



Oklahoma
Geological
Survey
1994

Special Publication 94-1

Catalog of Type and Figured Fossil Vertebrates, Oklahoma Museum of Natural History

Nicholas J. Czaplewski
Richard L. Cifelli
Wann Langston, Jr.





Special Publication 94-1

ISSN 0275-0929

CATALOG OF TYPE AND FIGURED FOSSIL VERTEBRATES, OKLAHOMA MUSEUM OF NATURAL HISTORY

Nicholas J. Czaplewski

Richard L. Cifelli

Wann Langston, Jr.



Oklahoma Geological Survey

Charles J. Mankin, *Director*

The University of Oklahoma
Norman, Oklahoma

1994

SPECIAL PUBLICATION SERIES

The Oklahoma Geological Survey's Special Publication series is designed to bring timely geologic information to the public quickly and economically. Review and editing of this material has been minimized in order to expedite publication.

Front Cover

Life restoration of the Permian pelycosaur *Cotylorhynchus romeri*. This species is known from a few whole or partial skeletons, all found in what is now central Oklahoma. This small-headed, large-bodied, mammal-like reptile reached a length of 3 meters and a weight of 600 kilograms, and was herbivorous. Its fossils do not occur with typical Permian faunas in Texas and Oklahoma, suggesting that it inhabited a distinct ecological community or environment. Painted in 1942–43 by Ralph B. Shead, University of Oklahoma museum artist and superintendent of a Works Progress Administration-sponsored paleontological project.

This publication, printed by the Oklahoma Geological Survey, is issued by the Oklahoma Geological Survey as authorized by Title 70, Oklahoma Statutes, 1981, Section 3310, and Title 74, Oklahoma Statutes, 1981, Sections 231–238. 1,000 copies have been prepared at a cost of \$1,492 to the taxpayers of the State of Oklahoma. Copies have been deposited with the Publications Clearinghouse of the Oklahoma Department of Libraries.

~ CONTENTS ~

INTRODUCTION	1
HISTORICAL BACKGROUND	2
Charles N. Gould and the Department of Geology and Natural History ...	2
J. Willis Stovall and WPA Collecting	2
The Post-Stovall Era	4
DATA SOURCES AND CONVENTIONS	5
Documentation	5
Initials and Catalog Numbers	5
Taxonomy and Specimen Entries	7
ACKNOWLEDGMENTS	8
CATALOG OF TYPE AND FIGURED FOSSIL VERTEBRATES	9
ACANTHODII	9
Acanthodiformes	9
?ACANTHODII incertae sedis	9
CHONDRICHTHYES	9
Symmoriida	9
Eugeneodontida	9
Ctenacanthiformes	9
Xenacanthida	9
Order uncertain	10
OSTEICHTHYES	11
Palaeonisciformes	11
Ichthyodectiformes	11
Ellimmichthyiformes	11
Elopiformes	11
Osteoglossiformes	11
Cyprinodontiformes	11
Dipnoi	12
AMPHIBIA	12
Labyrinthodontia	12
Temnospondyli	12
Anthracosauria	13
Nectridea	13
Microsauria	13
REPTILIA	13
Captorhinida	13
Chelonia	14
Squamata	15
Thecodontia	15
Crocodylia	15
Saurischia	15
Ornithischia	16
Pelycosauria	16

AVES	17
MAMMALIA	18
Multituberculata	18
Symmetrodonia	18
Aegialodontia	18
Tribosphenida, Order and Family uncertain	18
Marsupialia	19
?Marsupialia	20
Eutheria	20
Order and Family uncertain	20
Insectivora	21
Xenarthra	21
Creodonta	22
Carnivora	22
Rodentia	23
Lagomorpha	24
Artiodactyla	24
Cetacea	26
Perissodactyla	26
Proboscidea	29
REFERENCES CITED	30
INDEX OF TYPE AND FIGURED SPECIMENS, BY GENUS	33



Catalog of Type and Figured Fossil Vertebrate Specimens, Oklahoma Museum of Natural History

NICHOLAS J. CZAPLEWSKI¹, RICHARD L. CIFELLI¹,
AND WANN LANGSTON, JR.²



INTRODUCTION

The vertebrate paleontology collection of the Oklahoma Museum of Natural History (OMNH) constitutes a major U.S. holding and is one of the most complete existing records of vertebrate history in the southern plains. The collection includes specimens from various places in the U.S.A. (particularly the Western Interior) and a number of foreign countries, but the vast majority of the specimens were collected in Oklahoma. As might be predicted from the distribution of terrigenous sedimentary rocks within the State, the collection includes well-represented series of lower tetrapods and fishes from Upper Pennsylvanian and Lower Permian units; dinosaurs and other Mesozoic reptiles from Upper Jurassic and Lower Cretaceous units of the Panhandle and southeastern Oklahoma, respectively; and mammals from Ogallala Group rocks of western Oklahoma. The most significant holdings from other areas include Cretaceous vertebrates from Texas, New Mexico, Utah, and Montana. The majority of the collection was amassed during a short interval earlier in this century (1930–42), under the direction of J. Willis Stovall, at that time a faculty member of the Department of Geology, University of Oklahoma. Several independent specimen catalogs were begun at various times, but they include many duplications of numbers and other errors. The majority of the collection was never curated. After several decades of inactivity and a number of moves (with attendant specimen disassociation, breakage, and loss), the collection became functionally inaccessible. In 1988, under sponsorship of the National Science Foundation, we initiated a recovery program to restore the utility of the collection as a research resource in the earth and life sciences.

Cataloging is not yet complete, but the collection includes an estimated 50,000 specimens; the most recent survey of North American collections (Langston and others, 1977) ranks it 15th in the U.S.A. In spite of relatively limited use during its long and somewhat checkered career, the collection is known to include 34 type specimens (holotypes and cotypes), seven paratype specimens, and an additional 550 figured specimens.

The primary purpose in publishing this catalog (in compliance with recommendation 72G of the International

Code of Zoological Nomenclature [ICZN]) is to present, in organized fashion, critical data on important specimens in the collection, in order to foster and facilitate research based on this resource. As noted by Pregill and Berrian (1984, p. 151), such a listing “provides a comprehensive reference to [the institution’s] holdings of primary and secondary types, and serves as a guide to the original literature, perhaps even yielding insights into the nomenclatural history of the taxa.” This statement is especially appropriate in the present case, inasmuch as no catalog of the collection has been published (a listing of neontological types in the Oklahoma Museum of Natural History was presented by Brown and Shepard, 1979).

Publication is particularly timely now for several additional reasons. Fossil vertebrate specimens in the collection of the Oklahoma Museum of Natural History have been cited under a variety of institutional initials and catalog numbering systems, and some published specimens lack any such designations. For some specimens, designations represent field numbers, duplications, or errors; for others, there is no recorded number in the card catalog or on the specimen, although a number may have been used in an original publication. Recently, a standard system has been used to recatalog all type and figured specimens, and the majority of previously published numbers are now obsolete. Most discrepancies and ambiguities in numbering have been resolved. Taxonomic revisions have required nomenclatural modifications, and, in addition, the physical nature of many type and figured specimens has changed since original publication. Inventory of the collection during the course of the current restoration program resulted in reassociation of parts not mentioned in publication, or revealed that structures or elements originally present have been broken or lost. Similarly, a number of type and figured specimens long since missing and presumed lost have been relocated, while it may be said conclusively that others are not now present in the collection. Finally, compilation of new specimen and locality files through consulting extensive archival sources, detailed below, has provided important new information on specimen origin and documentation and permitted us to supplement or correct locality data for a number of published specimens. In order to place this information in the proper context, we present a brief history of the vertebrate paleontology collection of the Oklahoma Museum of Natural History and outline the conventions we have adopted in this catalog.

¹Oklahoma Museum of Natural History.

²The University of Texas at Austin.

HISTORICAL BACKGROUND

Charles N. Gould and the Department of Geology and Natural History

The development of a vertebrate paleontology collection at, or associated with, the University of Oklahoma began in 1900, when an act of the Territorial Legislature established a Department of Geology and Natural History. Albert H. Van Vleet (Professor of Biology), appointed as Territorial Geologist, rapidly began amassing natural history collections as part of the mission of his department. Responsibility for earth science materials fell to Charles N. Gould (Professor of Geology), at the time appointed as "Assistant." Gould, founder of the Department of Geology, first Director of the Oklahoma Geological Survey, and "father of Oklahoma Geology" (cf. Ham, 1983), apparently collected various remains of fossil vertebrates in Oklahoma around the turn of the century, but little evidence of these materials now exists. One significant Early Permian assemblage from Orlando was sent to Samuel W. Williston, University of Kansas, for examination (Gould, 1902). This collection, described by Case (1902; see also Case, 1907; Olson, 1970), includes four types (*Trimerorhachis leptorhynchus*, *Cricotillus brachydens*, *Crossotelos annulatus*, and *Pleuristion brachycoelous*). Case retained the specimens for further study and they were not returned—fortunately, as it turned out, because the collections at the University of Oklahoma were largely destroyed by fire in 1903. Most of the materials are at the University of Kansas, although at least one specimen (the holotype of *Crossotelos annulatus*) accompanied Case to the University of Michigan, where it still resides.

It is clear that fossil vertebrates remained important among Gould's diverse interests throughout his remarkable career (Fig. 1). At his instigation, a fragmentary dinosaur bone recovered in 1908 from the "Trinity sands" (Antlers Formation of current usage; cf. Langston, 1974) of southern Oklahoma was illustrated and published, with Williston's help (Larkin, 1910). This specimen, the earliest-collected fossil vertebrate known to reside in the OMNH collection, is significant in that it represents the first documented occurrence of sauropod dinosaurs in the Cretaceous of western North America. Gould also was apparently responsible for the collection of an important glyptodont carapace, *Glyptotherium arizonae* (Simpson, 1929; Meade, 1953; Gillette and Ray, 1981), from the Holloman gravel pit near Frederick, Oklahoma, in the 1920s. Later, a number of vertebrate fossils were added to the collection by Charles E. Decker, who joined the geology faculty (as an invertebrate paleontologist specializing in graptolites) in 1916. Most of these specimens consist of mammoth and mastodon limb bones and none, to our knowledge, have been illustrated or described in print.

J. Willis Stovall and WPA Collecting

The beginning of an active collecting program at the University of Oklahoma may be pinpointed to 1929 and the arrival of J. Willis Stovall (Fig. 2). Although hired to teach geology, Stovall lost no time in undertaking field work and generating interest in vertebrate paleontology among both students and faculty. In 1930, he was called in to salvage the skeleton of a huge Cretaceous fish, *Xiphactinus audax*, discovered in the Austin Chalk of Collin County, Texas (Stovall, 1933); a second skeleton was collected nearby in 1932 and sold to the University of Texas. Field work in 1931 included collecting from Lower Permian outcrops near Wellington, southwestern Cotton County, Texas, and from the Triassic near Big Spring, Texas; the latter trip resulted in the recovery of a phytosaur later designated as new (*Angistorhinus alticephalus* Stovall and Wharton, 1936). In 1933, a large deposit of mammoth bones was excavated north of Eldorado, in Jackson County, Oklahoma (Fig. 3). On these early projects, Stovall was assisted by Llewelyn I. Price (Fig. 4), a Brazilian student of American parentage. Price prepared a number of the specimens collected under Stovall's direction, and a short time later he achieved fame as illustrator and preparator for Alfred S. Romer (Stovall's graduate advisor and, at that time, at the University of Chicago), producing art-



Figure 1. Charles N. Gould (1868–1949) at dinosaur site in Antlers Formation, Atoka County, Oklahoma, 1940.



Figure 2. J. Willis Stovall (1891–1953), shown with a skull of the Early Cretaceous ornithomimid *Tenontosaurus* from Oklahoma.

work for the standard textbook of vertebrate paleontology (Romer, 1933) and a number of other significant publications. Also in 1933, Stovall organized an expedition to Tertiary beds of Wyoming, Nebraska, and South Dakota. The field party, including William S. Strain, made representative collections from the Oligocene of the White River badlands, South Dakota; Torrington and Douglas, Wyoming; and Harrison and Hat Creek, Nebraska. A large block of rhinoceroses (*Diceratherium*) was also collected from Miocene exposures at the famous Harold Cook ranch near Agate, Nebraska. Expeditions of 1934–35 included a return to Agate, where skeletons of the gazelle camel (*Stenomylus*) were collected, and work in the Upper Cretaceous Hell Creek Formation near Jordan, Montana, where a large *Triceratops* was recovered.

In 1935, Stovall received federal support in the form of a depression-relief project to search for, collect, and prepare fossil vertebrates. Sponsorship of the project, which technically was restricted to activities within Oklahoma, came from the Works Progress Administration (WPA) and its precursors, and continued into early 1942, when WPA was effectively disbanded because of U.S. involvement in World War II. During this time period, the project concurrently employed 40 or more individuals; records indicate that 60,000 to 80,000 man-hours were expended per year. (Simple cal-

culations make it clear that the cost of such an operation today would be prohibitive.) As a result, enormous quantities of fossils from various places in Oklahoma were collected and prepared during this span of about seven years. In its later years, the project was administered by Ralph B. Shead, Stovall's assistant. Various units were organized on a county by county basis, depending on the location of fossil occurrences deemed significant. The major impetus behind the WPA project had been the discovery of Jurassic dinosaurs in the Morrison Formation of Cimarron County. In 1931, road workers discovered large bones about 9 miles east of Kenton, and Stovall had collected a rib and two caudal vertebrae of *Apatosaurus* at that time. Initial WPA activities in the Morrison Formation focused on this site (Quarry 1), although a number of other sites, mainly on or near the flanks of Black Mesa, soon were developed. Although it was widely rumored that one or more complete skeletons were recovered, almost all the materials were disarticulated. Quarry charts for several of the sites exist, and it may prove possible to reassociate some individual elements. Preparation techniques, necessarily primitive, resulted in surface damage to many of the specimens. Although Stovall's dissertation concerned the geology and paleontology of the Morrison Formation in Oklahoma (cf. Stovall, 1943) and he published brief accounts of the dinosaur fauna (Stovall, 1932, 1938), most of this significant collection remains unstudied. The assemblage is unusual in the presence of a large theropod (Ray, 1941), large individuals of *Apatosaurus* (J. S. McIntosh, personal communication), and the relatively abundant remains of juvenile sauropods (Carpenter and McIntosh, in press). One of the sites (Quarry 8) produced small bones and a largely aquatic assemblage, including the holotype of a crocodilian (*Goniopholis stovalli* Mook, 1964).

WPA crews in western Oklahoma also collected extensively from Neogene rocks of the Ogallala Group, exposed in the Oklahoma Panhandle and adjacent areas. Excavations at Optima, a somewhat atypical Hemphillian locality (cf. Harrison, 1981), were conducted for a 20-month period during 1937 and 1938, under the direction of Nolan McWhirter. This site had been visited briefly by Charles

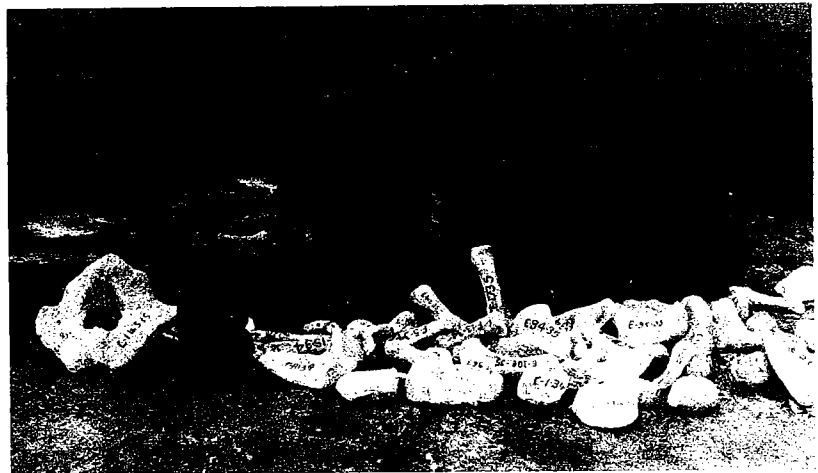


Figure 3. J. Willis Stovall (second from left) and field crew at mammoth site near Eldorado, Jackson County, Oklahoma, 1933.

E. Decker in 1928 and collected by the University of California, Berkeley, in 1929 (Hesse, 1936); by Stovall in 1929–30; and by Frick collectors, led by Charles Falkenbach, in 1934–36. The WPA project employed an average of 25 men at this site and amassed a relatively enormous collection. (Cataloging is not complete at this writing, but it is likely that more than 10,000 specimens are present.) A preliminary faunal study based on the OMNH collection, including description of two new carnivores, was presented by Savage (1939, 1941). A crew of eight to nine WPA workers recovered a smaller but significant assemblage of Hemphillian mammals from a site near Arnett, Ellis County, in 1939 (cf. Kitts, 1957, 1958a). Pleistocene fossils also were collected by WPA workers in western Oklahoma, including the incomplete skeleton of a ground sloth (*Megalonyx hogani*) obtained from a railroad cut east of Gould, Harmon County (Stovall, 1940).

A WPA unit based at the University of Oklahoma (Fig. 5), together with students and staff, collected in central and southern parts of the State, in addition to preparing and mounting fossils sent in by other crews. In 1937 and several following years, this unit collected a number of specimens of the giant caseid pelycosaur *Cotylorhynchus romeri* from the Early Permian of central Oklahoma (Stovall, 1937a; Stovall and others, 1966). Some of these specimens later were traded to other institutions. Following the discovery, in 1940, of dinosaurs in the Lower Cretaceous Antlers Formation of Atoka County, this unit also collected several notable specimens of archosaurs, including the large theropod *Acrocanthosaurus atokensis* (cf. Stovall and Langston, 1950) and partial skeletons of an, as yet, unpublished ornithomimid similar to *Tenontosaurus tilletti* (Langston, 1974).

Stovall resumed summer field expeditions in 1938, when Donald E. Savage, William N. McNulty, and Wann Langston, Jr., were sent to the Big Bend area of Trans-Pecos

Texas. Dinosaurs were collected from the Aguja Formation (Upper Cretaceous) in what is now Big Bend National Park; exploration of Tertiary rocks in Presidio County resulted in the first significant collection of Oligocene (Chadronian) mammals from the area (Stovall, 1948a). Stovall and Savage collected additional specimens in Presidio County in 1940 and, from there, moved on to the San Juan basin, New Mexico, where they collected Paleocene and Late Cretaceous vertebrates, including a partial skeleton of the theropod dinosaur *Aublysodon* cf. *A. mirandus* (Lehman and Carpenter, 1990). Accompanied by Langston, they subsequently collected in the Lower Cretaceous Cloverly Formation of Montana, obtaining a relatively complete skeleton of the ornithomimid dinosaur *Tenontosaurus tilletti*, associated with three juvenile individuals of the same species (Forster, 1985, 1990a,b). Stovall, Savage, and Langston returned to the Rocky Mountain region in 1941, collecting in Upper Cretaceous rocks of the San Juan basin, New Mexico, and Eocene units of Wyoming and Colorado. Field trips were resumed after a wartime hiatus, but Stovall's later activities largely revolved around the building of a mineral collection. Eocene vertebrates, principally Wasatchian mammals, were collected in Colorado and Wyoming in 1952 and 1953, the year of Stovall's death. The University of Oklahoma Museum, which had been consolidated by the Board of Regents in 1943 (with Stovall as the first director), was renamed the J. Willis Stovall Museum of Science and History in 1953.

The Post-Stovall Era

David Kitts replaced Stovall as vertebrate paleontologist on the faculty of the School of Geology in 1954. His field work was confined largely to the Ogallala Group of Roger Mills, Ellis, and Harper Counties, including, among others, the Laverne and Durham localities, of Claremontian age (Kitts and Black, 1959; Kitts, 1964). No collecting data, other than that published, is available for these specimens, a number of which now cannot be located. In 1965, Everett C. Olson reorganized the Permian holdings and added a number of specimens to the collection (cf. Olson, 1967). Jiri Zidek joined the museum and the School of Geology and Geophysics in 1970. Zidek continued organization of the Paleozoic holdings and, in particular, curated the fossil fishes. He also added a number of specimens (principally Paleozoic fishes) from a variety of sources to the collection.

Following Zidek's departure from the University of Oklahoma in 1982, Cifelli and Czaplewski joined the museum staff in 1986 and 1988, respectively. In 1987, the Oklahoma State Legislature designated the museum as official repository for natural history specimens in the State, and the institution adopted the name Oklahoma Museum of Natural History. Approximately 7,000 specimens have been added to the vertebrate paleontol-

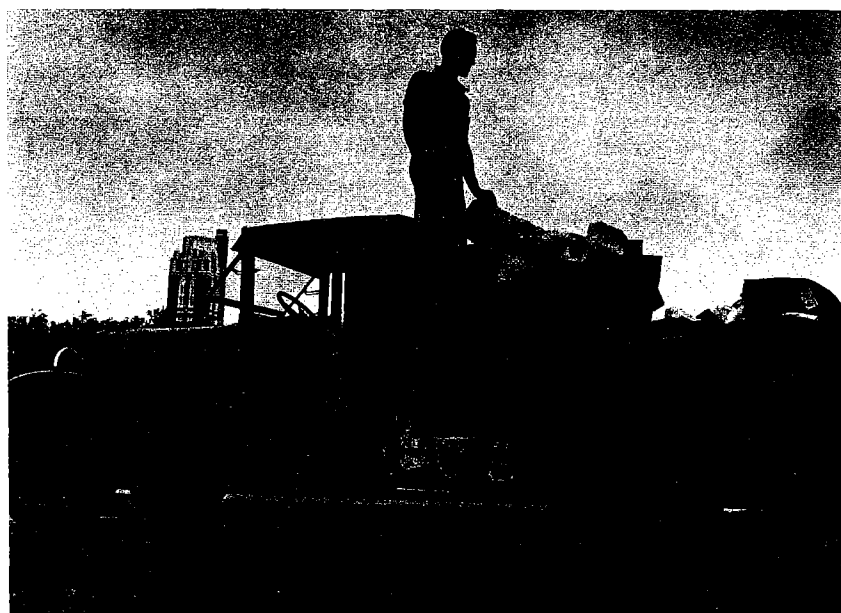


Figure 4. Llewelyn I. Price with load of jacketed fossils behind the old geology building, University of Oklahoma, 1933.



Figure 5. The WPA "mobile unit," based at the University of Oklahoma, shown in the laboratory on the second floor of the west stadium, 1937.

ogy collection since 1986. Many of these are Cretaceous microvertebrates, including assemblages from the Straight Cliffs, Wahweap, and Kaiparowits Formations (Upper Cretaceous), southern Utah (Cifelli, 1990a–d); Aguja Formation (Upper Cretaceous), Texas (Rowe and others, 1992; Cifelli, in press); Cloverly Formation (Lower Cretaceous), Wyoming and Montana (Larson, 1990); and Cedar Mountain Formation (Lower Cretaceous), central Utah. Additional microvertebrates and dinosaurs also have been collected in recent years from the Lower Cretaceous Antlers Formation of Atoka County, Oklahoma.

DATA SOURCES AND CONVENTIONS

Documentation

We have consulted a variety of archival materials and published sources in compiling this catalog and its supplemental documentation and index. Sources include maps, field notebooks, correspondence, and reports, which are on deposit at the Section of Vertebrate Paleontology, Oklahoma Museum of Natural History, and the Western History Collection in the University of Oklahoma Library (where they are filed under Stovall, J. Willis). Many of

these documents relate to activities conducted under auspices of the WPA, which sponsored the assembly of the bulk of the collection. Archival information was supplemented by the personal recollections of one of us (WL). We also contacted every person available who had anything to do with the development of the collection, as well as colleagues who have detailed knowledge of it. These individuals are listed in the acknowledgments. A detailed report on the collection and its history was prepared by WL, and interested researchers may consult it at the Oklahoma Museum of Natural History.

Initials and Catalog Numbers

There is evidence that a sequential numbering system (or more than one) was employed for the vertebrate paleontology collection in the early part of this century, but there is no record of it other than the presence of unprefix numbers on a few specimens and citation of several such numbers in the literature (e.g., Stovall and Johnston, 1934a). A complex, highly idiosyncratic, and ultimately unworkable system was implemented around 1940 (Table 1). These entries, for which a card catalog exists, include numerical designations for taxonomic group, element(s)

TABLE 1. — KEY TO STOVALL CATALOGING SYSTEM*

Taxonomic code		Skeletal code	
No.	Group	No.	Element
1	Fish	0	Skeleton
2	Amphibians	1	Skull
3	Cotylosaurs	2	Palate
4	Pelycosaurs	3	Occiput
5	Turtles	4	Mandible
6	Marine fossils	5	Hyoids
7	Squamata	6	Cervical vertebrae
8	Dinosaurs	7	Dorsal vertebrae
9	Pterosaurs	8	Lumbar vertebrae
10	Birds	9	Sacrum
11	Prototheres	10	Caudal vertebrae
12	Marsupials	11	Ribs
13	Sirenia	12	Scapula
14	Whales	13	Humerus
15	Condylarthra	14	Radius
16	Equidae	15	Ulna
17	Tapiridae	16	Carpals and tarsals
18	Titanotheres	17	Metacarpals, metatarsals
19	Rhinocerotidae	18	Clavicle, sesamoids
20	Suidae	19	Phalanges
21	Camelidae	20	Pelvis
22	Tragulidae	21	Femur
23	Cervidae	22	Patella
24	Antilocapridae	23	Tibia
25	Bovidae	24	Fibula
26	Ancylopoda	25	Upper teeth
27	Amblypoda	26	Lower teeth
28	Proboscidea	27	Tusks
29	Rodents	28	Brain cast
30	Insectivora	29	Antler
31	Bats	30	Os penis, carapace
32	Creodonta	31	Plastron
33	Ursidae	32	Sternum
34	Procyonidae	33	Coprolites
35	Mustelidae	34	Miscellaneous
36	Felidae	35	Spines
37	Pinnipedia	36	Dermal plates
38	Phytosaurs	37	Interclavicle
39	Crocodylia	38	Ear ossicles
40	Canidae		
41	Edentata		
42	Primates		
43	Ophidia		
44	Oreodontidae		
45	Cetacea (cf. 14)		
46	Chalicotheria		
47	Trematopsidae		
48	Miscellaneous		
49	Dicotylidae		

*This system, employed roughly from 1940 to 1970 (cf. Table 2), included taxonomic and representational codes, succeeded by a number indicating sequence within the respective part of the catalog. The serial numbers were preceded by an "S" (commonly mistaken for "5"). For example, the number 8-20-S23 refers to the 23rd catalogued specimen of a dinosaur pelvis in the collection.

TABLE 2. — SYNOPSIS OF INSTITUTIONAL AND SPECIMEN CITATIONS

Years	Institutional and specimen designations	Reference examples
1902–39	No institutional initials or specimen number given	Case (1902), Larkin (1910), Mehl (1926), Stovall and McAnulty (1939)
1934–39	University of Oklahoma Museum (no initials); serial numbers not keyed to known catalog	Stovall and Johnston (1934b, 1935), Stovall and Savage (1939)
1940	University of Oklahoma Museum of Geology and Paleontology (no initials); specimens keyed to Stovall catalog (cf. Table 1)	Stovall (1940)
1939; 1941–46	OMP (not defined; presumably Oklahoma Museum of Paleontology); specimens keyed to Stovall catalog (cf. Table 1)	Savage (1939), Savage (1941), Stovall (1946)
1947; 1948	OUM or UOM (not defined; presumably University of Oklahoma Museum); specimens keyed to Stovall catalog (cf. Table 1)	Langston (1947), Stovall (1948a)
1948–50	MUO (not defined; presumably University of Oklahoma Museum); specimens keyed to Stovall catalog (cf. Table 1)	Stovall (1948b), Stovall (1950), Stovall and Langston, 1950
1956–65	OU (not defined); serial specimen numbers not keyed to known catalog	Gregory and others (1956), Branson (1964, 1965)
1957–70	OUSM or UOSM (J. Willis Stovall Museum of Science and History, University of Oklahoma); specimen numbers keyed to Stovall catalog (cf. Table 1)	Kitts (1957), Carlson (1968), Olson (1967, 1968, 1970)
1973–78	OUSM (J. Willis Stovall Museum of Science and History, University of Oklahoma); specimen numbers keyed to serial catalog implemented by Zidek and still used	Zidek (1973, 1978)
1990–present	OMNH (Oklahoma Museum of Natural History); specimen numbers keyed to serial catalog implemented by Zidek and still used	Cifelli (1990a–d), Forster (1990b), Fielitz and Bardack (1992)

represented, and catalog sequence (prefixed by an “S,” for “specimen”). In use, this system was ridden with errors; in our experience, the success rate for retrieval of specimen data from this catalog is about 60%. A sequentially numbered system, superseding all previous systems or individual specimen designations, was adopted in 1970. This system has been extended to most of the collection, including all published specimens. Under each entry in the catalog below, we also have listed field number and/or previously published specimen number, where warranted.

OMNH vertebrate paleontology specimens have appeared under a variety of published initials (or without initials altogether), with or without institutional designation (Table 2). Following adoption of the name Oklahoma Museum of Natural History by the State Legislature in

1987, the designation OMNH supersedes all previously published initials (which also are listed in the following catalog). A number of specimens, especially of fishes, have retained the same sequential catalog number under the OMNH designation that they had under OUSM during 1973–78 (Table 2). If such a specimen originally was cited in a published figure as OUSM 00000, it is listed in the catalog below as OMNH (OUSM) 00000.

Taxonomy and Specimen Entries

We have departed from a commonly used format of listing taxa alphabetically by species (e.g., Gillette, 1975; Woods and Stucky, 1992), by presenting the catalog in systematic arrangement (as done, for instance, by Ostrander

and others, 1986). We believe this format will prove more useful, but we also provide a separate index of type and figured specimens, arranged alphabetically by genus. Taxonomic usage follows that of Carroll (1988) except in the case of obvious errors, omissions, or taxa published since that work appeared. We have preserved original syntax in referring to unidentified or new taxa; thus, usage varies somewhat among the entries in the catalog. Under each species heading, we give the taxonomic history of type and figured OMNH specimens. Type specimens, listed only if they are deposited in the OMNH collection, are flush left; genoholotypes are indicated by an asterisk (*). In some instances, original publication of taxa did not follow current ICZN guidelines. Where the situation is clear-cut (for instance, a type implied by illustration and description but not designated as such or referred to by catalog number), we have designated the type. Where no type was originally designated from a series or from among two or more "cotypes," we have left formal type designation to future revision of the group in question. Figured specimens are indented from the left margin. Provenance data includes state, county, and rock unit of origin, together with chronostratigraphic age to the most precise unit possible. For terrestrial vertebrates from the Late Cretaceous and Cenozoic of North America, we include North American Land-mammal Age (NALMA; see Lillegraven and McKenna, 1986; Woodburne, 1987). Local-

ity numbers, prefixed with a "V," refer to OMNH fossil vertebrate sites. Precise locality data, where known, is on file at OMNH. Where appropriate, we have appended supplemental information on a "comments" line following locality data. Comments include information on changes in specimen status since original publication or, where doubt or confusion exists, our tentative conclusions regarding the problem. Reference is made to known published and unpublished sources of information, so that catalog users may consult them in reaching their own conclusions.

ACKNOWLEDGMENTS

Renovation of the OMNH vertebrate paleontology collection, which made preparation of this catalog possible, was supported by NSF grants BSR 8707598 and 9024999. For information regarding the development of the collection or help with the specimens and field data, we thank Drs. Jiri Zidek, David Kitts, Alfred Loeblich, Jr., Nolan McWhirter, Everett C. Olson, William A. Clemens, Peter Dodson, John Ostrom, John McIntosh, Donald Savage, Richard Hulbert, the late Dr. William Strain, Mr. Charles Longacre, Mr. Roger Burkhalter, and Ms. Julie Droke. We also appreciate the continued support of Dr. Michael A. Mares, Director of the OMNH, and the administration of the University of Oklahoma.



CATALOG OF TYPE AND FIGURED FOSSIL VERTEBRATES

(Asterisk denotes genoholotype)

ACANTHODII
Acanthodiformes
Acanthodidae

Acanthodes kinneyi Zidek, 1992, p. 155

Paratypes—OMNH (OUSM) 00447, counterparts of nearly complete body; 00448, squamation and fins; 00449, squamation and fins; Zidek (1975a, 1992).

Locality and Age—V187, Bernalillo County, New Mexico; Wild Cow Formation; Late Pennsylvanian (Virgilian).

Figured specimens—OMNH (OUSM) 00447–00449; Zidek (1975a, pls. 1, 2; fig. 2) as *Acanthodes* sp.

Locality and Age—V187, Bernalillo County, New Mexico; Wild Cow Formation; Late Pennsylvanian (Virgilian).

Acanthodes sp.

Figured specimens—OMNH (OUSM) 00447–00449; Zidek (1975a, pls. 1, 2; fig. 2).

Locality and Age—V187, Bernalillo County, New Mexico; Wild Cow Formation; Late Pennsylvanian (Virgilian).

Comments—These three specimens were designated as paratypes of *Acanthodes kinneyi* (see above) by Zidek (1992).

Figured specimens—OMNH (OUSM) 00405–00409 (all fin spine fragments); OMNH (OUSM) 00511, fin spine; OUSM 00514A (now OMNH 00514), pectoral girdle, fin spines and scales; Zidek (1975b, figs. 4–6).

Locality and Age—V176, Tillman County, Oklahoma; Hennessey Formation; Early Permian.

Acanthodes cf. *A. bridgei*

Figured specimens—OMNH (OUSM) 00497, right scapulocoracoid and associated fin elements; OMNH (OUSM) 00472, remnants of dorsal fin; Zidek (1976a, figs. 7, 10).

Locality and Age—V365, Greenwood County, Kansas; Topeka Formation; Late Pennsylvanian.

Acanthodidae, gen. and sp. indet.

Figured specimen—OMNH (OUSM) 00403, pectoral girdle and spine; Zidek (1977, fig. 1).

Locality and Age—V353, Kings County, Nova Scotia, Canada; Horton Bluff Formation; Early Mississippian.

**?ACANTHODII incertae sedis***Machaeracanthus* cf. *M. major*

Figured specimen—OMNH (OUSM) 00139, fin spine fragment; Zidek (1975b, fig. 3).

Locality and Age—V138, Murray County, Oklahoma; Bois d'Arc Formation; Early Devonian.



CHONDRICHTHYES
Symmoriida
Stethacanthidae

Stethacanthus aff. *altonensis*

Figured specimen—OMNH 04175, ceratohyal, brush portion of spine-brush complex, teeth, and denticles; Zidek (1993, figs. 1–3).

Locality and Age—V486, Pontotoc County, Oklahoma; Caney Shale; Mississippian (Chesterian).

Symmoriidae*Symmorium reniforme*

Figured specimen—OMNH (OUSM) 00259, tooth; Zidek (1973, fig. 2).

Locality and Age—V168, Pontotoc County, Oklahoma; Francis Formation; Late Pennsylvanian (Missourian).

Comments—Zidek (1973) originally identified this specimen as *Cladodus occidentalis*, but later corrected himself (Zidek, 1993).

Eugeneodontida**Edestidae***Edestus vorax*

Figured specimen—OMNH 00138 (OU 4999), dorsal fin spine fragment; Branson (1964, fig. 1).

Locality and Age—V75, Carter County, Oklahoma; Deese Formation; Pennsylvanian.

Ctenacanthiformes**Hybodontidae***Hybodus* sp.

Figured specimens—OMNH (OUSM) 00515, 00522A, 00394, fin spines; Zidek (1976b, fig. 1).

Locality and Age—V176, Tillman County, Oklahoma; Hennessey Formation; Early Permian.

Figured specimen—OMNH (OUSM) 00522, fin spine fragments; Simpson (1976, fig. 10).

Locality and Age—V173, Tillman County, Oklahoma; Garber Formation; Early Permian.

Xenacanthida**Xenacanthidae***Platyacanthus avirostratus* Zidek, 1978, p. 1074

Holotype—OMNH 00521 (OUSM 00521A), distally incomplete fin spine; Zidek (1978, p. 1074 and text-fig. 2B).

Paratypes—OMNH 00521 (OUSM 00521B–J), nine fragmentary fin spines; Zidek (1978, p. 1074).

Locality and Age—V173, Tillman County, Oklahoma; Garber Formation; Early Permian.

Anodontacanthus belemnoideus Zidek, 1978, p. 1071

Holotype—OMNH (OUSM) 00450, fin spine; Zidek (1978, p. 1071 and text-fig. 2A).

Locality and Age—V120, Jefferson County, Oklahoma; Oscar Formation; Late Pennsylvanian.

Anodontacanthus sp.

Figured specimen—OMNH (OUSM) 00521, cephalic spines; Simpson (1976, fig. 9).

Locality and Age—V173, Tillman County, Oklahoma; Garber Formation; Early Permian.

Pleuracanthus (= *Xenacanthus*) *gracilis*

Figured specimen—OMNH 00425 (no number given in original article), occipital spine; Smith (1927, fig. 1).

Locality and Age—V114, Grant County, Oklahoma; Garber Formation; Early Permian.

Pleuracanthus (= *Orthacanthus*) *compressus*

Figured specimen—OMNH 00416 (no number given in original article), tooth; Smith (1927, fig. 2).

Locality and Age—V114, Grant County, Oklahoma; Garber Formation; Early Permian.

Figured specimen—No number given in original article, tooth; Smith (1927, fig. 41).

Locality and Age—V120, Jefferson County, Oklahoma; Oscar Formation; Late Pennsylvanian.

Comments—Missing.

Orthacanthus compressus

Figured specimens—OMNH 00545 (OUSM 00545-1), teeth; OMNH 00546 (OUSM 00546-1), occipital spines; Simpson (1976, figs. 7, 8).

Locality and Age—V173, Tillman County, Oklahoma; Garber Formation; Early Permian.

Xenacanthus (= *Orthacanthus*) *platypternus*

Figured specimen—OMNH 00543 (OUSM 00543-1), teeth; Simpson (1976, fig. 5).

Locality and Age—V173, Tillman County, Oklahoma; Garber Formation; Early Permian.

Xenacanthus luedersensis

Figured specimen—OMNH 00544 (OUSM 00544; erroneously listed as 005441), teeth; Simpson (1976, fig. 6).

Locality and Age—V173, Tillman County, Oklahoma; Garber Formation; Early Permian.

Xenacanthodii, gen. and sp. indet.

Figured specimen—OMNH (OUSM) 00430, occipital spine; Zidek (1978, text-fig. 3).

Locality and Age—V120, Jefferson County, Oklahoma; Oscar Formation; Late Pennsylvanian.

Order uncertain

Family uncertain

Petrodus occidentalis

Figured specimens—No numbers given in original article (may never have been cataloged), dermal denticles; Stovall (1945, fig. 1).

Locality and Age—Oklahoma, no specific data are available.

Comments—Missing.

Figured specimen—OU 338, denticles; Branson (1965, figs. 1–3).

Locality and Age—V701, Rogers County, Oklahoma; formation unknown ("shale of Higginsville age" [Branson, 1965, p. 274]); Pennsylvanian.

Comments—Missing.

Physonemus aff. *acinaciformis*

Figured specimen—OMNH (OUSM) 00398, fin spine proximal fragment; Zidek (1976b, fig. 2).

Locality and Age—V168, Pontotoc County, Oklahoma; Francis Formation; Late Pennsylvanian (Missourian).

Agassizodus aff. *variabilis*

Figured specimen—OMNH (OUSM) 00553, worn lateral tooth; Zidek (1976b, fig. 3).

Locality and Age—V166, Pontotoc County, Oklahoma; Boggy Formation; Middle Pennsylvanian (Desmoinesian).

Agassizodus sp.

Figured specimen—OMNH (OUSM) 00554, lateral tooth; Zidek (1976b, fig. 3).

Locality and Age—V75, Carter County, Oklahoma; Deese Formation; Middle Pennsylvanian (Desmoinesian).

Cladodus occidentalis

Comments—See *Symmorium reniforme*.

Helodus sp.

Figured specimen—OMNH (OUSM) 00557, tooth; Zidek (1976b, fig. 4).

Locality and Age—V166, Pontotoc County, Oklahoma; Boggy Formation; Middle Pennsylvanian (Desmoinesian).

Figured specimen—OMNH (OUSM) 00558, tooth; Zidek (1976b, fig. 4).

Locality and Age—V182, Washington County, Oklahoma; Coffeyville Formation and Nellie Bly Formation; Late Pennsylvanian (Missourian).

Ctenoptychius sp.

Figured specimen—OMNH (OUSM) 00397, tooth; Zidek (1976b, fig. 4).

Locality and Age—V76, Carter County, Oklahoma; Lester Formation; Middle Pennsylvanian (Desmoinesian).

Palaeoxyris lewisi Zidek, 1976c

Holotype—OMNH (OUSM) 00499, counterparts of a complete egg capsule; Zidek (1976c, p. 907 and pl. 1).

Locality and Age—V170, Rogers County, Oklahoma; Senora Formation; Middle Pennsylvanian.



OSTEICHTHYES

Palaeonisciformes

Palaeoniscoidea

Figured specimens—OMNH (OUSM) 00523, flank and ridge scales; OMNH (OUSM) 00524, skull bones; OMNH (OUSM) 00525, mandible; Simpson (1976, figs. 11–14).

Locality and Age—V173, Tillman County, Oklahoma; Garber Formation; Early Permian.

Carbovelidae

Sphaerolepis arcata

Figured specimen—OMNH 00260 (no number given in original article), dentigerous plate; Smith (1927, fig. 5).

Locality and Age—V114, Grant County, Oklahoma; Garber Formation; Early Permian.

Comments—Olson (1967) believed the locality for this specimen was questionable.

Platysomidae

Platysomus sp.

Figured specimens—OMNH 09151, flank scalation, dorsal fin, and dorsal lobe of tail; Zidek (1992, fig. 17A). OMNH 09152, incomplete flank scalation and poorly preserved head; Zidek (1992, fig. 17B).

Locality and Age—V176, Tillman County, Oklahoma; Hennessey Formation; Early Permian.

Comments—Zidek (1992) listed these two specimens as “OMNH uncataloged.”

?*Schaefferichthys*

Figured specimen—OMNH (OUSM) 00509, phyllodont tooth plates with a partially articulated body; Johnson and Zidek (1981, fig. 1H–J).

Locality and Age—V176, Tillman County, Oklahoma; Hennessey Formation; Early Permian.

Ichthyodectiformes

Ichthyodectidae

Xiphactinus audax

Figured specimen—OMNH 01722 (1-0-S32), complete skeleton; Stovall (1933, figs. 1, 2); Stovall and Brown (1954, unnumbered figure on p. 376).

Locality and Age—V202, Collin County, Texas; Austin Chalk Formation; Cretaceous.

Comments—Stovall and Brown (1954) referred to this specimen as *Portheus molossus*.

Ellimmichthyiformes

Ellimmichthyidae

Diplomystus dentatus

Figured specimen—OMNH 02777 (1-0-S22), skeleton; Stovall and Brown (1954, unnumbered figure on p. 376).

Locality and Age—V434, Lincoln County, Wyoming; Green River Formation; Eocene.

Elopiformes

Albulidae

Deltaichthys albuloides Fielitz and Bardack, 1992, p. 133

***Holotype**—OMNH 03030 (formerly OUSM 1-0-S83; listed by Fielitz and Bardack, 1992, p. 133 and fig. 1, as OMNH 1-0-283); nearly complete, three-dimensionally preserved body; Fielitz and Bardack (1992, figs. 1–8).

Locality and Age—V463, Britton, Texas; Eagle Ford Formation; Late Cretaceous.

Comments—At the time this specimen was nominated, no locality data were known to be available, but based on its unusual preservation, Fielitz and Bardack (1992) determined that the horizon and locality of origin of the specimen were “Probably Eagle Ford Shale (Upper Cretaceous), and possibly from rocks of this formation in vicinity of Fort Worth or Dallas, Texas. . . . The specimen has been in the Oklahoma collection for at least 50 years.” While their paper was in press and during the renovation of our vertebrate paleontology collection in 1991, one of us (NJC) located a few undated photographs of this specimen, originally made by Donald E. Savage, labeled simply “q Tex.-1-J” and “Teleost from Britton, Texas.” Thus its occurrence in the Eagle Ford Shale near Dallas and Fort Worth, as inferred by Fielitz and Bardack, has been confirmed, and a type locality is established hereby.

Osteoglossiformes

Osteoglossidae

Dapedoglossus (= *Phareodus*) *testis*

Figured specimen—UOM 1-0-S18, skeleton; Stovall and Brown (1954, unnumbered figure on p. 399).

Locality and Age—V434, Lincoln County, Wyoming; Green River Formation; Eocene.

Comments—Missing.

Cyprinodontiformes

Atherinidae

Plancterus kansae?

(= *Menidia* sp.)

Figured specimens—OMNH 15847–15849 (no numbers given in original article), skeletons; Stovall and McNulty (1939, figs. 1, 2).

Locality and Age—V702, Roger Mills County, Oklahoma; unnamed formation, sandy fill of a channel cut into the Permian Quartermaster Formation; Miocene–Pliocene.

Comments—Although Stovall and McAnulty (1939) identified their specimens as members of the Cyprinodontidae similar to *Plancterus kansae*, Hubbs (1942) corrected their mistake, tentatively identifying the specimens as *Menidia* sp. (Atherinidae).

Dipnoi

Sagenodontidae

Sagenodus vinslovi

Figured specimen—OMNH 00483 (no number given in original article), left palatal plate; Smith (1927, fig. 3).

Locality and Age—V114, Grant County, Oklahoma; Garber Formation; Early Permian.

Sagenodus porrectus

Figured specimens—OUSM 00527-1, -2, -10, pterygoid tooth plates; OUSM 00528-12, splenial tooth plates; OUSM 00530-1, zoned and polished roofing bones; OUSM 00541-1, -2, opercula; Simpson (1976, figs. 15–17).

Locality and Age—V173, Tillman County, Oklahoma; Garber Formation; Early Permian.

Comments—Missing.

Lepidosirenidae

Gnathorhiza serrata

Figured specimens—OMNH 00063 (OUSM 1-40-S48), clavicle; OMNH 00065 (OUSM 1-40-S46), splenial postsplenial and lower tooth; OMNH 00066 (OUSM 1-40-S43), palatal elements; OMNH 00082 (OUSM 1-40-S38), skull element; OMNH 00127 (OUSM 1-40-S44), lower tooth; Carlson (1966, figs. 4–6, 9, 10).

Locality and Age—V147, Noble County, Oklahoma; Wellington Formation; Early Permian.

Comments—OMNH 00082 is missing.

Figured specimens—OMNH 00074 (OUSM 1-40-S42), lower tooth; OMNH 00083 (OUSM 1-40-S19), pre-articulars with tooth plates; OMNH 00096 (OUSM 1-40-S41), pterygoid tooth; OMNH 00099 (OUSM 1-40-S33), lower teeth; OMNH 00101 (OUSM 1-40-S9), skull elements; OMNH 00108 (OUSM 1-40-S32), skull element; OMNH 00112 (OUSM 1-40-S11), pterygoid tooth; OMNH 00113 (OUSM 1-40-S7), angular; OMNH 00124 (OUSM 1-40-S13), skull roof elements; OMNH 00125 (OUSM 1-40-S15), skull elements; OMNH 00126 (OUSM 1-40-S14), skull elements; Carlson (1966, figs. 4–10).

Locality and Age—V144, Noble County, Oklahoma; Wellington Formation; Early Permian.

Figured specimens—OMNH 00066 (OUSM 1-40-S43), palatal elements; OMNH 00124 (OUSM 1-40-S13), skull roof elements; Carlson (1968, pl. 1).

Locality and Age—V147, Noble County, Oklahoma; Wellington Formation; Early Permian.

Figured specimen—No number given in original article, palatal plate; Smith (1927, fig. 4).

Locality and Age—V114, Grant County, Oklahoma; Garber Formation; Early Permian.

Comments—Missing; originally identified by Smith (1927) as *G. pusilla*.



AMPHIBIA

Labyrinthodontia

Order indet.

Figured specimen—OUSM 10094, stapes; Simpson (1976, fig. 22).

Locality and Age—V173, Tillman County, Oklahoma; Garber Formation; Early Permian.

Comments—Missing.

Temnospondyli

Metoposauridae

Buettneria (= *Metoposaurus* sp.)

Figured specimen—OMNH 00591 (UOM 2-1-S7), cranium; Stovall and Brown (1954, unnumbered figure on p. 314).

Locality and Age—V205, Garza County, Texas; Dockum Group; Late Triassic.

Eryopidae

Eryops megacephalus

Figured specimen—OMNH 10030 (no number given in original article), intercentrum; Smith (1927, fig. 7).

Locality and Age—V114, Grant County, Oklahoma; Garber Formation; Early Permian.

Figured specimen—OMNH 10051 (no number given in original article), cervical vertebra with neural spine; Smith (1927, fig. 40).

Locality and Age—V700, Noble County, Oklahoma; Wellington Formation; Early Permian.

Trimerorhachidae

Trimerorhachis insignis

Figured specimens—OUSM 10111, humeri; OUSM 10114, femora; OUSM 10115, ilia; OUSM 10118, articulars; Simpson (1976, figs. 18–21).

Locality and Age—V173, Tillman County, Oklahoma; Garber Formation; Early Permian.

Comments—Missing.

Trimerorhachis sp.

Figured specimen—No number given in original article, fragment of right lower jaw; Smith (1927, fig. 9).

Locality and Age—V114, Grant County, Oklahoma; Garber Formation; Early Permian.

Comments—Missing.

Figured specimen—No number given in original article, intercentrum; Smith (1927, fig. 36).

Locality and Age—V152, Noble County, Oklahoma; Wellington Formation; Early Permian.

Comments—Missing.

Figured specimen—No number given in original article, nearly complete lower jaw; Smith (1927, fig. 35).

Locality and Age—V108, Noble County, Oklahoma; Garber Formation; Early Permian.

Comments—Missing; identified by Smith (1927, p. 36) as "Indeterminate form (Resembles *Trimerorhachis*)."

Trematopsidae

Trematops thomasi Mehl, 1926, p. 467

(=*Trematops milleri* Williston, 1909)

Holotype—OMNH 02110 (no number given in original description; formerly OUSM 2-1-S36), anterior part of skull and lower jaws; Mehl (1926, figs. 1-5).

Locality and Age—V171, Kiowa County, Oklahoma; Arroyo Formation; Early Permian.

Comments—A synonym of *Trematops milleri* Williston according to Olson (1941). Olson (1941), in his review of the Trematopsidae, mistakenly listed this specimen as being in collections of the University of Missouri.

Zatracheidae

Zatrachys serratus

Figured specimen—OMNH 10071 (OUSM 2-0-S15), articulated skull and right mandible; Olson (1965, figs. 1, 3).

Locality and Age—V130, McClain County, Oklahoma; formation unknown, "Gearyan strata" (Olson, 1965, p. 91); Early Permian (Wolfcampian).

Anthracosauria

Archeriidae

Archeria victori Stovall, 1948b, p. 75

(=*Archeria crassidisca* [Cope], 1884)

Holotype—OMNH 04176 (formerly UOM 4-4-S5; listed by Stovall, 1948b, p. 75, as UOM 2-1-S8), posterior portion of right mandible; Stovall (1948b, figs. 1, 2).

Locality and Age—V128, Kay County, Oklahoma; Wellington Formation; Early Permian.

Cricotus sp.

Figured specimen—OMNH 00626 (no number given in original article), dorsal intercentrum; no number, dorsal pleurocentrum; no number, caudal intercentrum; Smith (1927, fig. 10).

Locality and Age—V114, Grant County, Oklahoma; Garber Formation; Early Permian.

Comments—The last two specimens listed are missing.

Nectridea

Diplocaulidae

Diplocaulus magnicornis

Figured specimen—OMNH 00620 (no number given in original article), two articulated dorsal vertebrae; Smith (1927, fig. 6).

Locality and Age—V114, Grant County, Oklahoma; Garber Formation; Early Permian.

Comments—Originally identified by Smith (1927) as *D. salamandroides*.

Figured specimen—OMNH 10019 (no number given in original article), skull fragments and partial vertebral column; Smith (1927, figs. 30-33).

Locality and Age—V108, Noble County, Oklahoma; Garber Formation; Early Permian.

Figured specimen—OMNH 01672 (UOM 2-0-S11), skeleton; Stovall and Brown (1954, unnumbered figure on p. 289).

Locality and Age—V132, Logan County, Oklahoma; Garber Formation; Early Permian.

Urocordylidae

Crossotelos annulatus

Figured specimens—No numbers given in original article: mid-dorsal vertebra; two articulated posterior dorsal vertebrae; five articulated caudal vertebrae; jaw fragments; leg bones; Smith (1927, figs. 37-39).

Locality and Age—V152, Noble County, Oklahoma; Wellington Formation; Early Permian.

Comments—All are missing.

Microsauria

Gymnarthridae

Cardiocephalus peabodyi Carroll and Gaskill, 1978, p. 57

Cardiocephalus cf. *C. sternbergi* Gregory, Peabody, and Price, 1956, p. 14

Holotype—OMNH 10001 (listed by Gregory and others, 1956, p. 14 and figs. 9, 10, as OU 1034; also illustrated by them in fig. 19), skeleton lacking right forelimb, rear limbs, and tail; Carroll and Gaskill (1978, figs. 31, 33A-C, 34A, 119C, 124H, 126H).

Locality and Age—V51, Comanche County, Oklahoma; fissure fillings; Early Permian.



REPTILIA

Captorhinida

Captorhinidae

Captorhinid

Figured specimen—OMNH (OUSM) 15024, partial skeleton (right manus is illustrated); Holmes (1977, fig. 10A,B).

Locality and Age—V128, Kay County, Oklahoma; Wellington Formation; Early Permian.

Captorhinus aguti

Figured specimen—OMNH (OUSM) 15003, partial skeleton (pectoral girdle is illustrated); Holmes (1977, fig. 4).

Locality and Age—V51, Comanche County, Oklahoma; fissure fillings; Early Permian.

Labidosaurikos meachami Stovall, 1950, p. 46

***Holotype**—OMNH 04331 (listed by Stovall, 1950, p. 46, as MUO 3-1-S2), mostly complete skull and associated right mandible; Stovall (1950, pl. 1), Seltin (1959, fig. 200A), Zidek (1971, cover figure, as MUO 3-1-S2).

Locality and Age—V495, Logan County, Oklahoma; Hennessey Formation; Early Permian.

Comments—The braincase and other parts have been separated from the skull roof and partially prepared since the cited illustrations were published.

Labidosaurus oklahomensis Seltin, 1959, p. 479

(= *Eocaptorhinus laticeps* [Williston], 1909)

Holotype—OMNH 15022 (MUO 3-1-S7), mostly complete skull and mandibles; Seltin (1959, p. 479 and fig. 197).

Locality and Age—V128, Kay County, Oklahoma; Wellington Formation; Early Permian.

Comments—A synonym of *Eocaptorhinus laticeps* Williston according to Heaton (1979).

Eocaptorhinus laticeps [Williston], 1909

Figured specimens—OMNH 15020, partial skeleton, of which the following portions have been illustrated or used to reconstruct certain elements: pectoral girdle (Holmes, 1977, fig. 2E, as *Captorhinus aguti*, OUSM 15020B); presacral vertebrae 1–20 with ribs and partial pectoral girdle (Dilkes and Reisz, 1986, figs. 1, 3–5, as OUSM 15020B); skull and pectoral girdle, preorbital region of skull, and several isolated skull elements/regions (Heaton, 1979, figs. 8, 9, 14, 15, 18, 19, 24–27, 29, 32, as 15020A [3-1-S4] and 15020B [3-0-S5]).

OMNH 15021, partial skull with mandible, of which several portions or isolated elements have been illustrated or used as the basis for reconstructing skull elements (Heaton, 1979, figs. 7, 11, 15–17, 23, 24, 30–32, as OUSM 15021 [3-1-S8]).

OMNH 15022, partial skull and mandibles, of which several portions have been illustrated or used to reconstruct certain elements (Heaton, 1979, figs. 4, 19, 24, 25, 27, as OUSM 15022 [3-1-S7]).

OMNH 15024, partial skeleton, of which the following portions have been illustrated or used to reconstruct certain elements: caudal vertebrae and left pes, presacral vertebrae and right manus (Dilkes and Reisz, 1986, figs. 2, 3); right palate, left epipterygoid, braincase (Heaton, 1979, figs. 24, 25, 27, as OUSM 15024 [3-1-S6]).

OMNH 15101, partial skeleton, of which the following portions have been illustrated or used to reconstruct certain elements: atlas-axis complex (Dilkes and Reisz, 1986, fig. 5); complete skull, several isolated skull elements/regions (Heaton, 1979, figs. 12, 14, 15, 24–29, 32, as OUSM 15101 [3-0-S4]).

OMNH 15102, left half of skull, of which several portions have been illustrated or used as the basis for reconstructing certain skull elements (Heaton, 1979, figs. 10, 11, 21, 22, 24, as OUSM 15102 [3-1-S3]).

Reconstructions of the complete skeleton based on several specimens (OMNH 15020, 15021, 15022, 15024, 15101, 15102) were provided by Heaton and Reisz (1980, fig. 1) and Carroll (1988, fig. 10–14).

Locality and Age—V128, Kay County, Oklahoma; Wellington Formation; Early Permian.

Bolosauridae

Bolosaurus striatus

Figured specimen—No number given in original article, complete right dentary with teeth; Smith (1927, fig. 11).

Locality and Age—V114, Grant County, Oklahoma; Garber Formation; Early Permian.

Comments—Missing.

Chelonia

Emydidae

Pseudemys cf. *P. caelata*

Figured specimen—OMNH 16536 (S-2042), costal osteoscut fragment; Strain (1937, pl. I, fig. 2).

Locality and Age—V703, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Trachemys bisornata

Figured specimen—OMNH 16502 (1005), broken carapace and plastron; Strain (1937, pl. I, fig. 9).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Testudinidae

Testudo (= *Geochelone*) cf. *T. hexagonata*

Figured specimen—OMNH 16542 (S-2040), neural osteoscut; Strain (1937, pl. I, fig. 7).

Locality and Age—V527, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Testudo (= *Geochelone*) *ocalana*

Figured specimens—OMNH 16540 (S-2039), left first costal osteoscut; OMNH 16543 (S-2039), hypoplas-tron fragment; Strain (1937, pl. I, figs. 5, 8).

Locality and Age—V527, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Testudo (= *Geochelone*) sp.

Figured specimens—OMNH 16500 (S-2038), peripheral osteoscut; OMNH 16501 (S-2038), right hypoplas-tral osteoscut; Strain (1937, pl. I, figs. 3, 4).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Figured specimen—OMNH 16541 (S-2041), nuchal osteoscut; Strain (1937, pl. I, fig. 6).

Locality and Age—V527, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Squamata**Lacertilia**

Figured specimen—MUO 7-34-S2, left maxilla, portion of cranium, and four articulated cervical vertebrae; Stovall (1948a, pl. 1) (only three of the vertebrae were illustrated).

Locality and Age—V459, Presidio County, Texas; Chambers Tuff Formation; early Oligocene (Chadronian).

Comments—Missing.

Scincidae*Sauriscus* sp.

Figured specimen—OMNH 25347, maxilla; Rowe and others (1992, fig. 4E–G).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Thecodontia**Phytosauridae**

Angistorhinus alticephalus Stovall and Wharton, 1936, p. 186

Holotype—OMNH 00733 (no number given by Stovall and Wharton, 1936, but the type formerly was numbered 38-1-S1, 38-7-S1, 38-34-S1, and 1032); skull, nine vertebrae, and several dermal osteoscutes; Stovall and Wharton (1936, figs. 1, 2).

Locality and Age—V207, Howard County, Texas; Dockum Group; Late Triassic.

Machaeroprotopus sp. (= *Rutiodon* sp.)

Figured specimen—OMNH 00739 (Univ. Okla. Mus. Geol. and Paleontol. no. 1250), skull with partial lower jaws and associated postcranial elements; Stovall and Savage (1939, figs. 1, 2).

Locality and Age—V193, Union County, New Mexico; Sloan Canyon Formation; Triassic.

Crocodylia**Goniopholididae**

Goniopholis stovalli Mook, 1964, p. 283

Holotype—OMNH 02392 (OUSM 39-1-S8), skull; Mook (1964, figs. 1, 2).

Locality and Age—V97, Cimarron County, Oklahoma; Morrison Formation; Late Jurassic.

Saurischia**Allosauridae**

Saurophagus maximus

Comments—The name *Saurophagus maximus* Stovall in Ray (1941) was applied to an allosaurine based on OUSM 4666. Ray (1941) described the specimen as a “hefty long shank.” Several complete or partial tibiae are available in the collection, but we have no record of the old number 4666 nor evidence that it was written on any of the specimens.

This name has been used in the literature (Stovall, 1943, p. 70), but it is a *nomen nudum*; also *Saurophagus* is preoccupied Swainson, 1832 (Camp and others, 1953, p. 412).

Megalosauridae or Allosauridae

Acrocantliosaurus atokensis Stovall and Langston, 1950, p. 700

***Holotype**—OMNH 10146 (listed by Stovall and Langston, 1950, p. 699 and pls. 1–4, as MUO 8-0-S9); partial skeleton including several skull elements; Langston (1947, figs. 1, 2 and pls. I–IV, as OUM 8-0-S9), Stovall and Langston (1950, figs. 2–4 and pls. 1–4), Langston (1974, text-fig. 3, as OU 8-0-S9).

Locality and Age—V68, Atoka County, Oklahoma; Antlers Formation; Early Cretaceous.

Comments—In his M. S. thesis, Langston (1947) used the name *Acrocantliosaurus atokaensis* for this animal.

Paratype—OMNH 10147 (listed by Stovall and Langston, 1950, p. 699 and pls. 3, 4, as MUO 8-0-S8); partial skeleton; Langston (1947, fig. 3 and pls. III, IV, as OUM 8-0-S8), Stovall and Langston (1950, pls. 3, 4).

Locality and Age—V67, Atoka County, Oklahoma; Antlers Formation; Early Cretaceous.

Ceratosauridae

Ceratosauros? sp.

Figured specimens—No numbers given in original article: tooth fragment, fused metatarsals, cervical vertebra, dorsal vertebra, rib; Stovall (1938, fig. 3).

Locality and Age—V92, Cimarron County, Oklahoma; Morrison Formation; Late Jurassic.

Comments—Missing.

Tyrannosauridae

Aublysodon cf. *A. mirandus*

Figured specimen—OMNH 10131, partial skeleton; Lehman and Carpenter (1990, figs. 1–6).

Locality and Age—V188, San Juan County, New Mexico; Fruitland Formation; Late Cretaceous (Judithian).

Sauropoda**Family uncertain**

Figured specimen—OMNH 00779 (no number given in original article), coracoid; Larkin (1910, figs. 1–4).

Locality and Age—V611, Oklahoma; Antlers Formation; Early Cretaceous.

Comment—This specimen probably pertains to *Pleurocoelus*.

Family indeterminate

Figured specimens—OMNH 01247, 01250, cervical centra; Carpenter and McIntosh (in press, fig. 1).

Locality and Age—V92, Cimarron County, Oklahoma; Morrison Formation; Late Jurassic.

Diplodocidae*Brontosaurus excelsus* (= *Apatosaurus* sp.)

Figured specimens—OMNH 01162, tooth; OMNH 01667, femur; OMNH 01670, dorsal vertebra; fragment of right mandible; Stovall (1938, fig. 3).

Locality and Age—V92, Cimarron County, Oklahoma; Morrison Formation; Late Jurassic.

Comments—No specimen numbers were provided by Stovall (1938) for any of the specimens he illustrated. The mandible fragment is missing.

Apatosaurus sp.

Figured specimens—OMNH 01245, 01246, 01251, cervical centra; OMNH 01206, 01210, 01217, 01219, 01226, 01230, 01233, dorsal centra; OMNH 01300, scapula; OMNH 01275–01278, 02113, 02115, humeri; OMNH 01289, ulna; OMNH 01287, 01288, 01290, radii; OMNH 04019, ilium; OMNH 01293, 01294, pubes; OMNH 01297, 01298, ischia; OMNH 01279–01281, femora; OMNH 01285, 01286, 01291, tibiae; OMNH 01295, 01296, fibulae; OMNH 01256, metatarsal I; Carpenter and McIntosh (in press, figs. 1–9).

Locality and Age—V92, Cimarron County, Oklahoma; Morrison Formation; Late Jurassic.

Camarasauridae*Camarasaurus* sp.

Figured specimens—OMNH 01239, 01241–01244, 01248, 01249, 01252–01254, cervical centra; OMNH 01266, 01268, 01273, cervical neural arches; OMNH 01264, posterior dorsal neural arch; OMNH 01269, sacral neural arch; OMNH 01302, coracoid; Carpenter and McIntosh (1993?, figs. 1, 3, 4).

Locality and Age—V92, Cimarron County, Oklahoma; Morrison Formation; Late Jurassic.

Ornithischia**Hypsilophodontidae***Tenontosaurus tilletti*

Figured specimen—OMNH 10132, nearly complete skeleton; Ostrom (1970, pl. 21A) (left manus is illustrated); Forster (1985, figs. 1–5, 11–18; 1990b, figs. 1, 3, 7–14).

Locality and Age—V184, Big Horn County, Montana; Cloverly Formation; Early Cretaceous (Ap-tian–Albian).

Comments—Ostrom (1970) and Forster (1985) refer to this specimen as OU 11. We have no record of this number.

Tenontosaurus sp.

Figured specimen—OMNH 02528, skeleton (OUSM 8-1-S10; listed by Langston, 1974, as OU 8-0-S3; skull is illustrated); Langston (1974, pl. 1).

Locality and Age—V70, Atoka County, Oklahoma; Antlers Formation; Early Cretaceous.

Iguanodontidae*Camptosaurus?* sp.

Figured specimen—No number given in original article, left femur; Stovall (1938, fig. 3).

Locality and Age—V92, Cimarron County, Oklahoma; Morrison Formation; Late Jurassic.

Comments—Missing.

Stegosauridae*Stegosaurus* sp.

Figured specimens—No numbers given in original article: dorsal plate, femur; Stovall (1938, fig. 3).

Locality and Age—V92, Cimarron County, Oklahoma; Morrison Formation; Late Jurassic.

Comments—Both specimens are missing.

Pelycosauria**Ophiacodontidae***Poliosaurus uniformis* (= *Ophiacodon* sp.)

Figured specimen—No number given in original article, vertebra; Smith (1927, fig. 12).

Locality and Age—V114, Grant County, Oklahoma; Garber Formation; Early Permian.

Comments—Missing.

Clepsydropus sp.

Figured specimen—No number given in original article, neural spine and postzygapophyses; Smith (1927, fig. 13).

Locality and Age—V114, Grant County, Oklahoma; Garber Formation; Early Permian.

Comments—Missing.

Sphenacodontidae*Dimetrodon limbatus*

Figured specimens—OUSM 15114, pterygoid crest; OUSM 15115-1, ilia; Simpson (1976, figs. 23, 24).

Locality and Age—V173, Tillman County, Oklahoma; Garber Formation; Early Permian.

Comments—Missing.

Dimetrodon sp.

Figured specimens—OMNH 00603, jaw fragment with tooth; OMNH 15060, left humerus; OMNH 15061, dorsal vertebra; OMNH 15062, interclavicle; no number given for any of these in original article; Smith (1927, figs. 15, 17, 19, 25). Additional unnumbered missing specimens illustrated by Smith (1927) include intercentrum (fig. 16), right and left ulnae (fig. 20), right femur (fig. 21), proximal left and proximal right tibiae (fig. 22), phalanges (fig. 23), procoracoid (fig. 24), cervical vertebra (fig. 26), and dorsal vertebra (fig. 27).

Locality and Age—V114, Grant County, Oklahoma; Garber Formation; Early Permian.

Comments—All are missing except the three with OMNH numbers.

Figured specimen—OUSM 15166, gastralia; Simpson (1976, fig. 25).

Locality and Age—V175, Tillman County, Oklahoma; Garber Formation; Early Permian.

Comments—Missing.

Edaphosauridae

Naosaurus sp. (= *Edaphosaurus* sp.)

Figured specimen—OMNH 00621 (no number given in original article), fragment of neural spine; Smith (1927, fig. 28).

Locality and Age—V114, Grant County, Oklahoma; Garber Formation; Early Permian.

Caseidae

Cotylorhynchus romeri Stovall, 1937a, p. 308

***Holotype**—OMNH 00637 (no number originally given by Stovall, 1937a, but the type formerly was numbered OUSM 4-0-S1 and S-2052); partial right side of skull and right mandible, interclavicle, and left manus of an immature individual; Stovall (1937a, pl. 1), Romer and Price (1940, figs. 7, 12, 40), Olson (1968, pl. 2, fig. B).

Locality and Age—V134, Logan County, Oklahoma; Hennessey Formation; Early Permian.

Comments—Olson (1968) noted that the type included a right manus as well as the left one. Although he located a right manus numbered 4-0-S1 (the same as the type) at that time, only the left was relocated during the collection renovation of 1988–93.

Figured specimen—OMNH 00655 (4-0-[S]6), complete skeleton; Stovall and others (1966, figs. 1, 2, 7, 13); Stovall and Brown (1954, unnumbered figure on p. 292).

Locality and Age—V386, Cleveland County, Oklahoma; Hennessey Formation; Early Permian.

Figured specimens—OMNH 00630 (4-0-[S]10), miscellaneous bones and fragments; Stovall and others (1966, fig. 14). OMNH 00605 (UOSM 4-0-S2, 1249), tail, pelvis, and hind limb; Olson (1968, pl. 3, fig. G).

Locality and Age—V80, Cleveland County, Oklahoma; Hennessey Formation; Early Permian.

Figured specimen—OUSM 4-1-S2, illustration shows articulated left manus and forelimb bones; Stovall and others (1966, fig. 14). "OUSM, number not certain," sacral vertebra; Olson (1968, pl. 3, fig. I).

Locality and Age—Unknown, probably Cleveland County, Oklahoma; Hennessey Formation; Early Permian.

Comments—Missing.

Figured specimens—OMNH 01673 (UOSM 4-0-S7, 1251), complete mounted skeleton; OMNH 00627 ("probably UOSM 4-0-S16"), miscellaneous skeletal elements (pelvis illustrated); Olson (1968, pls. 1 and 3, fig. J).

Locality and Age—V81, Cleveland County, Oklahoma; Hennessey Formation; Early Permian.

Figured specimens—OMNH 04329 (OUSM 4-1-S5), skull and jaws; OMNH 01704 (number not given in figure legend, formerly OUSM 4-1-S10), skull and jaws; Olson (1968, pl. 2, figs. C, E, F); Romer and Price (1940, pls. 18, 19).

Locality and Age—V381, Cleveland County, Oklahoma; Hennessey Formation; Early Permian.

Figured specimen—Reconstruction of complete skeleton based on several OMNH specimens; Carroll (1988, fig. 17-12e); reconstruction of right lower jaw based on "two specimens [numbers not given] in the University of Oklahoma collections;" Romer and Price (1940, fig. 12).



AVES

Family indeterminate

gen. et sp. indet.

Figured specimen—OMNH 09960 (10-21-S4), proximal half of right femur; Savage (1939, pl. III).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Anseriformes

genus and sp. indet.

Figured specimen—OMNH 16537 (S-4004), phalanx 1; Strain (1937, pl. II, fig. 4).

Locality and Age—V703, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Comments—Strain (1937, p. 69) identified this specimen as "Family GALLINULOIDES Genus and sp. indet." It is a first phalanx of the left pedal digit IV.

Galliformes

Parapavo oklahomensis (= *Meleagris gallopavo*)

Figured specimen—S-4003, tarsometatarsus with spur core; Strain (1937, pl. II, fig. 5).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Comments—Missing.

Passeriformes

Family indeterminate

genus and species indet.

Figured specimen—S-4004, distal tibia; Strain (1937, pl. II, fig. 3).

Locality and Age—V703, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Comments—Missing.



MAMMALIA

Multituberculata

Cimolomyidae

Cimolomys clarki

Figured specimen—OMNH 25014, right M¹; Rowe and others (1992, fig. 6G); Weil (1992, fig. 5).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Meniscoessus sp.

Figured specimens—OMNH 25037, posterior fragment of left P₄; OMNH 22667, anterior fragment of left P₄; OMNH 25061, left M₁; Weil (1992, fig. 5).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

?Cimolomyid, gen. and sp. indet.

Figured specimen—OMNH (OUSM) 20005, left M₂ in fragment of dentary; Eaton (1987, fig. 65).

Locality and Age—V4, Garfield County, Utah; Straight Cliffs Formation; Late Cretaceous (Turonian).

Cimolodontidae

Cimolodon cf. *C. electus*

Figured specimens—OMNH 25042, left P₄; Rowe and others (1992, fig. 6E, F); Weil (1992, fig. 6). OMNH 25005, left P₄; OMNH 22692, left P₄; Weil (1992, fig. 6).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Cimolodon sp.

Figured specimens—OMNH 25062, left M₁; OMNH 22673, right M₂; OMNH 25035, left M₂; Weil (1992, fig. 6).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Cimolodontid, n. gen. and sp.

Figured specimen—OMNH (OUSM) 20000, right M₁; Eaton (1987, fig. 52).

Locality and Age—V4, Garfield County, Utah; Straight Cliffs Formation; Late Cretaceous (Turonian).

Multituberculata incertae sedis

Cimexomys sp.

Figured specimens—OMNH (OUSM) 20010, right P₄; OMNH (OUSM) 20006, right M₁; Eaton (1987, fig. 66).

Locality and Age—V5, Garfield County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Paracimexomys sp.

Figured specimens—OMNH 25058, right M₁; OMNH 25060, right M¹; OMNH 26030, right M²; Weil (1992, fig. 7).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Paracimexomys n. sp.

Figured specimens—OMNH (OUSM) 20001, left P₄; OMNH 20003, right M²; OMNH 20002, right M₁; and OMNH 20004, right M₂; Eaton (1987, figs. 52, 53).

Locality and Age—V4, Garfield County, Utah; Straight Cliffs Formation; Late Cretaceous (Turonian).

Paracimexomys n. sp. C

Figured specimen—OMNH (originally cited as OUSM) 20008, right M₁; Eaton (1987, fig. 68).

Locality and Age—V5, Garfield County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Multituberculata incertae sedis,
gen. et sp. nov.

Figured specimen—OMNH 25019, right M¹; Weil (1992, fig. 7).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Symmetrodonta

Spalacotheriidae

Symmetrodontoides oligodontos

Figured specimen—OMNH 20381, corroded right lower molar, probably M₄ or M₅; Cifelli (1990c, fig. 1).

Locality and Age—V4, Garfield County, Utah; Straight Cliffs Formation; Late Cretaceous (Turonian).

Aegialodontia

Deltatheridiidae

Unnamed genus and species

Figured specimen—OMNH 20386, M₄₇; Cifelli (1990c, fig. 2).

Locality and Age—V4, Garfield County, Utah; Straight Cliffs Formation; Late Cretaceous (Turonian).

Tribosphenida, Order and Family uncertain

genus and species undetermined

Figured specimens—OMNH 20036, upper molar fragment; OMNH 20030, upper molar fragment; OMNH 20379, M_{last}; OMNH 20372, broken lower molar; Cifelli (1990c, fig. 2).

Locality and Age—V4, Garfield County, Utah; Straight Cliffs Formation; Late Cretaceous (Turonian).

genus and species undetermined

Figured specimen—OMNH 25205, right upper molariform tooth; Cifelli (1993, fig. 1).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Paleomolops langstoni Cifelli, in press

***Holotype**—OMNH 22789, right lower molar; Cifelli (in press, fig. 1); Rowe and others (1992, fig. 6A, as *Tribotheria incertae sedis*).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Figured specimens—OMNH 22794, right M^{last} ; OMNH 22724, left M^{last} ; Cifelli (in press, fig. 1).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Kokopellia juddi Cifelli, 1993, p. 9413

***Holotype**—OMNH 26361, left lower jaw with P_2 – M_4 ; Cifelli (1993, fig. 1).

Locality and Age—V695, Emery County, Utah; Cedar Mountain Formation; Early Cretaceous (Albian).

Tribotheria incertae sedis

See *Palaeomolops langstoni*.

Marsupialia

Peradectidae

Aenigmadelphys archeri Cifelli and Johanson, in press

***Holotype**—OMNH 23328, left M^3 ; Cifelli and Johanson (in press, fig. 1).

Locality and Age—V6, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Figured specimens—OMNH 22898, M^1 ; OMNH 26169, M^1 ; OMNH 20120, M^2 ; OMNH 20160, M^2 ; OMNH 23460, M^3 ; OMNH 23475, M^4 ; and OMNH 23321, M^4 ; Cifelli and Johanson (in press, fig. 1). OMNH 20120; OMNH 20160; OMNH 20430, P_2 ; OMNH 20588, P_3 ; OMNH 20531, M_3 ; OMNH 20612, M_4 ; Cifelli (1990a, fig. 2).

Localities and Age—V6 and V9, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Comments—OMNH 20120, 20160, 20430, 20588, 20531, and 20612 were illustrated by Cifelli (1990a, fig. 2) and originally identified as *Iqualadelphis lactea*.

Protalphadon wahweapensis Cifelli, 1990a, p. 299

Holotype—OMNH 20115, left M^3 ; Cifelli (1990a, fig. 3).

Locality and Age—V6, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Figured specimens—OMNH 20202, P^3 ; OMNH 20587, M^2 ; OMNH 20536, fragment of dentary with M_1 – M_3 ; OMNH 20599, M_2 or M_3 ; Cifelli (1990a, fig. 3).

Localities and Age—V6 and V9, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Protalphadon crebreforme Cifelli, 1990b, p. 321

Holotype—OMNH 20667, labial half of left M^2 ; Cifelli (1990b, fig. 2).

Locality and Age—V8, Garfield County, Utah; Wahweap Formation; Late Cretaceous (Aquilan).

Alphadon attaragos

Figured specimens—OMNH 20152, right M^1 ; OMNH 20147, left M^2 ; OMNH 20143, right M_1 ; OMNH 20146, left M_2 ; OMNH 20145, left M_4 ; Cifelli (1990a, fig. 10).

Locality and Age—V5, Garfield County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Alphadon cf. A. halleyi

Figured specimens—OMNH 22726, right maxilla fragment with M^{1-2} ; OMNH 22723, right M^4 ; OMNH 22760, left M_1 ; OMNH 22757, left M_2 ; OMNH 25172, left M_3 ; and OMNH 25199, left M_4 ; Cifelli (in press, fig. 5). OMNH 22726 was illustrated by Rowe and others (1992, fig. 6C), who incorrectly listed it as OMNH 22724.

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Comments—OMNH 22726 was referred by Rowe and others (1992) to *Alphadon cf. A. wilsoni*.

Alphadon perexiguus Cifelli, in press

Holotype—OMNH 22721, left M^2 ; Cifelli (in press, fig. 3).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Comments—OMNH 22721 was illustrated by Rowe and others (1992, fig. 6B) as *Alphadon* sp.

Figured specimens—OMNH 22728, left M^1 ; OMNH 25211, right M^3 ; OMNH 25212, right M^4 ; OMNH 22761, left M_1 ; OMNH 25201, right M_2 ; OMNH 25181, left M_3 ; OMNH 22759, left M_4 ; and OMNH 25156, right dP_3 ; Cifelli (in press, fig. 3).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Alphadon sahnii

Figured specimens—OMNH 20114, left M^2 or M^3 ; OMNH 20116, left M^2 or M^3 ; OMNH 20598, left M_{27} ; Cifelli (1990a, fig. 8).

Locality and Age—V6, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Alphadon cf. A. sahnii

Figured specimens—OMNH 20186, P^2 ; OMNH 20185, P^3 ; OMNH 20150, left M^2 or M^3 ; OMNH 20144, M_1 ; OMNH 20138, M_2 ; OMNH 20139, M_3 ; OMNH 20140, M_4 ; Cifelli (1990a, fig. 9).

Locality and Age—V5, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Figured specimens—OMNH 25221, left M^2 ; OMNH 25219, left M^3 ; OMNH 25204, left M^4 ; OMNH 22733, left M_3 or M_2 ; and OMNH 25200, left M_4 ; Cifelli, in press, fig. 6.

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Alphadon cf. *A. wilsoni*

Comments—See *Alphadon* cf. *A. halleyi*.

Alphadon sp.

Comments—See *Alphadon perexiguus*.

Turgidodon lillegraveni Cifelli, 1990a, p. 303

Holotype—OMNH 20540, fragment of right maxilla with M² and labial half of M³; Cifelli (1990a, fig. 4).

Locality and Age—V9, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Figured specimens—OMNH 20572, P²; OMNH 20118, left M³; OMNH 20593, left M⁴; OMNH 20437, right P₃; Cifelli (1990a, fig. 4).

Localities and Age—V6 and V9, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Turgidodon cf. *T. lillegraveni*

Figured specimen—OMNH 20117, fragment of right maxilla with M²; Cifelli (1990a, fig. 6).

Locality and Age—V6, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Figured specimens—OMNH 22742, left M²; OMNH 25203, right M² or M³; Cifelli (in press, fig. 7).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Turgidodon madseni Cifelli, 1990a, p. 306

Holotype—OMNH 20538, right maxilla with M¹–M⁴; Cifelli (1990a, fig. 7).

Locality and Age—V9, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Figured specimens—OMNH 20594, M⁴; OMNH 20533, jaw fragment with P₃; OMNH 20600, M₁; OMNH 20530, jaw fragment with M₃; Cifelli (1990a, fig. 7).

Localities and Age—V6 and V9, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Peradectidae, genus and species undetermined

Figured specimens—OMNH 22725, right ?M¹; OMNH 22730, right M³; OMNH 25206, right M⁴; and OMNH 25164, right M_x; Cifelli (in press, fig. 8).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Pediomyidae

Iqualadelphus lactea

Comments—See *Aenigmadelphus archeri*.

Family uncertain

Marsupialia, unnamed genus and species

Figured specimens—OMNH 20373, left M³; OMNH 20380, right lower molar; Cifelli (1990c, fig. 4).

Locality and Age—V4, Garfield County, Utah; Straight Cliffs Formation; Late Cretaceous (Turonian).

Didelphidae

gen. et sp. indet.

Figured specimen—OMNH 15316 (OMP 12-25-S1), canine; Savage (1939, pl. III, as ?*Didelphys* sp.; 1941, pl. 2, fig. 7).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—The specimen does not appear to belong to an opossum; it may represent the deciduous canine of *Machairodus*.

?Marsupialia

Family uncertain

Iugomortiferum thoringtoni Cifelli, 1990b, p. 322

***Holotype**—OMNH 20936, right upper molariform tooth, probably M¹; Cifelli (1990b, fig. 3).

Locality and Age—V2, Garfield County, Utah; Wahweap Formation; Late Cretaceous (Aquilan).

Figured specimens—OMNH 20928, right M₁; OMNH 20705, left lower molar; OMNH 20136, left M₄; Cifelli (1990b, fig. 3).

Localities and Age—V2 and V8, Garfield County, Utah; Wahweap Formation; Late Cretaceous (Aquilan).

Anchistodelphys archibaldi Cifelli, 1990b, p. 325

***Holotype**—OMNH 20133, left M³; Cifelli (1990b, fig. 4).

Locality and Age—V11, Garfield County, Utah; Wahweap Formation; Late Cretaceous (Aquilan).

Figured specimen—OMNH 20968, left M²; Cifelli (1990b, fig. 4).

Locality and Age—V49, Kane County, Utah; Wahweap Formation; Late Cretaceous (Aquilan).

?*Anchistodelphys delicatus* Cifelli, 1990c, p. 337

Holotype—OMNH 20374, left M² or M³; Cifelli (1990c, fig. 3).

Locality and Age—V4, Garfield County, Utah; Straight Cliffs Formation; Late Cretaceous (Turonian).

Figured specimens—OMNH 20375, left M⁴; OMNH 20034, right M⁴; OMNH 20384, lower molar; OMNH 20377, lower molar; Cifelli (1990c, fig. 3).

Locality and Age—V4, Garfield County, Utah; Straight Cliffs Formation; Late Cretaceous (Turonian).

Eutheria

Order and Family uncertain

Gallolestes agujaensis Cifelli, in press

Holotype—OMNH 22788, right M₁ or M₂ in fragment of dentary; Cifelli (in press, fig. 9), Rowe and others (1992, fig. 6D).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Comment—OMNH 22788 was illustrated by Rowe and others (1992, fig. 6D) as *Gallolestes* sp.

Figured specimens—OMNH 22792, right M_1 ; OMNH 25108, left M^1 or M^2 ; and OMNH 25218, right M^3 ; Cifelli (in press, fig. 9).

Locality and Age—V58, Brewster County, Texas; Aguja Formation; Late Cretaceous (Judithian).

Gallolestes sp.

Comments—See *Gallolestes agujaensis*.

Avitotherium utahensis

Figured specimens—OMNH 20424, right M_1 or M_2 ; OMNH 20532, fragment of left dentary with P_3 ; Cifelli (1990d, fig. 6).

Localities and Age—V6 and V9, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Insectivora

Leptictidae

Gypsonictops sp. A

Figured specimen—OMNH 20131, lingual half of right M^1 or M^2 ; Cifelli (1990d, fig. 2).

Locality and Age—V9, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Gypsonictops sp. B

Figured specimens—OMNH 20539, lingual half of M^1 or M^2 ; OMNH 20428, left M_1 or M_2 ; Cifelli (1990d, fig. 2).

Locality and Age—V9, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Gypsonictops sp. C

Figured specimen—OMNH 21985, right M_1 ; Cifelli (1990d, fig. 2).

Locality and Age—V5, Garfield County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Nyctitheriidae

Paranyctoides sp. A

Figured specimen—OMNH 21983, right M_1 or M_2 ; Cifelli (1990d, fig. 3).

Locality and Age—V11, Garfield County, Utah; Wahweap Formation; Late Cretaceous (Aquilan).

Figured specimens—OMNH 20473, left upper molar; OMNH 20648, left M_1 or M_2 ; Cifelli (1990d, figs. 4, 5).

Locality and Age—V9, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Figured specimen—OMNH 21982, P^{last} ; Cifelli (1990d, fig. 4).

Locality and Age—V6, Kane County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Paranyctoides sp. B

Figured specimens—OMNH 20180, right $P^{penultimate}$; OMNH 21978, fragment of left maxilla with P^{last} ; OMNH 21977, left M^{17} ; Cifelli (1990d, fig. 4).

Locality and Age—V5, Garfield County, Utah; Kaiparowits Formation; Late Cretaceous (Judithian).

Xenarthra

Mylodontidae

Myiodon? (= *Glossotherium*) sp.

Figured specimen—OMNH 16508 (S-439), cervical vertebra; Strain (1937, pl. IV fig. 6).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Megalonychidae

Megalonychinae, gen. et sp. indet.

Figured specimens—OMNH 15314 (OMP 41-26-S1), lower caniniform tooth; Savage (1939, pl. III, fig. 7; 1941, pl. 2, fig. 5). OMNH 15315 (OMP 41-25-S2), upper caniniform tooth; Savage (1939, pl. III, fig. 6; 1941, pl. 2, fig. 6, as OMP 41-BE-S2).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Megalonyx hogani Stovall, 1940, p. 140

(= *Megalonyx jeffersonii* [Desmarest], 1822)

Holotype—OMNH 04326 (listed by Stovall, 1940, p. 140, as 41-0-S1), skull, upper right third cheek tooth, pelvis, scapula, and rib fragments; Stovall (1940, fig. 2 and pl. I).

Locality and Age—V242, Harmon County, Oklahoma; Quaternary alluvium; late Pleistocene (Rancholabrean).

Comments—The occlusal view of the cheek tooth (Stovall, 1940, fig. 5A) is reversed.

Megalonyx jeffersonii oklahomensis Savage, 1946, p. 388

Holotype—OMNH 09407 (listed by Savage, 1946, p. 388 and fig. 1, as 41-4-S3), complete mandible; Savage (1946, figs. 1, 2).

Locality and Age—V685, Grant County, Oklahoma; Quaternary alluvium; late Pleistocene (Rancholabrean).

Megalonyx sp.

Figured specimen—OMNH 16511 (571), caudal vertebra; Strain (1937, pl. V, fig. 3).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Glyptodontidae

Glyptotherium arizonae

Figured specimen—OMNH 02112, improperly reconstructed carapace; Gillette and Ray (1981, fig. 85).

Locality and Age—V423, Tillman County, Oklahoma; Quaternary alluvium; early Pleistocene (Irvingtonian).

Glyptodon petaliferous?

Comments—See Cetacea.

Creodonta

Hyaenodontidae

Ischnognathus savagei Stovall, 1948a, p. 85

***Holotype**—OMNH 02994 (listed by Stovall, 1948a, p. 86 and pl. 1, fig. 2, as MUO 32-4-S1), symphyseal region of mandible; Stovall (1948a, pl. 1, fig. 2).

Locality and Age—V459, Presidio County, Texas; Chambers Tuff Formation; early Oligocene (Chadronian).

Carnivora

Felidae

Machaerodus catocopis

Figured specimens—OMNH 15171 (OMP 36-4-S4), fragment of left dentary with P_3 – M_1 ; Savage (1939, pl. IV, fig. 10; 1941, pl. 1, fig. 8). OMNH 15180 (OMP 36-25-S3), root of C^1 ; OMNH 15181 (OMP 36-25-S2), C^1 ; OMNH 15182 (OMP 36-25-S4), deciduous C^1 ; OMNH 15183 (OMP 36-26-S1), C_1 ; OMNH 15184 (OMP 36-25-S6), right P^3 ; OMNH 15185 (OMP 36-25-S5), left P^4 ; OMNH 15186 (OMP 36-26-S3), M_1 ; OMNH 15187 (OMP 36-25-S7), right P^4 ; OMNH 15188 (OMP 36-17-S2), metapodial; Savage (1939, pls. IV, VIII).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—Two of these specimens illustrated by Savage (1939), OMNH 15186 and 15187, are now identified as *?Felis* sp.

Machaerodus (Heterofelis) coloradensis

Figured specimen—OMNH 15189 (OMP 36-26-S2), left M_1 ; Savage (1939, pl. IV, figs. 7, 7A; 1941, pl. 1, fig. 9).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Nimravides thinobates

Figured specimens—OMNH 15318 (OUSM 36-4-S13), complete mandible (left half illustrated); OMNH 03331 (36-4-S15), right lower jaw; Kitts (1958a, pl. 1).

Locality and Age—V54, Ellis County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—The right half of the complete mandible (OMNH 15318) is present in the collection, but the left half (the half that was illustrated) is missing.

Smilodon californicus (= *S. fatalis*)

Figured specimen—OMNH 09406 (OUSM 36-1-S7), skull elements and fragments (left premaxilla with I^3 , tip of upper canine, and left maxilla with P^3 ; Kitts (1958b, figs. 2, 3).

Locality and Age—V684, Logan County, Oklahoma; Quaternary alluvium; late Pleistocene (Rancholabrean).

Comments—A portion of the canine fragment is missing.

Albanosmilus? sp.

Figured specimen—OUSM 36-4-S16, fragment of left dentary with P_4 – M_1 ; Kitts (1957, pl. 1).

Locality and Age—V54, Ellis County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—Missing.

Felis proterolyncis Savage, 1941, p. 698

Cotypes—OMNH 15168 and 15170 (these two specimens, originally numbered OMP 36-4-S2 and 36-4-S11, respectively, by Savage [1941, p. 698 and pl. 1, figs. 6, 7; Savage, 1939, pl. V], were called cotypes); 15168 is a right horizontal ramus fragment with P_4 – M_1 ; 15170 is a right horizontal ramus fragment with P_3 – P_4 .

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; late Miocene (Hemphillian).

Felidae, genus and species indet.

Figured specimen—OMNH 16544 (S-476), phalanx 1; Strain (1937, pl. II, fig. 2).

Locality and Age—V527, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Mustelidae

Pliotaxidea nevadensis

Figured specimen—OMNH 09454 (OUSM 2100), right lower jaw; Kitts and Myers (1959, fig. 1).

Locality and Age—V687, Harper County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Mephitinae, genus and species indet.

Figured specimen—OUSM 2032, fragment of right dentary with M_2 – M_3 ; Kitts and Black (1959, fig. 7).

Locality and Age—V663, Roger Mills County, Oklahoma; Ogallala Formation; Miocene (Clarendonian).

Comments—Missing.

Mephitis mephitis

Figured specimen—S-472, left mandibular ramus with C_1 – M_1 ; Strain (1937, pl. II, fig. 1).

Locality and Age—V527, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Comments—Missing.

Canidae

unnamed canid

Figured specimen—OMNH 02953 (MUO 32-2-S2), right maxilla with P^3 – M^2 ; Stovall (1948a, pl. 1, fig. 3).

Locality and Age—V459, Presidio County, Texas; Chambers Tuff Formation; Oligocene (Chadronian).

Comments—A label with this specimen, written by J. Wilson, indicates that it is referable to *Daphoenus lambei*.

Aelurodon (= *Epicyon*)

Figured specimen—OUSM 40-4-S50, right lower jaw; Kitts (1964, fig. 1).

Locality and Age—V663, Roger Mills County, Oklahoma; Ogallala Formation; Miocene (Clarendonian).

Comments—Missing.

Aelurodon (=Epicyon) mortifer

Figured specimens—OMNH 15174 (OUSM 40-1-S40), right maxilla with P³-M²; OUSM 40-4-S26, left lower jaw with C₁-M₁; Kitts (1957, pl. 1).

Locality and Age—V54, Ellis County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—The lower jaw is missing.

Osteoborus cyonoides

Figured specimens—OMNH 15165 (OMP 40-1-S21), anterior portion of skull and lower jaw; Savage (1939, pl. VI, fig. 1; 1941, pl. 1, fig. 10). OMNH 15201 (OMP 40-2-S5), left premaxilla-maxilla region of skull; OMNH 15197 (OMP 40-4-S25), left dentary with P₄-M₂; OMNH 15198 (OMP 40-17-S31), three metapodials; OMNH 15199 (OMP 40-19-S5), first phalanges; OMNH 15203 (OMP 40-15-S5), right ulna; OMNH 15202 (OMP 40-14-S7), right radius; OMNH 11786 and 15200 (OMP 40-16-S9), left astragalus and calcaneus; Savage (1939, pls. VI-VIII).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Vulpes sp.

Figured specimen—OMNH 08051 (OUSM 2025), left dentary fragment with P₂-P₄; Kitts and Black (1959, fig. 6).

Locality and Age—V663, Roger Mills County, Oklahoma; Ogallala Formation; Miocene (Clarendonian).

Vulpes stenognathus Savage, 1941, p. 694

Cotypes—OMNH 15167 and 15166 (these two specimens, originally numbered OMP 40-4-S24 and 40-4-S10, respectively, by Savage [1939, pl. V; 1941, p. 694 and pl. 1, figs. 4, 5] were called cotypes); 15167 is a right horizontal ramus with P₂-M₂; 15166 is a right horizontal ramus fragment with P₁-P₄.

Paratypes—OMP 40-25-S12, right M¹; Savage (1939, pl. V, fig. 7; 1941, p. 694 and pl. 1, fig. 2); OMP 40-25-S11, right M²; Savage (1939, pl. V, fig. 6; 1941, p. 694 and pl. 1, fig. 3).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; late Miocene (Hemphillian).

Comments—OMP 40-25-S12 and 40-25-S11 are missing. Besides those listed above, Savage (1941) listed several other specimens (an additional M², three additional M¹s, and two M₁s) as paratypes but did not give the specimen numbers for them. These specimens probably are present in the collection but cannot be distinguished from the multitude of other, similar specimens from the same locality.

Figured specimen—OMP 40-25-S10, C¹; Savage (1939, pl. V, fig. 4; 1941, pl. 1, fig. 1).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—Missing.

Ursidae

Agriotherium schneideri

Figured specimens—OMNH 09974 (OMP 33-25c-S2), P₁; OMNH 15192 (OMP 33-25a-S1), I³; OMNH 15195 (OMP 33-25d-S7), M²; OMNH 15193 (OMP 33-25d-S1), M¹; OMNH 15194 (OMP 33-25c-S1), P⁴; OMNH 15191 (OMP 33-26d-S3), M₃; OMNH 16190 (OMP 33-4-S1), left dentary with deciduous and permanent teeth; Savage (1939, pl. IX; 1941, pl. 2, figs. 8-14).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—The original of OMNH 15193 is missing; however, a cast is available.

Ursus horribilis nelsoni (= *Ursus americanus*)

Figured specimen—OMNH 10735 (no number given in original article, but formerly numbered 702 and 33-1-S2), skull; Stovall (1936, figs. 1, 2).

Locality and Age—V689, Dewey County, Oklahoma; Quaternary lacustrine(?) deposits; Holocene.

Ursus horribilis oklahomensis (= *Ursus arctos*)

Figured specimen—OMNH 09569 (601), skull; Stovall and Johnston (1935, figs. 2-4).

Locality and Age—V688, Roger Mills County, Oklahoma; Quaternary alluvium; Pleistocene.

Comments—The subspecific epithet "*oklahomensis*" applied to this and the following specimen by Stovall and Johnston (1935, p. 210-211) appears to be a *nomen nudum*.

Figured specimen—546, skull; Stovall and Johnston (1935, fig. 1).

Locality and Age—near Lawton, Comanche County, Oklahoma; Quaternary alluvium; Pleistocene.

Comments—Missing.

Rodentia

Mylagaulidae

Mylagaulus sp.

Figured specimens—OMNH 15311 (OMP 29-25-S5; actually -S52), cheek tooth; OMNH 15312 (OMP 29-26-S2; actually -25-S52), cheek tooth; Savage (1939, pl. III, figs. 1, 2; 1941, pl. 2, figs. 1, 2).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Mylagaulus cf. *M. laevis*

Figured specimens—OMNH 08049 (OUSM 2018a), right P₄; OUSM 2018b, left P₄; OMNH 08048 (OUSM 2019), right P₄; OMNH 08047 (OUSM 2036), shaft of right humerus; OMNH 08046 (OUSM 2016, incorrectly given as 2019), distal end of left humerus; Kitts and Black (1959, figs. 3, 4).

Locality and Age—V663, Roger Mills County, Oklahoma; Ogallala Formation; Miocene (Clarendonian).
Comments—OUSM 2018b was destroyed in the process of serial sectioning for the published illustrations; the serial sections are missing.

Sciuridae

Cynomys ludovicianus

Figured specimen—S-475, left and right dentaries; Strain (1937, pl. V, figs. 5, 6).

Locality and Age—V703, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Comments—Missing.

Castoridae

Dipoides sp.

Figured specimen—OMNH 15313 (OMP 29-26-S3), M₃; Savage (1939, pl. III; 1941, pl. 2, fig. 3).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Heteromyidae

Perognathus cf. *P. pearlettensis*

Figured specimen—OMNH 08050 (OUSM 2022), fragment of left dentary with P₄–M₃; Kitts and Black (1959, fig. 5).

Locality and Age—V663, Roger Mills County, Oklahoma; Ogallala Formation; Miocene (Clarendonian).

Lagomorpha

Leporidae

Hypolagus cf. *H. vetus*

Figured specimen—OMNH 15310 (OMP 29-4-S52), fragment of left dentary with P₂; Savage (1939, pl. III; 1941, pl. 2, fig. 4).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Artiodactyla

Entelodontidae

Suina (= *Brachyhyops wyomingensis*)

Figured specimen—OMNH 02988 (MUO 20-4-S8), fragment of left dentary with M₂–M₃; Stovall (1948a, pl. 2, fig. 9).

Locality and Age—V459, Presidio County, Texas; Chambers Tuff Formation; Oligocene (Chadronian).

Tayassuidae

Platygonus sp.

Figured specimen—S-470, thoracic vertebra; Strain (1937, pl. II, fig. 8).

Locality and Age—V527, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Comments—Missing.

Merycoidodontidae

Merycoidodon culbertsoni (= *Agriochoerus antiquus*)

Figured specimens—OMNH 02960 (MUO 44-4-S41), fragment of right ramus with three teeth; OMNH 02969 (MUO 44-2-S23), fragment of left maxilla with M¹; Stovall (1948a, pl. 2, figs. 4, 6).

Locality and Age—V459, Presidio County, Texas; Chambers Tuff Formation; Oligocene (Chadronian).

Merycoidodon gracilis (= *Mesohippus* sp.)

Figured specimen—OMNH 02957 (MUO 44-4-S38), fragment of left ramus with three teeth; Stovall (1948a, pl. 2, fig. 5).

Locality and Age—V459, Presidio County, Texas; Chambers Tuff Formation; Oligocene (Chadronian).

Leptomerycidae

Leptomeryx? sp.

Comments—See under *Poabromylus kayi* and under *Mesohippus* sp.

Camelidae

Poabromylus kayi

Figured specimen—OMNH 02943 (MUO 22-2-S2), fragment of left maxilla with five teeth; Stovall (1948a, pl. 2, fig. 8); Wilson (1974, fig. 16, as OU 22-2-52).

Locality and Age—V459, Presidio County, Texas; Chambers Tuff Formation; Oligocene (Chadronian).

Comments—Stovall (1948a) mistakenly referred this specimen to the leptomerycid genus *Leptomeryx*?

Megatylopus cf. *M. gigas*

Figured specimens—OMNH 13838 (OMP 21-1-S6), palate; OMNH 13819 (OMP 21-4-S8), mandible; OMNH 15678, 15676, 15679, and 15680 (OMP 21-19-S13 [actually -S39 through -S42]), first phalanges; OMNH 15650 (OMP 21-16-S48 [actually -S53]), calcaneus and astragalus; OMNH 15831 (OMP 21-17-S70), metacarpal; OMNH 15745 (OMP 21-14-15-S2 [actually 21-14-S12]), radioulna; OMNH 15441 (OMP 21-17-S59), metatarsal with articulated navicular, cuboid, and ectomesocuneiform; Savage (1939, pls. XVIII, XIX).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—See also under *Bison* sp.

Pliauchenia sp. (= *Hemiauchenia* sp.)

Figured specimens—OMNH 15682, 15702, and 15705 (OMP 21-19-S12 [actually -S44, -S45, and -S48]), first phalanges; OMNH 15611 and 15566 (OMP 21-16-S47 [actually -S64 and -S65]), calcaneus and astragalus; OMNH 15790 (OMP 21-17-S55), metatarsal; OMP 21-17-S16, metacarpal; Savage (1939, pls. XVIII, XIX).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—OMP 21-17-S16 is missing.

Camel (= *Hemiauchenia macrocephala*)

Figured specimen—OMNH 16559, right dentary; Sellards (1932, pl. 12, fig. 3).

Locality and Age—V423, Tillman County, Oklahoma; Quaternary alluvium; Pleistocene (Irvingtonian).

? *Alticamelus* sp.

Figured specimens—OMNH 15703 and 15704 (OMP 21-19-S14 [actually -S46 and -S47]), first phalanges; OMNH 15803 (OMP 21-17-S56), metatarsal; OMNH 15807 (OMP 21-17-S61), metacarpal; Savage (1939, pls. XVIII, XIX).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Procamelus robustus

Figured specimen—OMNH 16560 (UOM 21-0-S1), skeleton; Stovall and Brown (1954, unnumbered figure on p. 413); Brown and others (1958, p. 605).

Locality and Age—V712, Roger Mills County, Oklahoma; Ogallala Formation; Miocene.

Camelops sp.

Figured specimens—OMNH 16503 (S-55), phalanx 1; OMNH 16507 (S-440), lumbar vertebra; Strain (1937, pl. II, fig. 6; pl. IV, fig. 2).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Camelidae, genus and species indet.

Figured specimen—OMNH 16545 (S-458), mandible fragment with broken cheek tooth; Strain (1937, pl. II, fig. 7).

Locality and Age—V527, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Palaeomerycidae

Pediomeryx hemphillensis

Figured specimens—OMNH 15887 (OMP 23-25d-S1), left M²; OMP 23-26d-S2, M₃; OMP 23-25-S2, P₃; Savage (1939, pl. XIV; 1941, pl. 4, figs. 5–7).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—OMP 23-26d-S2 and 23-25-S2 are missing.

Cervidae

Odocoileus virginianus

Figured specimen—OMNH 16538 (S-474), ungual phalanx; Strain (1937, pl. II, fig. 10).

Locality and Age—V703, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Figured specimens—OMNH 16505 (S-59), antler fragment; OMNH 16506 (S-20), left dentary with P₄–M₃; Strain (1937, pl. II, figs. 12, 13).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Antilocapridae

genus and species undetermined

Figured specimen—OMNH 08045 (OUSM 2007), fragment of left dentary with M₁–M₂; Kitts and Black (1959, fig. 9).

Locality and Age—V663, Roger Mills County, Oklahoma; Ogallala Formation; Miocene (Clarendonian).

Capromeryx altidens

Figured specimens—OMP 24-4-S9, fragment of left dentary with P₂–M₃; OMNH 15317 (OMP 24-4-S8), right dentary with P₃–M₃; Savage (1939, pl. XIII; 1941, pl. 4, figs. 8, 9). OMNH 12721 (OMP 24-20-S1), left pelvis; OMNH 12951 (OMP 24-17-S1), metatarsal; OMNH 12684 (OMP 24-16-S3 and -S4), right tarsus; OMP 24-19-S1, second phalanges; OMNH 12666 and 12667 (OMP 24-19-S2), first phalanges; Savage (1939, pl. XIII).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—OMP 24-4-S9 and 24-19-S1 are missing.

Bovidae

Bison sp.

Figured specimen—OMNH 09570 (OUSM 2074), skull fragments, upper teeth, and lower jaws (left dentary with M₁–M₃ is illustrated); Kitts and Black (1959, pl. II).

Locality and Age—V663, Roger Mills County, Oklahoma; Quaternary alluvium(?); Pleistocene.

Comments—Kitts and Black (1959) mistakenly referred this specimen to the camelid species *Megatylopus gigas*, probably because of the Miocene age of the associated fauna. The occurrence of *Bison* indicates the mixing of Pleistocene elements with the predominantly Clarendonian fauna.

Figured specimen—OMNH 16547 (S-461), first thoracic vertebra; Strain (1937, pl. IV, fig. 3).

Locality and Age—V527, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Figured specimen—S-473, left M²; Strain (1937, pl. IV, fig. 4).

Locality and Age—V704, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Comments—Missing.

Euceratherium bizzelli Stovall, 1937b, p. 451

(= *Euceratherium collinum* Furlong and Sinclair, 1904)

Holotype—OMNH 02123 (listed by Stovall, 1937b, p. 451, as 701); braincase with complete horn cores; Stovall (1937b, figs. 1–3).

Locality and Age—V73, Caddo County, Oklahoma; Quaternary alluvium; Pleistocene.

Comments—This specimen was previously also assigned the number 25-1-S18. At some point after the original publication, the facial portion of the skull was restored in plaster; this has since been removed.

Symbos cavifrons

Figured specimen—OMNH 4280 (S-646), cranial fragment with bases of horn cores; Strain (1937, pl. I, fig. 1).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Ovis canadensis

Figured specimen—OMNH 004257 (OMP 21-1-S28), cast of cranium with horn cores; Stovall (1946, figs. 1, 2).

Locality and Age—V491, San Juan County, New Mexico; Quaternary alluvium; Pleistocene (Rancholabrean).

Comments—The original number for this specimen was actually 25-1-S28. OMNH 004257 consists of plaster casts only. The original cranium was returned to the finder's son, Daniel Sullivan. One cast also was sent to the American Museum of Natural History.

Cetacea

Family indeterminate

genus and species indet.

Figured specimen—OMNH 08894 (S-435), cervical centrum; Strain (1937, pl. IV, fig. 8).

Locality and Age—V675, Calvert County, Maryland; Calvert Formation; Miocene.

Comments—Strain (1937, p. 63) mistakenly believed this specimen originated from Pleistocene deposits in Grady County, Oklahoma, and identified it as belonging to "*Glyptodon petaliferous?*".

Odontoceti

Family indeterminate

genus and species indet.

Figured specimen—OMNH 09116 (S-438), atlas; Strain (1937, pl. V, fig. 1).

Locality and Age—V675, Calvert County, Maryland; Calvert Formation; Miocene.

Comments—Strain (1937, p. 63) mistakenly believed this specimen originated from Pleistocene deposits in Grady County, Oklahoma, and identified it as "*Glyptodon petaliferous?*".

Perissodactyla

Equidae

Mesohippus bairdi

Figured specimen—OMNH 02985 (MUO 16-4-S436a, b), right and left jaws; Stovall (1948a, pl. 1, fig. 4).

Locality and Age—V459, Presidio County, Texas; Chambers Tuff Formation; Oligocene (Chadronian).

Mesohippus sp.

Figured specimen—OMNH 02957 (MUO 44-4-S38), left ramus with M₁–M₃; Stovall (1948a, pl. 2, fig. 5).

Locality and Age—V459, Presidio County, Texas; Chambers Tuff Formation; Oligocene (Chadronian).

Comments—Stovall (1948a) mistakenly referred this specimen to the oreodont species *Merycoidodon gracilis*.

Figured specimen—OMNH 02983 (MUO 22-25-S2), lower cheek tooth; Stovall (1948a, pl. 2, fig. 7).

Locality and Age—V459, Presidio County, Texas; Chambers Tuff Formation; Oligocene (Chadronian).

Comments—Stovall (1948a) mistakenly referred this specimen to *Leptomeryx?* sp.

Calippus (= *Astrohippus*) *ansae*

Figured specimens—OMNH 49773 (OMP 16-4-S58), left dentary fragment with P₂–M₃; OMNH 13342 (OMP 16-25-S4), left maxilla with P²–M³; Savage (1939, pl. X; 1941, pl. 3, figs. 6, 7).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Neohipparion sp.

Figured specimen—OUSM 2071, upper molar; Kitts and Black (1959, fig. 9).

Locality and Age—V663, Roger Mills County, Oklahoma; Ogallala Formation; Miocene (Clarendonian).

Comments—Missing.

Neohipparion eurystyle

Figured specimens—OMP 16-25-S42, right upper cheek tooth; OMP 16-25c-S42, left upper cheek tooth; OMP 16-26-S19, right lower cheek tooth; OMP 16-26c-S19, right lower premolar; Savage (1941, pl. 4, figs. 1–4).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—All these specimens are missing.

Nannippus cf. *N. gratus* (= *Pseudhipparion* cf. *P. gratum*)

Figured specimens—OMNH 08052 (OUSM 2012), upper cheek tooth; OMNH 08044 (OUSM 2000), left P₄–M₁; Kitts and Black (1959, fig. 8).

Locality and Age—V663, Roger Mills County, Oklahoma; Ogallala Formation; Miocene (Clarendonian).

Nannippus lenticulare (= *N. ingenuus*)

Figured specimens—OMNH 15852 (OMP 16-25d-S43), right upper cheek tooth; OMP 16-25c-S43, left upper cheek tooth; OMP 16-25c-S43, left P⁴; OMNH 15851 (OMP 16-26-S20), left M₃; OMNH 09401 (OMP 16-4-S59), left dentary fragment with P₂–M₂; Savage (1941, pl. 3, figs. 1–5).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—Two specimens, both numbered OMP 16-25c-S43 are missing.

Pliohippus (= *Dinohippus*) *interpolatus*

Figured specimens—OMNH 15835 (OMP 16-1-S1 [actually 16-1-S12]), skull; OMNH 15833 (OMP 16-2-S2 [actually 16-2-S12]), palate with deciduous cheek teeth; OMNH 12704 (OMP 16-4-S58), left dentary with P_2 - M_3 ; OMNH 15834 (OMP 16-2-S5 [actually -S20]), palate; Savage (1939, pl. XV).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Equus complicatus

Figured specimens—OMNH 16529 (S-450), left lower cheek tooth; OMNH 16530 (S-450), left lower cheek tooth; OMNH 16531 (S-445), right upper cheek tooth; OMNH 16532 (S-445), left upper cheek tooth; OMNH 16533 (S-450), right lower cheek tooth; OMNH 16534 (S-450), right lower cheek tooth; OMNH 16535 (S-450), left lower cheek tooth; Strain (1937, pl. VIII, figs. 1-4, 8-10).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Equus cf. *E. complicatus*

Figured specimen—OMNH 16551 (S-457), mandible fragments with seven cheek teeth; Strain (1937, pl. V, fig. 9).

Locality and Age—V527, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Equus excelsus

Figured specimens—OMNH 16524 (S447); OMNH 16525 (S-447); and OMNH 16526 (S-447), right upper cheek teeth; OMNH 16527 (S-449), left M_3 ; OMNH 16528 (S-447), right M^3 ; Strain (1937, pl. VII, figs. 7-11).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Figured specimen—OMNH 16556 (S-453), right M^3 ; Strain (1937, pl. VIII, fig. 5).

Locality and Age—V527, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Equus laurentius

Figured specimens—OMNH 16555 (S-452), right M^3 ; OMNH 16557 (S-452), left M^2 ; Strain (1937, pl. VII, fig. 1 and pl. VIII, fig. 6).

Locality and Age—V527, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Figured specimens—OMNH 16519 (S-446) and OMNH 16520 (S-446), left upper cheek teeth; OMNH 16522 (S-448) and OMNH 16523 (S-448), left lower cheek teeth; Strain (1937, pl. VII, figs. 2, 3, 5, 6 and pl. VIII, fig. 11).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Equus cf. *E. niobrarensis*

Figured specimen—OMNH 16549 (S-551), right upper cheek tooth; Strain (1937, pl. V, fig. 2).

Locality and Age—V527, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Equus pectinatus

Figured specimen—OMNH 16521 (S-444), right upper cheek tooth; Strain (1937, pl. VII, fig. 4).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Equus sp.

Figured specimens—OMNH 16546 (S-465), cervical vertebra; OMNH 16548 (S-464), thoracic vertebra; OMNH 16550 (S-456), right dentary fragment with M_2 - M_3 ; OMNH 16552 (S-460), left metacarpal; OMNH 16553 (S-460), left metatarsal; OMNH 16554 (S-462), left distal tibia and associated astragalus; OMNH 16558 (S-454), right upper cheek tooth; Strain (1937, pl. IV, figs. 1, 5; pl. V, fig. 8; pl. VI, figs. 4, 5, 7, 10; and pl. VIII, fig. 7).

Locality and Age—V527, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Figured specimens—OMNH 16509 (S-441), lumbar vertebra; OMNH 16510 (S-436), axis; OMNH 16513 (S-433), right metacarpal; OMNH 16514 (S-432), phalanx 1; OMNH 16515 (S-56), phalanx 1; OMNH 16516 (S-434), articulated thoracic vertebra seven through fourteen; OMNH 16517 (S-436), axis; OMNH 16518 (S-437), right astragalus; Strain (1937, pl. IV, figs. 7, 9; pl. VI, figs. 1-3, 6, 9, 11).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Figured specimen—OMNH 16539 (S-476), right calcaneus; Strain (1937, pl. VI, fig. 8).

Locality and Age—V703, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Brontotheriidae

Menodus bakeri Stovall, 1948a, p. 89

Holotype—No holotype was designated. In the original description, Stovall listed "a lower jaw, which lacked only the incisors of being complete, about 12 vertebrae, several damaged ribs, an almost complete femur, and a few foot and toe bones." No indication is given as to whether this collection of skeletal parts was actually associated. The mandible lacking incisors (MUO 18-4-S17; now OMNH 16561) was illustrated (Stovall, 1948a, pl. 1, fig. 7) with a caption reading "Mandible of *Menodus bakeri* sp. nov." and can be considered to be the holotype.

Locality and Age—Among the Presidio County, Texas, materials collected by Stovall, two localities apparently are involved, although only one is mentioned in Stovall (1948a). The two localities are:

V459; field loc. 40-III-1 (on paper field labels and inked directly onto some specimens). This should be

the locality shown on Stovall's (1948a) map. According to Wilson (Wilson and others, 1968; Wilson, 1971, 1974), the site is incorrectly plotted on Stovall's map. In addition, a small scrap of paper that was placed with the tapir specimens (*Colodon stovalli* Wilson and Schiebout) from this locality and handwritten by Wilson states that one of Stovall's figured specimens (1948a, identified as *Protapirus* sp.) fits on Texas Memorial Museum 40206-37. As the paper states, "this proves that the OU party collected near Big Cliff and not near tunnel road as shown by Stovall. —J. A. W., Oct. 1980." The site is in the Chambers Tuff Formation of the Vieja Group.

V460; field loc. 40-III-2. This locality is not mentioned or shown on Stovall's (1948a) map. A note in Stovall's handwriting, found with some of the Trans-Pecos specimens, mentions "B. B. [Big Bend] ... 40-III-2 Van Horn Texas." The town of Van Horn is in Culberson County, Texas, several miles to the north of 40-III-1. The site presumably is in the Vieja Group.

It cannot be determined from Stovall's description of *Menodus bakeri* whether specimens of this new species came from one or both localities. The note with specimens 40-III-2 reads "misc. ribs and vert. frags many of which fit other pieces." Only one of the many Trans-Pecos specimens, a nearly complete femur, is actually inked 40-III-2, although a few vertebrae are inked with "III-1-2-40." Thus, it is unclear whether these materials represent one individual or several. A few redundant elements (2 axis vertebrae, 3 left unciforms) occur among the materials, but, because most are not labeled with 40-III-1 or 40-III-2, it is not possible to clarify the situation by referring to field numbers.

Comments—The mandible actually lacks more than its incisors. As can be seen in the illustration (Stovall, 1948a, pl. 1, fig. 7), all the premolars also are missing. However, the right P_2 and P_3 shown in Stovall (1948a, pl. 1, fig. 9), as well as one-half of the right P_4 (not illustrated) have been fitted with plaster onto this mandible since the illustrations were made. Although these premolars are less worn than the molars, there seems to be an original fracture-contact between the base of the posterior root of the P_3 and its root remnant within the mandible. The premolars have the following old catalog numbers and field number written on them: P_2 19-26-S69 (not 19-2-S8 as is indicated in the caption to pl. 1, fig. 9); P_3 19-26-S68; P_4 40-III-1 and 19-26-S67. Since Stovall's (1948a) drawing was made, the canine has been lost from the mandible.

M. [sic] bendi Stovall, 1948a, p. 91

***Holotype?**—OMNH 02991 (MUO 19-2-S8), associated maxilla and left series of mandibular teeth; Stovall (1948a, pl. 1, figs. 8, 9).

Locality and Age—V459?, Presidio County, Texas; Chambers Tuff Formation(?); Oligocene (Chadronian).

Comments—In the same paper as that mentioned under *Menodus bakeri*, Stovall (1948a, p. 91 and pl. 1, figs. 8 and 9) discussed a second kind of titanotheres that he apparently intended to name as a new genus and species. He illustrated two pieces (both given the number MUO 19-2-S8), presumed to have been associated. The specimen consists of a maxillary fragment with broken P^4 – M^2 (fig. 8; now OMNH 02991) and associated "almost complete series of teeth from the lower left side of the mandible" ($P_{2,3}$ shown in fig. 9). In the caption for pl. 1, fig. 9, he provided the abbreviated name "*M. bendi* gen. et sp. nov." Measurements for the specimen were provided in the figure captions. No nearly complete series of left mandibular teeth was found during our collection renovation of 1988–93. The P_2 – P_3 shown in pl. 1, fig. 9 have been repaired onto the *Menodus bakeri* mandible (see above) and were not numbered 19-2-S8.

In the text, Stovall (1948a, p. 91) discussed the specimen as "An unidentified titanotheres" without providing the spelling of the intended generic name, designating a holotype specimen (except that only one, which was illustrated and numbered, was involved), or noting which of the localities it originated from (see Locality and Age notes for *Menodus bakeri*, above). In subsequent paragraphs, however, he provided what might be considered the generic and specific diagnosis, differentiating it from *Menodus*.

Helaletidae

Protapirus sp. (= *Colodon stovalli*)

Figured specimens—OMNH 02967 (MUO 17-2-S2a), right and left maxillaries (right illustrated); OMNH 02964 (MUO 17-4-S1), right dentary fragment with M_3 ; OMNH 02965 (MUO 17-4-S2), dentary fragment with molar; Stovall (1948a, pl. 1, figs. 5, 6).

Locality and Age—V459, Presidio County, Texas; Chambers Tuff Formation; Oligocene (Chadronian).

Tapiridae

Tapirus haysii (= *T. veroensis*)

Figured specimens—OMNH 09568 (OUSM 17-2-S1), skull fragment with palate and all upper cheek teeth; Stovall and Johnston (1934b, fig. 1); Strain (1937, pl. II, fig. 11). OMNH 16504 (S-57), left metatarsal III; Strain (1937, pl. II, fig. 9).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Hyracodontidae

Hyracodon petersoni (= *H. primus*)

Figured specimens—OMNH 02956 (MUO 19-4-S55), left dentary with P_4 – M_2 ; OMNH 02992 (MUO 19-4-S56), mandible; Stovall (1948a, pl. 2, figs. 1, 2).

Locality and Age—V459, Presidio County, Texas; Chambers Tuff Formation; Oligocene (Chadronian).

Hyacondon? [sic] sp.

Figured specimen—19-26-S67, left dentary fragment with molar; Stovall (1948a, pl. 2, fig. 3).

Locality and Age—V459, Presidio County, Texas; Chambers Tuff Formation; Oligocene (Chadronian).

Comments—Missing.

Rhinocerotidae

Aphelops sp.

Figured specimen—OUSM 19-25-S50, left upper pre-molar; Kitts (1957, pl. 1, fig. 8).

Locality and Age—V54, Ellis County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—Missing.

Teleoceras cf. *T. fossiger*

Figured specimens—OMNH 04261 (OMP 19-1-S1), skull; OMNH 12976 (OMP 19-4-S24), left ramus; OMNH 12978 (OMP 19-4-S23), right ramus; OMNH 12977 (OMP 19-4-S25), mandible; OMNH 13014 and 13086 (OMP 19-26-S1 [actually 19-27-S134 and -S135]), lower tusks; OMNH 13684, 13657, and 13664 (OMP 19-17-S5 [actually 19-19-S7, 19-19-S5, and 19-19-S4]), metapodials; OMNH 13662 (OMP 19-16-S3), astragalus; Savage (1939, pls. XVI, XVII).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Proboscidea

Gomphotheriidae

Serridentinus (= *Gomphotherium*) sp.

Figured specimen—OUSM 28B-4-S16, left M³; Kitts (1957, pl. 1).

Locality and Age—V54, Ellis County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—Missing.

Mammutidae

Pliomastodon sp.

Figured specimens—OMP 28B-26-S15, lower premolar; OMNH 12883 (OMP 28B-25-S12 [actually 28A-27-S11]), deciduous upper tusk; OMNH 04453 (OMP 28B-25-S13 [actually -27-S67]), upper tusk; OMNH 04454 and 04455 (OMP 28B-4-S4 [actually -S22 and -S23]), two separated rami of a mandible; OMNH 12906 (OMP 28B-24-S14 [actually -27-S69]), tusk; OMP 28B-7-S9, thoracic vertebra; OMNH 04573 (OMP 28B-26-S15 [actually -S48]), M₃; OMP 28B-25-

S15, M²; OMNH 04578 (OMP 28B-25-S16 [actually -S11]), M³; OMNH 04560 (OMP 28B-26-S16 [actually -S23]), M₂; OMNH 04582 (OMP 28B-26-S16 [actually -25-S56]), M₂; OMNH 12882 (OMP 28B-26-S17 [actually -25-S57]), M₁₂; OMNH 04590 (OMP 28B-26-S18 [actually -S47]), P₄₂; OMNH 04556 (OMP 28B-26-S16 [actually -25-S16]), M₂; OMNH 12897 (OMP 28B-26-S18 [actually -25-S2]), P₂₂; Savage (1939, pls. XVI, XX, XXI).

Locality and Age—V52, Texas County, Oklahoma; Ogallala Formation; Miocene (Hemphillian).

Comments—OMP 28B-26-S15, 28B-7-S9, and 28B-25-S15 are missing.

Mastodon (= *Mammut*) *americanus*

Figured specimen—OMNH 04563 (S-443), left M³; Strain (1937, pl. III, fig. 3).

Locality and Age—V527, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Figured specimen—OMNH 16512 (S-529), left tibia and fibula; Strain (1937, pl. V, fig. 4).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Elephantidae

Elephas imperator (= *Mammuthus columbi*)

Figured specimen—OMNH 04387 (UOM 558), pathological left ramus, right femur (ramus illustrated); Stovall and Johnston (1934a, figs. 1, 2).

Locality and Age—V504, Comanche County, Oklahoma; Quaternary alluvium; Pleistocene.

Elephas (= *Mammuthus*) *columbi*

Figured specimen—OMNH 04610 (561), left dM₂; Strain (1937, pl. III, fig. 1).

Locality and Age—V494, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Figured specimen—OMNH 04615 (718), left mandibular ramus; Strain (1937, pl. III, fig. 2).

Locality and Age—V538, Grady County, Oklahoma; Quaternary alluvium; Pleistocene.

Elephas (= *Mammuthus*) *primigenius*

Figured specimen—OMNH 04676 (S-469), tooth fragment; Strain (1937, pl. V, fig. 7).

Locality and Age—Exact locality unknown, possibly vicinity of Chickasha, Oklahoma; Pleistocene.



REFERENCES CITED

- Branson, C. C., 1964, Record of *Edestus* in Oklahoma: Oklahoma Geology Notes, v. 24, p. 210.
- _____, 1965, *Petrodus* in Oklahoma: Oklahoma Geology Notes, v. 25, p. 274–275.
- Brown, H. E.; Monnett, V. E.; and Stovall, J. W., 1958, Introduction to geology: Ginn and Company, Boston, 312 p.
- Brown, H. P.; and Shepard, W. D., 1979, Type specimens in the zoological collections of the Stovall Museum of Science and History: Southwestern Naturalist, v. 24, p. 195–197.
- Camp, C. L.; Welles, S. P.; and Green, Morton, 1953, Bibliography of fossil vertebrates 1944–1948: Geological Society of America Memoir 57, 465 p.
- Carlson, K. J., 1966, The skull morphology and estivation burrows of the Permian lungfish *Gnathorhiza serrata*: University of Chicago unpublished Ph.D. dissertation, 92 p.
- _____, 1968, The skull morphology and estivation burrows of the Permian lungfish, *Gnathorhiza serrata*: Journal of Geology, v. 76, p. 641–663.
- Carpenter, K. J.; and McIntosh, J. S. [in press], Upper Jurassic sauropod babies from the Morrison Formation, in Carpenter, K.; Hirsch, K.; and Horner, J. (eds.), Dinosaur eggs and babies: Cambridge University Press, New York.
- Carroll, R. L., 1988, Vertebrate paleontology and evolution: W. H. Freeman and Company, New York, 698 p.
- Carroll, R. L.; and Gaskill, Pamela, 1978, The Order Microsauria: Memoirs of the American Philosophical Society, v. 126, 211 p.
- Case, E. C., 1902, On some vertebrate fossils from the Permian beds of Oklahoma, in Van Vleet, A. H. (ed.), Second biennial report, Department of Geology and Natural History, Territory of Oklahoma: State Capital Company, Guthrie, p. 62–68.
- _____, 1907, Revision of the Pelycosauria of North America: Carnegie Institution of Washington Publication No. 55, 176 p.
- Cifelli, R. L., 1990a, Cretaceous mammals of southern Utah. I.—Marsupials from the Kaiparowits Formation (Judithian): Journal of Vertebrate Paleontology, v. 10, p. 295–319.
- _____, 1990b, Cretaceous mammals of southern Utah. II.—Marsupials and marsupial-like mammals from the Wahweap Formation (early Campanian): Journal of Vertebrate Paleontology, v. 10, p. 320–331.
- _____, 1990c, Cretaceous mammals of southern Utah. III.—Therian mammals from the Turonian (early Late Cretaceous): Journal of Vertebrate Paleontology, v. 10, p. 332–345.
- _____, 1990d, Cretaceous mammals of southern Utah. IV.—Eutherian mammals from the Wahweap (Aquilan) and Kaiparowits (Judithian) Formations: Journal of Vertebrate Paleontology, v. 10, p. 346–360.
- _____, 1993, Early Cretaceous mammal from North America and the evolution of marsupial dental characters: Proceedings of the National Academy of Sciences USA, v. 90, p. 9413–9416.
- _____, [in press], Therian mammals of the Terlingua Local Fauna (Judithian), Aguja Formation, Big Bend of the Rio Grande, Texas: Contributions to Geology, University of Wyoming.
- Cifelli, R. L.; and Johanson, Zerina [in press], A new marsupial from the Late Cretaceous of Utah: Journal of Vertebrate Paleontology.
- Dilkes, D. W.; and Reisz, R. R., 1986, The axial skeleton of the early Permian reptile *Eocaptorhinus laticeps* (Williston): Canadian Journal of Earth Sciences, v. 23, p. 1288–1296.
- Eaton, J. G., 1987, Stratigraphy, depositional environments, and age of Cretaceous mammal-bearing rocks in Utah, and systematics of the Multituberculata (Mammalia): University of Colorado, Boulder, unpublished Ph.D. dissertation, 320 p.
- Fielitz, Christopher; and Bardack, David, 1992, *Deltaichthys albuloides*, a new and unusually preserved albulid (Teleostei) probably from the Cretaceous of Texas: Journal of Vertebrate Paleontology, v. 12, p. 133–141.
- Forster, C. A., 1985, A description of the postcranial skeleton of the Early Cretaceous ornithomimid *Tenontosaurus tilletti*, Cloverly Formation, Montana and Wyoming: University of Pennsylvania unpublished M.S. thesis, 128 p.
- _____, 1990a, Evidence for juvenile groups in the ornithomimid dinosaur *Tenontosaurus tilletti* Ostrom: Journal of Paleontology, v. 64, p. 164–165.
- _____, 1990b, The postcranial skeleton of the ornithomimid dinosaur *Tenontosaurus tilletti*: Journal of Vertebrate Paleontology, v. 10, p. 273–294.
- Gillette, D. D., 1975, Catalogue of type specimens of fossil vertebrates, Academy of Natural Sciences, Philadelphia. Introduction and Part I.—Marine mammals: Proceedings, Academy of Natural Sciences of Philadelphia, v. 127, p. 63–66.
- Gillette, D. D.; and Ray, C. E., 1981, Glyptodonts of North America: Smithsonian Contributions to Paleobiology, no. 40, 255 p.
- Gregory, J. T.; Peabody, F. E.; and Price, L. L., 1956, Revision of the Gymnarthridae American Permian microsaur: Peabody Museum of Natural History, Yale University, Bulletin 10, p. 1–77.
- Gould, C. N., 1902, General geology of Oklahoma, in Van Vleet, A. H. (ed.), Second biennial report, Department of Geology and Natural History, Territory of Oklahoma: State Capital Company, Guthrie, p. 17–57.
- Ham, E. A., 1983, A history of the Oklahoma Geological Survey, 1908–1983: Oklahoma Geological Survey Special Publication 83-2, 60 p.
- Harrison, J. A., 1981, A review of the extinct wolverine, *Plesiogulo* (Carnivora: Mustelidae), from North America: Smithsonian Contributions to Paleobiology No. 46, 27 p.
- Heaton, M. J., 1979, Cranial anatomy of primitive captorhinid reptiles from the Late Pennsylvanian and Early Permian, Oklahoma and Texas: Oklahoma Geological Survey Bulletin 127, 84 p.
- Heaton, M. J.; and Reisz, R. R., 1980, A skeletal reconstruction of the early Permian captorhinid reptile *Eocaptorhinus laticeps* (Williston): Journal of Paleontology, v. 54, p. 136–143.
- Hesse, C. J., 1936, A Pliocene vertebrate fauna from Optima, Oklahoma: University of California, Dept. of Geological Sciences Bulletin, v. 24, p. 57–70.
- Holmes, R. B., 1977, The osteology and musculature of the pectoral limb of small captorhinids: Journal of Morphology, v. 152, p. 101–140.
- Hubbs, C. L., 1942, An atherinid fish from the Pliocene of Oklahoma: Journal of Paleontology, v. 16, p. 399–400.
- Johnson, G. D.; and Zidek, Jiri, 1981, Late Paleozoic phylloodont tooth-plates: Journal of Paleontology, v. 55, p. 524–536.
- Kitts, D. B., 1957, A Pliocene vertebrate fauna from Ellis County, Oklahoma: Oklahoma Geological Survey Circular 45, 27 p.
- _____, 1958a, *Nimravides*, a new genus of Felidae from the Pliocene of California, Texas, and Oklahoma: Journal of Mammalogy, v. 39, p. 368–375.
- _____, 1958b, A saber-tooth cat, *Smilodon californicus* Bovard, from Logan County, Oklahoma: Oklahoma Geology Notes, v. 18, p. 19–23.
- _____, 1964, *Aelurodon*, an addition to the Durham local fauna, Roger Mills County, Oklahoma: Oklahoma Geology Notes, v. 24, p. 76–78.
- Kitts, D. B.; and Black, C. C., 1959, A Pliocene vertebrate local

- fauna from Roger Mills County, Oklahoma, in Kitts, D. B., Cenozoic geology of northern Roger Mills County, Oklahoma: Oklahoma Geological Survey Circular 48, p. 27–47.
- Kitts, D. B.; and Myers, A. J., 1959, A Pliocene badger, *Pliotaxidea nevadensis* (Butterworth) from Harper County, Oklahoma: Oklahoma Geology Notes, v. 19, p. 143–146.
- Langston, Wann, Jr., 1947, A new genus and species of Cretaceous theropod dinosaur from the Trinity of Atoka County, Oklahoma: University of Oklahoma unpublished M.S. thesis, 73 p.
- _____, 1974, Nonmammalian Comanchean tetrapods: Geoscience and Man, v. 8, p. 77–102.
- Langston, Wann, Jr.; Black, C. C.; Lillegraven, J. A.; Patton, T. H.; Schaeffer, Bobb; and Wilson, R. W., 1977, Fossil vertebrates in the United States: the next ten years: Society of Vertebrate Paleontology, Austin, 40 p.
- Larkin, Pierce, 1910, The occurrence of a sauropod dinosaur in the Trinity Cretaceous of Oklahoma: Journal of Geology, v. 18, p. 93–98.
- Larson, E. M., 1990, Microvertebrate fauna of the Cloverly Formation, Montana: University of Oklahoma unpublished B.S. thesis, 21 p.
- Lehman, T. M.; and Carpenter, Kenneth, 1990, A partial skeleton of the tyrannosaurid dinosaur *Aublysodon* from the Upper Cretaceous of New Mexico: Journal of Paleontology, v. 64, p. 1026–1032.
- Lillegraven, J. A.; and McKenna, M. C., 1986, Fossil mammals from the "Mesaverde" Formation (Late Cretaceous, Judithian) of the Bighorn and Wind River basins, Wyoming, with definitions of Late Cretaceous North American land-mammal "ages": American Museum Novitates, no. 2840, 68 p.
- Meade, G. E., 1953, An early Pleistocene vertebrate fauna from Frederick, Oklahoma: Journal of Geology, v. 61, p. 452–460.
- Mehl, M. G., 1926, *Trematops thomasi*, a new amphibian species from the Permian of Oklahoma: Journal of Geology, v. 34, p. 466–474.
- Mook, C. C., 1964, New species of *Goniopholis* from the Morrison of Oklahoma: Oklahoma Geology Notes, v. 24, p. 283–287.
- Olson, E. C., 1941, The Family Trematopsidae: Journal of Geology, v. 49, p. 149–176.
- _____, 1965, *Zatrachys serratus* Cope (Amphibia: Labyrinthodontia) from McClain County, Oklahoma: Oklahoma Geology Notes, v. 25, p. 91–97.
- _____, 1967, Early Permian vertebrates of Oklahoma: Oklahoma Geological Survey Circular 74, 111 p.
- _____, 1968, The Family Caseidae: Fieldiana: Geology, v. 17, p. 225–349.
- _____, 1970, New and little known genera and species of vertebrates from the Lower Permian of Oklahoma: Fieldiana: Geology, v. 18, p. 359–434.
- Ostrander, G. E.; Mebrate, Assefa; and Wilson, R. W., 1986, Type and figured specimens of fossil vertebrates in the collection of the University of Kansas Museum of Natural History. Part IV.—Fossil mammals: Miscellaneous Publications, University of Kansas Museum of Natural History, no. 79, 83 p.
- Ostrom, J. H., 1970, Stratigraphy and paleontology of the Cloverly Formation (Lower Cretaceous) of the Bighorn basin area, Wyoming and Montana: Peabody Museum of Natural History, Yale University, Bulletin 35, 234 p.
- Pregill, G. K.; and Berrian, J. E., 1984, Type specimens of amphibians and reptiles in the San Diego Natural History Museum: Transactions, San Diego Society of Natural History, v. 20, p. 151–164.
- Ray, G. E., 1941, Big for his day: Natural History, v. 48, p. 36–39.
- Romer, A. S., 1933, Vertebrate paleontology: University of Chicago Press, Chicago, 687 p.
- Romer, A. S.; and Price, L. I., 1940, Review of the Pelycosauria: Geological Society of America, Special Papers, no. 28, p. 1–538.
- Rowe, T. B.; Cifelli, R. L.; Lehman, T. M.; and Weil, Anne, 1992, The Campanian age Terlingua Local Fauna, with a summary of other vertebrates from the Aguja Formation, Trans-Pecos Texas: Journal of Vertebrate Paleontology, v. 12, p. 472–493.
- Savage, D. E., 1939, The Optima fauna, middle Pliocene, from Texas County, Oklahoma: University of Oklahoma unpublished M.S. thesis, 128 p.
- _____, 1941, Two new middle Pliocene carnivores from Oklahoma with notes on the Optima fauna: American Midland Naturalist, v. 25, p. 692–710.
- _____, 1946, A mandible of *Megalonyx* from the Pleistocene of Oklahoma: Journal of Mammalogy, v. 27, p. 388–390.
- Sellards, E. H., 1932, Geologic relations of deposits reported to contain artifacts at Frederick, Oklahoma: Geological Society of America Bulletin, v. 43, p. 783–796.
- Seltin, R. J., 1959, A review of the Family Captorhinidae: Fieldiana: Geology, v. 10, p. 461–509.
- Simpson, G. G., 1929, Pleistocene mammalian faunas of the Seminole field, Pinellas County, Florida: American Museum of Natural History Bulletin, v. 56, p. 561–599.
- Simpson, L. C., 1976, Paleontology of the Garber Formation (Lower Permian), Tillman County, Oklahoma: University of Oklahoma unpublished M.S. thesis, 216 p.
- Smith, G. N., 1927, The Permian vertebrates of Oklahoma: University of Oklahoma unpublished M.S. thesis, 46 p.
- Stovall, J. W., 1932, The Jurassic in Oklahoma: Science, v. 76, p. 122–123.
- _____, 1933, *Xiphactinus audax*, a fish from the Cretaceous of Texas: University of Texas Bulletin, v. 3201, p. 87–92.
- _____, 1936, A Recent grizzly bear skull found fossil in Oklahoma: American Midland Naturalist, v. 17, p. 781–783.
- _____, 1937a, *Cotylorhynchus romeri*, a new genus and species of pelycosaurian reptile from Oklahoma: American Journal of Science, v. 34 (5th series), p. 308–313.
- _____, 1937b, *Eucatherium bizzelli*, a new ungulate from Oklahoma: Journal of Paleontology, v. 11, p. 450–455.
- _____, 1938, The Morrison of Oklahoma and its dinosaurs: Journal of Geology, v. 46, p. 583–600.
- _____, 1940, *Megalonyx hogani*, a new species of ground sloth from Gould, Oklahoma: American Journal of Science, v. 238, p. 140–146.
- _____, 1943, Stratigraphy of the Cimarron Valley (Mesozoic rocks), in Schoff, S. L., Geology and ground water resources of Cimarron County, Oklahoma: Oklahoma Geological Survey Bulletin 64, p. 43–100.
- _____, 1945, The occurrence of *Petrodus* in Oklahoma: American Midland Naturalist, v. 34, p. 720–722.
- _____, 1946, A Pleistocene *Ovis canadensis* from New Mexico: Journal of Paleontology, v. 20, p. 259–260.
- _____, 1948a, Chadron vertebrate fossils from below the Rim Rock of Presidio County, Texas: American Journal of Science, v. 246, p. 78–95.
- _____, 1948b, A new species of embolomere amphibian from the Permian of Oklahoma: Journal of Geology, v. 56, p. 75–79.
- _____, 1950, A new cotylosaur from north central Oklahoma: American Journal of Science, v. 248, p. 46–54.
- Stovall, J. W.; and Brown, H. E., 1954, The principles of historical geology: Ginn and Company, Boston, 472 p.
- Stovall, J. W.; and Johnston, C. S., 1934a, Hypertrophy in the jaw of an Oklahoma proboscidean: American Midland Naturalist, v. 15, p. 622–624.
- _____, 1934b, *Tapirus haysii* of Oklahoma: American Midland Naturalist, v. 15, p. 92–93.
- _____, 1935, Two fossil grizzly bears from the Pleistocene of

- Oklahoma: Journal of Geology, v. 43, p. 208–213.
- Stovall, J. W.; and Langston, Wann, Jr., 1950, *Acrocanthosaurus atokensis*, a new genus and species of Lower Cretaceous Theropoda from Oklahoma: American Midland Naturalist, v. 43, p. 696–728.
- Stovall, J. W.; and McAnulty, W. N., 1939, Cyprinodontidae from the Pliocene in Roger Mills County, Oklahoma: American Midland Naturalist, v. 22, p. 749–752.
- Stovall, J. W.; and Savage, D. E., 1939, A phytosaur in Union County, New Mexico, with notes on the stratigraphy: Journal of Geology, v. 47, p. 759–766.
- Stovall, J. W.; and Wharton, J. B., Jr., 1936, A new species of phytosaur from Big Spring, Texas: Journal of Geology, v. 44, p. 183–192.
- Stovall, J. W.; Price, L. I.; and Romer, A. S., 1966, The postcranial skeleton of the giant Permian pelycosaur *Cotylorhynchus romeri*: Bulletin of the Museum of Comparative Zoology, Harvard University, v. 135, p. 1–30.
- Strain, W. S., 1937, The Pleistocene geology of part of the Washita River valley, Grady County, Oklahoma: University of Oklahoma unpublished M.S. thesis, 102 p.
- Weil, Anne, 1992, The Terlingua local fauna: stratigraphy, paleontology, and multituberculate systematics: University of Texas, Austin, unpublished M.S. thesis, 119 p.
- Wilson, J. A., 1971, Early Tertiary vertebrate faunas, Vieja Group, Trans-Pecos Texas: Agriochoeridae and Merycoidodontidae: Texas Memorial Museum Bulletin 18, 83 p.
- _____, 1974, Early Tertiary vertebrate faunas, Vieja Group and Buck Hill Group, Trans-Pecos Texas: Protoceratidae, Camelidae, Hypertragulidae: Texas Memorial Museum Bulletin, v. 23, p. 1–34.
- Wilson, J. A.; Twiss, P. C.; DeFord, R. K.; and Clabaugh, S. E., 1968, Stratigraphic succession, potassium-argon dates, and vertebrate faunas, Vieja Group, Rim Rock country, Trans-Pecos Texas: American Journal of Science, v. 266, p. 590–604.
- Woodburne, M. O. (ed.), 1987, Cenozoic Mammals of North America: Geochronology and Biostratigraphy: University of California Press, Berkeley, 336 p.
- Woods, S. C.; and Stucky, R. K., 1992, Catalogue of the type specimens of fossil vertebrates, Denver Museum of Natural History: Proceedings, Denver Museum of Natural History, ser. 3, no. 2, 11 p.
- Zidek, Jiri, 1971, *Labidosaurikos meachami*, a Lower Permian reptile: Oklahoma Geology Notes, v. 31, p. 90.
- _____, 1973, Oklahoma paleoichthyology. Part II: Elasmobranchii (*Cladodus*, minute elements of cladoselachian derivation, *Dittodus*, and *Petrodus*): Oklahoma Geology Notes, v. 33, p. 87–103.
- _____, 1975a, Some fishes of the Wild Cow Formation (Pennsylvanian) Manzanita Mountains, New Mexico: New Mexico Bureau of Mines and Mineral Resources Circular 135, p. 1–22.
- _____, 1975b, Oklahoma paleoichthyology. Part IV: Acanthodii: Oklahoma Geology Notes, v. 35, p. 135–146.
- _____, 1976a, Kansas Hamilton Quarry (upper Pennsylvanian) *Acanthodes*, with remarks on the previously reported North American occurrences of the genus: University of Kansas Paleontological Contributions Paper, no. 83, p. 1–41.
- _____, 1976b, Oklahoma paleoichthyology. Part V: Chondrichthyes: Oklahoma Geology Notes, v. 36, p. 175–192.
- _____, 1976c, A new shark egg capsule from the Pennsylvanian of Oklahoma, and remarks on the chondrichthyan egg capsules in general: Journal of Paleontology, v. 50, p. 907–915.
- _____, 1977, An acanthodid shoulder girdle from Lower Mississippian of Nova Scotia: Journal of Paleontology, v. 51, p. 199–200.
- _____, 1978, New chondrichthyan spines from the late Paleozoic of Oklahoma: Journal of Paleontology, v. 52, p. 1070–1078.
- _____, 1992, Late Pennsylvanian Chondrichthyes, Acanthodii, and deep-bodied Actinopterygii from the Kinney Quarry, Manzanita Mountains, New Mexico: New Mexico Bureau of Mines and Mineral Resources Bulletin 138, p. 145–182.
- _____, 1993, A large stethacanthid shark (Elasmobranchii: Symmoriida) from the Mississippian of Oklahoma: Oklahoma Geology Notes, v. 53, p. 4–15.



INDEX OF TYPE AND FIGURED SPECIMENS, BY GENUS

<i>Acanthodes</i> cf. <i>A. bridgei</i>	9	Cetacea, family, genus, and species indet.	26
<i>Acanthodes kinneyi</i>	9	<i>Cimexomys</i> sp.	18
<i>Acanthodes</i> sp.	9	<i>Cimolodon</i> cf. <i>C. electus</i>	18
Acanthodidae, gen. and sp. indet.	9	<i>Cimolodon</i> sp.	18
<i>Acracanthus atokaensis</i>	15	Cimolodontid, n. gen and sp.	18
<i>Acrocanthosaurus atokensis</i>	4, 15	?Cimolomyid, gen. and sp. indet.	18
<i>Aelurodon</i>	22	<i>Cimolomys clarki</i>	18
<i>Aelurodon mortifer</i>	23	<i>Cladodus occidentalis</i>	9, 10
<i>Aenigmadelphys archeri</i>	19, 20	<i>Clepsydraps</i> sp.	16
<i>Agassizodus</i> aff. <i>variabilis</i>	10	<i>Colodon stovalli</i>	28
<i>Agassizodus</i> sp.	10	<i>Cotylorhynchus romeri</i>	4, 17
<i>Agriochoerus antiquus</i>	24	<i>Cricotillus brachydens</i>	2
<i>Agriotherium schneideri</i>	23	<i>Cricotus</i> sp.	13
<i>Albanosmilus</i> ? sp.	22	<i>Crossotelos annulatus</i>	2, 13
<i>Alphadon attaragos</i>	19	<i>Ctenoptychius</i> sp.	10
<i>Alphadon</i> cf. <i>A. halleyi</i>	19, 20	<i>Cynomys ludovicianus</i>	24
<i>Alphadon</i> cf. <i>A. sahnii</i>	19	 <i>Dapedoglossus testis</i>	11
<i>Alphadon</i> cf. <i>A. wilsoni</i>	19, 20	<i>Daphoenus lambei</i>	22
<i>Alphadon perexiguus</i>	19, 20	<i>Deltaichthys albuloides</i>	11
<i>Alphadon sahnii</i>	19	Deltatheridiidae, unnamed genus and species	18
<i>Alphadon</i> sp.	19, 20	<i>Diceratherium</i>	3
? <i>Alticamelus</i> sp.	25	Didelphidae, gen. et sp. indet.	20
<i>Anchistodelphys archibaldi</i>	20	<i>Dimetrodon limbatus</i>	16
? <i>Anchistodelphys delicatus</i>	20	<i>Dimetrodon</i> sp.	16
<i>Angistorhinus alticephalus</i>	2, 15	<i>Dinohippus interpolatus</i>	27
<i>Anodontacanthus belemnoides</i>	10	<i>Diplocaulus magnicornis</i>	13
<i>Anodontacanthus</i> sp.	10	<i>Diplocaulus salamandroides</i>	13
Anseriformes, genus and sp. indet.	17	<i>Diplomystus dentatus</i>	11
Antilocapridae, genus and species undetermined	25	<i>Dipoides</i> sp.	24
<i>Apatosaurus</i>	3	 <i>Edaphosaurus</i> sp.	17
<i>Apatosaurus</i> sp.	16	<i>Edestus vorax</i>	9
<i>Aphelops</i> sp.	29	<i>Elephas columbi</i>	29
<i>Archeria crassidisca</i>	13	<i>Elephas imperator</i>	29
<i>Archeria victori</i>	13	<i>Elephas primigenius</i>	29
<i>Astrohippus ansae</i>	26	<i>Eocaptorhinus laticeps</i>	14
<i>Aublysodon</i> cf. <i>A. mirandus</i>	4, 15	<i>Epicyon</i>	22
Aves, fam., gen. et sp. indet.	17	<i>Epicyon mortifer</i>	23
<i>Avitotherium utahensis</i>	21	<i>Equus</i> cf. <i>E. complicatus</i>	27
 <i>Bison</i> sp.	25	<i>Equus</i> cf. <i>E. niobrarensis</i>	27
<i>Bolosaurus striatus</i>	14	<i>Equus complicatus</i>	27
<i>Brachyhyops wyomingensis</i>	24	<i>Equus excelsus</i>	27
<i>Brontosaurus excelsus</i>	16	<i>Equus laurentius</i>	27
<i>Buettneria</i>	12	<i>Equus pectinatus</i>	27
 <i>Calippus ansae</i>	26	<i>Equus</i> sp.	27
<i>Camarasaurus</i> sp.	16	<i>Eryops megacephalus</i>	12
Camel	25	<i>Eucatherium bizzelli</i>	25
Camelidae, genus and species indet.	25	<i>Eucatherium collinum</i>	25
<i>Camelops</i> sp.	25	 Felidae, genus and species indet.	22
<i>Camptosaurus</i> ? sp.	16	<i>Felis proterolyncis</i>	22
Canidae, unnamed	22	? <i>Felis</i> sp.	22
<i>Capromeryx altidens</i>	25	 <i>Gallinuloides</i>	17
Captorhinid	13	<i>Gallolestes aguajensis</i>	21
<i>Captorhinus aguti</i>	13	<i>Gallolestes</i> sp.	21
<i>Cardiocephalus</i> cf. <i>C. sternbergi</i>	13	<i>Geochelone</i> cf. <i>T. hexagonata</i>	14
<i>Cardiocephalus peabodyi</i>	13	<i>Geochelone ocalana</i>	14
<i>Ceratosaurs</i> ? sp.	15		

<i>Geochelone</i> sp.	14	<i>Mylagaulus</i> sp.	23
<i>Glossotherium</i> sp.	21	<i>Myiodon?</i> sp.	21
<i>Glyptodon petaliferous?</i>	21, 26	<i>Nannippus</i> cf. <i>N. gratus</i>	26
<i>Glyptotherium arizonae</i>	2, 21	<i>Nannippus ingenuus</i>	26
<i>Gnathorhiza pusilla</i>	12	<i>Nannippus lenticulare</i>	26
<i>Gnathorhiza serrata</i>	12	<i>Naosaurus</i> sp.	17
<i>Gomphotherium</i> sp.	29	<i>Neohipparion eurystyle</i>	26
<i>Goniopholis stovalli</i>	3, 15	<i>Neohipparion</i> sp.	26
<i>Gypsonictops</i> sp. A	21	<i>Nimravides thinobates</i>	22
<i>Gypsonictops</i> sp. B	21	<i>Odocoileus virginianus</i>	25
<i>Gypsonictops</i> sp. C	21	<i>Odontoceti</i> , family, genus and species indet.	26
<i>Helodus</i> sp.	10	<i>Ophiacodon</i> sp.	16
<i>Hemiauchenia macrocephala</i>	25	<i>Orthacanthus compressus</i>	10
<i>Hemiauchenia</i> sp.	24	<i>Orthacanthus platypternus</i>	10
<i>Hybodus</i> sp.	9	<i>Osteoborus cyonoides</i>	23
<i>Hypolagus</i> cf. <i>H. vetus</i>	24	<i>Ovis canadensis</i>	26
<i>Hyracodon petersoni</i>	28	<i>Palaeoniscoidea</i>	11
<i>Hyracodon primus</i>	28	<i>Palaeoxyris lewisi</i>	11
<i>Hyracodon?</i> sp.	29	<i>Paleomolops langstoni</i>	19
<i>Iqualadelphis lactea</i>	20	<i>Paracimexomys</i> n. sp.	18
<i>Ischnognathus savagei</i>	22	<i>Paracimexomys</i> n. sp. C	18
<i>Iugomortiferum thoringtoni</i>	20	<i>Paracimexomys</i> sp.	18
<i>Kokopellia juddi</i>	19	<i>Paranyctoides</i> sp. A	21
<i>Labidosaurikos meachami</i>	14	<i>Paranyctoides</i> sp. B	21
<i>Labidosaurus oklahomensis</i>	14	<i>Parapavo oklahomensis</i>	17
<i>Labyrinthodontia</i> , order indet.	12	<i>Passeriformes</i> , family, genus and species indet.	17
<i>Lacertilia</i>	15	<i>Pediomeryx hemphillensis</i>	25
<i>Leptomeryx?</i> sp.	24, 26	<i>Peradectidae</i> , genus and species undetermined	20
<i>M.</i> [sic] <i>bendi</i>	28	<i>Perognathus</i> cf. <i>P. pearlettensis</i>	24
<i>Machaeracanthus</i> cf. <i>M. major</i>	9	<i>Petrodus occidentalis</i>	10
<i>Machaerodus catocopsis</i>	22	<i>Phareodus testis</i>	11
<i>Machaerodus (Heterofelis) coloradensis</i>	22	<i>Physonemus</i> aff. <i>acinaciformis</i>	10
<i>Machaeroprotopus</i> sp.	15	<i>Plancterus kansae?</i>	12
<i>Mammut americanus</i>	29	<i>Platyacanthus avirostratus</i>	9
<i>Mammuthus columbi</i>	29	<i>Platygonus</i> sp.	24
<i>Mammuthus primigenius</i>	29	<i>Platysomus</i> sp.	11
<i>Marsupialia</i> , unnamed genus and species	20	<i>Pleuracanthus compressus</i>	10
<i>Mastodon americanus</i>	29	<i>Pleuracanthus gracilis</i>	10
<i>Megalonychinae</i> , gen. et sp. indet.	21	<i>Pleuristion brachycoelous</i>	2
<i>Megalonyx hogani</i>	4, 21	<i>Pleurocoelus</i>	15
<i>Megalonyx jeffersonii</i>	21	<i>Pliauchenia</i> sp.	24
<i>Megalonyx jeffersonii oklahomensis</i>	21	<i>Pliohippus interpolatus</i>	27
<i>Megalonyx</i> sp.	21	<i>Pliomastodon</i> sp.	29
<i>Megatylopus</i> cf. <i>M. gigas</i>	24	<i>Pliotaxidea nevadensis</i>	22
<i>Megatylopus gigas</i>	25	<i>Poabromylus kayi</i>	24
<i>Meleagris gallopavo</i>	17	<i>Poliosaurus uniformis</i>	16
<i>Menidia</i> sp.	11	<i>Portheus molossus</i>	11
<i>Meniscoessus</i> sp.	18	<i>Procamelus robustus</i>	25
<i>Menodus bakeri</i>	27	<i>Protalphadon crebreforme</i>	19
<i>Mephitis</i> , genus and species indet.	22	<i>Protalphadon wahweapensis</i>	19
<i>Mephitis mephitis</i>	22	<i>Protapirus</i> sp.	28
<i>Merycoidodon culbertsoni</i>	24	<i>Pseudemys</i> cf. <i>P. caelata</i>	14
<i>Merycoidodon gracilis</i>	24, 26	<i>Pseudhipparion</i> cf. <i>P. gratum</i>	26
<i>Mesohippus bairdi</i>	26	<i>Rutiodon</i> sp.	15
<i>Mesohippus</i> sp.	24, 26	<i>Sagenodus porrectus</i>	12
<i>Metoposaurus</i> sp.	12	<i>Sagenodus vinslovi</i>	12
<i>Multituberculata incertae sedis</i> , gen. et sp. nov.	18	<i>Sauriscus</i> sp.	15
<i>Mylagaulus</i> cf. <i>M. laevis</i>	23	<i>Saurophagus maximus</i>	15

Sauropoda, family uncertain	15	Tribosphenida, genus and species undetermined	18
Sauropoda, family indeterminate	15	Tribotheria incertae sedis	19
? <i>Schaefferichthys</i>	11	<i>Triceratops</i>	3
<i>Serridentinus</i> sp.	29	<i>Trimerorhachis insignis</i>	12
<i>Smilodon californicus</i>	22	<i>Trimerorhachis leptorhynchus</i>	2
<i>Smilodon fatalis</i>	22	<i>Trimerorhachis</i> sp.	12
<i>Sphaerolepis arctata</i>	11	<i>Turgidodon</i> cf. <i>T. lillegraveni</i>	20
<i>Stegosaurus</i> sp.	16	<i>Turgidodon lillegraveni</i>	20
<i>Stenomylus</i>	3	<i>Turgidodon madseni</i>	20
<i>Stethacanthus</i> aff. <i>altonensis</i>	9	<i>Ursus americanus</i>	23
<i>Symbos cavifrons</i>	26	<i>Ursus arctos</i>	23
<i>Symmetrodontoides oligodontos</i>	18	<i>Ursus horribilis nelsoni</i>	23
<i>Symmorium reniforme</i>	9	<i>Ursus horribilis oklahomensis</i>	23
<i>Tapirus haysii</i>	28	<i>Vulpes</i> sp.	23
<i>Tapirus veroensis</i>	28	<i>Vulpes stenognathus</i>	23
<i>Teleoceras</i> cf. <i>T. fossiger</i>	29	<i>Xenacanthodii</i> , gen. and sp. indet.	10
<i>Tenontosaurus</i> sp.	16	<i>Xenacanthus gracilis</i>	10
<i>Tenontosaurus tilletti</i>	4, 16	<i>Xenacanthus luedersensis</i>	10
<i>Testudo</i> cf. <i>T. hexagonata</i>	14	<i>Xenacanthus platypternus</i>	10
<i>Testudo ocalana</i>	14	<i>Xiphactinus audax</i>	2, 11
<i>Testudo</i> sp.	14	<i>Zatrachys serratus</i>	13
<i>Trachemys bisornata</i>	14		
<i>Trematops milleri</i>	13		
<i>Trematops thomasi</i>	13		

