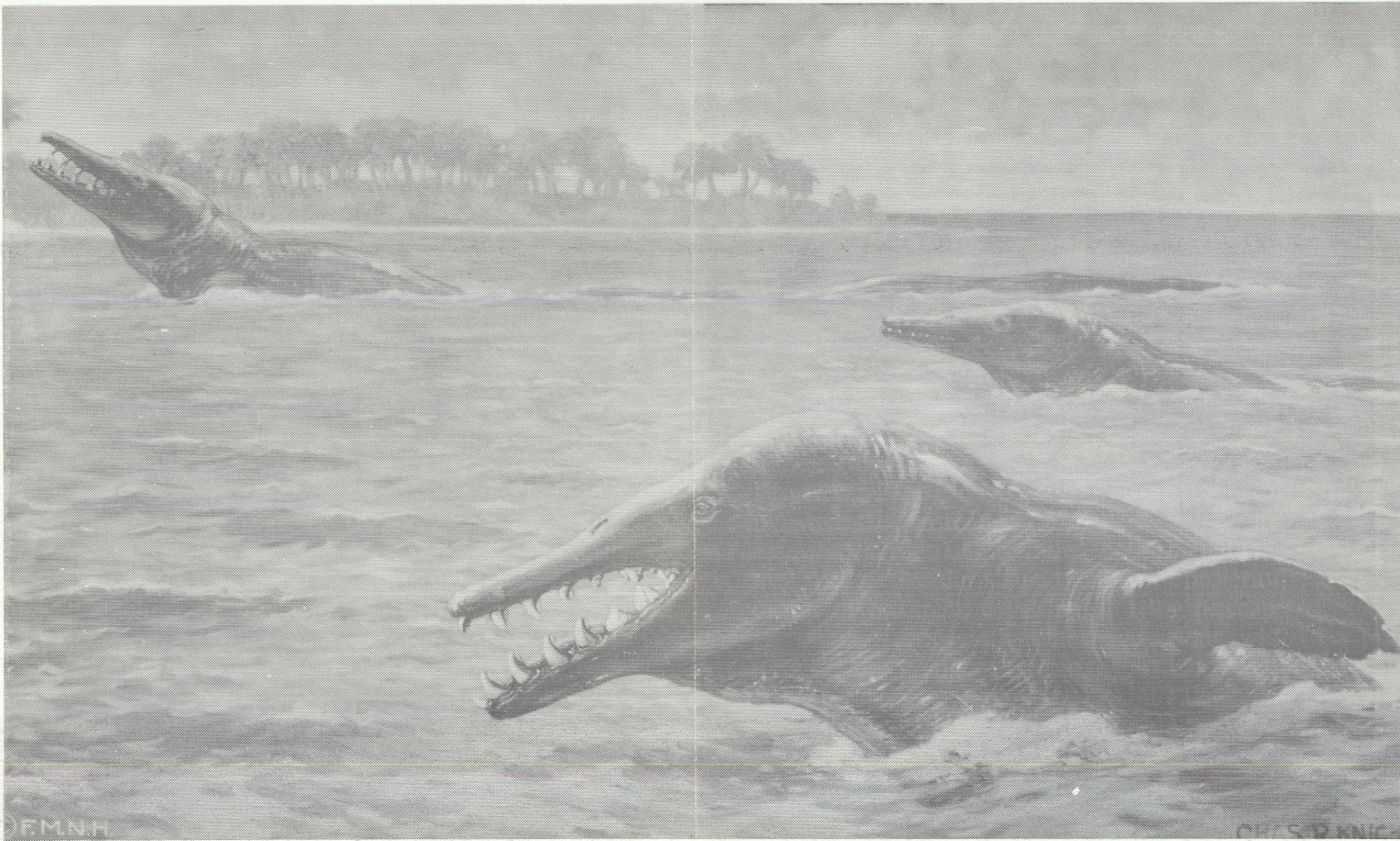
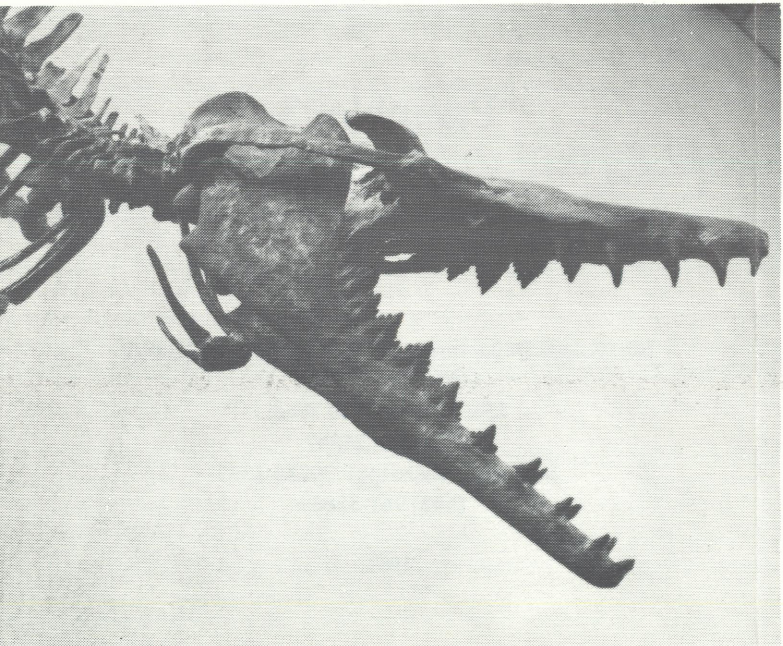
FOSSIL WHALE

State Fossil of Mississippi

Approximately 35 to 40 million years ago, during the late Eocene Epoch, a shallow sea covered much of Mississippi and extended northward up the Mississippi Embayment into Arkansas. Of the abundant marine life in this warm Eocene sea, the largest animals were the archaeocetes, or primitive whales. One species of whale, *Basilosaurus cetoides* (Owen), attained a length of 60 feet. In appearance they looked more like mythical sea-serpents than whales. Their long, slender, wedge-shaped heads, up to 5 feet long, contained basically two types of teeth. Cone-shaped teeth in the anterior, or front, of the skull caught and held the prey while triangular-shaped teeth in the posterior, or rear, of the skull sliced it. By studying the shape and amount of wear on the teeth, along with muscle scars on the jaws, paleontologists (scientists who study fossil remains) can infer that these primitive whales ate mainly fish and other marine animals, such as squid.

There are two types of archaeocetes, or primitive whales, found in Mississippi. The *Zygorhiza*

Skull of *Zygorhiza kochii* (Reichenbach).



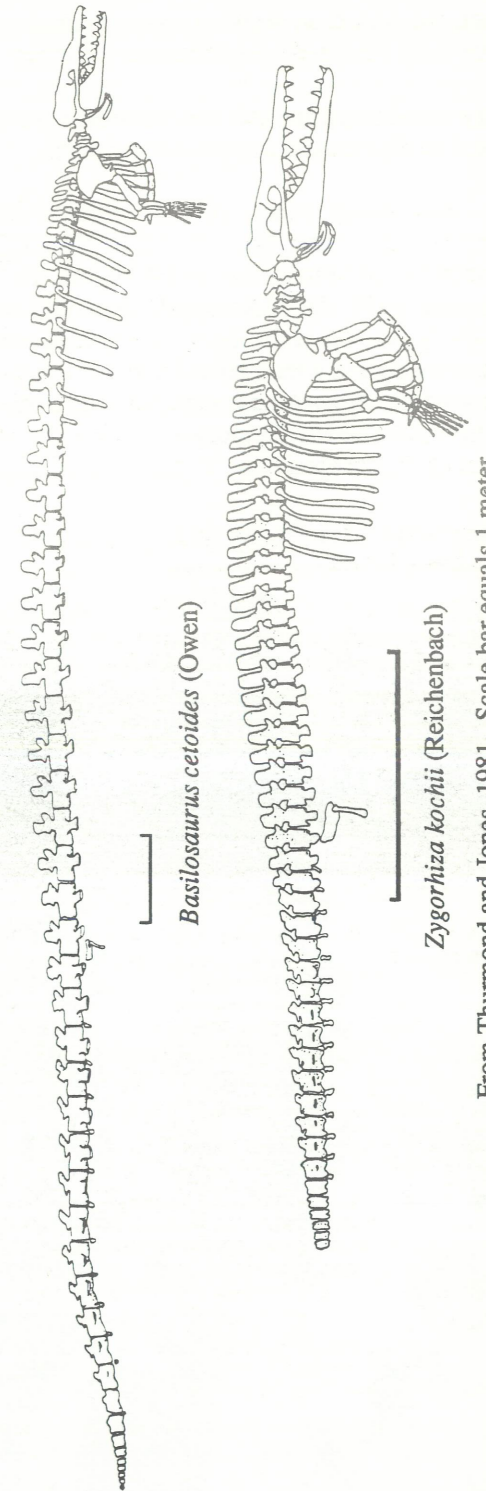
Basilosaurus in an Eocene sea. Courtesy, Field Museum of Natural History, Neg. No. 63228, Artist: Charles R. Knight.

were stout-bodied whales attaining a length of about 20 feet, whereas the larger *Basilosaurus* reached lengths up to 60 feet. Both *Zygorhiza* and *Basilosaurus* remains are found in Upper Eocene sediments of Mississippi, with the majority of the specimens coming from the Moodys Branch Formation and the overlying, and younger, Yazoo Clay.

In 1834 Dr. Richard Harlan, a physician and anatomist, described some bones that had been found several years earlier along the banks of the Ouachita River in Caldwell Parish, Louisiana. Harlan thought the bones belonged to a Tertiary marine reptile and named it *Basilosaurus*, which is Latin for "king of the lizards." This was the first archaeocete whale described from the United States. On a visit to London in 1839, Harlan showed some *Basilosaurus* remains from Alabama to the fa-

mous paleontologist, Sir Richard Owen. Owen soon realized that the animal was not a reptile, but a mammal, and suggested the name be changed to *Zeuglodon cetoides*. However, due to modern rules of taxonomic nomenclature, the original genus name prevailed so that the correct name of this first-described primitive whale is *Basilosaurus cetoides* (Owen).

The 1840's saw a surge of fossil whale discoveries in Louisiana, Mississippi, and Alabama. In 1843 Benjamin L. C. Wailes, a wealthy Natchez planter and naturalist, obtained the partial remains of a *Basilosaurus* found along the banks of the Pearl River in Mississippi. Wailes mentioned in his 1854 report on the geology and agriculture of Mississippi that *Basilosaurus* vertebrae had been found in Hinds (within the city limits of Jackson), Madison, Scott, Smith, and Clarke counties. In



From Thurmond and Jones, 1981. Scale bar equals 1 meter.