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Article Summary: During the excavation process paleontologists and archeologists have a single opportunity to record the precise circumstances in which they locate fossils or artifacts. Once such objects have been excavated they must be cleaned and stabilized, then finally analyzed and catalogued.

Cataloging Information:

Keywords: National Historic Preservation Act of 1966, Highway Salvage Program, black market, volunteers

Photographs / Images: a fossil pictured with published information about it; preparation of a pottery display; field site with notes and numbers written on a bag to record the specimen; Rob Bozell investigating a 2,500 year-old hearth (Thomas County); volunteers investigating the ruins of a Village Farmer house (Sarpy County)

CONCLUSION

INTERPRETING AND PRESERVING THE PAST

By John R. Bozell and Michael R. Voorhies

DISCOVERY AND EXCAVATION are the most exciting and visible parts of paleontology and archaeology. News stories with pictures of archaeologists and paleontologists doing obviously strenuous, tedious and dirty field work give the impression that most of the toil is finished when the digging is completed. But digging is just the beginning of a process that includes research, analysis and collection management.

It may take many years of analysis between excavation of a site and publication of the results of a paleontological or archaeological dig. Excavation may be meticulous and detailed, but it takes far less time to remove objects from the earth than it does to analyze them, preserve them for future study and, in some cases, prepare them for display.

Before cataloging and analysis can begin, a collection of fossils or artifacts must be cleaned and stabilized to protect them from deterioration. Often, specimens must be painstakingly reassembled from thousands of tiny fragments. Tens of thousands of items might come from a few weeks of excavation, and numbering them all might take many months.

Analysis includes identifying, measuring and describing artifacts and fossils and classifying the raw materials — the type of stone or the source of pottery clay. Artifacts and fossils are often compared with those from other sites, and specialists are sometimes consulted. Like other scientists, archaeologists and paleontologists develop theories about past human and animal behavior. From those theories emerge hypotheses which require testing with data from new excavations or re-examination of old collections.

The results of scientific inquiry are usually published in technical professional journals, reports and books, but most paleontologists and archaeologists also want to share their knowledge with the public. They most often do so



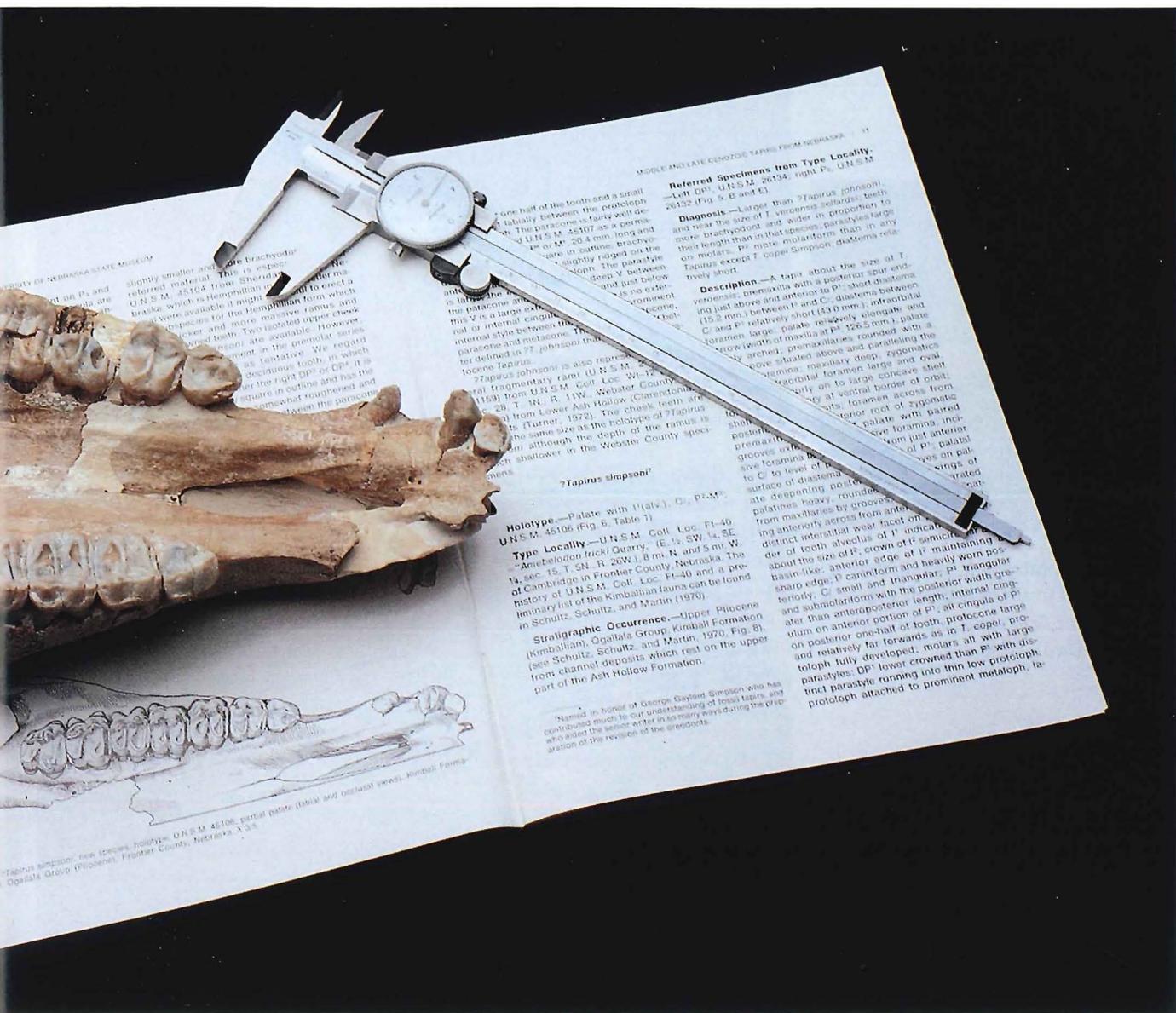
ABOVE:

Several years of study and analysis may be necessary between the discovery of an important fossil or artifact and publication of the data in a scientific journal or book.

LEFT:

Curt Peacock and Teresa Jacobs prepare a pottery display at the Museum of Nebraska History.





through museum exhibits such as those at the University of Nebraska State Museum (Morrill Hall) or at the Museum of Nebraska History, where displays present an accurate, interesting and understandable view of the past.

Unlike forests or wetlands, archaeological and paleontological resources are not renewable. Once eroded by the elements or destroyed by development, they will not grow back and cannot be re-created. That is what makes information preservation so important. Nebraska State Historic Preservation Office Archaeologist Terry Steinacher likens the archaeological and paleontological record to a manuscript of the past. Every time a site is destroyed, it is like tearing a page from the manuscript and reducing the opportunity to read about Nebraska's past.

Response to growing concern for archaeological site destruction came in the 1960s, when a series of historic preservation laws was passed. The most important was the National Historic Preservation Act of 1966, requiring federal agencies and other agencies using federal funding to identify and protect significant historic sites that might be affected by projects or, if damage cannot be avoided, to excavate the site and publish the data. Some non-federal public agencies also consider impact to archaeological sites under their jurisdiction

even if federal money is not used. But the destruction continues through private development and activities by other government agencies. Legislation to protect paleontological resources on federal lands is pending.

The Highway Salvage Program is one measure that has helped reduce some of the damage. Earthmoving machinery on highway construction projects often uncovers archaeological or paleontological sites, but since 1960, the Nebraska Department of Roads, paleontologists from the University of Nebraska State Museum and archaeologists from the State Historical Society have cooperated to minimize losses.

The Department of Roads supplies schedules and plans of future road construction for inspection long before work begins. If a site might have archaeological or paleontological significance, it is investigated by excavation or remote sensing. Unfortunately, not all sites can be located by early investigation, and some are exposed by the blade of a roadgrader. Sites sometimes can be bypassed with small changes in design or route, but if that is too costly, the site is excavated using the latest techniques to salvage as much data as possible.

Another growing threat to paleontological and archaeological sites is the black market in antiquities and fossils. Some of the damaging and unethical mining of fossils and artifacts associated with the black market has been curbed by legislation, but it continues at an alarming rate. Trespassing on private property to search for artifacts or fossils is illegal, as is disturbing an archaeological or paleontological site on government property. It is illegal to disturb human remains wherever they are found. Whenever those activities occur, everyone who is legitimately interested in the past loses.

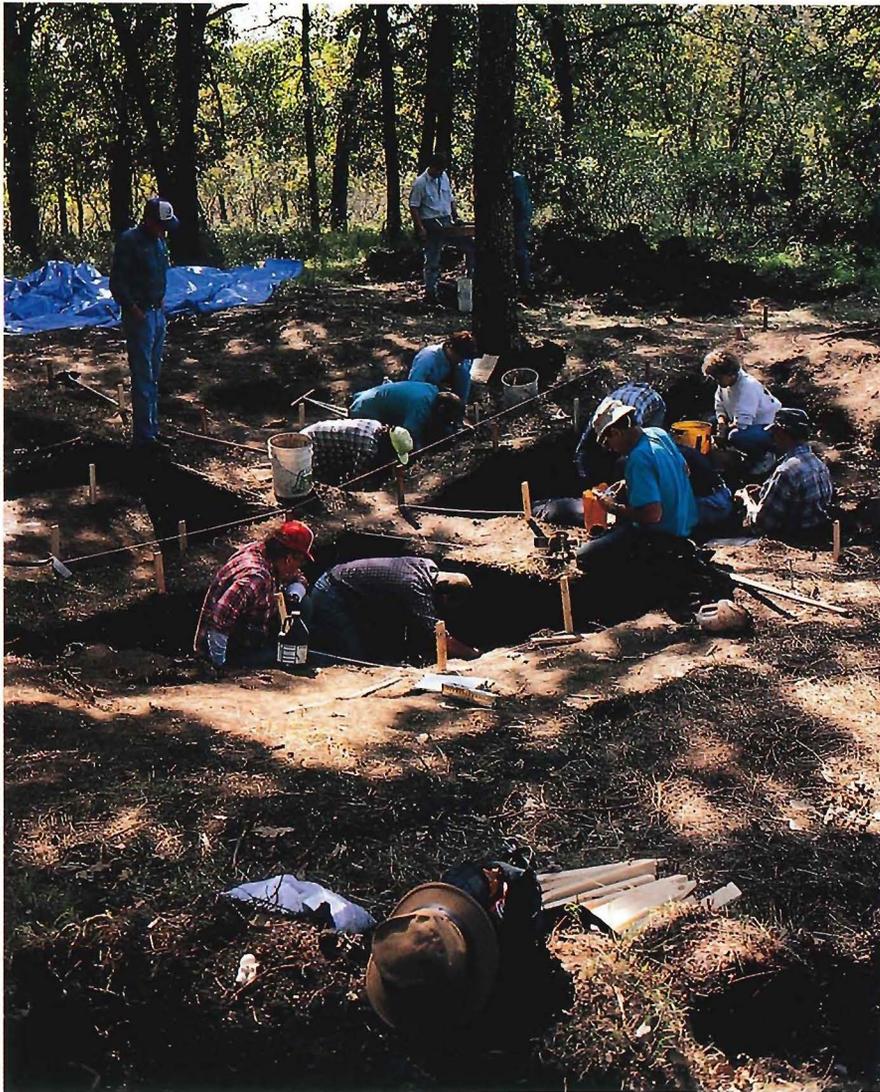
A looted site is difficult to interpret. All the restorations of places like Fort Atkinson, Fort Kearny and Rock Creek Station state historical parks are partly the result of archaeological investigations. If those sites had been looted and



The process of cataloging and managing a collection of fossils or artifacts begins at the site, where field notes and numbers on a bag record a specimen.



Archaeologist Rob Bozell investigates a 2,500-year-old hearth exposed at a road construction site near Thedford in Thomas County.



Volunteers supervised by State Historical Society archaeologists investigate the ruins of a Village Farmer house on a ridge overlooking the lower Platte River in Sarpy County.

major portions of the metal artifacts carried off, it would have been impossible to determine the location of windows and doors and assign functions to buildings or rooms. Such trophy hunting has destroyed the scientific value of many paleontological sites.

Nebraskans can be proud that fossil sites of worldwide importance such as those at Agate Fossils Beds National Monument and Ashfall State Historical Park have been preserved for the future. The state also has unique archaeological features such as the Oregon Trail and its related road ranches and forts, as well as Native American villages and camps dating back thousands of years.

Nebraskans must work together to protect what is left. Legislation can be useful but laws are no substitute for greater public awareness. To this end professional paleontologists and archaeologists must strive to make their work more accessible to the public without compromising scientific integrity.

People interested in archaeology and paleontology may want to take part in field work, and increasingly, professionals are willing to have volunteer helpers in their projects. Volunteers for archaeology work should join The Nebraska Archaeological Society, 6822 Platte Avenue, Lincoln, NE 68507; or The Nebraska Association of Professional Archaeologists, c/o Archaeology Department, Nebraska State Historical Society, Box 82554, Lincoln, NE 68501. Anyone interested in helping with a paleontological project should contact Friends of the State Museum, 307 Morrill Hall, Lincoln, NE 68588.

If you find artifacts or fossils, leave them in place and contact a specialist. To report artifacts call the Nebraska State Historical Society at (402) 471-4789, the University of Nebraska State Museum Anthropology Division at (402) 472-5044, or the University of Nebraska Department of Anthropology (402) 472-2411. To report fossils call the University of Nebraska State Museum, Vertebrate Paleontology Division at (402) 472-2657.