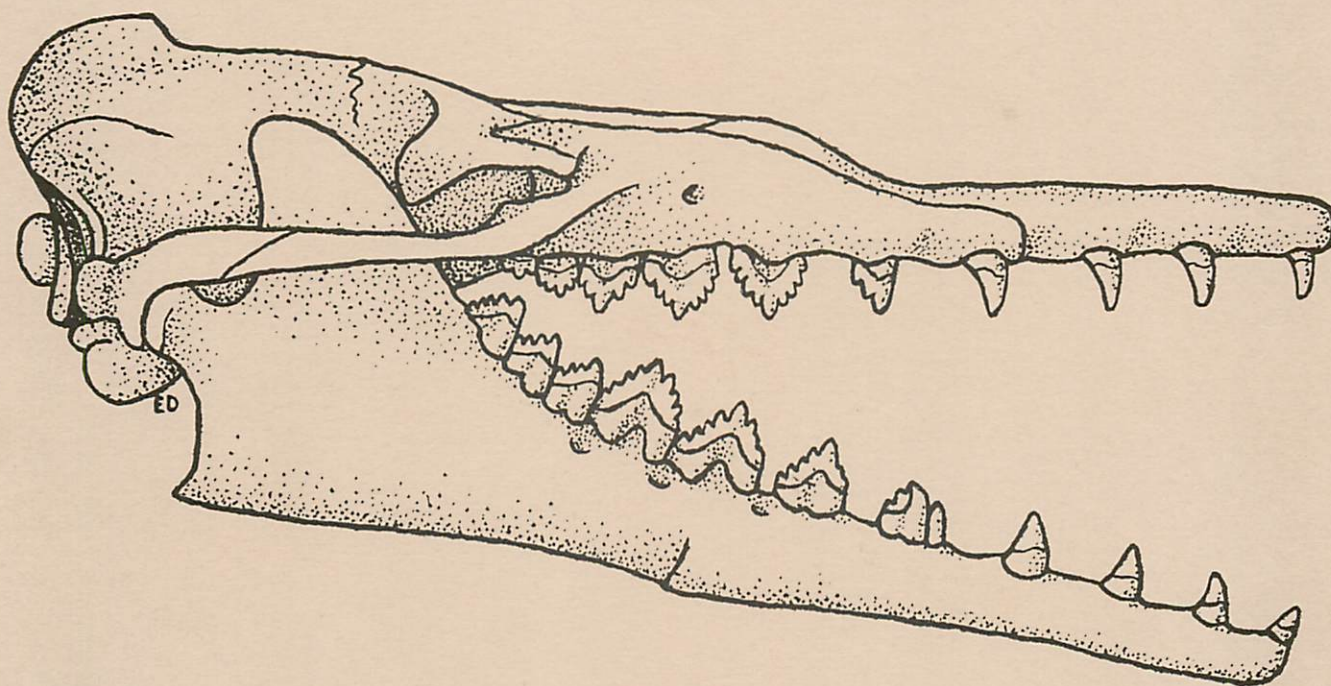


# A LIST, BIBLIOGRAPHY AND INDEX OF THE FOSSIL VERTEBRATES OF MISSISSIPPI

Eleanor Daly  
Mississippi Museum of Natural Science  
Jackson, Mississippi



BULLETIN 128

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY  
OFFICE OF GEOLOGY

S. Cragin Knox  
Director

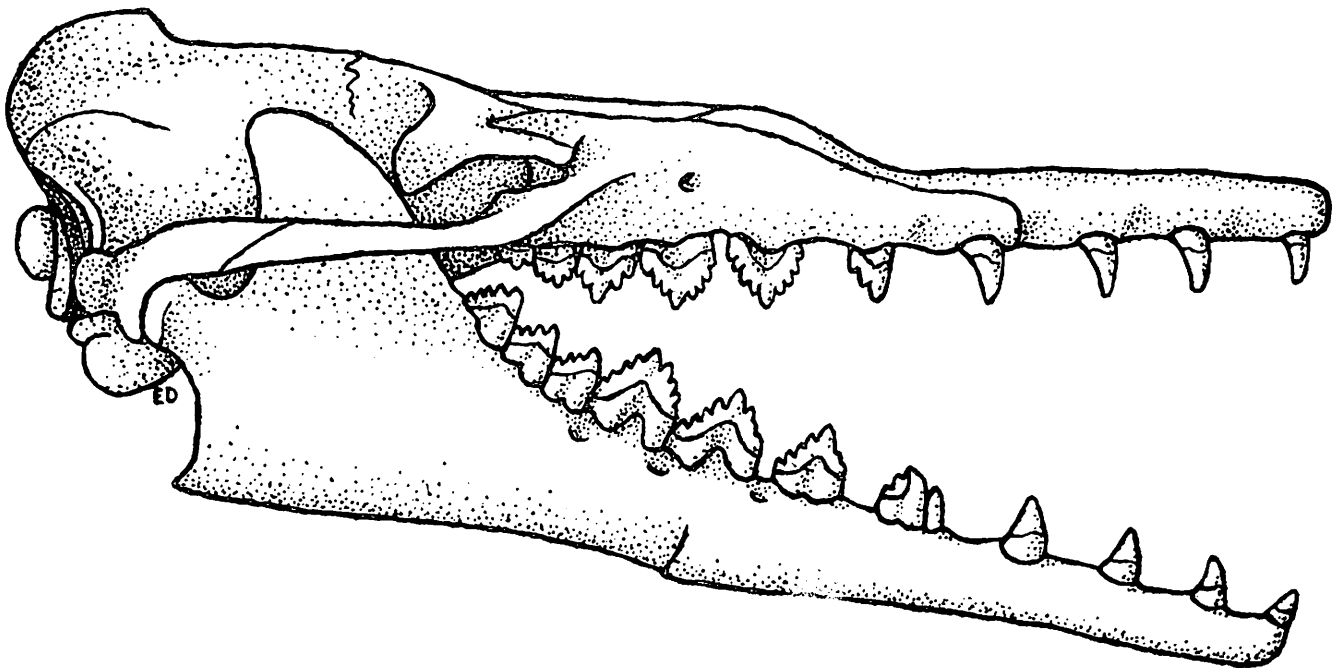
Jackson, Mississippi  
1992





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COVER: *Zygorhiza kochii*, MMNS VP 130, right lateral view, approximately 1/5 natural size.

Suggested cataloging by the Office of Geology

Daly, Eleanor.

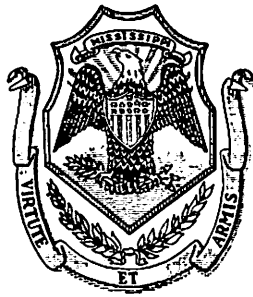
A list, bibliography and index of the fossil vertebrates of Mississippi.

(Mississippi. Office of Geology. Bulletin 128)

1. Vertebrates, Fossil - Mississippi - Bibliography. 2. Paleontology - Mississippi - Bibliography.  
I. Title.

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QE 641 .D3



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STATE OF MISSISSIPPI  
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JAMES I. PALMER, JR.  
EXECUTIVE DIRECTOR

April 15, 1992

Mr. Thomas L. Goldman, Chairman, and  
Members of the Commission  
Department of Environmental Quality

Commissioners:

Since the earliest days of this country our citizens have had an interest in fossils of large animals. Thomas Jefferson encouraged this interest in the late eighteenth and early nineteenth centuries as both amateur scientist and member of scientific societies. As President of the United States, he took his Cabinet to view the first American mastodon excavated and mounted. William Dunbar, B.L.C. Wailes, and other prominent early naturalists in Mississippi sent specimens to experts for identification. Many Mississippians today thrill to the discovery of shark teeth and other fossils as they enjoy the outdoors. And exciting finds are made in Mississippi, including dinosaur remains, teeth of sharks larger than any living today, and bones and teeth of Ice Age mastodons.

Bulletin 128 compiles information on all the scientific publications from the twentieth century on the vertebrate fossils (those from animals with backbones) of Mississippi. The author, Dr. Eleanor Daly, is a vertebrate paleontologist at the Mississippi Museum of Natural Science. She kindly offered the result of two years of research to the Office of Geology for publication. We are happy to make this excellent work available to the citizens of Mississippi and to specialists throughout the world.

Dr. Daly has prepared an annotated bibliography on the vertebrate paleontology of Mississippi. But the work goes far beyond that by providing a list of all the species that have been identified with all scientific names revised to the modern nomenclature. The report also provides indexes back to the literature from scientific name and from geographic/stratigraphic locality. Bulletin 128 will be used extensively by amateur and professional paleontologists.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "S. Cragin Knox", with a stylized flourish at the end.

S. Cragin Knox  
Director and State Geologist

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Eleanor Daly  
Mississippi Museum of Natural Science  
Jackson, Mississippi 39201

### ABSTRACT

Species of fossil vertebrates reported from Mississippi during the twentieth century are listed under the formations where they were found. The twentieth-century bibliography of 126 titles is annotated with names of fossil species and elements found, along with other information pertinent to Mississippi paleontology. Systematic and geographic-stratigraphic indexes are provided.

### INTRODUCTION

In 1969 Daryl P. Domning, then of Tulane University, published his list, bibliography and index of the fossil vertebrates of Louisiana and Mississippi. The termination date of Domning's compilation was as of the end of 1968. He believed that new literature appeared so infrequently that the exact date was unimportant. However, from the perspective of the present, a corner had already been turned, and the publication rate was beginning to increase. Now, more than twenty years later, there is evident use in having an updated bibliography.

Limiting the coverage of the list and bibliography to Mississippi rather than including Louisiana as Domning did reduces the size of the project, a desirable objective this time around. Another deliberate limitation is confinement to the twentieth century, so that the date of the oldest reference herein is 1901. The resulting new bibliography contains 126 entries, in contrast to Domning's 169. The new list of taxa is likewise limited to those reported in twentieth-century literature, but that has led to few omissions in comparison with the previous list.

### A BRIEF HISTORY OF PUBLICATION ON MISSISSIPPI

It is appropriate to begin with an overview of the subject and period, as Domning did. The present work will not attempt to carry forward his entertaining and informative account of the personalities and events of the early years. For a simpler history, the complete bibliography was inspected to determine whether its century-and-a-half span could be divided into manageable segments. Four readily recognizable periods were

discovered in the vertebrate paleontology of Mississippi, as follows:

the Natchez period, from 1845 through 1875

the decline period, from 1883 to 1913

the Geological Survey period, from 1915 through 1963

the acceleration period, from 1965 through 1991

A version of this history was presented to the Mississippi Academy of Sciences on February 21, 1991.

The 31-year Natchez period is so called because of the prominence of the Pleistocene large-mammal fauna collected near Natchez in the literature of the time. Of the 47 publications of this period, fully 30 dealt more or less with elements of this fauna. Its existence, and the proximity of informed and well connected collectors greatly contributed to the importance of the South during the early years of North American vertebrate paleontology. Domning's historical introduction deals largely with the Natchez period because that is when things were happening in the area.

In 1845, the opening date, two papers on Mississippi geology and vertebrate fossils were read to the Association of American Geologists and Naturalists in New Haven, and published in its proceedings later that year. These were the first papers in a professional outlet to deal primarily with the fossil resources of Mississippi. The closing date of the Natchez period is placed at a seven-year gap in the publication record. The appearance of 47 publications in 31 years makes an average of 1.5 per year.

The majority of the papers were produced by professional biologists based in eastern institutions. Collection and shipping was done mostly by local hobbyists who wanted to have their finds identified. Best known of the collectors were Benjamin L. C. Wailes and William H. Huntington (Natchez) and William Spillman of Columbus. Columbus is located in the productive Upper Cretaceous deposits of northeastern Mississippi. Parts of their collections are still extant, although not in Mississippi.

Joseph Leidy, a founder of American vertebrate paleontology, might be considered the patron saint of the Natchez fauna. He first took notice of it when Montroville Dickeson announced the discovery of a human pelvis fragment among sloth and mastodon bones before the Philadelphia Academy in 1846. The

supposedly Pleistocene "Natchez Man" attracted everyone's attention. Leidy's first paper on Natchez appeared in 1847 and described a new horse species from material brought back by Dickeson. He made the last addition to its known fauna in 1870, when he described a muskox tooth. Altogether, Leidy has 19 entries on Mississippi in Domning's bibliography, including ten on Natchez and six on Upper Cretaceous vertebrates.

A total of fourteen papers of this period mention elements of Mississippi's Cretaceous fauna. Edward D. Cope, another big name in nineteenth century vertebrate paleontology, described a new mosasaur and a new marine turtle from near Columbus.

Between 1883 and 1913, 21 publications mention Mississippi vertebrate fossils, making a rate of 0.7 per year during the decline period. Eleven papers mention the Natchez fauna, but five of them are concerned with Natchez Man. The other six add nothing to knowledge of the fauna. Five publications concern Cretaceous fossils, of which one describes two new fish species.

A notable publication of the period is Thomas Wilson's "Man and the Mylodon" which appeared in 1892. In it he announced that the fluorine test done on the fragment of Natchez Man showed it to be more mineralized than a supposedly associated sloth bone. Other events: in 1888, Koken's monograph on Eocene and Oligocene otoliths (fish ear stones) brought from Mississippi; and in 1901, Gidley's horse monograph, in which (among other things) five named species are synonymized into one, based on a tooth from Natchez.

Why did publication on southeastern vertebrate fossils drop off after a running start? Domning supplied answers. First, the fossil mammals from the area, the mastodon, the ground sloths, and the archaeocete whales became well known and no new spectacular animals came to light. Second, the frontier moved west, and the vast untouched fossil beds of the plains and mountains were discovered and took the attention of the eastern researchers. Local collectors continued their interest, but the other half of the team had defected.

The 49-year Geological Survey period opens with the publication in 1915 of a book on the general geology of Mississippi written by E. N. Lowe, director of the newly reincarnated Survey (the previous one had lapsed in 1872). The period closes just before the first year in which papers on Mississippi vertebrate paleontology begin to consistently appear in multiples per year. The rate for the period is 0.8 per year.

Nineteen of the 40 publications are Geological

Survey bulletins, hence the name given the period. Their authors are purely geological workers who note the presence of vertebrates as a feature of the sediments in this or that section. Their identifications are on the level of "shark teeth", "mosasaur" and "zeuglodon" due to their limited interest, but without their work the record of this period would be much worse. The remaining 21 papers lead to a rate of about 0.4 per year.

The event of this period is the discovery of an Eocene titanotherid, *Notiotitanops*, in eastern Mississippi. It was collected by Professor J. Magruder Sullivan of Millsaps College in Jackson, and was shipped east to the National Museum to be identified and described (Gazin and Sullivan, 1942), in the traditional manner.

Natchez Man resurfaced when Wilson's (1892) fluorine testing was rediscovered (Stewart, 1951), prompting two anthropologists to travel to Natchez to see what else could be found (Quimby, 1956). The locality was long since destroyed by erosion, and nothing was present. Quimby finished his article with a suggestion that radiocarbon dating be used to settle the question of the exact age of the loess and the bones within or under it.

Toward the end of the period, two new papers on Gulf Coast Tertiary otoliths appeared (Frizzell and Lamber, 1961, 1962). They seem worth special mention because, apparently for the first time since 1929, someone went to Mississippi to collect study material in vertebrate paleontology (in 1929 Kellogg and Boss digressed into Clarke County while hunting archaeocetes in Alabama).

During the 27 years of the acceleration or modern period (1965 through 1991), 71 publications on Mississippi came out, for a rate of about 2.6 per year. It is more revealing to calculate the rate for successive segments: for 1965 through 1970, 1.7 per year; for 1971 through 1980, 2.6 per year; for 1981 through 1990, 3.3 per year. The rate may still be on the upcurve, because seven papers came out in 1991. The majority of modern authors are paleontologists, and some are even residents of the state. Most of their study material is still in Mississippi.

The acceleration period has been eventful as well as prolific. In the summer of 1969, an expedition set out from the Los Angeles County Museum to collect enough *Basilosaurus* material to complete a whale exhibit. The original plan was to collect in Alabama, the state where most fossil whales had been found. An advance scout stopped at Millsaps College on the way, where he learned of a Mississippi *Basilosaurus* that had been reported to Professor Richard R. Priddy of the geology department. As a result the

LACM party spent some time taking up *Basilosaurus* bones in Scott County (Applegate, 1969-1970), attended and assisted by members of the Mississippi Gem and Mineral Society. The latter group was, and is, an association of earth science hobbyists that organized during the 50's in Jackson.

The seventies opened with the finding of a mountable *Zygorhiza*, the smaller Eocene archaeocete, in Yazoo County by other members of the Gem and Mineral Society (Dockery, 1974). This specimen became the official State Fossil and now hangs on the rear wall of the main hall in the Mississippi Museum of Natural Science.

During the seventies, seven theses and dissertations were submitted, each based at least partly on material collected in Mississippi especially for the project. John M. Kaye of Columbus is an author on seven papers during the decade, recommending him as its patron saint. Finally, the first issue of *Mississippi Geology* came out in 1980. This is a quarterly from the state Office of Geology, created as an outlet for members and associates, and has averaged two articles per issue.

During the eighties, *Mississippi Geology* was the major vehicle for reports on vertebrate paleontology based on materials collected in the state, with twelve articles in this field. This is a substantial proportion of the total, and about 15% of the journal's articles for the decade. Four papers mentioning Mississippi Eocene snakes appeared in the *Journal of Vertebrate Paleontology*, the premier periodical in the field, which must mean arrival at national visibility for the state.

Events of the eighties include the collection of a skull of the Oligocene hippopotamus-like perissodactyl *Metamynodon*, and later a rhinoceros jaw from the same locality. In 1990, Natchez Man was disposed of as an item of anthropological interest when his keeper at the Academy in Philadelphia sent the pelvis fragment away to be radiocarbon dated. In spite of its mineralization grade it proved to be younger than Pleistocene (Hamilton, 1990).

The acceleration period provides reason for optimism about prospects for vertebrate paleontology in Mississippi. It may never rival Florida and Texas, but there is evidently more to do here. The roster of Pleistocene mammals is probably not complete. Remains of large animals will continue to be found in near-shore deposits of earlier times. Microspecimens collected by screen-washing sediments are predicted to provide most of the additions to the faunal list.

## ACKNOWLEDGMENTS

First of all, I must recognize the care and diligence of Daryl P. Domning, on whose work this paper is based. The invaluable advice and assistance of Earl Manning, formerly of the geology museum of Louisiana State University, contributed great improvements. Finally, I am grateful to John M. Kaye for suggesting this project some years ago.

## THE LIST OF FOSSIL VERTEBRATES REPORTED FROM MISSISSIPPI

The list is arranged by formation, starting with the oldest and proceeding up the column to the youngest. European marine stage equivalents for the Cretaceous strata are taken from Mancini, Smith and Russell (1984), and equivalents for the Paleogene strata are from Dockery (1986). Taxa are entered in the form

Genus species author date (English name)  
[synonymous name]

as in Domning's list. Only synonymous names appearing in twentieth-century literature are given. Sharks and other elasmobranchs are listed by names following Capetta (1987) wherever possible. While not everyone will agree with what Capetta has done, all interested parties will have a copy of his monograph. None of this is meant to imply that the present writer has checked anyone's identifications. That responsibility has been left to authors, and taxa are synonymized here solely from their published names.

Chattanooga Formation, Devonian  
fish (probably placoderm)  
Fort Payne Formation, Mississippian  
fish? (see Morse, 1930)  
Cretaceous, undifferentiated  
*Discosaurus planior* Leidy, 1870  
(plesiosaur, indet.)  
Tuscaloosa Group, late Cenomanian to late  
Coniacian  
No vertebrate fossils have been reported as yet.  
Eutaw Group, late Coniacian to early Campanian  
shark  
*Ptychodus mortoni* Agassiz, 1843 (hybodont shark)  
[*Hemiptychodus mortoni* (Mantell, 1842)]  
fish  
*Anomoedus phaseolus* (Hay, 1899)  
(pycnodont fish)  
[*Pycnodus phaseolus* Hay, 1899]  
*Neptunochelys tuberosa* (Cope, 1872)  
(large sea turtle)

- mosasaur  
*Platecarpus tympaniticus* Cope, 1869 (mosasaur)
- McShan Formation of the Eutaw Group, late Coniacian to early Santonian  
 Five dinosaur fragments may be from the McShan (Carpenter, 1982)  
 theropod  
 ?ornithomimid (Baird, 1986)  
 hadrosaurs (2)  
 dinosaur, indet.
- Eutaw Formation of the Eutaw Group, Santonian to early Campanian  
 Five dinosaur fragments (listed above) may be from the Eutaw rather than the McShan.
- Tombigbee Sand Member of the Eutaw Formation, early Campanian  
 The named elasmobranchs are from Meyer (1974) and Emry, Archibald and Smith (1981).  
 shark  
*Hybodus* sp. (hybodont shark)  
*Hybodus* sp. aff. *H. butleri* Thurmond, 1971 (hybodont shark)  
*Lissodus* sp. aff. *L. brevis* (Patterson, 1966) (hybodont shark)  
 [ *Lonchiodon* sp. aff. *L. brevis* Patterson, 1966]  
*Ptychodus mortoni* Agassiz, 1843 (hybodont shark)  
 [ *Hemiptychodus* cf. *H. mortoni* (Mantell, 1842)]  
*Squatina hassei* Leriche, 1929 (angel shark)  
*Chiloscyllium greeni* (Capetta, 1973) (hemiscylliid shark)  
*Cantioscyllium* sp. (ginglymostomatid shark)  
*Ginglymostoma* sp. (nurse shark)  
*Rhincodon* sp. (whale shark)  
*Odontaspis* sp. cf. *O. tenuis* Davis, 1890 (sand shark)  
*Striatolamia* sp. (sand shark)  
*Scapanorhynchus texanus* Roemer, 1845 (goblin shark)  
*Cretolamna* sp. (lamniform shark)  
*Cretolamna appendiculata* (Agassiz, 1843) (lamniform shark)  
*Cretoxyrhina mantelli* (Agassiz, 1843) (lamniform shark)  
*Otodus* sp. (lamniform shark)  
*Paranomotodon* sp. aff. *P. angustidens* (Reuss, 1845) (thresher)  
 [ *Anomotodon* sp. aff. *A. angustidens* (Reuss, 1845)]  
*Squalicorax* sp. (crow shark)  
*Squalicorax* sp. aff. *S. kaupi* (Agassiz, 1843) (crow shark)  
 scyliorhinid type 2 (cat shark)
- ?*Rhinobatos incertus* Capetta, 1973 (guitarfish)  
*Pseudohypolophus mcultyi* (Thurmond, 1971) (?guitarfish)  
 [ *Parahypolophus mcultyi* (Thurmond, 1971)]  
*Squatirhina* sp. cf. *S. lonzeensis* Casier, 1947 (?guitarfish)  
*Raja* sp. (skate)  
*Ischyryhiza* sp. (sawfish)  
*Ischyryhiza* sp. aff. *I. mira* Leidy, 1856 (sawfish)  
 ?*Sclerorhynchus* sp. (sawfish)  
*Ptychotrygon* sp. (rajiform ray)  
*Ptychotrygon triangularis* (Reuss, 1845) (rajiform ray)  
*Ptychotrygon* sp. aff. *P. hooveri* McNulty and Slaughter, 1972 (rajiform ray)  
 cf. *Dasyatis* sp. (stingray)  
 ?urolophid (myliobatiform ray)  
*Anomoeodus* sp. (pycnodont fish)  
*Hadrodus priscus* Leidy, 1857 (pycnodont fish)  
 mosasaur  
 ?*Mosasaurus* sp. (duckbilled dinosaur)  
 hadrosaur  
 eutherian mammal
- Selma Group, early Campanian to middle Maastrichtian  
 shark  
 mosasaur  
*Mosasaurus* sp. (duckbilled dinosaur)  
 hadrosaur (duckbilled dinosaur)  
 hadrosaurine (duckbilled dinosaur)
- Coffee Sand of the Selma Group, early to middle Campanian  
 The named elasmobranchs are from Meyer (1974) and Case (1991), and the fishes (except *Anomoeodus*) are from Nolf and Dockery (1990).  
 The fish were studied from otoliths and their nomenclature follows conventions in current use by students of fossil otoliths.  
 shark  
*Lissodus* sp. aff. *L. brevis* (Patterson, 1966) (hybodont shark)  
 [ *Lonchiodon* sp. aff. *L. brevis* Patterson, 1966]  
*Squatina hassei* Leriche, 1929 (angel shark)  
*Chiloscyllium greeni* (Capetta, 1973) (hemiscylliid shark)  
*Hemiscyllium* sp. (bamboo shark)  
*Cantioscyllium* sp. (ginglymostomatid shark)  
*Ginglymostoma globidens* Capetta and Case, 1975 (nurse shark)  
*Odontaspis tenuis* Davis, 1890 (sand shark)  
 ?*Carcharias* sp. 1 (sand shark)  
 This may be a juvenile *Scapanorhynchus* tooth (Case, 1991).  
*Carcharias* sp. 2 (sand shark)

*Scapanorhynchus texanus* (Roemer, 1845)  
 (goblin shark)  
*Cretolamna appendiculata* (Agassiz, 1843)  
 (lamniform shark)  
*Paranomotodon* sp. aff. *P. angustidens* (Reuss, 1845)  
 (thresher)  
 [*Anomotodon* sp. aff. *A. angustidens* (Reuss, 1845)]  
*Pseudocorax laevis* (Leriche, 1906)  
 (false crow shark)  
*Pseudocorax granti* Capetta and Case, 1975  
 (false crow shark)  
*Squalicorax kaupi* (Agassiz, 1843) (crow shark)  
 scyliorhinid type 4 (cat shark)  
 ?*Rhinobatos incertus* Capetta, 1973 (guitarfish)  
*Ischyrrhiza mira* Leidy, 1856 (sawfish)  
 ?*Sclerorhynchus* sp. (sawfish)  
*Sclerorhynchus* sp. (sawfish)  
*Ptychotrygon* sp. aff. *P. triangularis* (Reuss, 1845)  
 (rajiform)  
*Ptychotrygon vermiculata* Capetta, 1975 (rajiform)  
 ?*Hypolophus* sp. (stingray)  
 fish  
*Anomoeodus mississippiensis* Gidley, 1913  
 (pycnodont fish)  
 ?megalopid (?tarpon)  
 pterothrissid (bonefish)  
 "Pterothrissidarum" *griffini* Nolf and Dockery, 1990 (bonefish)  
*Pterothrissus* sp. (bonefish)  
 "Albulidarum" *ensis* Nolf and Dockery, 1990 (bonefish)  
 "Albulidarum" aff. *sohli* (Frizzell, 1965) (bonefish)  
 aff. *Albula* sp. (bonefish)  
 congrid (conger eel)  
 salmoniform fish  
 ariid (marine catfish)  
 "Synodontidarum" *pseudoperca* Nolf and Dockery, 1990 (lizardfish)  
 acanthomorph fish  
 "Trachichthyidarum" *coffeesandensis* Nolf and Dockery, 1990 (slimehead)  
 holocentrid (squirrelfish)  
 "Perciformorum" *cepoloides* Nolf and Dockery, 1990  
 "Percoideorum" *pseudochandra* Nolf and Dockery, 1990  
 Percoidei sp. (three)  
 apogonid (cardinalfish)  
 aff. *Bathyclupea* sp. (percoid fish)  
 hadrosaur (duckbilled dinosaur)  
 Mooreville Chalk of the Selma Group, a partial  
 equivalent of the Coffee Sand  
 Stephenson and Monroe (1940) found a few

vertebrate fossils in this unit.  
 shark  
*Ptychodus* sp. (hybodont shark)  
 fish  
 Demopolis Chalk of the Selma Group, middle  
 Campanian to early Maastrichtian  
 shark  
*Squalicorax* sp. (crow shark)  
*Pseudocorax* sp. (false crow shark)  
*Ischyrrhiza* sp. (sawfish)  
*Myliobatis* sp. (eagle ray)  
*Anomoeodus latidens* Gidley, 1913 (pycnodont fish)  
*Pachyrhizodus* sp. (elopiform fish)  
*Enchodus* sp. (aulopiform fish)  
 cf. *Protosphyraena gladius* (billfish)  
 ?*Bothremys* sp. (pelomedusid sea turtle)  
 chelosphargine (protostegid sea turtle)  
*Protostega* sp. (protostegid sea turtle)  
 toxochelyid (sea turtle)  
 ?*Peritresius* sp. (toxochelyid sea turtle)  
*Prionochelys nauta* Zangerl, 1953  
 (toxochelyid sea turtle)  
*Toxochelys barberi* (Schmidt, 1944)  
 (toxochelyid sea turtle)  
*Toxochelys moorevillensis* Zangerl, 1953  
 (toxochelyid sea turtle)  
 mosasaur  
*Mosasaurus conodon* (Cope, 1881) (mosasaur)  
*Globidens alabamaensis* Gilmore, 1912 (mosasaur)  
*Plioplatecarpus* sp. (mosasaur)  
*Prognathodon* cf. *P. solvayi* Dollo, 1889 (mosasaur)  
 plesiosaur  
 elasmosaurid (plesiosaur)  
 crocodile  
 ornithischian dinosaur  
 hadrosaur (duckbilled dinosaur)  
 Ripley Formation of the Selma Group, early to  
 middle Maastrichtian  
 The named elasmobranchs are from Meyer  
 (1974) (except *Scapanorhynchus* and *Cretolamna*)  
 and the fish are from Stringer (1991). The latter  
 is an otolith study.  
 shark  
*Squatina hassei* Leriche, 1929 (angel shark)  
*Chiloscyllium greeni* (Capetta, 1973)  
 (hemiscylliid shark)  
*Cantioscyllium* sp. (ginglymostomatid shark)  
*Odontaspis tenuis* Davis, 1890 (sand shark)  
*Scapanorhynchus texanus* (Roemer, 1845)  
 (goblin shark)  
*Cretolamna* cf. (lamniform shark)  
 ?*Rhinobatos incertus* Capetta, 1973 (guitarfish)  
 ?*Sclerorhynchus* sp. (sawfish)  
*Ptychotrygon* sp. aff. *P. triangularis* (Reuss, 1845)

- (rajiform)  
*?Hypolophus* sp. (stingray)  
*?urolophid* (myliobatiform ray)  
*?mobulid* (devil ray)  
 teleost  
 megalopid (tarpon)  
 "Pterothrissidarum" *griffini* Nolf and Dockery,  
 1990 (bonefish)  
*Pterothrissus* sp. (bonefish)  
 albulid (bonefish)  
 "Albulidarum" *ensis* Nolf and Dockery, 1990  
 (bonefish)  
 congrid (conger eel)  
 argentiniid (argentine)  
 salmoniform fish  
 ariid (marine catfish)  
 sternoptychid (hatchetfish)  
*Enchodus ?petrosus* Cope, 1874 (aulopiform fish)  
 "Synodontidarum" *pseudoperca* Nolf and  
 Dockery, 1990 (lizardfish)  
 gadid (codfish)  
 ophidiid (cusk-eel)  
 polymixiid (beardfish)  
 "Trachichthyidarum" *coffeesandensis* Nolf and  
 Dockery, 1990 (slimehead)  
 Percoidei sp. (two)  
 apogonid sp. (two) (cardinalfish)  
 pempheridid (sweeper)  
*Thoracosaurus neocesariensis* (De Kay, 1842)  
 (crocodilian)
- Prairie Bluff Formation of the Selma Group, middle  
 Maastrichtian  
 shark  
 fish  
 mosasaur
- Owl Creek Formation of the Selma Group, middle  
 Maastrichtian  
 shark  
 fish
- Clayton Formation, Lower Paleocene, Danian  
 shark
- Porters Creek Formation, Lower Paleocene, Danian  
 shark
- Nanafalia Formation, Upper Paleocene, Selandian  
 No fossil vertebrates have been reported as yet.
- Tuscahoma Formation, Upper Paleocene, Selandian  
 Most of the Tuscahoma Formation does not have  
 reported fossil vertebrates. Listed here is the  
 vertebrate fauna of its uppermost part at  
 Meridian. The elasmobranchs and fish are from  
 lists in Case (1986).  
 shark  
*Ginglymostoma subafricana* Arambourg, 1952  
 (nurse shark)
- Nebrius thielensis* (Winkler, 1873) (nurse shark)  
 "?Hypotodus" *robustus* Leriche, 1921 (sand shark)  
 This needs a new genus assignment (Capetta,  
 1987).  
*Jaekelotodus trigonalis* (Jaekel, 1895) (sand shark)  
*Odontaspis speyeri* Darteville and Casier, 1943  
 (sand shark)  
*Striatolamia macrota* (Agassiz, 1843) (sand shark)  
 [*Eugomphodus macrotus* (Agassiz, 1843)]  
*Carcharias hopei* (Agassiz, 1843) (sand shark)  
 [*Eugomphodus hopei* (Agassiz, 1843)]  
*Carcharias substriata* (Stromer, 1910)  
 (sand shark)  
 [*Eugomphodus substriatus* (Stromer, 1910)]  
*Cretolamna aschersoni* (Stromer, 1905)  
 (lamniform shark)  
 [*Lamna aschersoni* Stromer, 1905]  
 "Lamna" *lerichei* (lamniform shark)  
*Galeus* sp. (carcharhiniform shark)  
*Scyliorhinus gilberti* Casier, 1946 (cat shark)  
*Scyliorhinus subulidens* Arambourg, 1952  
 (cat shark)  
 [*Abdounia subulidens* (Arambourg, 1952)]  
*Galeorhinus affinis* (soupfin shark)  
*Galeorhinus lefevrei* (Daimeries, 1891)  
 (soupfin shark)  
*Galeorhinus minor* (Agassiz, 1843) (soupfin shark)  
*Galeorhinus ypresiensis* Casier, 1946  
 (soupfin shark)  
*Abdounia beaugei* Arambourg, 1935  
 (carcharhiniform shark)  
*?Carcharhinus* sp. (carcharhiniform shark)  
*Physogaleus tertius* (Winkler, 1874)  
 (carcharhiniform shark)  
*Pristis lathamii* Galeotti, 1837 (sawfish)  
*Dasyatis jaekeli* (Leriche, 1905) (stingray)  
*Jacquhermania duponti* (Winkler, 1874)  
 (myliobatiform ray)  
*Coupatezia woutersi* Capetta, 1982  
 (myliobatiform ray)  
*Myliobatis* sp. (eagle ray)  
*Burnhamia* sp. (manta)  
*Lepisosteus suessionensis* Gervais (gar)  
*Pycnodus bowerbanki* Egerton (pycnodont fish)  
 teleost  
*Brychaetus muelleri* Woodward  
 (osteoglossiform fish)  
*Albula oweni* (Owen) (bonefish)  
*Albula eppsi* White and Frost (bonefish)  
*Phyllodus toliapicus* Agassiz (elopiform fish)  
*Egertonia isodonta* Cocchi (elopiform fish)  
*Arius* sp. (marine catfish)  
*Trichiurides sagittidens* Winkler (cutlassfish)  
*Scomberomorus proosti* (Storms)



- (Spanish mackerel)  
 [Cybium proosti Storms]  
*Cylindracanthus* sp. (?billfish)  
*Xiphias* sp. (swordfish)  
*Eotrigonodon serratus* (Gervais)  
 snake  
*Palaeophis* sp. (aquatic snake)  
*Palaeophis casei* Holman, 1982 (aquatic snake)  
*Palaeophis littoralis* Cope, 1868 (aquatic snake)  
*Palaeophis virginianus* Lynn, 1934 (aquatic snake)  
 mammal  
 Bashi Formation, Lower Eocene, Ypresian  
 Named fish also present in the Tusahoma  
 Formation are likewise from Case (1986).  
 shark  
*Lepisosteus suessionensis* Gervais (gar)  
*Pycnodus bowerbanki* Egerton (pycnodont fish)  
*Genartina* sp. (osteoglossiform fish)  
*Albula oweni* (Owen) (bonefish)  
*Albula eppsi* White and Frost (bonefish)  
*Eoalbulia meridiana* Frizzell, 1965 (bonefish)  
*Metalbulia bashiana* Frizzell, 1965 (bonefish)  
*Egertonia isodonta* Cocchi (elopiform fish)  
*Phyllodus toliapicus* Agassiz (elopiform fish)  
 "Conger" meridies Frizzell and Lamber, 1962  
 (anguilliform fish)  
*Trichiurdes sagittidens* Winkler (cutlassfish)  
*Scomberomorus proosti* (Storms)  
 (Spanish mackerel)  
 [Cybium proosti Storms]  
*Eosolea* sp. (sole)  
*Eotrigonodon serratus* (Gervais)  
 snake  
*Palaeophis ?littoralis* Cope, 1868 (aquatic snake)  
*Palaeophis virginianus* Lynn, 1934 (aquatic snake)  
 alligator  
 archaeocete  
 omomyid (primate)  
 Hatchetigbee Formation, Lower Eocene, Ypresian  
 No vertebrate fossils have been reported as yet.  
 Claiborne Group, Lower to Middle Eocene, mid-  
 Ypresian to upper Bartonian  
 shark  
 fish  
*Ekokenia eporrecta* (Koken, 1888) (drum)  
 "Otolithus" aff. *umbonato* Koken, 1888  
 Meridian Sand of the Claiborne Group, Lower  
 Eocene, Ypresian  
 No vertebrate fossils have been reported as yet.  
 Winona Formation of the Claiborne Group, Middle  
 Eocene, Lutetian  
 shark  
 fish  
 Kosciusko Formation of the Claiborne Group,
- Middle Eocene, Lutetian  
 archaeocete  
 Cook Mountain Formation of the Claiborne Group,  
 Middle Eocene, Bartonian  
*Notiotitanops mississippiensis* Gazin and Sullivan,  
 1942 (southern titanotheria)  
 Cockfield Formation of the Claiborne Group, Middle  
 Eocene, Bartonian  
 No vertebrate fossils have been reported as yet.  
 Moodys Branch Formation, upper Middle Eocene,  
 Bartonian  
 The named fauna is largely from Breard (1978,  
 1991).  
 shark  
*Carcharias hopei* (Agassiz, 1843) (sand shark)  
 [Odontaspis hopei (Agassiz, 1843)]  
*Isurus hastalis* (Agassiz, 1843) (mako)  
*Isurus praecursor* (Leriche, 1905) (mako)  
 "Lamna" lerichei Casier, 1946 (lamniform shark)  
*Carcharocles auriculatus* (Blainville, 1818)  
 (giant shark)  
 [Carcharodon auriculatus Blainville, 1818]  
*Hemipristis curvatus* Dames, 1883  
 (snaggletooth shark)  
 [Hemipristis wyattdurhami White, 1956]  
*Abdounia enniskilleni* (White, 1956)  
 (carcharhiniform shark)  
 [Scyliorhinus enniskilleni White, 1956]  
*Carcharhinus gibbesi* (Woodward, 1889)  
 (requiem shark)  
 [Negaprion gibbesi (Woodward, 1889)]  
*Galeocerdo clarkensis* White, 1956 (tiger shark)  
*Physogaleus huberensis* (Case, 1981)  
 (carcharhiniform shark)  
 [Galeorhinus huberensis Case, 1981]  
*Pristis lathami* Galeotti, 1837 (sawfish)  
*Aetobatus* sp. (spotted eagle ray)  
 [Aetobatis sp.]  
*Myliobatis* sp. (eagle ray)  
 fish  
*Albula* sp. (bonefish)  
*Anguilla* sp. (eel)  
*Ariosoma* sp. (conger eel)  
 "Conger" brevior (Koken, 1888)  
 (anguilliform fish)  
 "Conger" vetustus Frizzell and Lamber, 1962  
 (anguilliform fish)  
*Arius* sp. (marine catfish)  
*Preopheidion* sp. (gadiform fish)  
*Brazosiella* sp. (beryciform fish)  
*Allomorone* sp. (sea bass)  
*Corvina intermedia* (Koken, 1888) (drum)  
*Jefitchia claybornensis* (Koken, 1888) (drum)  
*Sphyaena* sp. (barracuda)

- Sphyræna* cf. *S. major* Leidy, 1855 (barracuda)  
*Cylindracanthus* cf. *C. rectus* (Agassiz, 1843) (?billfish)  
*Eosolea* sp. (sole)  
*Diodon* sp. (porcupinefish)  
*Pterosphenus schucherti* Lucas, 1899 (aquatic snake)
- archaeocete  
*Zygorhiza kochii* (Reichenbach, 1847) (archaeocete)  
*Basilosaurus cetoides* (Owen, 1839) (archaeocete)
- Yazoo Formation, Upper Eocene, Priabonian  
 shark  
*Isurus* sp. (mako)  
*Isurus praecursor* (Leriche, 1905) (mako)  
*Carcharocles auriculatus* (Blainville, 1818) (giant shark)  
 [ *Carcharodon auriculatus* Blainville, 1818 ]  
*Pristis* sp. (sawfish)  
 fish  
*Euobolus* sp. (bonefish)  
 clupeid (herring)  
*Xiphiorhynchus kimballi* Fierstine and Applegate, 1974 (billfish)  
*Cylindracanthus rectus* Agassiz, 1843 (?billfish)  
 xiphiid (swordfish)  
*Pterosphenus schucherti* Lucas, 1899 (aquatic snake)  
*Eopteryx mississippiensis* Meyer, 1887 (bird, indet.)  
*Zygorhiza kochii* (Reichenbach, 1847) (archaeocete)  
*Basilosaurus cetoides* (Owen, 1839) (archaeocete)
- Vicksburg Group, Lower Oligocene, Rupelian  
*Striatolamia macrota* (Agassiz, 1843) (sand shark)  
 [ *Odontaspis macrota* (Agassiz, 1843) ]  
*Corvina pseudoradians* Dante and Frizzell in Frizzell and Dante, 1965 (drum)
- Red Bluff Formation of the Vicksburg Group  
*Odontaspis* sp. (sand shark)  
 fish  
*"Conger" brevior* (Koken, 1888) (anguilliform fish)  
*"Conger" sanctus* Frizzell and Lamber, 1962 (anguilliform fish)  
*Corvina gemma* (Koken, 1888) (drum)  
*Corvina pseudoradians* Dante and Frizzell in Frizzell and Dante, 1965 (drum)  
*Sphyræna* sp. (barracuda)  
 sirenian (sea cow)
- Forest Hill Formation of the Vicksburg Group  
 No vertebrate fossils have been reported as yet.
- Mint Spring Formation of the Vicksburg Group  
 shark  
 ray  
*"Conger" brevior* (Koken, 1888) (anguilliform fish)  
*Stintonia glendonensis* Frizzell and Dante, 1961 (squirrelfish)
- Corvina gemma* (Koken, 1888) (drum)  
*Corvina pseudoradians* Dante and Frizzell in Frizzell and Dante, 1965 (drum)  
 Marianna Formation of the Vicksburg Group  
*Carcharocles auriculatus* (Blainville, 1818) (giant shark)  
 [ *Carcharodon auriculatus* Blainville, 1818 ]  
 Glendon Formation of the Vicksburg Group  
 shark  
 fish  
*"Conger" brevior* (Koken, 1888) (anguilliform fish)  
*"Conger" sanctus* Frizzell and Lamber, 1961 (anguilliform fish)  
*Stintonia glendonensis* Frizzell and Lamber, 1961 (squirrelfish)  
*Weileria brandonis* Frizzell and Lamber, 1961 (squirrelfish)
- Corvina gemma* (Koken, 1888) (drum)  
*Corvina pseudoradians* Dante and Frizzell in Frizzell and Dante, 1965 (drum)  
 Byram Formation of the Vicksburg Group  
*Carcharocles auriculatus* (Blainville, 1818) (giant shark)  
 [ *Carcharodon auriculatus* Blainville, 1818 ]  
*"Conger" brevior* (Koken, 1888) (anguilliform fish)  
*Stintonia glendonensis* Frizzell and Lamber, 1961 (squirrelfish)
- Corvina gemma* (Koken, 1888) (drum)  
*Corvina pseudoradians* Dante and Frizzell in Frizzell and Dante, 1965 (drum)  
*Metamynodon planifrons* Scott and Osborn, 1887 (amynodont)  
*Subhyracodon* sp. (rhinoceros)  
 ?*Halitherium* (sea cow)
- Bucatunna Formation of the Vicksburg Group  
 fish  
 Chickasawhay Formation, lower Upper Oligocene, Chattian  
*Odontaspis* sp. (sand shark)  
*Aetobatus* sp. (spotted eagle ray)  
 [ *Aetobatis* sp. ]  
 silurid (catfish)  
*Sphyræna* sp. (barracuda)  
 turtle  
 trionychid (softshell turtle)  
 sirenian (sea cow)
- Oligocene, Upper  
 No vertebrate fossils have been reported as yet.
- Miocene, undifferentiated  
*Carcharocles megalodon* (Agassiz, 1837) (giant shark)  
 [ *Carcharodon megalodon* Agassiz, 1837 ]  
 Hattiesburg Formation, Miocene

No vertebrate fossils have been reported as yet.

Pascagoula Formation, Miocene

fish

lepisosteid (gar)

crocodile

Graham Ferry Formation, Pliocene, and Citronelle

Formation, Plio-Pleistocene

No vertebrate fossils have been reported as yet.

Rancholabrean Land Mammal Age, Upper

Pleistocene, and/or Holocene

This list is compiled from Kaye (1974), Kurtén and Kaye (1982), and Frazier and Lenzor (1985).

Taxonomic authorities for this section are Ernst and Barbour (1989) (turtles) and Kurtén and Anderson (1980) (mammals).

*Apalone* sp. (softshell turtle)

[*Trionyx* sp.]

*Chelydra serpentina* (Linnaeus, 1758) (snapping turtle)

*Macrochelys temminckii* (Troost in Holbrook, 1836) (alligator snapping turtle)

*Terrapene carolina* (Linnaeus, 1758) (eastern box turtle)

*Emydoidea blandingii* (Holbrook, 1838) (Blanding's turtle)

*Chrysemys picta* (Schneider, 1783) (painted turtle)

*Trachemys scripta* (Schoeopf, 1792) (common slider)

[*Chrysemys scripta* (Schoeopf, 1792)]

*Pseudemys nelsoni* Carr, 1938 (Florida red-bellied turtle)

[*Chrysemys nelsoni* (Carr, 1938)]

*Geochelone* cf. *G. crassiscutata* (Leidy) (giant turtle)

large bird

wading bird

*Meleagris* cf. *M. gallopavo* Linnaeus, 1758 (turkey)

*Didelphis* sp. (opossum)

*Blarina carolinensis* (Bachman, 1837) (southern short-tailed shrew)

[*Blarina brevicauda* (Say, 1823); this is the

northern sp.]

felid (cat)

*Felis amnicola* Gillette, 1976 (river cat)

*Felis* cf. *F. weidii* Schinz, 1821 (margay)

*Lynx rufus* (Schreber, 1777) (bobcat)

*Panthera leo atrox* (Leidy, 1853) (American lion)

[*Felis atrox* Leidy, 1853]

canid

*Urocyon* sp. (gray fox)

*Urocyon cinereoargenteus* (Schreber, 1775) (gray fox)

*Canis* cf. *C. latrans* Say, 1823 (coyote)

*Canis latrans* Say, 1823 (coyote)

*Canis* cf. *C. rufus* Audubon and Bachman, 1851 (red wolf)

*Procyon lotor* (Linnaeus, 1758) (raccoon)

bear

*Arctodus* cf. *A. simus* (Cope, 1879) (greater short-faced bear)

*Arctodus simus* (Cope, 1879) (greater short-faced bear)

*Tremarctos floridanus* (Gidley, 1928) (Florida spectacled bear)

*Ursus americanus* Pallas, 1780 (black bear)

[*Ursus amplidens* Leidy, 1853]

*Glaucomys volans* (Linnaeus, 1758) (eastern flying squirrel)

*Sciurus carolinensis* Gmelin, 1788 (gray squirrel)

*Castor canadensis* Kuhl, 1820 (beaver)

*Castoroides ohioensis* Foster, 1838 (giant beaver)

*Microtus pennsylvanicus* (Ord, 1815) (meadow vole)

*Microtus pinetorum* (Le Conte, 1830) (pine vole)

[*Pitymys pinetorum* (Le Conte, 1830)]

*Neotoma floridana* (Ord, 1818) (eastern wood rat)

*Ondatra* sp. (muskrat)

*Ondatra zibethicus* (Linnaeus, 1766) (muskrat)

*Sigmodon hispidus* Say and Ord, 1825 (hispid cotton rat)

*Synaptomys cooperi* Baird, 1858 (southern bog lemming)

*Hydrochoerus* sp. (capybara)

*Sylvilagus* cf. *S. aquaticus* (Bachman, 1837) (swamp rabbit)

*Sylvilagus floridanus* (Allen, 1890) (cottontail rabbit)

*Mylohyus* sp. (peccary)

*Platygonus* sp. (peccary)

*Hemiauchenia* sp. (llama)

[*Tanupolama* sp.]

*Odocoileus virginianus* (Zimmermann, 1780) (whitetailed deer)

*Cervus* sp. (wapiti)

*Bison* sp. (giant bison)

*Bison* cf. *B. latifrons* (Harlan, 1825) (giant bison)

*Bootherium bombifrons* (Harlan, 1825) (muskox)

[*Symbos cavifrons* (Leidy, 1852)]

[*Ovibos* sp.]

*Equus* sp. (horse)

*Equus* cf. *E. complicatus* Leidy, 1858 (eastern horse)

[*Equus intermedius* Cope, 1895]

[*Equus eous* Hay, 1899]

[*Equus leidy* Hay, 1913]

[*Equus major* DeKay, 1842]

*Equus* cf. *E. conversidens* Owen, 1869 (Mexican horse)

*Equus* cf. *E. fraternus* Leidy, 1860 (brother horse)

- Equus fraternus* Leidy, 1860 (brother horse)  
*Equus simplicidens* Cope, 1892 (American zebra)  
*Equus* cf. *E. tau* Owen, 1869 (pygmy onager)  
 [*Equus francisi* Hay, 1915]  
*Tapirus* sp. (tapir)  
*Tapirus copei* Simpson, 1945 (Cope's tapir)  
 [*Tapirus haysii* Leidy, ?1860]  
*Tapirus veroensis* Sellards, 1918 (Vero tapir)  
 [*Tapirus terrestris* (Linnaeus, 1758)]  
*Mammut americanum* (Kerr, 1792)  
 (American mastodon)  
*Mammuthus* sp. (mammoth)  
 [*Elephas* sp.]  
*Dasypus bellus* (Simpson, 1930) (armadillo)  
*Holmesina septentrionalis* (Leidy, 1889)  
 (northern pampathere)  
 [*Chlamytherium septentrionalis* (Leidy, 1889)]  
 sloth  
*Megalonyx jeffersonii* (Desmarest, 1822)  
 (Jefferson's ground sloth)  
 [*Megalonyx dissimilis* Leidy, 1855]  
 [*Ereptodon priscus* Leidy, 1855]  
*Eremotherium* sp. (giant ground sloth)  
*Glossotherium harlani* (Owen, 1840)  
 (Harlan's ground sloth)  
 [*Mylodon harlani* Owen, 1840]  
 [*Paramylodon nebraskensis* Brown, 1903]

### THE ANNOTATED BIBLIOGRAPHY ON VERTEBRATE FOSSILS OF MISSISSIPPI

Criteria for inclusion in the bibliography are about the same as Domning's. Most of the references are concerned with sightings or collections of vertebrate fossils from various localities and/or formations in the state. Important secondary literature on fossils from Mississippi is included also, while minor mentions have been omitted. As in Domning's paper, newspapers, encyclopedias, textbooks, and most bibliographies have not been considered as sources. Some articles on Natchez Man and the mounted *Zygorhiza* are included purely for their historical interest. For long articles, relevant pages are indicated in parentheses. Currently correct names, where possible, have been used in the annotations, which may not be the same as the author's usage. This practice is expected to be more helpful to those consulting the bibliography.

Applegate, Shelton P., 1969-1970, Digging fossil whales in Mississippi with southern hospitality: Quarterly of the Los Angeles County Museum of Natural History, v. 8, no. 3, p. 26-31.

An expedition from the Los Angeles County Museum took up three partial skeletons of *Basilosaurus* from the Upper Eocene Yazoo Formation in Scott County. One came from the Huff farm near Forest, and the other two from the Idom farm near Pinkston Hill. A concretion of stomach contents associated with one whale contained shark and fish remains. Herring scales and a mako tooth have been identified. A tooth of *Carcharocles auriculatus* was associated with one of the specimens also. A visitor showed the diggers parts of the large billfish *Xiphiorhynchus*, and presented them with a small archaeocete vertebra from the Lower Eocene Bashi Formation.

Arata, Andrew A., and Crawford G. Jackson, Jr., 1965, Cenozoic vertebrates from the Gulf Coastal Plain - 1: Tulane Studies in Geology, v. 3, no. 3, p. 175-177.

Two small Oligocene marine faunas are reported from east-central Mississippi. One is from the Chickasawhay Formation south of Waynesboro, Wayne County. A complete sirenian rib was found, together with 25 rib pieces and a damaged vertebra. Also found were *Odontaspis* teeth, *Aetobatus* plate fragments, *Sphyaena* teeth, a catfish spine, a trionychid pleural plate, and a piece of another turtle. The second locality is in the Red Bluff Formation near Hiwanee, Wayne County. A sirenian rib fragment and *Odontaspis* and *Sphyaena* teeth were found.

Baird, Donald, 1986, Upper Cretaceous reptiles from the Severn Formation of Maryland: The Mosasaur, v. 3, p. 63-85.

The author notes the presence of the crocodilian *Thoracosaurus* in the Ripley Formation of Mississippi (Carpenter, 1983) as well as the Maastrichtian of the east (77). He also notes that a theropod pedal phalanx (MMNS VP 103) described from Mississippi (Carpenter, 1982) is identical to a right pedal phalanx III-1 of *Ornithomimus antiquus*, although slightly smaller (80). Carpenter rejected the possibility that the specimen could be an ornithomimid bone.

Beard, K. Christopher, and Alan R. Tabrum, 1991, The first early Eocene mammal from eastern North America: an omomyid primate from the Bashi Formation, Lauderdale County, Mississippi: Mississippi Geology, v. 11, no. 2, p. 1-6.

A lower jaw fragment of an omomyid primate, bearing the third molar and the posterior root of the second molar, was found in the collections of the Yale Peabody Museum. It was collected from

the early Eocene Bashi Formation exposed in Meridian, Lauderdale County. The Bashi Formation must be temporally equivalent to part of the Wasatchian North American Land Mammal Age of the western interior. The marine nannoplankton assemblage of the Bashi Formation permits correlation with the lower part of the Ypresian Stage of Europe.

Bergquist, Harlan R., 1942, Scott County geology: Mississippi Geological Survey, Bulletin 49, p. 13-102.

Fragmentary *Basilosaurus* bones occur in places in the Upper Eocene Yazoo Formation in Scott County (17, 36). A roadcut near Forest showed jaw fragments of this archaeocete (36). Several large vertebrae and rib pieces were seen weathered out of the upper beds of the Yazoo Formation at Pinkston Hill (46).

Bergquist, Harlan R., 1943, Clay County geology: Mississippi Geological Survey, Bulletin 53, p. 11-71.

Shark teeth are numerous in the Tombigbee Sand Member of the Eutaw Formation at Bartons Bluff and at Vinton Bluff (16, 17). The presence of shark teeth, and of ribs and vertebrae of mosasaurs, in the Selma Chalk is noted (20). Shark teeth and a mosasaur bone were found in the Demopolis Chalk four miles south of West Point (28), and possible mosasaur vertebral fragments at Long Creek west of Siloam (30, 67). A few shark teeth occurred in a limestone ledge above the Prairie Bluff Formation a mile west of Montpelier (41). Shark teeth and fish vertebrae were in a Prairie Bluff section three miles northeast of Pheba (41, 42).

Breard, Sylvester Q., Jr., 1978, Macrofaunal ecology, climate, and biogeography of the Jackson Group in Louisiana and Mississippi: unpublished master's thesis, Northeast Louisiana University, 159 p.

Six localities were comprehensively collected for all visible fossils. Three of the six localities were in the Moodys Branch Formation of Mississippi. An area near Midway, Yazoo County, yielded teeth of nine elasmobranchs and otoliths of four bony fish, plus *Myliobatis* caudal spines, a rostral section of *Pristis lathamii*, *Sphyræna* teeth, and a scapula and two teeth of *Basilosaurus*. An exposure on Town Creek in Jackson produced teeth of *Myliobatis* sp. and *Sphyræna* sp., and otoliths of eight bony fish. Riverside Park in Jackson provided two *Myliobatis* teeth and one *Sphyræna* tooth (faunal list 81-102). All were in shallow-water facies. Characteristics of the biota

indicate that the climate of the shore during Moodys Branch time was tropical. A large percentage of the vertebrates was derived from the Tethyan area, due to east to west Atlantic currents.

Breard, Sylvester Q., Jr., 1991, Paleocology of a late Eocene (Bartonian) vertebrate fauna, Moodys Branch Formation, Techeva Creek, Mississippi: Gulf Coast Association of Geological Societies, Transactions, v. 41, p. 43-55.

Twenty species of vertebrates have been identified by the author from Techeva Creek, north of Midway, Yazoo County. The majority of specimens are loose teeth. The fauna includes nine sharks, three rays, seven teleost fish, and the cetacean *Zygorhiza kochii*. The eagle ray *Myliobatis* is most abundant, as it is throughout the Gulf Coast marine Cenozoic. As a whole the vertebrates indicate a marine nearshore environment, judged from the habitats of their modern relatives and analogs. In the same way, the invertebrate fauna indicates a shallow, high-energy situation.

Carpenter, Kenneth, 1982, The oldest Late Cretaceous dinosaurs in North America?: Mississippi Geology, v. 3, no. 2, p. 11-17.

A maxillary tooth crown of a hadrosaur has been collected from near Saltillo in Lee County, a locality probably in the Selma Group. Five other dinosaur parts come from the site of Lock A of the Tennessee-Tombigbee Waterway, near Amory in Monroe County. The Lock A locality is in either the basal Eutaw Formation or the upper McShan Formation. If McShan, the five bones may be the oldest known Upper Cretaceous dinosaur remains of North America. Kaye and Russell (1973) recommended a partial hadrosaur skeleton from the Tombigbee Sand as the oldest known N. A. dinosaur, but the Tombigbee Sand is certainly younger than the McShan Formation.

Carpenter, Kenneth, 1983, *Thoracosaurus neocesariensis* (De Kay, 1842) (Crocodylia: Crocodylidae) from the Late Cretaceous Ripley Formation of Mississippi: Mississippi Geology, v. 4, no. 1, p. 1-10.

*Thoracosaurus* has been collected from a locality in the Ripley Formation of Oktibbeha County. Parts preserved consist of the skull, jaw, 23 vertebrae, left scapula, coracoids, right ilium, left ischium, femora and 45 scutes. This is the most complete North American skeleton to date of a Cretaceous crocodile that was previously poorly known, and accumulated a long list of synonymous names.

- Carpenter, Kenneth, and David T. Dockery, III, 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.  
This is a brief account of this nearly complete *Zygorhiza* skeleton, found in 1971 in the bed of Thompson Creek near Tinsley, Yazoo County. Emphasis is on the mounting procedure in the Mississippi Museum of Natural Science, accompanied by a pictorial record.
- Carpenter, Kenneth, and David White, 1986, Feeding in the archaeocete whale *Zygorhiza kochii* (Cetacea: Archaeoceti): Mississippi Geology, v. 7, no. 2, p. 1-14.  
The authors studied the skull and jaw of the previously reported specimen of *Zygorhiza* from the upper Middle Eocene Moodys Branch Formation at Thompson Creek, Yazoo County. They concluded that *Zygorhiza* is adapted to eating large fish.
- Case, Gerard R., 1982, A pictorial guide to fossils: New York, Van Nostrand Reinhold, 514 p.  
A complete crusher tooth of *Ptychodus mortoni* from the Eutaw Formation at Columbus, Lowndes County, is figured in three views (254).
- Case, Gerard R., 1986, The bony fishes (teleosts) of the Tusahoma and Bashi formations, early Eocene, Meridian, Lauderdale County, Mississippi: Mississippi Geology, v. 6, no. 4, p. 6-8.  
Fourteen species of teleost are reported from the Tusahoma Formation at Meridian. Ten of these species were found also in the Bashi Formation at the same locality. The remains are fragmentary, usually teeth and pieces of jaw. Twenty-six elasmobranch species are listed as present in the Tusahoma at Meridian also, represented by teeth. The fossil aquatic snake *Palaeophis casei* is from the Tusahoma Formation at Meridian, rather than the Bashi, as previously thought.
- Case, Gerard R., 1991, Selachians (sharks) from the Tupelo Tongue of the Coffee Sand (Campanian, Upper Cretaceous) in northern Lee County, Mississippi: Mississippi Geology, v. 11, no. 3, p. 1-8.  
An assemblage of eleven taxa of elasmobranchs is described from a locality on the Griffin property near Chapelville, Lee County. None of the elasmobranch taxa are new, with one possible exception. There may be a tooth from a juvenile *Scapanorhynchus*, and if so it is a first report. *Ptychotrygon triangularis* is known only from Texas so far. *P. vermiculata*, a widespread species, is the one found in Mississippi.
- Conant, Louis C., 1939, Observations on the Midway Group: Journal of the Mississippi Academy of Sciences, v. 1, p. 6-7.  
Shark teeth are abundant in a coquina about one foot thick, at a locality about 1 1/2 miles east of Falkner, Tippah County. The layer is in the upper part of the Lower Paleocene Clayton Formation.
- Conant, Louis C., 1941, Tippah County mineral resources: geology: Mississippi Geological Survey, Bulletin 42, p. 11-110.  
Shark teeth were found at a location 1 1/2 miles east of Falkner, in the upper part of the Clayton Formation (31). Mastodon remains, including the jaw, several ribs, two or three vertebrae, a scapula and parts of two femora, were recovered from the channel of Dry Creek, from a gray clay interpreted as a Pleistocene swamp bottom.
- Derstler, Kraig, 1988, A rich vertebrate fossil assemblage from the upper Demopolis Formation of Alabama and Mississippi: Journal of the Alabama Academy of Science, v. 59, no. 3, p. 144.  
A reptile-rich fossil fauna is reported from an interval of a few meters within the upper Demopolis Formation of western Alabama and northeastern Mississippi. The fauna is dominated by the mosasaurs *Plioplatecarpus* and *Mosasaurus conodon*, and the sea turtles *Prionochelys nauta*, *Toxochelys barberi* and *T. moorevillensis*. Also found are the mosasaur *Prognathodon* cf. *P. solvayi*, the sea turtles *Bothremys*, *Protostega*, a chelosphargine, and *Peritresius*, plus a plesiosaur, a crocodile, and an ?ornithischian dinosaur. Fishes are less common, and include *Squalicorax*, *Pseudocorax*, *Ischyrrhiza*, *Myliobatis*, *Pachyrhizodus*, and *Enchodus*.
- Dessem, Dean A., 1976, Eocene snakes of the Gulf Coastal region: unpublished bachelor honors thesis, Tulane University, 34 p.  
Thoracic vertebrae of the fossil snake *Palaeophis virginianus* were collected at two localities in the Lower Eocene Bashi Formation (10-11). One locality is in Meridian, and the other is on Highway 19 southeast of Whynot, both in Lauderdale County (Highway 19 is not in Wayne County as stated). Vertebrae of the fossil snake *Pterosphenus* were also collected at two localities in Mississippi (14): one in the upper Middle Eocene Moodys Branch Formation at Jackson, Hinds County, and the other in the Upper Eocene Yazoo Formation at the Miss-Lite quarry of Jackson Ready-Mix Concrete, located near



- Cynthia, Hinds County. The localities where *Pterosphenus* was found strengthen the idea that it is a marine snake.
- DeVries, David A., 1963, Jasper County mineral resources: Mississippi Geological Survey, Bulletin 95, p. 11-52.
- Fossil bone fragments presumed to be those of *Basilosaurus* were observed at several localities in the Pachuta Marl Member of the Yazoo Formation in Jasper County. Similar fragments were seen also in the Shubuta Clay Member, in two pastures near Montrose (27, 29, table 12). The author notes that Bergquist (1942) reported *Basilosaurus* bones in the Pachuta Marl of Scott County, and that he said that most such fossils had been found in the Shubuta Clay. A few fish vertebrae and shark teeth can be found in the Glendon Formation in Jasper County (40).
- Dockery, David T., III, 1974, An Archaeoceti from the Moodys Branch Formation (Upper Eocene) of Mississippi: The Compass of Sigma Gamma Epsilon, v. 51, no. 3, p. 61-64.
- Most of a specimen of *Zygorhiza*, including the skull and both jaws, was found in the Moodys Branch Formation exposed in Thompson Creek, Yazoo County. This skeleton appears to be one of the best preserved archaeocetes ever found. The specimen's history and the geology of the locality where it was found are described. It is now on exhibit in the Mississippi Museum of Natural Science.
- Dockery, David T., III, 1980, The invertebrate macropaleontology of the Clarke County, Mississippi, area: Mississippi Bureau of Geology, Bulletin 122, p. 5-387.
- The Bashi Formation of Lauderdale County is known to fossil collectors for its shark teeth, snake vertebrae, and alligator teeth (27). A fragmented fossil rib was found at Dobys Bluff on the Chickasawhay River in the Kosciusko Formation, Clarke County (45-46). The rib is tentatively identified as that of a small rhinoceros (another observer believes it to be cetacean: Earl Manning, pers. comm.). Vertebrae and other bones of *Basilosaurus* are common in the Pachuta Marl Member of the Yazoo Formation. At the "bone yard" locality of southeastern Clarke County, *Basilosaurus* bones are numerous and occur associated with fish spines (54). The earlier discovery of the type skull of *Notiotitanops* in the Cook Mountain Formation of Clarke County is noted (45). The Bashi Formation is interpreted as a nearshore, energetic deposit. The Kosciusko Formation at Dobys Bluff represents a destructional shelf environment created during marine transgression, while the Cook Mountain Formation includes marine shelf deposits. The Yazoo Formation is marine.
- Dockery, David T., III, 1981, Upper Eocene Carcharodons in Mississippi: Mississippi Geology, v. 1, no. 4, p. 6.
- Teeth of *Carcharocles auriculatus* have been found in Jackson, near Midway in Yazoo County, and near Yazoo City. The first large *Carcharocles* teeth in the Gulf Coastal Plain occur in the Jackson Group.
- Dockery, David T., III, 1982a, Lesueur's Walnut Hills fossil shells: Mississippi Geology, v. 2, no. 3, p. 7-13.
- Naturalist Charles A. Lesueur visited the future site of Vicksburg in 1828 and collected fossils from the Lower Oligocene Mint Spring and Byram formations. He prepared twelve plates illustrating the kinds of fossils he had found, which are published for the first time with this article. Plates 2 and 3 show vertebrates, including recognizable teeth of *Carcharias*, *Hemipristis*, *Galeocerdo*, *Carcharhinus*, *Carcharocles*, and *Myliobatis*. Sagittae (saccular otoliths) of *Corvina* and *Jefitchia* are shown also, as are fish vertebrae and possible sirenian rib fragments.
- Dockery, David T., III, 1982b, Lower Oligocene Bivalvia of the Vicksburg Group in Mississippi: Mississippi Bureau of Geology, Bulletin 123, p. 5-261.
- Charles A. Lesueur's plates (see previous entry) are reproduced as Appendix II in this monograph. See pages 240 and 241 for plates 2 and 3. Fossil vertebrate remains were noted during field surveys of the Vicksburg Group. Otoliths are common in sand lenses in the Red Bluff Formation exposed along the Chickasawhay River in Wayne County (16). Lower Oligocene shark and ray teeth occur in the shell gravel at the base of the Mint Spring Formation (18).
- Dockery, David T., III, 1987, *Metamynodon planifrons* from the Lower Oligocene Byram Formation - Mississippi's second major Tertiary land mammal find: Journal of the Mississippi Academy of Sciences, v. 32 (supplement), p. 31.
- A nearly complete skull of the amynodont perissodactyl *Metamynodon* was recovered from the Byram Formation of central Mississippi. It is described in Manning, Dockery and Schiebout (1985). An earlier significant find was the skull and a jaw fragment of the titanotheres

*Notiotitanops* from the Middle Eocene Archusa Marl Member of the Cook Mountain Formation. Finds such as these permit correlation of the western land mammal ages with the marine sequence of the northern Gulf.

Dockery, David T., III, K. Christopher Beard, Alan R. Tabrum, and Gerard R. Case, 1991, New Early Eocene land mammal faunas from the Tusahoma and Bashi formations in Mississippi: *Journal of the Mississippi Academy of Sciences*, v. 36, issue 1, p. 41.

New Lower Eocene faunas have been discovered at Meridian, Lauderdale County, in the Bashi and Tusahoma formations. The Tusahoma Formation fauna contains shark teeth, teleost teeth, snake vertebrae, and mammal teeth. Ten mammal taxa have been identified so far. The overlying Bashi Formation also contains a varied vertebrate fauna, including one identified mammal taxon. The Tusahoma Formation contains mammals of either the Clarkforkian (Upper Paleocene) or the Wasatchian (Lower Eocene) North American Land Mammal Age, while the Bashi mammal is definitely Wasatchian. This is consistent with other evidence that places the Paleocene-Eocene boundary in the upper Tusahoma at Meridian, below the faunal level (see also Ingram, 1991).

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

A series of more than twenty trunk vertebrae of *Basilosaurus* was recovered from an excavation into the Yazoo Formation near Madison, Madison County.

Dockery, David T., III, and Earl M. Manning, 1986, Teeth of the giant shark *Carcharodon auriculatus* from the Eocene and Oligocene of Mississippi: *Mississippi Geology*, v. 7, no. 1, p. 7-19.

This article reports a comparative study of teeth of *Carcharocles auriculatus* from Mississippi with interpretations of their differences. It includes a listing of all previously reported finds from the state. Nine teeth were assembled for the study. Two are from the Moodys Branch Formation at Town Creek, Jackson, Hinds County. Three are from the Yazoo Formation, two at Yazoo City, Yazoo County, and the third at Jackson. Two other teeth have been found in the upper Yazoo Formation at the Miss-Lite clay quarry near Cynthia, Hinds County, but they were not available for study. The sixth tooth is from the Marianna Formation at the South-Central Lime

quarry at Edwards, Hinds County. The remaining three are from the Byram Formation: one probably near Vicksburg, one from near Brandon, Rankin County, and one from north of Redwood, Warren County. One of the specimens from Yazoo City was previously reported by Dockery (1981).

Dockery, David T., III, and Earl Manning, 1990, *Subhyracodon* sp. from the Lower Oligocene Byram Formation - Mississippi's second major land mammal find: *Journal of the Mississippi Academy of Sciences*, v. 35 (supplement), p. 59.

A nearly complete jaw of the rhinocerotid *Subhyracodon* was found along the Big Black River in western Hinds County, in an exposure of the Byram Formation. This *Subhyracodon* find in a marine unit, plus the earlier find of a *Metamynodon* skull from the same locality, is of significant utility in the correlation of North American Land Mammal Ages with the standard marine sequence.

Domning, Daryl P., 1969, A list, bibliography and index of the fossil vertebrates of Louisiana and Mississippi: *Gulf Coast Association of Geological Societies, Transactions*, v. 19, p. 385-422.

*Mammut* is reported from Clarksdale, Coahoma County, and Camp Creek, Lee County (393, 420). This information is from an abstract of a paper in preparation by Arata and Domning that was apparently never published.

Domning, Daryl P., 1974, The old fossil #36. Fossil seacows of the southeast: *Rocky Echoes*, v. 14, no. 7, p. 7-9.

Dugong remains have been found in the Oligocene of Mississippi as follows: rib pieces from the Red Bluff and Mint Spring formations; a tooth and some skull fragments, probably of *Halitherium*, from the Byram Formation; and rib and other fragments from the Chickasawhay Formation. A listing of known sirenian finds for the southeastern states from Mississippi to South Carolina is presented.

Dunn, Paul H., 1948, Giant fauna in the Selma Chalk: *Geological Society of America, Bulletin*, v. 59, no. 12, p. 1318-1319.

Bones of several hadrosaurian dinosaurs were found near the base of the Selma Chalk at Plymouth Bluff, Lowndes County, together with exceptionally large specimens of a cephalopod and a rudistid bivalve.

Emry, Robert J., J. David Archibald, and Charles C. Smith, 1981, A mammalian molar from the Late Cretaceous of northern Mississippi: *Journal of*

Paleontology, v. 55, no. 5, p. 953-956.

An incomplete eutherian molar has been discovered in screen concentrate from Vinton Bluff on the south bank of the Tombigbee River, Clay County. The sample was taken from a rich lag deposit one meter above the base of the Tombigbee Sand Member of the Eutaw Formation. In the same sample were a mosasaur tooth, teeth of the fish *Anomoeodus*, and many elasmobranch teeth. The mammal tooth is the fourth Late Cretaceous mammal specimen known from east of the Western Interior Seaway. The authors place the Santonian-Campanian stage boundary within the Tombigbee Sand, and as the sample is from the base, the molar is judged to be Santonian, and the oldest known Late Cretaceous mammal molar from North America.

Fierstine, Harry L., 1974, The paleontology of billfish - the state of the art: NOAA Technical Report NMFS SSRF no. 675, p. 34-44.

This review of a group of fishes mentions the new Upper Eocene *Xiphiorhynchus kimblalocki* (39) and figures the bill segment and two vertebrae (39, 40). The specimen was found in the Shubuta Clay Member of the Yazoo Formation at Sherman Hill, Scott County. Mention is also made of an undescribed rostrum, probably of a xiphiid, found by Applegate in the Eocene of Mississippi, presumably in the Yazoo Formation of Scott County (40). The author believes that *Cylindracanthus*, known from numerous fragments supposedly of a fish's bill, will eventually be shown to be pieces of fin spine (43).

Fierstine, Harry L., and Shelton P. Applegate, 1974, *Xiphiorhynchus kimblalocki*, a new billfish from the Eocene of Mississippi with remarks on the systematics of xiphioid fishes: Southern California Academy of Science, Bulletin, v. 73, no. 1, p. 14-22.

A well-preserved rostrum, three partial vertebrae and two fin spine pieces of *Xiphiorhynchus* were collected in the Shubuta Clay Member of the Upper Eocene Yazoo Formation. The locality is on the southwest side of Sherman Hill in Scott County. The preserved parts are described and compared with those of other billfish. A skull and cervical vertebrae of the archaeocete *Zygorhiza* were found associated.

Foster, V. M., 1940, Lauderdale County mineral resources: geology: Mississippi Geological Survey, Bulletin 41, p. 9-172.

A shark tooth was collected in 1912 from the

Lower Claiborne Group from the east bank of the Chickasawhay River about a half mile below Enterprise, Clarke County.

Fowler, Henry W., 1911, A description of the fossil fish remains of the Cretaceous, Eocene and Miocene formations of New Jersey: Geological Survey of New Jersey, Bulletin 4, p. 22-192.

*Anomoeodus phaseolus* (Hay, 1899), which has been reported from New Jersey, was originally described from the Cretaceous of Mississippi by Leidy in 1873 as *Pycnodus faba*. Hay changed the name to *P. phaseolus* because of preoccupation (146-147). (Gidley placed this species in *Anomoeodus* in 1913.)

Frazier, Michael K., 1980a, A late Quaternary fossil vertebrate assemblage from Lowndes County, Mississippi: Journal of the Mississippi Academy of Sciences, v. 25 (supplement), p. 44.

Parts of the small rodents *Synaptomys cooperi* and *Microtus pennsylvanicus* were recovered from reworked stream deposits in Catalpa Creek, Lowndes County, along with other late Quaternary vertebrate fossils and remains of Cretaceous sharks, fish and reptiles. These two rodents do not live as far south as Mississippi today. Their presence in northeastern Mississippi in former times indicates that the average temperature there was about 5 degrees F cooler than at present, at some time in the late Quaternary.

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

In 1933, a partial skull of *Zygorhiza* was found in Jackson and studied by Kellogg for his monograph of 1936. During the late 1960's, an expedition from the Los Angeles County Museum took home specimens of both *Zygorhiza* and *Basilosaurus* from Scott County (Applegate, 1969-1970). In 1970 a group from the University of Southern Mississippi collected a nearly complete specimen of *Basilosaurus* from a locality in Jasper County (Reel, 1972). Part of this skeleton is on display at the university's Frazier Museum. The most recent important find is the nearly complete *Zygorhiza* skeleton collected just south of Yazoo City by members of the Mississippi Gem and Mineral Society. This specimen includes the most complete skull known, both jaw halves, about 20 ribs and 50 vertebrae, but no limb bones. It has been donated to the state and is now on exhibit at the Mississippi Museum of Natural Science.

Frazier, Michael K., and John Lenzor, 1985,

Paleontology study, in Guy R. Muto and Joel Gunn, eds., A study of Late-Quaternary environments and early man along the Tombigbee River, Alabama and Mississippi, v. 4: Benham Blair and Associates, Inc., Oklahoma City, Oklahoma, p. C-88 - C-106.

Vertebrate parts and fragments were collected by wet screening from two locations along the banks of Catalpa Creek, Clay County. All identified Quaternary vertebrates found in the study area are listed in a table. Fossils and localities from Kaye (1974) are also presented in a table. Fossils and human artifacts are found together in gravel deposits on top of the Cretaceous bedrock. In this reworked, mixed assemblage, non-marine remains cannot be closely dated. Some elements in the assemblage permit inferences about previous climate in this area. *Synaptomys* and *Microtus* and their significance were reported earlier (Frazier, 1980a).

Frizzell, Don L., 1965, Otolith-based genera and lineages of fossil bonefishes (Clupeiformes, Albulidae): *Senckenbergiana Lethaea*, v. 46a, p. 85-110.

*Eoalbulus meridianus* and *Metabulbus bashianus*, new genera and species of bonefishes, have the same type locality in the Lower Eocene Bashi Formation at Meridian, Lauderdale County. Another species of *Eoalbulus*, from the Upper Eocene Yazoo Formation at the Miss-Lite clay quarry near Cynthia, Hinds County, is said to be described in manuscript. The author describes a total of six new genera and presents a phylogeny of the Albulidae.

Frizzell, Don L., and John H. Dante, 1965, Otoliths of some early Cenozoic fishes of the Gulf Coast: *Journal of Paleontology*, v. 39, no. 4, p. 687-718.

This Eocene to Oligocene otolith fauna includes five fishes from Mississippi. *Genartina* sp. is represented by poorly preserved specimens from the Bashi Formation (695). *Ekokenia eporrecta* (Koken, 1888) is from undifferentiated Claiborne beds at Newton in Newton County (704). *Corvina gemma* (Koken, 1888) was recovered from the following formations: the Red Bluff Formation at Red Bluff Landing, Hiwannee, Wayne County; the Mint Spring Formation, Mint Spring Bayou, Vicksburg, Warren County; the Glendon Formation at the Marquette Cement Quarry, Brandon, Rankin County; and the Byram Formation at Byram, Hinds County, and Vicksburg, Warren County (706). *Corvina pseudoradians* sp. nov. occurs in all the same

localities as *C. gemma* except the Marquette Cement Quarry, plus the undifferentiated Vicksburg Group at Vicksburg (707-708). *Eosolea* sp. is known from the Lower Eocene of the state (716).

Frizzell, Don L., and C. Kurt Lamber, 1961, New genera and species of myripristid fishes, in the Gulf Coast Cenozoic, known from otoliths (Pisces, Beryciformes): *Missouri University School of Mines and Metallurgy, technical series, Bulletin 100*, p. 1-28.

Squirrelfish sagittae were found in fossiliferous samples from three Lower Oligocene formations in Mississippi. *Stintonia glendonensis* gen. et sp. nov. is rare in the Glendon Formation at the Marquette Cement Quarry near Brandon, Rankin County; the Byram Formation at Byram, Hinds County; and the Mint Spring Formation at Vicksburg, Warren County. *Weileria brandonis* gen. et sp. nov. is known to occur in the Glendon Formation at the Marquette Cement Quarry. Other new species of these genera are described from Louisiana and Texas.

Frizzell, Don L., and C. Kurt Lamber, 1962, Distinctive "congrid type" fish otoliths from the lower Tertiary of the Gulf Coast (Pisces: Anguilliformes): *Proceedings of the California Academy of Sciences*, 4th series, v. 32, no. 5, p. 87-101.

Sagittae of "*Conger*" *brevior* (Koken, 1888) were found in otolith collections from a number of Mississippi localities. They occurred in the Moodys Branch Formation near Midway, Yazoo County, the Red Bluff Formation at Hiwannee, Wayne County, the Mint Spring Formation at Vicksburg, Warren County, the Glendon Formation at Brandon, Rankin County, and the Byram Formation at Old Byram, Hinds County, and Vicksburg, Warren County. Sagittae of a new species, "*Conger*" *meridies*, were uncommon in the Bashi Formation at Meridian, Lauderdale County. Another new species, "*Conger*" *sanctus*, was found in the Red Bluff Formation at Hiwannee and the Glendon Formation at Brandon. Finally, the new "*Conger*" *vetustus* was rare in collections from the Moodys Branch Formation at Jackson, Hinds County. "*Conger*" is a form genus used for otoliths presumably from anguilliform fishes whose true relations are unknown at present.

Gazin, C. Lewis, and J. Magruder Sullivan, 1942, A new titanothera from the Eocene of Mississippi, with notes on the correlation between the marine Eocene of the Gulf Coastal Plain and continental

- Eocene of the Rocky Mountain region: Smithsonian Miscellaneous Collections, v. 101, no. 13, p. 1-13.
- The type skull and jaw of *Notiotitanops mississippiensis* were collected from the bank of a small stream about 2 1/2 miles south of Quitman, Clarke County, in the Cook Mountain Formation. It is here described and illustrated, and compared with the other known titanotheres of the west. It is evolutionarily more advanced than its supposed Middle Eocene contemporaries.
- Gidley, James W., 1901, Tooth characters and revision of the North American species of the genus *Equus*: Bulletin of the American Museum of Natural History, v. 14, no. 9, p. 91-142.
- Equus complicatus* Leidy, 1858 was based upon three upper molars from the "blue clay" at Natchez. The original name for the horse from Natchez was *E. americanus*. When Leidy discovered that the name was preoccupied, he changed it (108). In 1869 Leidy synonymized *E. complicatus* with *E. major* De Kay, 1842, but this name has no taxonomic standing (109). *E. eous* Hay, 1899 (renamed from *E. intermedius* Cope, 1895) is synonymous with *E. complicatus* (110, 130-133).
- Gidley, James W., 1913, Some new American pycnodont fishes: Proceedings of the U. S. National Museum, v. 46, no. 2036, p. 445-449.
- Anomoeodus latidens* sp. nov. is founded on a portion of left splenial with teeth, found nine miles west of Tupelo, Lee County, a locality in the Demopolis Chalk. *Anomoeodus mississippiensis* sp. nov. is founded on a posterior portion of right splenial with teeth, found at Guntown, Lee County, a locality in the Coffee Sand.
- Gilmore, Charles W., 1927, Note on a second occurrence of the mosasaurian reptile *Globidens*: Science n. s., v. 66, no. 1715, p. 452.
- Two unworn tooth crowns of *Globidens alabamaensis* were found in the Demopolis Chalk near Saltillo, Lee County.
- Gilmore, Charles W., 1938, Fossil snakes of North America: Geological Society of America, Special Paper 9, p. 1-96.
- Twenty-three thoracic vertebrae of the aquatic snake *Pterosphenus* are reported to be from Melvin, Alabama, the type locality (60). This series of vertebrae, formerly in the collection of J. Magruder Sullivan, may be the same as the one that passed into the collection of the Old Capitol Museum (no. 63.19.53), whose catalog records that it is from Jackson, Hinds County. No. 63.19.53, now consisting of eleven vertebrae, is today in the collections of the Mississippi Museum of Natural Science.
- Hall, Johnny Lee, 1976, Paleoecology and age of the Upper Eocene *Basilosaurus cetoides* beds of Louisiana, Mississippi and southeastern Alabama: unpublished master's thesis, Northeast Louisiana University, 166 p.
- Most of this work is based on analysis of foraminiferan faunas collected from six localities, two of which are in Mississippi. A jaw fragment, fifteen vertebrae, and numerous ribs of *Basilosaurus* were collected from the Jackson Ready-Mix clay quarry near Cynthia, Hinds County, in 1965 (8). Also noted are previous reports in Bergquist (1942) and Applegate (1969-1970). Shark teeth and *Basilosaurus* bones have been found at several localities in the Pachuta Marl Member of the Yazoo Formation (26). *Basilosaurus* fragments are present locally in the Shubuta Clay Member (DeVries, 1963) (27). One conclusion is that *Basilosaurus* is too long-lived a genus to be useful as a stratigraphic marker within the Jackson Group but it is an indicator of Upper Eocene sediments in intercontinental correlation. Other species of *Basilosaurus* are known to exist in Egypt and Australia. The true number of species in the Jackson Group is uncertain because most finds do not include good skulls.
- Hamilton, David P., editor, 1990, Briefings. Natchez Man gets younger: Science, v. 250, no. 4988, p. 1662.
- The controversial human pelvis fragment found at Natchez with the bones of Pleistocene mammals has been radiocarbon dated at 5580 years old plus or minus 80 years and is therefore not Pleistocene. The *Glossotherium* bone associated with it was found to be 17,840 years old plus or minus 125 years.
- Hay, Oliver P., 1908, The fossil turtles of North America: Carnegie Institution of Washington, Publ. no. 75, p. 1-568.
- A humerus of *Neptunochelys* was found in Upper Cretaceous deposits near Columbus, Lowndes County, by Dr. Spillman. No other part of this large sea turtle has been found (187).
- Hay, Oliver P., 1923, The Pleistocene of North America and its vertebrated animals from the states east of the Mississippi River and from the Canadian provinces east of longitude 95 degrees: Carnegie Institution of Washington, Publ. no. 322, p. 1-499.
- For this monograph, the author compiled all

available information concerning Pleistocene mammals of eastern North America, published and otherwise. The summary for Mississippi includes the author's update of Leidy's list of Pleistocene mammals: *Megalonyx jeffersonii*, *Glossotherium harlani*, *Ursus americanus*, *Panthera leo atrox*, *Castoroides ohioensis*, *Tapirus copei*, *Tapirus veroensis*, *Equus complicatus*, *Odocoileus virginianus*, *Bootherium bombifrons*, *Bison latifrons*, *Mammuth americanus*, and *Mammuthus* sp. This list is coincident with the fauna of Natchez, where remains occur in the tenacious blue clay underneath the loess (41). A human pelvis fragment was also found near Natchez (125, 390-391). Mastodon parts are found in the loess proper (125). The author notes that *Equus fraternus* was reported from Natchez by Leidy in 1860 (200-201). Mastodon fragments have been found in other places, listed (124-126). A horse premolar is reported from Cane Creek, southern Tippah County, and deer remains from Aberdeen, Monroe County.

Hay, Oliver P., 1928, Characteristic mammals of the Early Pleistocene: *Journal of the Washington Academy of Science*, v. 18, no. 15, p. 421-430.

The list of Pleistocene mammal species found at Natchez, given in Hay (1923), is repeated (428). This time the fauna is reported from the blue clay of the pre-loess terrace and possibly partly from the overlying loess.

Hay, Oliver P., 1930, On a long-known occurrence of a musk-ox at Natchez, Mississippi: *Journal of Mammalogy*, v. 11, no. 4, p. 505-507.

A last lower molar of *Bootherium bombifrons* was found at Natchez during the nineteenth century. Probably it came from the blue clay beneath the loess, as did the other fossil mammals from Natchez.

Holman, J. Alan, 1982, *Palaeophis casei*, new species, a tiny palaeophid snake from the early Eocene of Mississippi: *Journal of Vertebrate Paleontology*, v. 2, no. 2, p. 163-166.

Fourteen vertebrae of the fossil aquatic snake *Palaeophis casei* sp. nov. were collected from the Tusahoma Formation at Meridian, Lauderdale County. According to Case (1986), the correct horizon for these vertebrae is the Tusahoma rather than the Bashi, as was at first thought.

Holman, J. Alan, David T. Dockery III, and Gerard R. Case, 1991, Paleogene snakes of Mississippi: *Mississippi Geology*, v. 11, no. 1, p. 1-12.

This paper lists all reported finds of palaeophiid snakes in Mississippi (Holman, 1982; Parmley and Case, 1988; Dessem, 1976) plus additional

specimens from the same localities collected since the last publication. Those from the upper part of the Tusahoma Formation at Meridian could be Lower Eocene rather than Upper Paleocene. The Tusahoma Formation is usually considered to be Upper Paleocene, but its top is nonfossiliferous at its type locality (see Ingram, 1991). Palaeophiid sea snakes have been found in sediments with associated faunas that indicate an estuarine or tidewater environment of deposition. The python-sized *Palaeophis virginianus* and *Pterosphenus schucherti* could have lived in the open sea; indeed *Pterosphenus* has been found in a marine deposit in Florida (Hutchison, 1985). The garter-snake-sized *Palaeophis casei* is plausible as an estuarine species (Holman, 1982).

Horner, John R., 1979, Upper Cretaceous dinosaurs from the Bearpaw Shale (marine) of south-central Montana with a checklist of Upper Cretaceous dinosaur remains from marine sediments in North America: *Journal of Paleontology*, v. 53, no. 3, p. 566-577.

Two Mississippi hadrosaurs are in the checklist, USNM 175583 (Kaye and Russell, 1973) and USNM 4869 (Lull and Wright, 1942). Carpenter (1982) points out that these specimens are not from the Eutaw Formation, as given by Horner, but from the Selma Group.

Hrdlička, Aleš, 1907, Skeletal remains suggesting or attributed to early man in North America: *Bureau of American Ethnology, Bulletin* 33, p. 1-98.

The human pelvis fragment found at Natchez is not demonstrably fossil (16-18).

Hughes, Richard J., Jr., 1958, Kemper County geology: *Mississippi Geological Survey, Bulletin* 84, p. 4-274.

The author collected unidentified vertebrae in the Demopolis Chalk (58) and bone fragments and a tooth in the Bluffport Marl Member that he thinks are probably mosasaur (58). More vertebrae and shark teeth were collected from the Ripley Formation (67). Shark teeth were also found in the Prairie Bluff Formation 2.7 miles east of DeKalb. The author notes that Harper in 1857 reported mosasaur vertebrae, teeth and coprolites from Wahalak, and also remains of turtles (16).

Hutchison, J. Howard, 1985, *Pterosphenus* cf. *P. schucherti* Lucas, (Squamata, Palaeophidae) from the Late Eocene of peninsular Florida: *Journal of Vertebrate Paleontology*, v. 5, no. 1, p. 20-25.

The carbonate facies in which the Florida



*Pterosphenus* vertebra was found, and the internal anatomy of the specimen, convince the author that this species was fully marine rather than estuarine as others have proposed. An undescribed centrum of *Pterosphenus* from Mississippi exists in the collections of the Los Angeles County Museum. The construction of the Mississippi centrum is similar to that of the Florida specimen.

Ingram, Stephen L., 1991, The Tusahoma-Bashi section at Meridian, Mississippi: first notice of lowstand deposits above the Paleocene-Eocene TP2/TE1 sequence boundary: *Mississippi Geology*, v. 11, no. 4, p. 9-14.

According to this revision of the well-known fossil-bearing sediments at Meridian, ten feet of the Paleocene Tusahoma Formation are separated by an unconformity from ten feet of a marine lowstand unit of the Eocene Bashi Formation. Above another unconformity are four feet of fossiliferous, boulder-bearing transgressive marine Bashi, topped by the lowest part of the unfossiliferous Hatchetigbee Formation. Previous opinion was that the Bashi lowstand unit was part of the Tusahoma, thus placing the Paleocene-Eocene boundary within that formation. The most fossiliferous part of the section is a lag at the base of an estuarine channel sand just below the epoch boundary. Thirteen kinds of mammals have been recognized in screen-washed residues so far. The next most prolific sediment is under the concretions in the Bashi marine unit. An omomyid primate fossil is known from it (Beard and Tabrum, 1991). Four marine snake species have been found at Meridian (Holman, Dockery, and Case, 1991). Case (1986) lists 22 species of sharks, skates, sawfish and rays from here, plus 11 species of bony fish.

Jackson, Crawford G., Jr., and John M. Kaye, 1974a, Occurrence of box turtles, *Terrapene* (Testudines: Testudinidae) in the Pleistocene of Mississippi: *Herpetologica*, v. 30, no. 1, p. 11-13.

Two posterior plastron halves of *Terrapene carolina* were found in a late Pleistocene channel deposit near Columbus, Lowndes County. A moderately large, sexually dimorphic box turtle existed in northern Mississippi during the late Pleistocene. Associated finds were a fragmentary tooth of *Mammuthus*, fragmentary teeth of *Equus* sp., and dermal ossicles of *Dasypus bellus*. Tusk fragments were found also.

Jackson, Crawford G., Jr., and John M. Kaye, 1974b, The occurrence of Blanding's turtle, *Emydoidea*

*blandingii*, in the late Pleistocene of Mississippi (Testudines: Testudinidae): *Herpetologica*, v. 30, no. 4, p. 417-419.

A partially incomplete nuchal bone of *Emydoidea blandingii* was found on a point bar of Catalpa Creek where it forms the boundary between Clay and Lowndes counties. This is the southernmost record of this turtle and may indicate a cooler paleoclimate for the Gulf Coast during the late Pleistocene. The Holocene range of Blanding's turtle centers in the Great Lakes region. A specimen of the giant ground sloth *Eremotherium* was present in the adjoining Tibbee Creek.

Jackson, Crawford G., Jr., and John M. Kaye, 1975, Giant tortoises in the late Pleistocene of Mississippi: *Herpetologica*, v. 31, no. 4, p. 421.

Shell fragments of the giant tortoise *Geochelone* cf. *G. crassiscutata* were found on a point bar of Catalpa Creek where it forms the boundary between Clay and Lowndes counties. The giant ground sloth *Eremotherium* was present in the adjoining Tibbee Creek. Winter temperatures in northern Mississippi must have stayed above freezing in the late Pleistocene when the cold-intolerant *Geochelone* lived there.

Jones, Cheri A., Jerry R. Choate, and Hugh H. Genoways, 1984, Phylogeny and paleobiology of short-tailed shrews (genus *Blarina*), in Hugh H. Genoways and Mary R. Dawson, eds., *Contributions in Quaternary vertebrate paleontology: a volume in memorial to John E. Guilday*: Carnegie Museum of Natural History, Special Publication 8, p. 56-148.

A right jaw of a shrew, collected from the bank of Catalpa Creek, Lowndes County, is here identified as *Blarina carolinensis* through measurements of its single remaining molar (102). This is the species that inhabits the southeast at present. The age of the reworked deposit at the locality could be anywhere in the range Rancholabrean to Holocene (145).

Kaye, John M., 1971, A peccary from the Pleistocene or Holocene of Mississippi: *Tulane Studies in Geology and Paleontology*, v. 8, no. 4, p. 219-220. Peccary metapodials III and IV were found on the campus of Mississippi State University, Starkville, Oktibbeha County. These are the first peccary fossils reported from Mississippi. Later they were identified as those of *Platygonus* (Kaye, 1974, p. 43).

Kaye, John M., 1974, Pleistocene sediment and vertebrate fossil associations in the Mississippi Black Belt: unpublished dissertation, Louisiana

State University and Agricultural and Mechanical College, 115 p.

Thousands of fossil bones and teeth were collected by the author from 52 localities within the Black Belt physiographic province of northeastern Mississippi (listed 103-115; map 54). Most productive were Town Creek in Monroe County, Catalpa Creek between Clay and Lowndes counties, and Cedar Creek and its tributaries in Lowndes County. Horse teeth and tooth fragments were by far the most common fossils found (36-52). Thirty-four kinds of mammal were identified, eight kinds of turtle, and three birds. The Pleistocene vertebrates of the Black Belt belong to the Rancholabrean Land Mammal Age. The faunal list is most similar to that of the Rancholabrean of Florida. Two assemblages are distinguished: an older fauna from the Sangamon interglacial stage, indicative of a savanna environment, and a younger fauna, dating from the Wisconsin glaciation, and most typical of a swampy environment (63-70).

Kaye, John M., 1975, Pleistocene sediment and vertebrate fossil associations in the Black Belt of Mississippi and Alabama, in Loren A. Raymond, ed., Proceedings of the 2nd Annual Conference on the Quaternary History of the Southeastern United States: Appalachian State University, Publication No. 1, p. 19.

Thousands of Pleistocene vertebrate bone fragments and teeth have been found within basal conglomerates of surficial deposits in that area of northeastern Mississippi known as the Black Belt. The vertebrate remains are found in remnants of upper terraces and beneath present flood-plain deposits. Identified fossils belong to the Rancholabrean Land Mammal Age. Some fossils from the higher terrace remnants are pre-Wisconsin in age, while those from lower elevations seem to be Wisconsin.

Kaye, John M., and Dale A. Russell, 1973, The oldest record of hadrosaurian dinosaurs in North America: *Journal of Paleontology*, v. 47, no. 1, p. 91-93.

Fragmentary remains of an immature hadrosaurian dinosaur were recovered from the bed of the Tombigbee River, three miles northeast of Columbus, Lowndes County. The site lies within the Tombigbee Sand Member of the Eutaw Formation. The authors argue that this specimen is the oldest known hadrosaur from North America, based on a supposed Campanian age for the Smoky Hill Chalk of Kansas and Santonian age for the Tombigbee Sand. The

Smoky Hill Chalk has been radiometrically dated as Santonian (Carpenter, 1982).

Kellogg, Remington, 1936, A review of the Archaeoceti: Carnegie Institution of Washington, Publication no. 482, p. 1-366.

A referred specimen of *Basilosaurus* is a manubrium of the sternum from Wayne County (19). A referred specimen of *Zygorhiza* includes ten vertebrae, a right jaw and two loose teeth, from Clarke County near the eastern border (104). A nearly complete skull of a young *Zygorhiza* was found close to the same place (104). A nearly complete skull and jaw, with six cervical vertebrae and ten dorsal vertebrae, is from Jackson, Hinds County (105). The centrum of a fairly large lumbar vertebra, of an unidentifiable archaeocete, was also collected within Jackson (260). All specimens are from the Yazoo Formation, except the lumbar vertebra, which is from the Moodys Branch Formation.

Kellogg, Remington, 1966, Fossil marine mammals from the Miocene Calvert Formation of Maryland and Virginia. Part 3. New species of extinct Miocene Sirenia: *Bulletin of the U. S. National Museum*, no. 247, p. 65-97.

A small sirenian is reported as recovered from the Upper Oligocene Chickasawhay Formation in Wayne County (66).

Knox, S. Cragin, and Sue Pitts, 1984, Excavation of a mastodon at Vicksburg, Mississippi: *Mississippi Geology*, v. 4, no. 4, p. 1-10.

The largely complete skeleton of a mastodon was recovered from loess deposits at Vicksburg, Warren County. The skull and one front leg are the most notable lacks. The animal died on the site and was disarticulated before burial. Numerous Pleistocene land snails were associated with the bones.

Kolb, Charles R., Ernest E. Russell, and Wendell B. Johnson, 1976, Road log: Jackson-Vicksburg-Natchez, in *Classic Tertiary and Quaternary localities and historic highlights of the Jackson-Vicksburg-Natchez area: Guidebook for the New Orleans Geological Society field trip for the AAPG/SEPM Annual Convention in New Orleans*, p. 1-17.

Two mastodon specimens are reported from the loess at Vicksburg, from a locality just north of the Waterways Experiment Station near Exit 1C of I-20. The mastodon found in 1956 was radiocarbon dated at 17,000 years BP. Most of this specimen was reburied; it may never have been collected. The mastodon found in 1976 was found to be 15,665 plus or minus 400 years old.

This mastodon was in poor condition and may not have been excavated either. A third set of mastodon bones was collected on Hwy 61 Bypass just north of Vicksburg. This specimen is now on display in the Waterways Experiment Station. In addition, the authors note that parts of the archaeocete whale *Basilosaurus* are common in the Upper Eocene Yazoo Clay where it is being mined at Cynthia, Hinds County, by the Miss-Lite Aggregate Plant of Jackson Ready-Mix Concrete.

Kurtén, Björn, and John M. Kaye, 1982, Late Quaternary Carnivora from the Black Belt, Mississippi: *Boreas*, v. 11, p. 47-52.

Fossilized jaw fragments, teeth and other assorted parts were collected from brown clay deposits in the Black Belt province of northeastern Mississippi. Carnivores represented include *Canis latrans*, *Ursus americanus*, *Tremarctos floridanus*, *Arctodus simus*, *Felis amnicola*, *Lynx rufus*, and *Urocyon cinereoargenteus*. All but one fossil were found in banks and channels of small Black Belt streams. The exception, a tooth of *Tremarctos*, was found at a more elevated locality, Golden Triangle Regional Airport, and is probably older than the others. *Canis latrans* is not a Holocene native of Mississippi, but it lived in the eastern U. S. in Rancholabrean times.

Leriche, Maurice, 1942, Contributions à l'étude des faunes ichthyologiques marines des terrains tertiaires de la plaine cotière atlantique et du centre des États-Unis. Le synchronisme des formations tertiaires des deux cotés de l'Atlantique: Société géologique de France, Mém. 20, v. 2-4, p. 1-112.

Otoliths of the fishes *Ekokenia eporrectus* and "*Otolithus*" aff. *umbonato* are reported from the Middle Eocene Claiborne Group of Newton, Newton County (53). In the Jackson Group of Pachuta, Clarke County, was found a *Pristis* vertebra (44, 45), teeth of the shark *Isurus praecursor* (45-46), and rostra of *Cylindracanthus rectus* (49-50). Teeth of *Carcharocles auriculatus* were found in the Jackson Group at Shubuta in Clarke County, and in Wayne County (46-47). A tooth of the sand shark *Striatolamia macrota* and a tooth of another probable sand shark occur in the Lower Oligocene Vicksburg Group at Vicksburg, Warren County (53). Finally, *Carcharocles megalodon* is reported as present in the Miocene of Mississippi (74-77). The author notes that archaeocete remains are characteristic of the upper part of the Jackson Group in Alabama and

Mississippi.

Logan, William N., 1916, Preliminary report on the marls and limestone of Mississippi: Mississippi Geological Survey, Bulletin 13, p. 1-82.

Mosasaur remains were either encountered by the author or reported to him during his survey of the state. "Saurian bones" occur east of Okalona, Chickasaw County, in the Demopolis Chalk (37). "Bones of marine reptiles" are found occasionally west of Crawford, Lowndes County, also in the Demopolis Chalk (50). The frontispiece is a photograph of fossils from the Selma Chalk, and shows two mosasaur vertebrae among oyster shells. The existence of fossil bones in the Jackson Group is noted (32).

Lougee, Richard J., 1940, It pays to think twice: The Eleusis of Chi Omega, v. 42, no. 2, p. 569-572.

Scattered remains of a large mosasaur, including a jaw with teeth, were encountered in the chalk deposits near Tupelo, Lee County.

Lowe, E. N., 1915, Mississippi: its geology, geography, soils and mineral resources: Mississippi Geological Survey, Bulletin 12, p. 1-335.

In this general work, the writer reports the observations of unspecified authors and field explorers. He himself may have measured the *Basilosaurus* vertebrae in the museum of the University of Mississippi at Oxford (74). Bones and teeth of Cretaceous sharks are often found in exposures of the Demopolis Chalk (61), and teeth are abundant in the Eutaw Formation beds at Barton's Bluff on the Tombigbee River, Clay County (308). Shark teeth are also found in the upper Middle Eocene Moodys Branch Formation (80) and in the older Winona Formation just south of Enterprise (77). Fish teeth occur in the Upper Cretaceous Owl Creek Formation (62), and in the Middle Eocene Winona Formation (76). Mosasaur jaws and vertebrae have been reported from the Eutaw Formation at Plymouth Bluff on the Tombigbee. Jaws and vertebrae of *Basilosaurus* may be found wherever the Yazoo Formation is exposed (79, 80). Especially good whale localities are said to be around Satartia in Yazoo County (80) and between Roberts and Montrose in Jasper County (311). Mastodons occur in the loess terrace (93) and are especially abundant near Natchez (312). Large mammals have been discovered in the loess of Mississippi: one lion, two bears, two ground sloths, two tapirs, one horse, one deer, one bison, one mammoth, and the mastodon (96).

Lowe, E. N., 1919, Mississippi: its geology,

geography, soils and mineral resources: Mississippi Geological Survey, Bulletin 14, p. 1-346.

This is a revised version of Bulletin 12, issued in response to popular demand that exhausted the supply of that bulletin. Vertebrate fossil reports are the same as in Bulletin 12. Page locations are slightly different. There is an added note, that mammal bones may be collected in the bluffs at Vicksburg, Yazoo City and Natchez, and points intermediate (320).

Lowe, E. N., 1923, Ninth biennial report 1921-1923 of the director of the State Geological Survey to the Mississippi legislature and bulletin on petroleum prospecting in Mississippi: Mississippi Geological Survey, p. 1-190.

The author notes that fish and reptilian teeth and bones occur in the Cretaceous Eutaw Group (25), that the upper Claiborne Group (middle Eocene) bears fish teeth (30), and that the Upper Eocene Yazoo Formation is known for vertebrae and teeth of *Basilosaurus*.

Lowe, E. N., 1925, Geology and mineral resources of Mississippi: Mississippi Geological Survey, Bulletin 20, p. 1-140.

The author notes that shark teeth occur in the Cretaceous Selma Group (48) and that fish teeth are found in the Middle Eocene Winona Formation (61). Shark teeth were observed in an indurated bluff of Winona Formation on the east bank of the Chickasawhay River half a mile below Enterprise, Clarke County (62). The Upper Eocene Moodys Branch Formation also bears shark teeth (64). Vertebrae and jaw fragments of *Basilosaurus* occur in the Upper Eocene Yazoo Formation of Yazoo, Hinds, Madison, Scott, Jasper, and Clarke counties (66, 67). Large *Basilosaurus* remains are said to be common around Satartia, Yazoo County, and the author describes a locality 1 1/2 miles south of that town where 12 to 13 feet of vertebrae were seen (67). *Mammut* is found in blue muds within the loess and pre-loess terrace (81). Bones of a number of large mammals are known from the normal loess, of which the mastodon is the most common (83).

Lowe, E. N., 1933, Coastal plain stratigraphy of Mississippi. Part first: Midway and Wilcox Groups: Mississippi Geological Survey, Bulletin 25, p. 1-125.

A shark tooth was collected from the south side of Owl Creek, 2 3/4 miles northeast of Ripley, Tippah County, in the Paleocene Clayton Formation (10).

Lull, Richard S., and Nelda E. Wright, 1942, Hadrosaurian dinosaurs of North America: Geological Society of America, Special Paper 40, p. 1-242.

Fragments of a hadrosaur hindlimb, including both ends of a right femur and part of a fibula, are reported from near Tupelo, Lee County (15). This Mississippi locality is said to be in the Selma Chalk (correlation chart); near Tupelo it must be in the Demopolis Chalk. The Tupelo hadrosaur is No. 4869 in the U. S. National Museum. Remains of several unidentified hadrosaurs from the Selma Group of Mississippi and Alabama are said to exist in the same museum (9). In the distribution table, a *Hadrosaurus* and four mosasaurs are listed as present in the Selma Chalk of Mississippi (39) but no localities or references are given.

Lundelius, Ernest L., Jr., Russell L. Graham, Elaine Anderson, John Guilday, J. Alan Holman, David W. Steadman, and S. David Webb, 1983, Terrestrial vertebrate faunas, in Herbert E. Wright, Jr., ed., Late Quaternary environments of the United States. Vol. 1. The Late Pleistocene: p. 311-353.

The northern turtle *Emydoidea blandingii* occurs in Catalpa Creek together with the giant *Geochelone* (Jackson and Kaye, 1974b, 1975) (316, 326). Both occur together in northern Florida with a northern toad. *Geochelone* and the northern salamander *Ambystoma* occur together in southern Florida. It may be that a more equable climate in the southeastern U. S. is what permitted these disharmonious associations (325).

Luper, Edwin E., 1972, Smith County geology and mineral resources: Mississippi Geological Survey, Bulletin 116, p. 11-100.

The author notes that *Basilosaurus* has been reported from the Yazoo Formation in northern Smith County (12, 28).

Manning, Earl, David T. Dockery, III, and Judith A. Schiebout, 1986, Preliminary report of a *Metamynodon* skull from the Byram Formation (Lower Oligocene) in Mississippi: Mississippi Geology, v. 6, no. 2, p. 1-16.

A well-preserved skull of the amynodont *Metamynodon planifrons* was found in the Lower Oligocene Byram Formation on the east bank of the Big Black River in Hinds County. *Metamynodon* was previously known from the Upper Eocene to Middle Oligocene channel deposits of the high plains area. Its discovery in eastern nearshore marine sediments has

- permitted correlation between the Chadronian Land Mammal Age of North America and the Rupelian marine stage of Europe.
- May, James H., 1974, Wayne County geology: Mississippi Geological Survey, Bulletin 117, p. 13-194.
- Shark teeth and fish vertebrae were observed in the Pachuta Marl Member of the Upper Eocene Yazoo Formation at an outcrop near Frost Bridge, Wayne County. The author notes that the Pachuta Marl is the "Zeuglodon bed" of early authors, and that Bergquist (1942) reported bones of *Basilosaurus* in the Pachuta of Scott County (47). A core taken at the type locality of the Lower Oligocene Bucatunna Formation on Bucatunna Creek, Wayne County, contained fish otoliths (89). Rib fragments were repeatedly found in the Upper Oligocene Chickasawhay Formation of Wayne County. These have been considered sirenian ribs (96).
- McDonald, Hugh G., 1977, Description of the osteology of the extinct gravi-grade edentate *Megalonyx* with observations on its ontogeny, phylogeny and functional anatomy: unpublished master's thesis, University of Florida, 327 p.
- Specimens of *Megalonyx jeffersonii* from Mississippi are listed on p. 24. Those known from Natchez, Adams County, are from Leidy (1855), and those from Catalpa and Cedar Creeks are from Kaye (1974). Five species of *Megalonyx* are recognized as valid. They succeeded each other through a six-million-year period, from the middle Hemphillian Land Mammal Age to the late Rancholabrean LMA. The last and largest species is *M. jeffersonii*, the only one with remains found in Mississippi.
- McDonald, Jerry N., and Clayton E. Ray, 1989, The autochthonous North American musk oxen *Bootherium*, *Symbos*, and *Gidleya* (Mammalia: Artiodactyla: Bovidae): Smithsonian Contribution to Paleobiology no. 66, p. 1-77.
- Three musk ox skull specimens from Mississippi were examined during this study. A *Bootherium* partial skull was found on a sand bar near Rosedale, Bolivar County (54). A *Symbos* skull with partial horn cores came from a gravel bar west of Scott, Bolivar County (64). Another *Symbos* partial skull with horn core bases was found on a gravel bar at Friars Point, Coahoma County (64). Seven nominal species are synonymized under the senior name *Bootherium bombifrons*.
- Mellen, Frederic F., 1940, Yazoo County mineral resources: geology: Mississippi Geological Survey, Bulletin 39, p. 9-72.
- Scattered vertebrae of *Basilosaurus* occur in the upper part of the Yazoo Formation (20). Mammal bones occur in the loess (32). The bluish-gray lower layer of the loess may have been reduced from the usual oxidized color on site, when the deposits became thick enough to support a higher water table (32).
- Merrill, Robert K., 1988, Tishomingo County geology and mineral resources: Mississippi Bureau of Geology, Bulletin 127, p. 7-128.
- Worn fish remains have been reported from the Devonian part of the Chattanooga Formation, exposed in Tishomingo County (37, 39). The author notes that many previously described exposures of this formation are now covered by Pickwick Lake (39).
- Meyer, Robert Lee, 1974, Late Cretaceous elasmobranchs from the Mississippi and East Texas Embayments of the Gulf Coastal Plain: unpublished dissertation, Southern Methodist University, 419 p.
- More than 20,000 teeth of sharks, rays, guitarfishes, sawfishes and other cartilaginous fishes have been recovered by screenwashing from 50 localities, from Texas to Alabama, in age from upper Albian to lower Maastrichtian. About 30 species come from twelve localities in Mississippi (listed 391-401). When species distribution in the embayment was analyzed by lithologic type, five environmentally based assemblages could be recognized. Analysis by stratigraphic occurrence revealed four successive assemblages in the region. In comparisons with other contemporary faunas, that of the Gulf Coast is a unique faunal province, with cosmopolitan pelagic species in common with others abroad. Within North America, the warm-weather elasmobranchs of the embayment were distinct from a temperate-boreal assemblage farther north.
- Moore, William H., 1965, Hinds County geology: Mississippi Geological Survey, Bulletin 105, p. 21-145.
- A number of specimens of the archaeocete *Basilosaurus* have been found in the Miss-Lite quarry of Jackson Ready-Mix Concrete near Cynthia, Hinds County, where Yazoo clay is mined. About 15 vertebrae, numerous ribs, and a jaw fragment from the Cynthia quarry are now at the Mississippi Office of Geology. *Basilosaurus* remains have also been found at several other locations in Hinds County where the Yazoo

Formation is exposed (57). Southwest of Jackson is a shark-tooth locality in the Lower Oligocene Glendon Formation (72). Possible animal tracks have been observed in the Upper Oligocene Catahoula Formation in Simpson County (84).

Morse, William C., 1930, Paleozoic rocks: Mississippi Geological Survey, Bulletin 23, p. 3-212.

Damaged fish plates were collected from a basal conglomerate in the Devonian Chattanooga Formation, on the south side of Island Hill on Yellow Creek, Tishomingo County (30, 31, 50). Black fish remains or concretions were collected from the same formation from another locality on Yellow Creek, a half mile below the mouth of Big Branch (33, 51), and more bone fragments or concretions from 3/4 mile below Big Branch (34, 51). Small black fish bones occur at a locality on Whetstone Branch (this is in the northeast of Tishomingo County, not Tennessee) (53). The conglomerate that bears fish remains is within the Chattanooga Formation, not at its true base (60). Fish scales are said to be present in a basal conglomerate of the Mississippian Fort Payne Formation in Whetstone Branch (55). However, these are not mentioned again, and are not listed in the fauna of the formation (89). Merrill (1988) notes that most Yellow Creek localities are now under Pickwick Lake.

Neilson, George, 1974, These bones shall rise again: DuPont Magazine, Nov.-Dec., p. 28-31.

This is a popular account of the finding, collection and preparation of the *Zygorhiza* skeleton now on exhibit in the Mississippi Museum of Natural Science.

Nolf, Dirk, and David T. Dockery, III, 1990, Fish otoliths from the Coffee Sand (Campanian) of northeastern Mississippi: Mississippi Geology, v. 10, no. 3, p. 1-14.

Fish otoliths (ear stones) were collected from the Griffin sandpit, east of Chapelville, Lee County, by screen washing sediment. A total of 117 otoliths were recovered, from which 21 teleost taxa were recognized, including six new species. This is the first known otolith fauna of Campanian age. Several groups of fish existed far earlier than previously reported. Three species are tentatively placed in extant genera.

Parmley, Dennis, and Gerard R. Case, 1988, Palaeopheid snakes from the Gulf Coastal region of North America: Journal of Vertebrate Paleontology, v. 8, no. 3, p. 334-339.

Vertebrae and vertebral fragments of fossil aquatic snakes of the genus *Palaeophis* have been identified from two localities in Mississippi. *P.*

*casei*, *P. littoralis*, *P. virginianus*, and a number of specifically indeterminate specimens are reported from the Tuscaloosa Formation at Meridian, Lauderdale County. *P. virginianus* and a possible *P. littoralis* vertebra were collected from the Bashi Formation near Whynot, Lauderdale County.

Pitts, Leslie, 1969, The old fossil no. 24: Rocky Echoes, v. 10, no. 2, p. 11-12.

An expedition from the Los Angeles County Museum collected a skeleton of *Basilosaurus* from the Huff farm near Forest, Scott County, in the Upper Eocene Yazoo Formation. Another account of this event appeared in Applegate (1969-1970).

Pitts, Leslie, 1971, The old fossil no. 33: Rocky Echoes, v. 12, no. 4, p. 5-7.

This is the earliest account of the finding and excavation of the *Zygorhiza* specimen now on exhibit in the Mississippi Museum of Natural Science. Fish otoliths were among the fossils found associated with it. See also Dockery (1974) and Neilson (1974).

Priddy, Richard R., 1943, Pontotoc County mineral resources: geology: Mississippi Geological Survey, Bulletin 54, p. 9-88.

Shark teeth were present in the fossil assemblage collected from a locality just east of Troy, in the lower Ripley Formation (19). Mosasaur bone fragments and shark teeth are present in the Prairie Bluff Formation of the county (29, 30).

Priddy, Richard R., 1960, Madison County geology: Mississippi Geological Survey, Bulletin 88, p. 5-123.

Vertebrae and ribs of *Basilosaurus* are observed in the wall of the Miss-Lite quarry of Jackson Ready-Mix Concrete, just over the county line in Hinds County near Cynthia (82-83).

Priddy, Richard R., Jesse O. Snowden, and L. L. McDonald, 1966, Radiocarbon stratigraphy of Vicksburg loess: Journal of the Mississippi Academy of Sciences, v. 12, p. 130-131.

Bedrock hills at Vicksburg, Warren County, are overdraped by three to five blankets of loess, separated by soil horizons. Radiocarbon dates from materials in the loesses range from 26,000 to 14,000 years before the present. Mastodon bones were available for dating the youngest blanket of loess. Older blankets may well exist at the bases of some hills.

Quimby, George I., 1956, The locus of the Natchez pelvis find: American Antiquity, v. 22, no. 1, p. 77-79.

In 1846, Dr. M. W. Dickeson reported finding a

fossil human pelvis near Natchez, Adams County, at least two feet below three skeletons of *Megalonyx*, in a layer of blue clay underneath the loess. Joseph Leidy, in 1889, wrote that the pelvis was associated with a nearly complete skull and other bones and teeth of *Megalonyx*, bones of *Glossotherium*, and bones and teeth of *Equus complicatus* and *Bison latifrons*. The author and his companion revisited the exact locality, following directions given by C. G. Forshey of Natchez. They reached the spot, just above the bridge over Mammoth Bayou, but the true locality had been removed by a century of erosion. In a general reconnaissance, the pair found only a fragment of fossil bone in the Natchez area.

Reel, Ted Wesley, 1972, The excavation and preparation of two fossilized whales: unpublished dissertation, University of Southern Mississippi, 113 p.

Two partial skeletons of *Basilosaurus* were excavated in Jasper County by an expedition from the University of Southern Mississippi. One locality is five miles northeast of Montrose and the other is four and a half miles WNW of Pachuta (18, 19, 26). Both were in the Pachuta Marl Member of the Yazoo Formation. Four other *Basilosaurus* localities were found, but the remains were not considered suitable for collection: another near Montrose, another near Pachuta, a site five miles northeast of Crandall, Clarke County, and a site in the southeast corner of Clarke County (102-103). A listing of all known fossil whale localities in Mississippi and western Alabama is appended (99-104). The author notes a verbal report of a *Zygorhiza* discovered in Rankin County during construction of the Barnett Reservoir, at the southeast end of the dam (102). He also notes another verbal report of a fossil cetacean in Techeva Creek one mile north of Midway, Yazoo County (99).

Richards, Horace G., 1951, The vindication of Natchez Man: *Frontiers*, v. 15, no. 5, p. 139-140.

The author points out Thomas D. Stewart's (1951) rediscovery of Thomas Wilson's (1895) fluorine study of the pelvis part that bears the name Natchez Man. He gives a short account of published work on it, and of the controversy over its apparent Pleistocene age.

Russell, Dale A., 1967, Systematics and morphology of American mosasaurs: *Bulletin of the Peabody Museum of Natural History*, no. 23, p. 1-250.

In this complete listing of all specimens known to the author, four are noted from Mississippi.

The type and only known specimen of *Platycarpus tympaniticus* was described by Cope in 1869 from the Eutaw Formation near Columbus, Lowndes County (152). This will prove to be the senior synonym of one of the Niobrara members of the genus when more examples of it are available. The holotype belongs to the Academy of Natural Sciences of Philadelphia. Teeth of *Globidens* were reported by Gilmore (1927) from the Selma Chalk near Saltillo, Lee County (145). A possible *Mosasaurus* dentary has been found in the Tombigbee Sand Member at Plymouth Bluff, Lowndes County, and a *Mosasaurus* tooth came from the Selma Chalk near Scooba, Kemper County (190).

Russell, Dale A., 1988, A check list of North American marine Cretaceous vertebrates including fresh water fishes: *Occasional Papers of the Tyrrell Museum of Palaeontology*, no. 4, p. 1-58.

The check list contains 68 chondrichthyan occurrences in Mississippi, three of osteichthyans, five of marine reptiles, four of dinosaurs, and one eutherian mammal find. The majority of these are taken from published reports, but five are based on personal communications, as follows: *Hadrodus priscus*, a pycnodont fish, occurs in the Tombigbee Sand Member; hadrosaurian dinosaur remains have been found in the Tupelo Tongue of the Coffee Sand; a billfish near *Protosphyraena gladius* occurs in the Demopolis Chalk; also in the Demopolis are a toxochelyid turtle and an elasmosaurid mosasaur (14-16).

Schiebout, Judith A., 1979, An overview of the terrestrial early Tertiary of southern North America - fossil sites and paleopedology: *Tulane Studies in Geology and Paleontology*, v. 15, no. 1-4, p. 75-94.

At present, Paleocene and Eocene terrestrial vertebrate localities are scarce in the southeast of the continent. We may expect that faunas of the Paleocene and early Eocene will be found to resemble those of Europe, due to the continuing presence of the interior seaway. Faunas of the later Eocene should resemble those of the intermontane basins of the west. Eventually, the southeast may be recognized to be a source of immigrants to the west and north. The author notes the report of the titanotherid *Notiotitanops* from the Middle Eocene Cook Mountain Formation of Clarke County.

Shimek, Bohumil, 1904, Papers on the loess: the loess of Natchez, Miss.: *Bulletin of the State University*



of Iowa Labs Nat. Hist., v. 5, no. 4, p. 299-326.

The author notes fish remains from Vicksburg, Warren County (304-305). He reproduces two lists of various mammals from Natchez, Adams County (305-306). He expresses doubt that these mammals were found in the loess.

Simpson, George G., 1942, The beginnings of vertebrate paleontology in North America: Proceedings of the American Philosophical Society, v. 86, no. 1, p. 130-188.

The type specimen of *Panthera leo atrox*, a mandible, came from the Natchez area in Adams County. Also from there are a paratype molar of *Equus complicatus*, five molars of *Bootherium bombifrons*, and a partial mandible of an *Equus*.

Stephenson, Lloyd W., and Watson H. Monroe, 1940, The Upper Cretaceous deposits: Mississippi Geological Survey, Bulletin 40, p. 5-296.

Shark teeth were encountered at 17 localities during field studies of the Cretaceous of Mississippi. Five of these were in the Tombigbee Sand Member of the Eutaw Formation (69, 73, 76, 79, 81). Five more are listed from the "Selma Chalk" (table facing 108, 117), of which the first two are in the Demopolis Chalk and the latter three are most probably in the Mooreville Chalk, a Coffee Sand equivalent. One shark tooth locality is in the Tupelo Tongue of the Coffee Sand (table facing 149). Two occur in the Ripley Formation (table facing 182, 187), three in the Prairie Bluff Formation (table facing 208), and one in the Owl Creek Formation (table facing 230). The only identified shark teeth are the distinctive grinders of *Ptychodus mortoni*, which were collected at Vinton Bluff, a Tombigbee Sand locality. A fragment of *Ptychodus* tooth was found at a Mooreville locality southeast of Columbus (117). Besides the shark teeth, a bony fish jaw was found at a Mooreville locality four miles west of Amory, Monroe County. Fish vertebrae are reported from a Prairie Bluff Formation locality 1 1/2 miles east of Sparta, Chickasaw County. The author notes the report of Gilmore (1927) of a tooth of *Globidens* from near Saltillo, Lee County, which is probably in the Demopolis Chalk.

Stewart, Thomas D., 1951, Antiquity of man in America demonstrated by the fluorine test: Science (n. s.), v. 113, no. 2936, p. 391-392.

The human pelvis fragment found at Natchez, Adams County, and the *Glossotherium* bones found associated, were dated as Pleistocene by fluorine tests arranged by Thomas Wilson. He published the results in the American Naturalist

in 1895.

Stringer, Gary L., 1991, Upper Cretaceous (Maastrichtian) teleostean otoliths from the Ripley Formation, Union County, Mississippi: Mississippi Geology, v. 11, no. 3, p. 9-20.

Twenty-one taxa represented by otoliths came to light in the residue from screen-washing 42 kilograms of sediment from the Blue Springs locality in the lower Ripley Formation of Union County. A few shark and fish teeth were also present, including teeth of *Ptychotrygon*, *Scapanorhynchus*, possibly *Cretolamna*, probably *Hadrodus* and *Enchodus*. The otolith fauna is dominated by "Trachichthyidarum" *coffeesandensis* (37% of the total fauna) and by "Synodontidarum" *pseudoperca* (21.8% of the total fauna). It resembles the otolith fauna from the Coffee Sand of Lee County described by Nolf and Dockery (1990), where these two species are even more dominant (45 and 58.8%). The Ripley fauna indicates a marine shelf environment and a tropical or subtropical climate.

Sullivan, J. Magruder, 1948, Some new fossils from the Mississippi Eocene: Journal of the Mississippi Academy of Sciences, v. 3, p. 153-162. The remains of a subadult *Zygorhiza* were recovered from an excavation into the Yazoo Formation near the Jackson Water Works, Hinds County. A vertebra of an unknown species of archaeocete was secured from another excavation on the edge of Town Creek, Jackson, into the Moodys Branch Formation. The type specimen of the titanotheres *Notiotitanops* was taken from a stream bank 2 1/2 miles south of Quitman, Clarke County. It consists of the skull, left mandible, and rib fragments. This was presented as a talk in 1942. The archaeocetes were described in Kellogg (1936) and the titanotheres in Gazin and Sullivan (1942).

Sydnor, Charles S., 1938, A gentleman of the old Natchez region: Benjamin L. C. Wailes: Duke University Press, 337 p.

Mosasurs, archaeocetes and various large land mammals are mentioned as occurring in Mississippi. The land mammals are probably all from Mammoth Bayou, Natchez, Adams County. The mosasurs are from Columbus, Lowndes County. The importance of this book is as a history source on 19th century natural history in Mississippi.

Toulmin, Lyman D., 1977, Stratigraphic distribution of Paleocene and Eocene fossils in the eastern Gulf Coast region: Geological Survey of Alabama, Monograph 13, p. 1-602.

The author collected a shark tooth from the Middle Eocene Moodys Branch Formation at Garland Creek, 4.8 miles northeast of Shubuta, Clarke County (table 4). He notes the occurrence of shark teeth and *Basilosaurus* bones in the area of the type locality of the Upper Eocene Pachuta Marl Member of the Yazoo Formation, also in Clarke County (128). In eastern Mississippi the basal conglomerate of the Paleocene Clayton Formation contains shark teeth, but these may be reworked from the Cretaceous (91). This work does not deal with vertebrate fossils because they are not presently useful as stratigraphic markers. The only exception is the large archaeocete, *Basilosaurus*, which is believed to be restricted stratigraphically to the Pachuta Marl Member and its equivalents in the Gulf Coast region (34) (for another observation on the stratigraphic range of *Basilosaurus* see Hall, 1976).

Vestal, Franklin E., 1942, Adams County mineral resources: geology: Mississippi Geological Survey, Bulletin 47, p. 9-142.

The loess in Adams County contains bones of Pleistocene mammals (17). The mastodon is specifically mentioned in the description of the unit (62). The blue-gray clay deposit is considered to be the lowest level of the loess.

Vestal, Franklin E., 1946, Lee County mineral resources: Mississippi Geological Survey, Bulletin 63, p. 5-140.

Shark teeth were collected during the field studies for this paper from a locality near Saltillo, in the lower part of the Demopolis Chalk (59), and from another locality near Tupelo, in the Tupelo Tongue Member of the Coffee Sand (61). A large piece of phosphatized bone was found at another place in the Coffee Sand (46). The author notes that the Tombigbee Sand Member of the Eutaw Formation bears teeth and vertebrae (54).

Welles, Samuel P., 1952, A review of the North American Cretaceous elasmosaurs: University of California Publications in Geological Sciences, v. 29, no. 3, p. 47-144.

The plesiosaur *Discosaurus planior* Leidy 1870 is based on a caudal centrum from Mississippi (111). It is the only certain plesiosaur specimen from the state so far. The present reviewer considers *D. planior* a *nomen vanum* because the type specimen is not diagnostic. The centrum probably belongs to a previously described plesiosaur but it is not possible to be sure.

Westgate, James W., 1986, Late Eocene land mammals from the Gulf Coastal Plain, in Judith A. Schiebout and William van den Bold, eds.,

Montgomery Landing site, marine Eocene (Jackson) of central Louisiana: proceedings of a symposium, 1986 annual meeting, Gulf Coast Association of Geological Societies, p. 223-239.

The author notes the report by Gazin and Sullivan (1942) of the titanotheres *Notiotitanops* from deposits in Clarke County that are now referred to the Archusa Marl Member of the Middle Eocene Cook Mountain Formation. Also noted is the report by Dockery (1980) of a rhinoceros rib from the Dobys Bluff Tongue of the Middle Eocene Kosciusko Formation, also in Clarke County (now considered to be an archaeocete rib by Manning, pers. comm.). It is still not possible to obtain agreement on correlation of the Gulf area with the Land Mammal Ages of the continental interior except in a very general way.

Westgate, James W., and James F. Ward, 1981, The giant aquatic snake *Pterosphenus schucherti* (Palaeophidae) in Arkansas and Mississippi: Journal of Vertebrate Paleontology, v. 1, no. 2, p. 161-164.

This article includes a list of all known specimens of this snake. The series of vertebrae formerly in the collection of J. Magruder Sullivan (Old Capitol no. 63.19.53) is said to be from Melvin, Alabama, following Gilmore (1938); however, see note at that reference. A previously unreported vertebra of *Pterosphenus* was collected near Town Creek, Jackson, Hinds County. It was discovered in an excavation into the Middle Eocene Moodys Branch Formation. The Town Creek specimen is part of a private collection. The authors note that all known specimens occur with mixed faunas, indicating estuarine or low-salinity deposit areas (see also Hutchison, 1985).

Wetmore, Alexander, 1930, The fossil birds of the A. O. U. checklist: Condor, v. 32, no. 1, p. 12-14.

*Eopteryx mississippiensis* Meyer, 1887 is based on a damaged vertebra from Eocene deposits near Jackson, Hinds County. It is a bird *incertae sedis* and will probably never be identified further.

Williams, Charles H., Jr., 1967, George County geology and mineral resources: Mississippi Geological Survey, Bulletin 108, p. 1-152.

A fossil gar and a crocodile tooth have been found in the Miocene Pascagoula Formation in the area near its type locality, which is along the bank of the Chickasawhay River in southern Greene County. A borehole into the Pascagoula Formation in George County contained fish vertebrae in a coquina of characteristic shell

fragments (47).

Zangerl, Rainer, 1960, The vertebrate fauna of the Selma Formation of Alabama. Part V. An advanced cheloniid sea turtle: *Fieldiana: Geology Memoirs*, v. 3, no. 5, p. 279-312.

The author considers the humerus of *Neptunochelys* from near Columbus, Lowndes County, in comparison with the new Alabama turtle (309). *Neptunochelys* is evidently not of the same species. Late Cretaceous sea turtles are not well known at present, but it is evident that cheloniids were varied and specialized.

### SYSTEMATIC INDEX

*Abdounia beaugei*

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*Abdounia subulidens*, see *Scyliorhinus subulidens*

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1990 Nolf and Dockery

*Aetobatus* sp.

1965 Arata and Jackson

1991 Breard

albulid

1991 Stringer

"Albulidarum" *ensis*

1990 Nolf and Dockery

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1990 Nolf and Dockery

*Albula* sp.

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*Albula eppsi*

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1986 Case

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1978 Breard

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*Anomoeodus mississippiensis*

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*Equus complicatus*  
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 1982b Dockery  
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 1956 Quimby  
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 holocentrid  
 1990 Nolf and Dockery  
*Homo sapiens* (Natchez Man)  
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 1923 Hay  
 1930 Hay  
 1951 Richards  
 1951 Stewart

- 1956 Quimby  
1990 Hamilton
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1981 Emry, Archibald and Smith
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1969-1970 Applegate
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1982 Kurtén and Kaye  
1985 Frazier and Lenzor
- Macrolemys temminckii*  
1974 Kaye
- mammal  
1940 Mellen  
1981 Emry, Archibald and Smith  
1988 Russell  
1991 Dockery, Beard, Tabrum and Case  
1991 Ingram
- Mammot americanum*  
1915 Lowe  
1919 Lowe  
1923 Hay  
1925 Lowe  
1928 Hay  
1941 Conant  
1942 Vestal  
1956 Quimby  
1966 Priddy, Snowden and McDowell  
1969 Domning  
1974a Jackson and Kaye  
1974 Kaye  
1976 Kolb, Russell and Johnson  
1984 Knox and Pitts  
1985 Frazier and Lenzor
- Mammuthus* sp.  
1915 Lowe  
1919 Lowe  
1923 Hay  
1928 Hay  
1974 Kaye
- Megalonyx dissimilis*, see *M. jeffersonii*
- Megalonyx jeffersonii*  
1923 Hay  
1928 Hay  
1956 Quimby  
1974 Kaye  
1977 McDonald
- megalopid  
1990 Nolf and Dockery  
1991 Stringer
- Meleagris gallopavo*  
1974 Kaye
- Metalbula bashiana*  
1965 Frizzell
- Metamynodon planifrons*  
1986 Manning, Dockery and Schiebout  
1987 Dockery
- Microtus pennsylvanicus*  
1980a Frazier  
1985 Frazier and Lenzor
- Microtus pinetorum*  
1985 Frazier and Lenzor
- mobulid  
1974 Meyer



1988 Russell  
*mosasaur*  
 1915 Lowe  
 1916 Logan  
 1919 Lowe  
 1940 Lougee  
 1943 Bergquist  
 1943 Priddy  
 1958 Hughes  
 1981 Emry, Archibald and Smith  
*Mosasaurus* sp.  
 1967 Russell  
 1988 Russell  
*Mosasaurus conodon*  
 1988 Derstler  
*Myliobatis* sp.  
 1978 Breard  
 1982a Dockery  
 1982b Dockery  
 1986 Case  
 1988 Derstler  
 1991 Breard  
*Mylodon*, see *Glossotherium*  
*Mylohyus* sp.  
 1974 Kaye  
*Nebrius thielensis*  
 1986 Case  
*Negaprion gibbsi*, see *Carcharhinus gibbsi*  
*Neotoma floridana*  
 1985 Frazier and Lenzor  
*Neptunochelys tuberosa*  
 1908 Hay  
 1960 Zangerl  
*Notiotitanops mississippiensis*  
 1942 Gazin and Sullivan  
 1948 Sullivan  
 1979 Schiebout  
 1980 Dockery  
 1986 Westgate  
 1987 Dockery  
*Odocoileus virginianus*  
 1915 Lowe  
 1919 Lowe  
 1923 Hay  
 1928 Hay  
 1974 Kaye  
 1985 Frazier and Lenzor  
*Odontaspis hopei*, see *Carcharias hopei*  
*Odontaspis macrota*, see *Striatolamia macrota*  
*Odontaspis speyeri*  
 1986 Case  
*Odontaspis* sp.  
 1965 Arata and Jackson  
*Odontaspis tenuis*

1974 Meyer  
 1988 Russell  
*omomyid*  
 1991 Beard and Tabrum  
*Ondatra* sp.  
 1974 Kaye  
*Ondatra zibethicus*  
 1985 Frazier and Lenzor  
*ophidiid*  
 1991 Stringer  
*ornithischian dinosaur*  
 1988 Derstler  
*ornithomimid*  
 1982 Carpenter  
 1986 Baird  
 1988 Russell  
*Otodus* sp.  
 1981 Emry, Archibald and Smith  
*"Otolithus"* aff. *umbonato*  
 1942 Leriche  
*Ovibos*, see *Bootherium*  
*Oxyrhina*, see *Isurus*  
*Pachyrhizodus* sp.  
 1988 Derstler  
*palaeophiid*  
 1980 Dockery  
*Palaeophis* sp.  
 1990 Parmley and Case  
*Palaeophis casei*  
 1982 Holman  
 1986 Case  
 1990 Parmley and Case  
 1991 Holman, Dockery and Case  
*Palaeophis littoralis*  
 1990 Parmley and Case  
 1991 Holman, Dockery and Case  
*Palaeophis virginianus*  
 1976 Dessem  
 1990 Parmley and Case  
*Panthera leo atrox*  
 1919 Lowe  
 1923 Hay  
 1928 Hay  
 1942 Simpson  
*Parahypolophus*, see *Pseudohypolophus*  
*Paramylodon*, see *Glossotherium*  
*Paranomotodon angustidens*  
 1974 Meyer  
 1988 Russell  
*pempheridid*  
 1991 Stringer  
*"Perciformorum"* *cepoloides*  
 1990 Nolf and Dockery  
*Percoidei*

- 1990 Nolf and Dockery  
 1991 Stringer  
*"Percoideorum" pseudochandra*  
 1990 Nolf and Dockery  
*Peritresius* sp.  
 1988 Derstler  
*Phyllodus toliapicus*  
 1986 Case  
*Physogaleus huberensis*  
 1991 Breard  
*Physogaleus tertius*  
 1986 Case  
*Pitymys*, see *Microtus*  
*Platecarpus tympaniticus*  
 1967 Russell  
 1988 Russell  
*Platygonus* sp.  
 1971 Kaye  
 1974 Kaye  
 plesiosaur  
 1988 Derstler  
*Plioplatecarpus* sp.  
 1988 Derstler  
 polymixiid  
 1991 Stringer  
*Preophidion* sp.  
 1978 Breard  
*Prionochelys nauta*  
 1988 Derstler  
*Pristis* sp.  
 1942 Leriche  
*Pristis lathamii*  
 1978 Breard  
 1986 Case  
 1991 Breard  
*Procyon lotor*  
 1974 Kaye  
 1985 Frazier and Lenzor  
*Prognathodon solvayi*  
 1988 Derstler  
*Protosphyraena gladius*  
 1988 Russell  
*Protostega* sp.  
 1988 Derstler  
*Pseudemys nelsoni*  
 1974 Kaye  
*Pseudocorax* sp.  
 1988 Derstler  
*Pseudocorax granti*  
 1991 Case  
*Pseudocorax laevis*  
 1974 Meyer  
 1988 Russell  
*Pseudohypolophus mcnultyi*  
 1974 Meyer  
 1988 Russell  
*Pterosphenus schucherti*  
 1938 Gilmore  
 1976 Dessem  
 1981 Westgate and Ward  
 1985 Hutchison  
 1991 Holman, Dockery and Case  
 pterothrissid  
 1990 Nolf and Dockery  
*"Pterothrissidarum" griffini*  
 1990 Nolf and Dockery  
 1991 Stringer  
*Pterothrissus* sp.  
 1990 Nolf and Dockery  
 1991 Stringer  
*Ptychodus mantelli*, see *P. mortoni*  
*Ptychodus mortoni*  
 1940 Stephenson and Monroe  
 1974 Meyer  
 1981 Emry, Archibald and Smith  
 1982 Case  
 1988 Russell  
*Ptychotrygon* sp.  
 1974 Meyer  
 1988 Russell  
*Ptychotrygon hooveri*  
 1974 Meyer  
 1988 Russell  
*Ptychotrygon* aff. *triangularis*  
 1991 Stringer  
*Ptychotrygon triangularis*  
 1974 Meyer  
 1988 Russell  
*Ptychotrygon vermiculata*  
 1991 Case  
*Pycnodus bowerbanki*  
 1986 Case  
*Pycnodus phaseolus*, see *Anomoeodus phaseolus*  
*Raja* sp.  
 1974 Meyer  
 1981 Emry, Archibald and Smith  
 1988 Russell  
 rajid  
 1974 Meyer  
 ray  
 1982b Dockery  
 reptile  
 1923 Lowe  
 1980a Frazier  
*Rhincodon* sp.  
 1981 Emry, Archibald and Smith  
 1988 Russell  
*Rhinobatos incertus*

- 1974 Meyer  
 1988 Russell  
 salmoniform  
 1990 Nolf and Dockery  
 1991 Stringer  
*Scapanorhynchus texanus*  
 1974 Meyer  
 1988 Russell  
 1991 Case  
 1991 Stringer  
*Sciurus carolinensis*  
 1985 Frazier and Lenzor  
*Sclerorhynchus* sp.  
 1974 Meyer  
 1988 Russell  
 1991 Case  
*Scomberomorus proosti*  
 1986 Case  
 scyliorhinid  
 1974 Meyer  
 1988 Russell  
*Scyliorhinus gilberti*  
 1986 Case  
*Scyliorhinus subulidens*  
 1986 Case  
 shark  
 1915 Lowe  
 1919 Lowe  
 1925 Lowe  
 1933 Lowe  
 1939 Conant  
 1940 Foster  
 1940 Stephenson and Monroe  
 1941 Conant  
 1943 Bergquist  
 1943 Priddy  
 1946 Vestal  
 1958 Hughes  
 1963 DeVries  
 1965 Moore  
 1969-1970 Applegate  
 1974 May  
 1976 Hall  
 1977 Toulmin  
 1980 Dockery  
 1980a Frazier  
 1982b Dockery  
 1991 Dockery, Beard, Tabrum, and Case  
*Sigmodon hispidus*  
 1985 Frazier and Lenzor  
 silurid  
 1965 Arata and Jackson  
 sirenian  
 1965 Arata and Jackson  
 1966 Kellogg  
 1974 Domning  
 1974 May  
 1982a Dockery  
 1982b Dockery  
 sloth  
 1915 Lowe  
 1919 Lowe  
 snake  
 1991 Dockery, Beard, Tabrum, and Case  
*Sphyraena* sp.  
 1965 Arata and Jackson  
 1978 Breard  
*Sphyraena major*  
 1991 Breard  
*Squalicorax* sp.  
 1981 Emry, Archibald and Smith  
 1988 Derstler  
*Squalicorax kaupi*  
 1974 Meyer  
 1988 Russell  
 1991 Case  
*Squatina hassei*  
 1974 Meyer  
 1988 Russell  
*Squatirhina lonzeensis*  
 1974 Meyer  
 1988 Russell  
 sternoptychid  
 1991 Stringer  
*Stintonia glendonensis*  
 1961 Frizzell and Lamber  
*Striatolamia* sp.  
 1981 Emry, Archibald and Smith  
 1988 Russell  
*Striatolamia macrotia*  
 1942 Leriche  
 1986 Case  
*Subhyracodon* sp.  
 1990 Dockery and Manning  
*Sylvilagus aquaticus*  
 1974 Kaye  
*Sylvilagus floridanus*  
 1985 Frazier and Lenzor  
*Symbos*, see *Bootherium*  
*Synaptomys cooperi*  
 1980a Frazier  
 1985 Frazier and Lenzor  
 "Synodontidarum" *pseudoperca*  
 1990 Nolf and Dockery  
 1991 Stringer  
*Tanupolama*, see *Hemiauchenia*  
*Tapirus* sp.  
 1915 Lowe

1919 Lowe  
 1974 Kaye  
*Tapirus copei*  
 1923 Hay  
 1928 Hay  
*Tapirus haysii*, see *T. copei*  
*Tapirus terrestris*, see *T. veroensis*  
*Tapirus veroensis*  
 1923 Hay  
 1928 Hay  
 1985 Frazier and Lenzor  
 teleost  
 1991 Dockery, Beard, Tabrum, and Case  
 1991 Stringer  
*Terrapene carolina*  
 1974a Jackson and Kaye  
 1974 Kaye  
 1983 Lundelius et al.  
 theropod  
 1982 Carpenter  
 1986 Baird  
*Thoracosaurus neocesariensis*  
 1983 Carpenter  
 1986 Baird  
 1988 Russell  
 toxochelyid  
 1988 Russell  
*Toxochelys barberi*  
 1988 Derstler  
*Toxochelys moorevillensis*  
 1988 Derstler  
*Trachemys scripta*  
 1974 Kaye  
 "Trachichthyidarum" *coffeesandensis*  
 1990 Nolf and Dockery  
 1991 Stringer  
*Tremarctos floridanus*  
 1982 Kurtén and Kaye  
*Trichiurides sagittidens*  
 1986 Case  
 trionychid  
 1965 Arata and Jackson  
*Trionyx* sp., see *Apalone* sp.  
 turtle  
 1958 Hughes  
 1965 Arata and Jackson  
*Urocyon* sp.  
 1974 Kaye  
*Urocyon cinereoargenteus*  
 1982 Kurtén and Kaye  
 urolophid  
 1974 Meyer  
 1988 Russell  
*Ursus americanus*

1923 Hay  
 1928 Hay  
 1974 Kaye  
 1982 Kurtén and Kaye  
*Ursus amplidens*, see *U. americanus*  
*Weileria brandonis*  
 1961 Frizzell and Lamber  
*Xiphias* sp.  
 1986 Case  
 xiphiid  
 1974 Fierstine  
*Xiphiorhynchus kimblalocki*  
 1969-1970 Applegate  
 1974 Fierstine  
 1974 Fierstine and Applegate  
*Zeuglodon*, see *Basilosaurus*  
*Zygorhiza kochii*  
 1936 Kellogg  
 1948 Sullivan  
 1971 Pitts  
 1972 Reel  
 1974 Dockery  
 1974 Fierstine and Applegate  
 1974 Neilson  
 1980b Frazier  
 1985 Carpenter and Dockery  
 1986 Carpenter and White  
 1991 Breard

## GEOGRAPHIC/STRATIGRAPHIC INDEX

This section replaces Domning's chronologic-geographic index. It serves the same purpose because stratigraphic units are given with their epochs in the List. Entries under county names are comprehensive in most cases, as in Domning's index. Localities are interfiled among the counties and units and have their own index entries, so there is no need for a separate finding index for them.

Aberdeen, Monroe County  
 1923 Hay  
 1940 Stephenson and Monroe  
 Adams County  
 1942 Vestal  
 see also Natchez  
 Alcorn County  
 1940 Stephenson and Monroe  
 Amory, Monroe County  
 1940 Stephenson and Monroe  
 1982 Carpenter  
 Ash Creek, Oktibbeha County  
 1974 Kaye

- Aubrey, Noxubee County  
 1974 Kaye  
 Avant Creek, Tallahatchie County  
 1923 Hay  
 Barnett Reservoir, Rankin County  
 1972 Reel  
 Bartons Bluff, Clay County  
 1915 Lowe  
 1919 Lowe  
 1940 Stephenson and Monroe  
 1943 Bergquist  
 Barton's Ferry, Clay County  
 1974 Meyer  
 Big Branch, Tishomingo County  
 1930 Morse  
 1988 Merrill  
 Bashi Formation  
 1962 Frizzell and Lamber  
 1965 Frizzell  
 1969-1970 Applegate  
 1976 Dessem  
 1980 Dockery  
 1986 Case  
 1988 Parmley and Case  
 1991 Beard and Tabrum  
 1991 Dockery, Beard, Tabrum and Case  
 1991 Ingram  
 Big Black River, Hinds County  
 1986 Manning, Dockery and Schiebout  
 1990 Dockery and Manning  
 Black Belt  
 1974 Kaye  
 1975 Kaye  
 1982 Kurtén and Kaye  
 Blue Bluff, Monroe County  
 1940 Stephenson and Monroe  
 Blue Springs, Union County  
 1991 Stringer  
 Bluffport Marl Member  
 1958 Hughes  
 Bodka Creek, Kemper County  
 1974 Kaye  
 Bogue Chitto Creek, Noxubee County  
 1974 Kaye  
 1982 Kurtén and Kaye  
 Bolivar County  
 1923 Hay  
 1989 McDonald and Ray  
 Bone Yard, Clarke County  
 1980 Dockery  
 Bovina, Warren County  
 1923 Hay  
 Brandon, Rankin County  
 1961 Frizzell and Lamber  
 1962 Frizzell and Lamber  
 1965 Frizzell and Dante  
 1986 Dockery and Manning  
 Bucatunna Creek, Wayne County  
 1974 May  
 Bucatunna Formation  
 1974 May  
 Byram, Hinds County  
 1961 Frizzell and Lamber  
 1962 Frizzell and Lamber  
 1965 Frizzell and Dante  
 Byram Formation  
 1961 Frizzell and Lamber  
 1962 Frizzell and Lamber  
 1965 Frizzell and Dante  
 1974 Domning  
 1982a Dockery  
 1982b Dockery  
 1986 Dockery and Manning  
 1986 Manning, Dockery and Schiebout  
 1987 Dockery  
 1990 Dockery and Manning  
 Camp Creek, Lee County  
 1969 Domning  
 1974 Kaye  
 Cane Creek, Tippah County  
 1923 Hay  
 1940 Stephenson and Monroe  
 Carmack Formation, see Fort Payne Formation  
 Cascilla, Tallahatchie County  
 1923 Hay  
 Catahoula Formation  
 1965 Moore  
 Catalpa Creek, Lowndes and Clay counties  
 1974b Jackson and Kaye  
 1974 Kaye  
 1975 Jackson and Kaye  
 1977 McDonald  
 1980a Frazier  
 1982 Kurtén and Kaye  
 1983 Lundelius et al.  
 1984 Jones, Choate and Genoways  
 1985 Frazier and Lenzor  
 Cedar Bluff, Clay County  
 1940 Stephenson and Monroe  
 Cedar Creek, Lowndes County  
 1977 McDonald  
 1982 Kurtén and Kaye  
 Cedar Creek, Monroe County  
 1974 Kaye  
 Chapelville, Lee County  
 1990 Nolf and Dockery  
 1991 Case  
 Chattanooga Formation

- 1930 Morse  
1988 Merrill  
Chickasaw County  
1916 Logan  
1940 Stephenson and Monroe  
Chickasawhay Formation  
1936 Kellogg  
1965 Arata and Jackson  
1974 Domning  
1974 May  
Chickasawhay River, Clarke County  
1925 Lowe  
1940 Foster  
1980 Dockery  
Chickasawhay River, Greene County  
1967 Williams  
Chickasawhay River, Wayne County  
1982b Dockery  
Chiwapa Creek, Lee County  
1974 Kaye  
Claiborne County  
1923 Hay  
Claiborne Group  
1923 Lowe  
1940 Foster  
1942 Leriche  
1965 Frizzell and Dante  
Clarke County  
1915 Lowe  
1919 Lowe  
1925 Lowe  
1936 Kellogg  
1940 Foster  
1942 Gazin and Sullivan  
1942 Leriche  
1948 Sullivan  
1972 Reel  
1977 Toulmin  
1979 Schiebout  
1980 Dockery  
1986 Westgate  
Clarksdale, Coahoma County  
1969 Domning  
Clay County  
1915 Lowe  
1919 Lowe  
1940 Stephenson and Monroe  
1943 Bergquist  
1974 Kaye  
1974 Meyer  
1981 Emry, Archibald and Smith  
see also Catalpa Creek and Tibbee Creek  
Clayton Formation  
1933 Lowe  
1939 Conant  
1941 Conant  
1977 Toulmin  
Coahoma County  
1969 Domning  
1989 McDonald and Ray  
Coffee Sand  
1913 Gidley  
1940 Stephenson and Monroe  
1946 Vestal  
1974 Meyer  
1988 Russell  
1990 Nolf and Dockery  
1991 Case  
Columbus, Lowndes County  
1908 Hay  
1938 Sydnor  
1940 Stephenson and Monroe  
1960 Zangerl  
1967 Russell  
1973 Kaye and Russell  
1974a Jackson and Kaye  
1982 Case  
1983 Lundelius et al.  
Cook Mountain Formation  
1942 Gazin and Sullivan  
1979 Schiebout  
1980 Dockery  
1986 Westgate  
1987 Dockery  
Corinth, Alcorn County  
1940 Stephenson and Monroe  
Cowpen Creek, Monroe County  
1974 Kaye  
Crandall, Clarke County  
1972 Reel  
Crawford, Lowndes County  
1916 Logan  
Cynthia, Hinds County  
1960 Priddy  
1965 Frizzell  
1965 Moore  
1976 Dessem  
1976 Hall  
1976 Kolb, Russell and Johnson  
1986 Dockery and Manning  
1991 Holman, Dockery and Case  
Death Creek, Clay County  
1974 Kaye  
De Kalb, Kemper County  
1958 Hughes  
Demopolis Chalk  
1913 Gidley  
1915 Lowe

- 1916 Logan
- 1919 Lowe
- 1927 Gilmore
- 1940 Lougee
- 1940 Stephenson and Monroe
- 1942 Lull and Wright
- 1943 Bergquist
- 1946 Vestal
- 1958 Hughes
- 1988 Derstler
- 1988 Russell
- Dobys Bluff, Clarke County
  - 1980 Dockery
- Dry Creek, Tippah County
  - 1941 Conant
- Dunbar Creek, Wilkinson County
  - 1923 Hay
- Edwards, Hinds County
  - 1986 Dockery and Manning
- Enterprise, Clarke County
  - 1919 Lowe
  - 1925 Lowe
  - 1940 Foster
- Enterprise Green Marl, see Winona Formation
- Eutaw Formation
  - 1915 Lowe
  - 1919 Lowe
  - 1923 Lowe
  - 1943 Bergquist
  - 1967 Russell
  - 1974 Meyer
  - 1981 Emry, Archibald and Smith
  - 1982 Carpenter
  - 1982 Case
  - 1988 Russell
- Eutaw Group
  - 1960 Zangerl
- Evans Pond, Monroe County
  - 1974 Kaye
- Falkner, Tippah County
  - 1939 Conant
  - 1941 Conant
- Forest, Scott County
  - 1942 Bergquist
  - 1969-1970 Applegate
  - 1969 Pitts
  - 1976 Hall
- Fort Payne Formation
  - 1930 Morse
- Friars Point, Coahoma County
  - 1989 McDonald and Ray
- Frost Bridge, Wayne County
  - 1974 May
- Garland Creek, Clarke County
  - 1977 Toulmin
- George County
  - 1967 Williams
- Gilmer Creek, Lowndes County
  - 1974 Kaye
- Glendon Formation
  - 1961 Frizzell and Lamber
  - 1962 Frizzell and Lamber
  - 1965 Frizzell and Dante
  - 1965 Moore
- Golden Triangle Regional Airport, Lowndes County
  - 1974 Kaye
  - 1982 Kurtén and Kaye
- Greene County
  - 1967 Williams
- Griffin Sandpit, Lee County
  - 1990 Nolf and Dockery
  - 1991 Case
- Guntown, Lee County
  - 1913 Gidley
- Hardy Farm, Lowndes County
  - 1974 Kaye
- Hatchetigbee Formation
  - 1991 Ingram
- Hinds County
  - 1915 Lowe
  - 1919 Lowe
  - 1925 Lowe
  - 1961 Frizzell and Lamber
  - 1962 Frizzell and Lamber
  - 1965 Frizzell and Dante
  - 1965 Moore
  - 1986 Dockery and Manning
  - 1986 Manning, Dockery and Schiebout
  - 1990 Dockery and Manning
  - see also Jackson and Cynthia
- Hiwannee, Wayne County
  - 1962 Frizzell and Lamber
  - 1965 Arata and Jackson
  - 1965 Frizzell and Dante
- Houlka, Chickasaw County
  - 1940 Stephenson and Monroe
- Houston, Chickasaw County
  - 1940 Stephenson and Monroe
- Island Hill, Tishomingo County
  - 1930 Morse
- Jackson, Hinds County
  - 1923 Hay
  - 1930 Wetmore
  - 1936 Kellogg
  - 1938 Gilmore
  - 1948 Sullivan
  - 1962 Frizzell and Lamber
  - 1965 Moore



- 1976 Dessem
- 1978 Breard
- 1980b Frazier
- 1981 Dockery
- 1981 Westgate and Ward
- 1986 Dockery and Manning
- 1991 Holman, Dockery and Case
- Jackson Group
  - 1916 Logan
  - 1938 Gilmore
  - 1942 Leriche
  - 1986 Westgate
- James Creek, Lowndes and Noxubee counties
  - 1974 Kaye
  - 1982 Kurtén and Kaye
- Jasper County
  - 1915 Lowe
  - 1919 Lowe
  - 1925 Lowe
  - 1963 DeVries
  - 1972 Reel
  - 1980b Frazier
- Jefferson County
  - 1923 Hay
- Jordan Field, Lowndes County
  - 1974 Kaye
- Kemper County
  - 1940 Stephenson and Monroe
  - 1958 Hughes
  - 1967 Russell
  - 1974 Kaye
- Kosciusko Formation
  - 1980 Dockery
  - 1986 Westgate
- Lauderdale County
  - 1980 Dockery
  - see also Meridian and Whynot
- Lee County
  - 1913 Gidley
  - 1969 Domning
  - 1974 Kaye
  - 1974 Meyer
  - 1990 Nolf and Dockery
  - 1991 Case
  - see also Tupelo and Saltillo
- Lisbon Formation, see Cook Mountain Formation
- loess
  - 1904 Shimek
  - 1915 Lowe
  - 1919 Lowe
  - 1923 Hay
  - 1925 Lowe
  - 1928 Hay
  - 1940 Mellen
- 1942 Vestal
- 1956 Quimby
- 1966 Priddy, Snowden and McDowell
- 1976 Kolb, Russell and Johnson
- 1984 Knox and Pitts
- Long Creek, Clay County
  - 1943 Bergquist
- Lowndes County
  - 1916 Logan
  - 1974a Jackson and Kaye
  - 1974 Kaye
  - 1975 Jackson and Kaye
  - 1977 McDonald
  - 1982 Kurtén and Kaye
  - see also Columbus, Catalpa Creek and Plymouth Bluff
- Madison, Madison County
  - 1986 Dockery and Johnston
- Madison County
  - 1915 Lowe
  - 1919 Lowe
  - 1925 Lowe
  - 1986 Dockery and Johnston
- Magawah Creek, North Branch, Lowndes County
  - 1974 Kaye
- Magawah-Cedar Creeks divide, Lowndes County
  - 1974 Kaye
- Marianna Formation
  - 1986 Dockery and Manning
- Matthews Landing Member
  - 1958 Hughes
- Mattubby Creek, Monroe County
  - 1974 Kaye
  - 1982 Kurtén and Kaye
- McShan Formation
  - 1982 Carpenter
  - 1988 Russell
- Meridian, Lauderdale County
  - 1962 Frizzell and Lamber
  - 1965 Frizzell
  - 1976 Dessem
  - 1982 Holman
  - 1986 Case
  - 1988 Parmley and Case
  - 1991 Beard and Tabrum
  - 1991 Dockery, Beard, Tabrum and Case
  - 1991 Holman, Dockery and Case
  - 1991 Ingram
- Midway, Yazoo County
  - 1923 Hall
  - 1962 Frizzell and Lamber
  - 1972 Reel
  - 1978 Breard
  - 1981 Dockery

- 1991 Breard  
 Mint Spring Bayou, Warren County  
 1965 Frizzell and Dante  
 Mint Spring Formation  
 1961 Frizzell and Lamber  
 1962 Frizzell and Lamber  
 1965 Frizzell and Dante  
 1974 Domning  
 1982a Dockery  
 1982b Dockery  
 Mississippi River  
 1923 Hay  
 1989 McDonald and Ray  
 Monroe County  
 1923 Hay  
 1940 Stephenson and Monroe  
 1974 Kaye  
 1982 Carpenter  
 1982 Kurtén and Kaye  
 Montpelier, Clay County  
 1943 Bergquist  
 Montrose, Jasper County  
 1915 Lowe  
 1919 Lowe  
 1963 DeVries  
 1972 Reel  
 Moodys Branch Formation  
 1915 Lowe  
 1919 Lowe  
 1925 Lowe  
 1936 Kellogg  
 1948 Sullivan  
 1962 Frizzell and Lamber  
 1971 Pitts  
 1974 Dockery  
 1976 Dessem  
 1977 Toulmin  
 1978 Breard  
 1981 Dockery  
 1981 Westgate and Ward  
 1986 Carpenter and White  
 1991 Breard  
 Mooreville Chalk  
 1940 Stephenson and Monroe  
 Natchez, Adams County  
 1901 Gidley  
 1904 Shimek  
 1907 Hrdlička  
 1915 Lowe  
 1919 Lowe  
 1923 Hay  
 1928 Hay  
 1930 Hay  
 1938 Sydnor  
 1942 Simpson  
 1951 Richards  
 1951 Stewart  
 1956 Quimby  
 1977 McDonald  
 1990 Hamilton  
 New Albany, Union County  
 1940 Stephenson and Monroe  
 1974 Meyer  
 New Hope, Prentiss County  
 1974 Meyer  
 New Site, Prentiss County  
 1974 Meyer  
 Newton, Newton County  
 1942 Leriche  
 1965 Frizzell and Dante  
 Noxubee County  
 1974 Kaye  
 1982 Kurtén and Kaye  
 Okalona, Chickasaw County  
 1916 Logan  
 Oktibbeha County  
 1974 Kaye  
 1974 Meyer  
 1983 Carpenter  
 Oldtown Creek, Lee County  
 1974 Kaye  
 Owl Creek, Tippah County  
 1933 Lowe  
 Owl Creek Formation  
 1915 Lowe  
 1919 Lowe  
 1940 Stephenson and Monroe  
 1974 Meyer  
 Pachuta, Clarke County  
 1942 Leriche  
 1972 Reel  
 1977 Toulmin  
 Pachuta Marl Member  
 1963 DeVries  
 1972 Reel  
 1974 May  
 1976 Hall  
 1977 Toulmin  
 1980 Dockery  
 Pascagoula Formation  
 1967 Williams  
 Perthshire, Bolivar County  
 1923 Hay  
 Pheba, Clay County  
 1943 Bergquist  
 Pickwick Lake, Tishomingo County  
 1988 Merrill  
 Pinckneyville, Wilkinson County

- 1923 Hay  
 Pinkston Hill, Scott County  
 1942 Bergquist  
 1969-1970 Applegate  
 Plymouth Bluff, Lowndes County  
 1915 Lowe  
 1919 Lowe  
 1940 Stephenson and Monroe  
 1948 Dunn  
 1967 Russell  
 1974 Kaye  
 1974 Meyer  
 Pontotoc, Pontotoc County  
 1974 Meyer  
 Pontotoc County  
 1943 Priddy  
 1974 Meyer  
 Porters Creek Formation  
 1958 Hughes  
 Port Hudson Formation, see pre-loess terrace  
 Prairie Bluff Formation  
 1940 Stephenson and Monroe  
 1943 Bergquist  
 1943 Priddy  
 1958 Hughes  
 pre-loess terrace  
 1915 Hay  
 1919 Lowe  
 1923 Hay  
 1925 Lowe  
 1928 Hay  
 1930 Hay  
 Prentiss County  
 1974 Meyer  
 Quitman, Clarke County  
 1942 Gazin and Sullivan  
 1948 Sullivan  
 1979 Schiebout  
 Rancholabrean Land Mammal Age  
 1901 Gidley  
 1923 Hay  
 1928 Hay  
 1930 Hay  
 1971 Kaye  
 1974a Jackson and Kaye  
 1974b Jackson and Kaye  
 1974 Kaye  
 1975 Jackson and Kaye  
 1975 Kaye  
 1977 McDonald  
 1979 Domning  
 1980a Frazier  
 1982 Kurtén and Kaye  
 1983 Lundelius et al.  
 1984 Jones, Choate and Genoways  
 1985 Frazier and Lenzor  
 1989 McDonald and Ray  
 Rankin County  
 1972 Reel  
 see also Brandon  
 Red Bluff Formation  
 1962 Frizzell and Lamber  
 1965 Arata and Jackson  
 1965 Frizzell and Dante  
 1974 Domning  
 1982b Dockery  
 Redwood, Warren County  
 1986 Dockery and Manning  
 Ripley, Tippah County  
 1933 Lowe  
 1940 Stephenson and Monroe  
 Ripley Formation  
 1940 Stephenson and Monroe  
 1943 Priddy  
 1958 Hughes  
 1974 Meyer  
 1983 Carpenter  
 1986 Baird  
 1988 Russell  
 1991 Stringer  
 Riverside Park, Hinds County  
 1978 Breard  
 Roberts, Jasper County  
 1915 Lowe  
 1919 Lowe  
 Rosedale, Bolivar County  
 1989 McDonald and Ray  
 Saltillo, Lee County  
 1927 Gilmore  
 1940 Stephenson and Monroe  
 1946 Vestal  
 1967 Russell  
 1974 Kaye  
 1974 Meyer  
 1982 Carpenter  
 Sara Bayou, Wilkinson County  
 1923 Hay  
 Satartia, Yazoo County  
 1915 Lowe  
 1919 Lowe  
 1925 Lowe  
 Scooba, Kemper County  
 1940 Stephenson and Monroe  
 1967 Russell  
 Scott, Bolivar County  
 1989 McDonald and Ray  
 Scott County  
 1915 Lowe

- 1919 Lowe  
 1925 Lowe  
 1942 Bergquist  
 1963 DeVries  
 1969 Pitts  
 1969-1970 Applegate  
 1974 Fierstine  
 1974 Fierstine and Applegate  
 1974 May  
 1976 Hall  
 1980b Frazier  
 Selma Group  
 1916 Logan  
 1925 Lowe  
 1942 Lull and Wright  
 1943 Bergquist  
 1948 Dunn  
 1967 Russell  
 1979 Horner  
 1982 Carpenter  
 1988 Russell  
 Sherman Hill, Scott County  
 1974 Fierstine  
 1974 Fierstine and Applegate  
 Shubuta, Clarke County  
 1942 Leriche  
 1977 Toulmin  
 Shubuta Clay Member  
 1963 DeVries  
 1974 Fierstine  
 1974 Fierstine and Applegate  
 1976 Hall  
 Shuqualak Creek, Noxubee County  
 1974 Kaye  
 Siloam, Clay County  
 1943 Bergquist  
 Simpson County  
 1965 Moore  
 Smith County  
 1915 Lowe  
 1919 Lowe  
 1972 Luper  
 Spring Creek, Clay County  
 1974 Kaye  
 Starkville, Oktibbeha County  
 1971 Kaye  
 1974 Meyer  
 Tallabinnela Creek, Monroe County  
 1974 Kaye  
 1974 Meyer  
 Tallahatchie County  
 1923 Hay  
 Techeva Creek, Yazoo County  
 1923 Hay  
 1962 Frizzell and Lamber  
 1972 Reel  
 1978 Breard  
 1991 Breard  
 Thompson Creek, Yazoo County  
 1971 Pitts  
 1974 Dockery  
 1985 Carpenter and Dockery  
 1986 Carpenter and White  
 Threadgill Farm, Lowndes County  
 1974 Kaye  
 Tibbee Creek, Clay and Lowndes counties  
 1974b Jackson and Kaye  
 1974 Kaye  
 1975 Jackson and Kaye  
 Tippah County  
 1923 Hay  
 1933 Lowe  
 1939 Conant  
 1940 Stephenson and Monroe  
 1941 Conant  
 Tishomingo County  
 1930 Morse  
 1988 Merrill  
 Tombigbee River  
 1940 Stephenson and Monroe  
 1974 Kaye  
 Tombigbee Sand Member  
 1943 Bergquist  
 1946 Vestal  
 1967 Russell  
 1973 Kaye and Russell  
 1974 Meyer  
 1981 Emry, Archibald and Smith  
 1982 Carpenter  
 1988 Russell  
 Tombigbee State Park, Lee County  
 1974 Meyer  
 Town Creek, Clay County  
 1974 Kaye  
 Town Creek, Hinds County  
 1978 Breard  
 1986 Dockery and Manning  
 Town Creek, Lee County  
 1974 Kaye  
 Town Creek, Monroe County  
 1974 Kaye  
 1982 Kurtén and Kaye  
 Troy, Pontotoc County  
 1943 Priddy  
 1974 Meyer  
 Tubbalubba Creek, Lee County  
 1974 Kaye  
 Tupelo, Lee County

- 1913 Gidley
- 1940 Lougee
- 1940 Stephenson and Monroe
- 1942 Lull and Wright
- 1946 Vestal
- 1974 Meyer
- Tusahoma Formation
  - 1982 Holman
  - 1986 Case
  - 1988 Parmley and Case
  - 1991 Dockery, Beard, Tabrum and Case
  - 1991 Ingram
- Union County
  - 1940 Stephenson and Monroe
  - 1974 Meyer
  - 1991 Stringer
- Vicksburg, Warren County
  - 1904 Shimek
  - 1919 Lowe
  - 1923 Hay
  - 1942 Leriche
  - 1961 Frizzell and Lamber
  - 1962 Frizzell and Lamber
  - 1965 Frizzell and Dante
  - 1966 Priddy, Snowden and McDowell
  - 1976 Kolb, Russell and Johnson
  - 1982a Dockery
  - 1982b Dockery
  - 1984 Knox and Pitts
  - 1986 Dockery and Manning
- Vicksburg Group
  - 1942 Leriche
  - 1965 Frizzell and Dante
- Vinton Bluff, Clay County
  - 1940 Stephenson and Monroe
  - 1943 Bergquist
  - 1974 Meyer
  - 1981 Emry, Archibald and Smith
- Wahalak, Kemper County
  - 1958 Hughes
- Warren County
  - 1923 Hay
  - 1965 Frizzell and Dante
  - 1974 May
  - 1986 Dockery and Manning
  - see also Vicksburg
- Wayne County
  - 1936 Kellogg
  - 1942 Leriche
  - 1962 Frizzell and Lamber
  - 1965 Arata and Jackson
  - 1965 Frizzell and Dante
  - 1966 Kellogg
  - 1974 May
- Waynesboro, Wayne County
  - 1965 Arata and Jackson
- West Point, Clay County
  - 1940 Stephenson and Monroe
  - 1943 Bergquist
- Whetstone Branch, Tishomingo County
  - 1930 Morse
- Whetstone Branch Formation, see Chattanooga Formation
- Whynot, Lauderdale County
  - 1976 Dessem
  - 1988 Parmley and Case
  - 1991 Holman, Dockery and Case
- Wilkinson County
  - 1923 Hay
- Winona Formation
  - 1915 Lowe
  - 1919 Lowe
  - 1925 Lowe
- Woodville, Wilkinson County
  - 1923 Hay
- Woodward Creek, Noxubee County
  - 1974 Kaye
- Word Creek, Monroe County
  - 1974 Kaye
- Yazoo City, Yazoo County
  - 1919 Lowe
  - 1971 Pitts
  - 1974 Neilson
  - 1980b Frazier
  - 1981 Dockery
  - 1986 Dockery and Manning
- Yazoo County
  - 1915 Lowe
  - 1919 Lowe
  - 1923 Hay
  - 1925 Lowe
  - 1940 Mellen
  - 1962 Frizzell and Lamber
  - 1971 Pitts
  - 1972 Reel
  - 1974 Dockery
  - 1978 Breard
  - 1985 Carpenter and Dockery
  - 1986 Carpenter and White
  - see also Midway and Yazoo City
- Yazoo Formation
  - 1915 Lowe
  - 1919 Lowe
  - 1923 Lowe
  - 1925 Lowe
  - 1936 Kellogg
  - 1940 Mellen
  - 1942 Bergquist

1948 Sullivan  
 1960 Priddy  
 1963 DeVries  
 1965 Frizzell  
 1965 Moore  
 1969 Pitts  
 1969-1970 Applegate  
 1972 Luper  
 1972 Reel  
 1974 Fierstine  
 1974 Fierstine and Applegate  
 1976 Dessem  
 1976 Hall  
 1976 Kolb, Russell and Johnson  
 1980 Dockery  
 1981 Dockery  
 1986 Dockery and Johnston  
 Yellow Creek, Tishomingo County  
 1930 Morse  
 1988 Merrill

## REFERENCES

- Capetta, Henri, 1987, Handbook of paleoichthyology. Vol. 3B. Chondrichthyes II: Mesozoic and Cenozoic elasmobranchs: Gustav Fischer Verlag, Stuttgart and New York, 193 p.
- Carroll, Robert L., 1988, Vertebrate paleontology and evolution: W. H. Freeman and Co., New York, 698 p.
- Dockery, David T., III, 1981, Stratigraphic column of Mississippi: Mississippi Bureau of Geology, Jackson.
- Dockery, David T., III, 1986, Molluscan diversity in the Moodys Branch Formation (Eocene) - north-central Gulf Coastal Plain, in Judith A. Schiebout and William van den Bold, eds., Montgomery Landing site, marine Eocene (Jackson) of central Louisiana: Gulf Coast Association of Geological Societies, Baton Rouge, p. 57-66.
- Domning, Daryl P., 1969, A list, bibliography and index of the fossil vertebrates of Louisiana and Mississippi: Gulf Coast Association of Geological Societies, Transactions, v. 19, p. 385-422.
- Ernst, Carl H., and Roger W. Barbour, 1989, Turtles of the world: Smithsonian Institution Press, Washington, D. C., and London, 313 p.
- Kurtén, Björn, and Elaine Anderson, 1980, Pleistocene mammals of North America: Columbia University Press, New York, 442 p.
- Mancini, Ernest A., C. C. Smith, and E. E. Russell, 1984, Upper Cretaceous biostratigraphy of western Alabama and eastern Mississippi: Geological Society of America, Abstracts with Programs, v. 16, no. 3, p. 178.







