

New Mexico Friends of Paleontology

A volunteer group committed to the advancement of paleontology in New Mexico



Gary Morgan, Sheila Bednarski & Lannois Neely
New Mexico Museum of Natural History and
New Mexico Friends of Paleontology

New Mexico Friends of Paleontology Background

The New Mexico Friends of Paleontology (NMFOP) is a volunteer organization affiliated with the New Mexico Museum of Natural History and Science (NMMNH) in Albuquerque, New Mexico.

Mission: Promote activities that aid in the knowledge, understanding, and public awareness of paleontology in New Mexico. Provide assistance to the NMMNH paleontology program, primarily as volunteers in the preparation lab, fossil collection, and in the field.



NMFOP logo

Membership: About 85 people from New Mexico, mostly from the Albuquerque area. Many members are retired professionals from disciplines including geology, physics, engineering, medicine, computer science, education, business, and liberal arts.



New Mexico Friends of Paleontology Background

Meetings: Monthly meetings are open to NMFOP members and the general public. Meetings include NMFOP business and an invited speaker who presents a non-technical lecture on New Mexico paleontology or a related topic.

Volunteer Activities: NMFOP members volunteer in the fossil preparation lab, Fossil Works preparation lab, and fossil collection, and also help with docent-led tours in the museum exhibits, field work, and research projects.



New Mexico Friends of Paleontology Training Programs

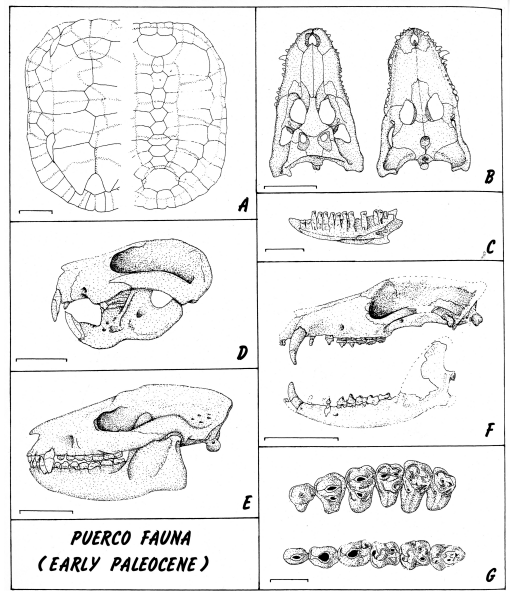
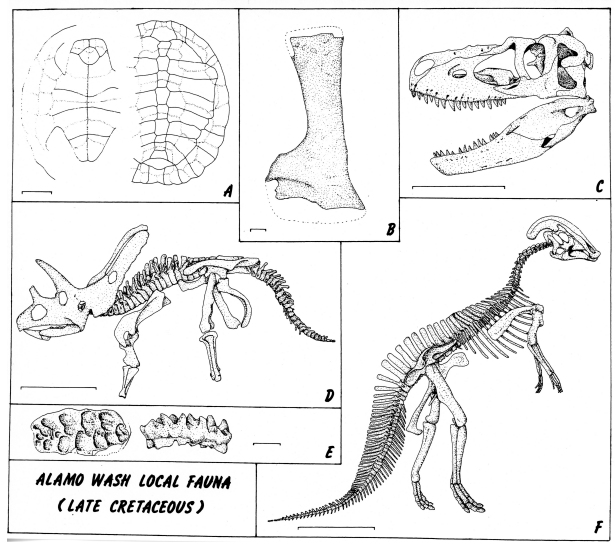
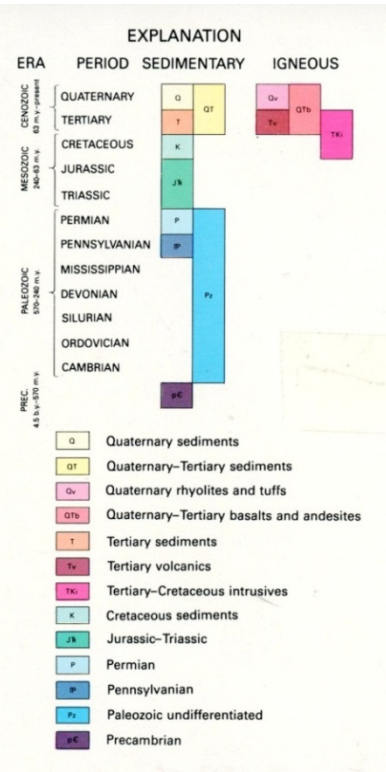
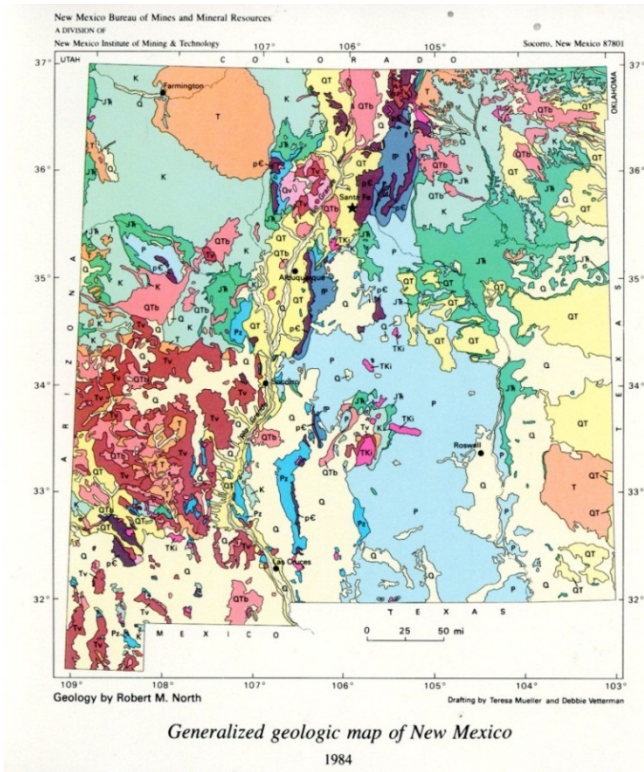
Docent Training. NMMNH volunteers, including most NMFOP members, undergo a rigorous training course, sponsored by the Museum's Education Department. Volunteers take about a dozen three hour classes over a period of two months that cover all of the Museum's exhibit halls (e.g., Triassic, Ice Age, Cave), as well as general topics such as geology, paleontology, and the plants and animals of New Mexico. Volunteers who lead public tours of the NMMNH exhibit halls are required to take the Docent Training course.

Fossil Preparation Class. Anyone interested in volunteering to prepare fossils at the NMMNH must take a six week class to learn the basic essentials of fossil preparation. The class is taught by the NMMNH fossil preparator, and is held every other year. The Museum's volunteer preparators are almost all members of NMFOP.

Paleontology Field Course. The paleontology curators at the NMMNH teach a course on paleontological field methods for NMFOP members. The course consists of a class reviewing the geology and paleontology of New Mexico and a day trip to an active fossil site to learn basic field techniques.

Paleontology Field Course

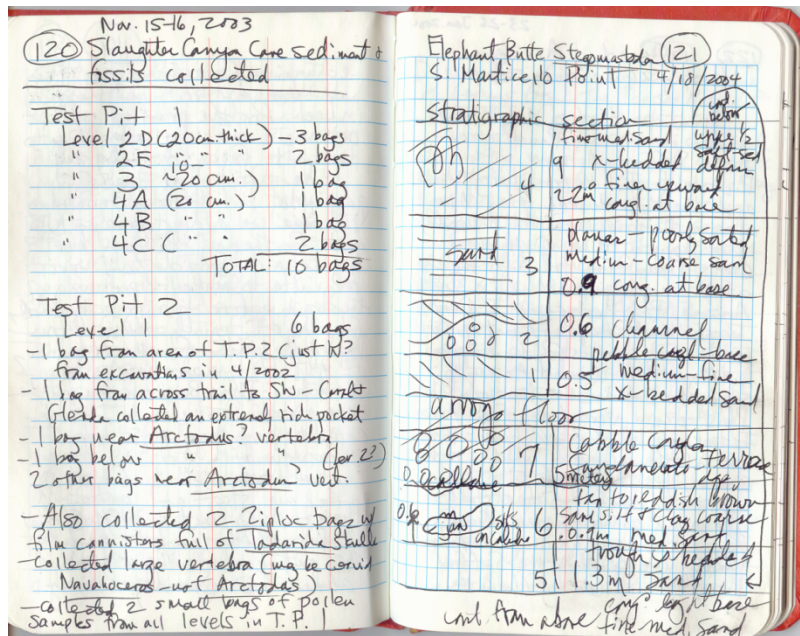
Overview of New Mexico Geology & Paleontology



Geologic Map

Paleontology Field Course

Tools of the Trade



Field Notebook



GPS Unit



Brunton Compass

NEW MEXICO MUSEUM OF NATURAL HISTORY

SPECIMEN:
LOCALITY:

COUNTY: STATE:
UTM or LAT./LONG.:
T R SEC. MAP
COLLECTOR:
DATE:

NEW MEXICO MUSEUM OF NATURAL HISTORY PALEONTOLOGY

SPECIMEN _____
IDENTIFICATION _____

LOCALITY _____

ACQ. NO. _____ LOC. NO. _____

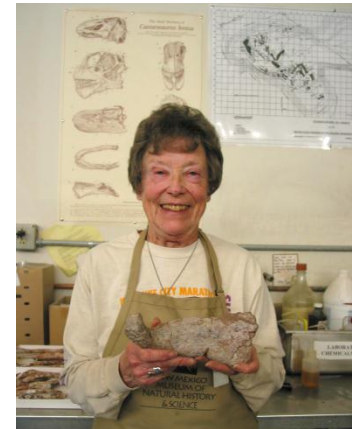
Field and Specimen Labels

NMMNH Fossil Preparation Lab



The NMMNH has two fossil preparation labs, the Fossil Preparation Lab in the Collections and Research facility and Fossil Works. With the exception of one state-funded position, all other fossil preparators (~40 people) in the two labs are Volunteers. Most are NMFOP members. Fossils prepared in these two labs are used in research, public exhibits, and educational programs

Fossil Works Preparation Lab



Fossil Works is an interactive fossil preparation laboratory in the NMMNH and is part of the museum's exhibit program. All Fossil Works preparators are volunteers and most are NMFOP members.

NMMNH Paleontology Collection

Curation and Tours



Curation in the NMMNH Paleontology Collection



Screenwashing and microfossil picking, sorting, and curation

Volunteer-led tours of the Paleontology Collection

NMMNH and NMFOP

Working with Federal and State Agencies



U. S. Bureau of Land Management



Phil Gensler



Miocene tortoise
Española Basin



Pleistocene Mammoth
Starvation Draw



Patricia Hester
Mike O'Neill



U. S. Forest Service



Pleistocene Mammoth
Canovas Creek
Gila National Forest

The U. S. Bureau of Land Management, U. S. Forest Service, and New Mexico State Land Office together manage over 30 million acres of land in New Mexico. The NMMNH, with volunteer help from the NMFOP, conducts permitted paleontological field work on lands managed by the BLM, USFS, State of NM and other U. S. government agencies, including the Air Force, Army, Bureau of Reclamation, Fish and Wildlife Service, and National Park Service.

Miocene Fossil Survey: Española Basin



Dixon horse



Arroyo del Llano
mastodon jaw

New Mexico Geological Society Guidebook, 62nd Field Conference, Geology of the Tulas Mountains - Ojo Caliente, 2011, p.

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A PALEONTOLOGICAL SURVEY OF A PART OF THE TESUQUE FORMATION NEAR CHIMAYÓ, NEW MEXICO AND A SUMMARY OF THE BIOSTRATIGRAPHY OF THE POJOAQUE MEMBER

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ABSTRACT—A recent paleontological survey north of Chimayó, NM identified many new localities containing Miocene mammal fossils and one site containing freshwater(?) gastropods. All fossils were found within eight sections (T21N, R9E) at the southwest end of the survey area within the Pojoaque Member of the Tesuque Formation. The majority of the fossils were found within ~120 m stratigraphic interval containing the Pojoaque white ash zone, which to the south contains an ash that is 13.7 ± 0.18 Ma. Correlation of the Pojoaque white ash zone with the magnetic-polarity stratigraphy of Barghoorn, (1981), indicates an age range of 14.0-13.2 Ma for this ash zone. All fossils were found within sediments derived from Proterozoic metamorphic and Paleozoic sedimentary (sandstone, limestone, and shale) terrains to the northeast with minor and variable input of volcanoclastic material from the Latir volcanic field near Taos. Laterally adjacent and overlying sediments derived primarily from Proterozoic granite to the east are barren of fossil material. The fossil-bearing strata have been interpreted to represent a basin-floor environment while the barren, granitic sediments are interpreted as a piedmont environment. Preferential fossilization may reflect either different diagenetic conditions in the lime-bearing sediments relative to the sediments derived primarily from Proterozoic sources or reflect some inherent difference in depositional environment. A compilation of published paleontological data along with our recent findings produces a summary of the known fauna of the Pojoaque Member of the Tesuque Formation. Approximately 65 species of mammals are currently known from the Pojoaque Member, which represents one of the most important samples of early late Barstovian (early middle Miocene) mammals in western North America.



A

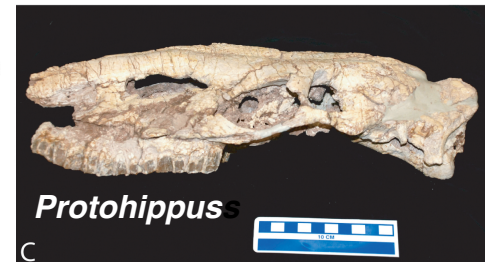


Meryceros



B

Gomphotherium



C

Protohippuss



F

Pseudaelurus



D



Peraceras

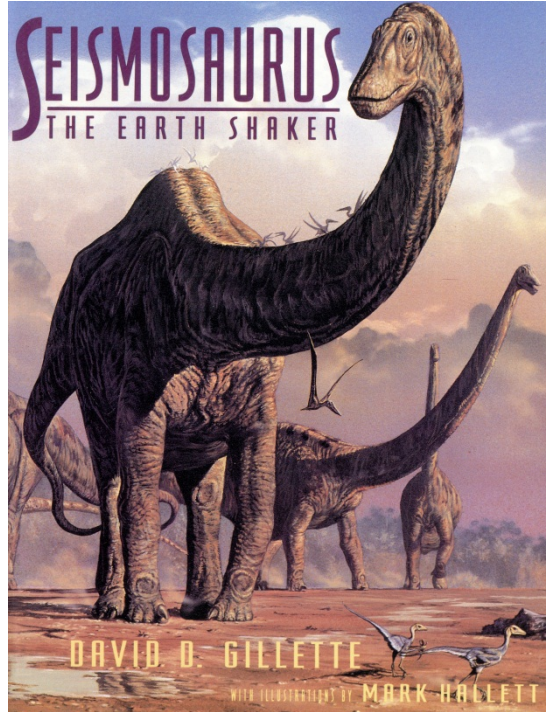
Miocene mammals from the Española Basin

Jurassic Dinosaurs from New Mexico

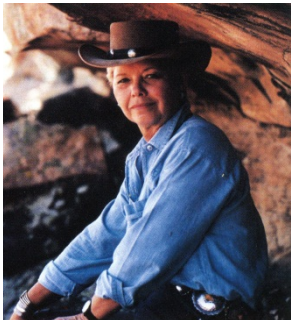
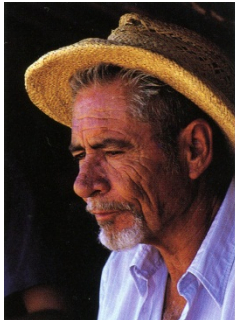
Seismosaurus Quarry



Seismosaurus Quarry



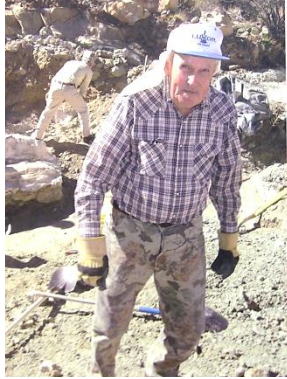
Seismosaurus book and mounted skeleton



Seismosaurus vertebrae in field and museum

Jurassic Dinosaurs from New Mexico

Peterson Site



Rodney E. Peterson
1928–

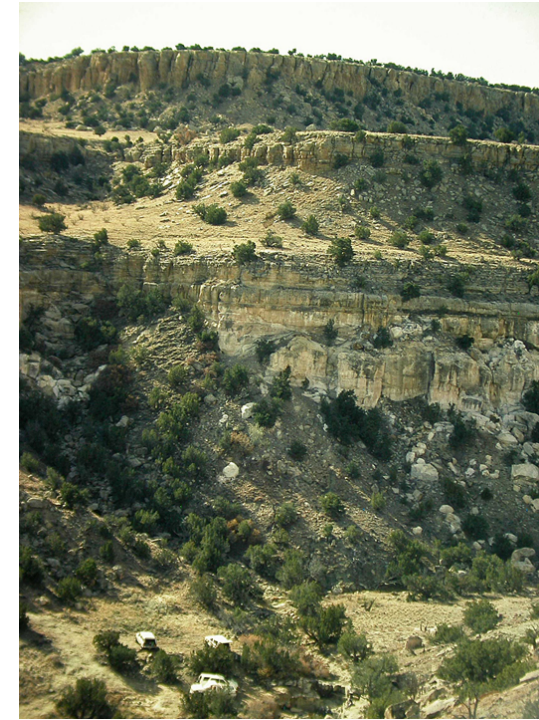
Born in Wisconsin, Rodney ("Rod") Peterson is a veteran of World War II and the Korean War. He studied engineering at the Colorado School of Mines and has worked for various engineering firms over a long and diverse career. In 1953, Rod Peterson discovered one of New Mexico's richest Jurassic bone beds, now known as the Peterson quarry.



Rod Peterson was prospecting for uranium west of Albuquerque when he found huge dinosaur bones weathering out of an arroyo.



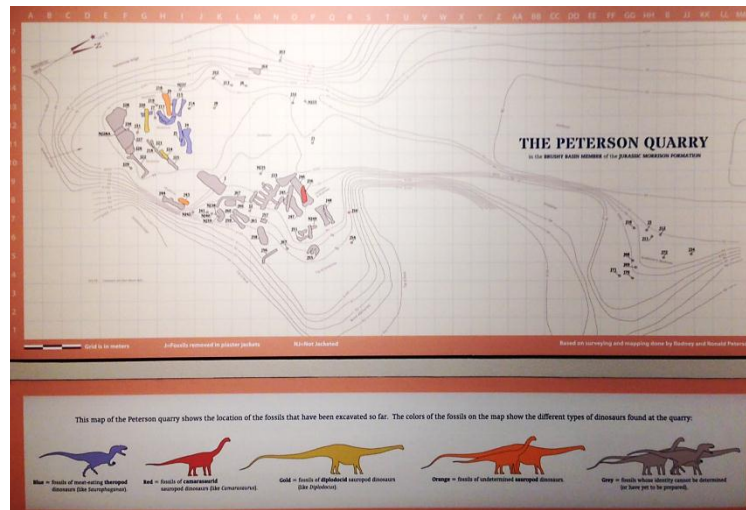
Saurophaganax skeleton



Peterson Site



After more than 20 years of excavation, Museum volunteers continue to find dinosaur fossils at the **Peterson quarry**. The volunteers have unearthed dozens of bones from giant Jurassic sauropods like *Diplodocus* (di-PLOD-oh-kus) and *Camarasaurus* (KAM-air-uh-sore-us).



NMFOP Field Trips

FOP Volunteers Find Fossils and Trace Fossils Near Socorro

Friends of Paleontology (FOP) volunteers added to the fossil record while learning about animals and plants in the Pennsylvanian and Permian periods of the Paleozoic era. On November 16, 2013, 25 volunteers traveled to an area northeast of Socorro, New Mexico to view trackways and prospect for fossils. The team was led by Amanda Cantrell, NMMNH Collections Manager; and Tom Suazo, NMMNH Preparator. We also relied on the expertise of Phil Gensler, US Bureau of Land Management Regional Paleontologist.

After parking the convoy of vehicles, the group hiked up and down hills and through arroyos to arrive at an exposure of the 300 million year old Bursum Formation of the Pennsylvanian period. Numerous vertebrate fossils and fragments were found. There were skulls, jaws with teeth, vertebrae and other skeletal parts of amphibians and reptiles.

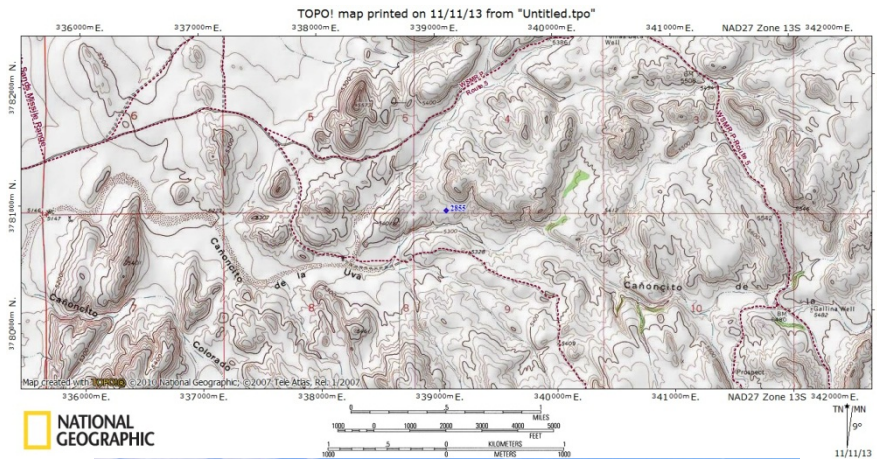
After another trek over hills and across slippery side slopes, we came upon trackway slabs at two locations in the 297 million year old Permian Abo formation. The first had reptile footprints resembling those from a large modern lizard. The second showed smaller amphibian tracks and tail drag marks along with scratch marks from reptilian claws. In the Abo, there were numerous traces of ancient conifers and more vertebrate fossils were found.

The highlight of the day happened when Tony Hunt examined a likely looking chunk of red sandstone, split it open with a couple taps along a midline seam and gazed in astonishment at a single huge footprint. It was an amphibian track that looked like a frog's footprint but was as big as a man's hand. Tony had split the rock perfectly to show the positive print on one half and its counterpart on the other. It was the largest such track that Tom and Amanda had ever seen. Way to go Tony!!!

After Tom and Amanda examined all of the finds, those that were most worthy were transported back to the museum for cataloging in Collections. Tom and Phil had the honors of hauling Tony's two heavy rock pieces back to the cars. It was a lovely paleo day in the desert.

Submitted by Mary Moore, FOP volunteer

"Today we improved the fossil record" A. Heckert



All field trip participants have access to a map, field trip summary, including important fossil discoveries, and photos taken by NMFOP members.

NMFOP Field Trips 2012-2013



Española basin
May 2013



Canovas Creek, Gila NF
July 2012



Kinney Brick Quarry
October 2012



Gallina Well
November 2013



Española Basin Miocene Fossil Survey



Canovas Creek Pleistocene Site

Gila National Forest



Canovas Creek Volunteer Diggers



USFS Archaeologists



Native Explorers
May 2013



Volunteer Crew: NMFOP
and UNM grad students



Quemado M. S.
September 2012



Reserve H. S.
September 2011

Gallina Well Permian Fossil Survey



Kinney Brick Quarry

Pennsylvanian Fish and Plants





Acknowledgments



U. S. Bureau of Land Management: Phil Gensler,
Patricia Hester, Mike O'Neill



U. S. Forest Service: Erin Knolles, Jeanne Schofer



New Mexico Friends of Paleontology:
All members present and past



Florida Museum of Natural History, University of Florida:
Kassie Hendy, Austin Hendy, Bruce MacFadden