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## THE INSTRUMENTAL ROLE OF PALEONTOLOGY IN THE FUNDING AND DEVELOPMENT OF A MAJOR NEW NATURAL HISTORY MUSEUM

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### EDITORIAL

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OVER the last four years a group of paleontologists, state legislators and laymen collaborated in an effort to secure legislative protection and financial support for the study of New Mexico's paleontological resources. Their approach to the problem departed from the more usual methods of securing funding in that it attempted to win protection and funding as a direct result of a campaign designed to increase both public and governmental awareness and understanding of the paleontology of New Mexico. The project proved remarkably successful. In 1978 and 1979 the New Mexico State Legislature passed protective legislation for New Mexico fossils and in 1980 a bill was passed which provides for the construction and operation of a new state natural history museum which will include a major paleontology program. This article chronicles the history of that project. We believe it to be significant to the profession not simply because it led to the development of a major new museum, but because it proves the viability of the approach. Dialogs among paleontologists and special interest groups *can* significantly affect the intellectual climate of large regions and can win substantial public support. The history of this project is a most optimistic one, and one which we hope will stimulate more such professional involvement.

The first scientific collection of fossils from New Mexico was in 1846. Continuously since that time New Mexico's fossils have been the subject of intense research by many paleontologists with diverse specific interests. Thou-

sands of fossil localities have been discovered and an enormous literature on New Mexico's fossils has been produced. The bulk of this work has been carried out by scientists and institutions outside the state and at present few paleontologists are employed in New Mexico.

In 1977 a University of New Mexico-Louisiana State University team under contract with the U.S. Bureau of Land Management conducted a predevelopment inventory survey of the paleontological resources in a large area in northwestern New Mexico, parts of which were destined for surface coal mining. The survey report (Kues et al., 1977) addressed the point that development of New Mexico's coal and mineral resources, which is economically essential to the state, could result in the destruction of large numbers of fossils, particularly those from the classic vertebrate bearing Late Cretaceous and Early Tertiary San Juan Basin sequence. Through this and similar surveys, it became apparent that no New Mexico institution had either individually or collectively the capacity to adequately collect, prepare, store, or display more than relatively small collections of fossils. Few specimens, particularly of vertebrate fossils, are available for study and public education in New Mexico itself, and the large numbers of specimens potentially retrievable prior to and during strip mining would eventually overwhelm existing facilities available within the state.

The 1977 UNM-LSU survey, which spent a great deal of time in the Late Cretaceous Fruitland and Kirtland formations, discovered abundant dinosaur remains and other fossils. Public attention was aroused from the inherent wide public appeal of dinosaurs and be-

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cause the occurrence of some dinosaur beds in close association with coal deposits generated discussion of the feasibility and desirability of preserving some of the fossils before or during coal extraction. Interest was heightened by environmental organizations which viewed the presence of important paleontological resources as an additional argument against the federal government permitting any mining in the picturesque badlands of the Fruitland and Kirtland formations.

As a direct result of the 1977 survey, a small group of private citizens approached the state government with the above observations. Their action led to the passage early in 1978 of Senate Joint Memorial 4, which directed the Educational Finance and Cultural Affairs Department to "make a feasibility study regarding the most appropriate and beneficial method of preserving, storing, cataloging, and displaying those fossils and ancient life forms existing on federal and state lands in New Mexico." A nine-member committee of interested laymen and scientists, the New Mexico Paleontological Task Force, was appointed to undertake the study and \$35,000 was allocated for its support.

The Task Force submitted a report in October 1978 summarizing the nature and extent of fossils occurring in New Mexico, together with a summary of scientific work and major collections and displays of this material. The report indicated that "although New Mexico is rich in fossils of national and international importance, due to inadequate planning and lack of facilities and personnel, the state has derived little benefit from its paleontology resources. Furthermore, strip mining threatens to destroy some of the state's most important fossil deposits." The report recommended the establishment of one of the following institutions:

1) *A salvage and preservation center for paleontological remains*, "to salvage fossils and gather scientific information that would be lost due to mining, construction, erosion, and other activities."

2) *A paleontology institute*, which would perform salvage and preservation functions and would also support research and limited public education programs.

3) *A paleontology museum*, which would perform the functions of a paleontological in-

stitute and also support extensive public education programs, including exhibits and publications.

4) *A state natural history museum*, which would include the functions of a paleontology museum in addition to similar programs in other fields of natural history.

As a result of the Task Force report and recommendations, the New Mexico legislature in 1979 passed Senate Memorial 31 and Senate Bill 224 (Laws of 1979, Chapter 237). Memorial 31 indicated that the legislature "is cognizant of the great scientific importance of the paleontological resources within the state," and resolved to adopt procedures that would insure protection and preservation of fossils on public lands. Bill 224 appropriated \$200,000 to the Office of Cultural Affairs, a successor agency of the Educational Finance and Cultural Affairs Department, for the purpose of "field and laboratory research, study and evaluation of the extent and scientific, cultural, and educational value of fossils and ancient life forms found in New Mexico, and for the purpose of reporting specific findings and recommendations to the 1980 legislative session." The scope and membership of the Task Force were expanded and the committee was renamed the New Mexico Life History Program Advisory Committee.

The enactment of Bill 224 in the context of Senate Memorial 4 of 1978 called for the development of the "most appropriate and beneficial method" of preserving, storing, cataloging, and displaying New Mexico's fossils; this was held to be a natural history museum instead of simply a paleontology institute or museum. The Advisory Committee decided that under the 1979 allocation the following items should be prepared:

1) A compendium of research published on New Mexico fossils, demonstrating their extent and value.

2) An independent study to corroborate the importance of the state's vertebrate fossil beds.

3) A field and laboratory program to recover fossils and prepare them for study and use.

4) A program to demonstrate the cultural and educational value of fossils through an exhibit and public education program.

5) A set of recommendations concerning future legislative steps required to develop the state's paleontology program and to provide a

natural history museum for the benefit and education of the citizens of New Mexico.

All of these requirements were completed during 1979 and 1980. The research compendium consists of a catalog detailing publications pertaining to New Mexico's fossils and was prepared at the University of New Mexico under the direction of Stuart A. Northrop. This bibliography of some 2,000 references is complete through 1979 and has been published (Kues and Northrop, 1981). Information abstracted from this compendium was then transferred to a card catalog which itemizes the known fossil taxa from New Mexico (more than 6,000 species) and their geographic and stratigraphic distributions. A listing of New Mexico taxa new to science at the time of description (over 900 species) was also compiled, together with a list of institutions holding significant collections of New Mexico fossils and institutions with permanent exhibits of fossils from New Mexico.

An independent assessment of the significance of New Mexico's fossil vertebrates was undertaken by a committee of members of the Society of Vertebrate Paleontology. Their report, submitted in August 1979, summarized the known vertebrate paleontological resources of the state and urged that "the state of New Mexico assume a major role in conserving its fossil vertebrates." The report also recommended a balanced conservation program, calling for collecting (including salvaging) fossil vertebrates and for a major institution where fossils could be "adequately stored, studied, and displayed."

Because New Mexico lacked the capacity for extensive paleontological field, laboratory, or display work, the Museum of Northern Arizona (MNA) was contracted in March 1979 to design a field program and to produce an exhibit on the state's fossils. MNA was also commissioned to produce a book on the fossils of New Mexico. This book (Trimble, 1980) was distributed free to junior high school students across the state in early 1981. The field and exhibition phases of this work were coordinated with extensive newspaper, magazine, radio and television coverage. The publicity and especially the exhibit were intended to increase public awareness and understanding of New Mexico's fossils, so that a basis would be developed for making informed, re-

sponsible judgments on a bill to establish a state natural history museum that would be introduced to the 1980 legislature.

The field work was intended to recover significant new vertebrate fossils to form the nucleus of a state museum collection. At the same time, it was designed to illustrate to the public that fossils are a renewable resource in the sense that natural erosion continually exposes new material and that the extensive collections made from the state in the past have not exhausted the resource. The point was to gain understanding and support for future field work. Partial skeletons of the duckbill dinosaur *Kritosaurus* (discovered during the 1977 survey) and the sauropod dinosaur *Alamosaurus* were collected from Cretaceous deposits in the San Juan Basin. Members of the news media and state government visited the excavations and more than 100 news articles and broadcasts covered the story.

The exhibit, entitled "Fossils of New Mexico" was designed to demonstrate to the public and members of the state legislature the scientific, educational and cultural significance of the state's fossils, and to demonstrate the potential impact of a state natural history museum. The exhibit opened in the rotunda of the State Capitol Building in Santa Fe on January 4, 1980, and remained for two months, during the entire legislative session. At the same time a bill was introduced before the legislature to provide for the construction and operation of a state natural history museum. The exhibit then traveled to Gallup and Farmington for one month each, eight months at the Albuquerque Museum, Carlsbad and Hobbs for six weeks each, and finally 12 weeks in Alamogordo. The exhibit consisted entirely of specimens, and in several instances casts of specimens, collected in New Mexico. In addition to the specimens recovered during the 1979 field work, material used in the exhibit was loaned by the American Museum of Natural History, New York, the Museum of Paleontology, University of California (Berkeley), the Museum of Northern Arizona, the U.S. Bureau of Land Management (Albuquerque Branch), and Universal Contractors, Inc., Albuquerque. It is estimated that 150,000 people have viewed "Fossils of New Mexico." In addition to the exhibit, during 1979-1980 a slide show produced by the Paleontological Task Force deal-

ing with New Mexico fossils was sent to civic centers in cities and towns across the state to reach that portion of the population which was unable to see the exhibit.

On February 14, 1980 the New Mexico State Legislature passed Bill 19 (Laws of 1980, Chapter 128) allocating \$8 million in state funding for the construction of a state natural history museum in Albuquerque. The bill requires an acceptable site to be donated and an additional \$2 million to be raised by the City of Albuquerque. A plot of land for the new museum was purchased in July 1980 by the city. At the present time (January 1981) a Director and Policy Advisory Committee for the new museum have been selected, architectural and other planning for the 100,000 square foot facility is under way, and a fund raising committee is in operation to secure the \$2 million. Construction is expected to be completed in approximately three years and the museum to be in full operation by 1985. The establish-

ment of the New Mexico State Museum of Natural History is an outstanding example of how scientists, laymen, and state government can collaborate to create an institution that will contribute significantly to increased study and public understanding of paleontology and other natural history disciplines.

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