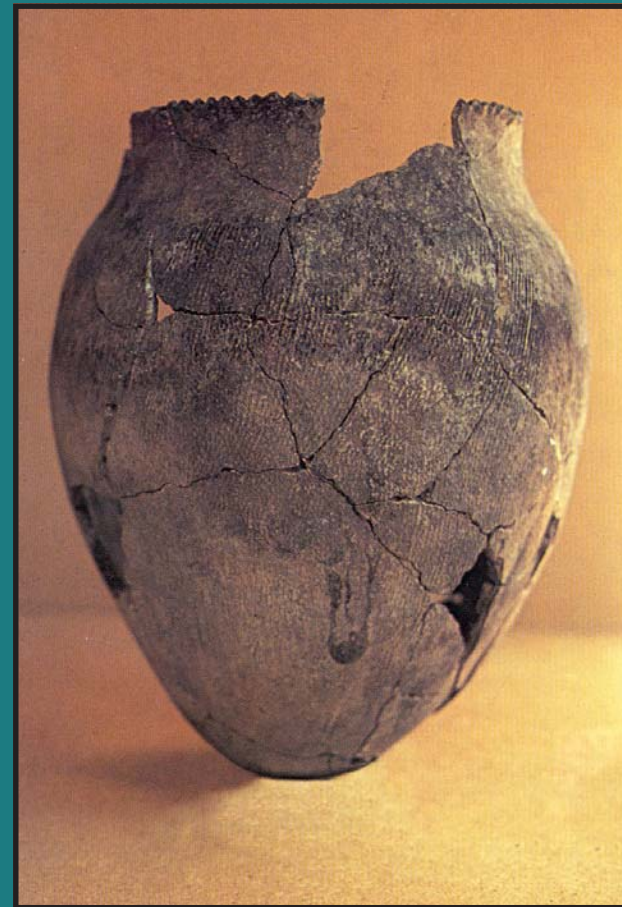


USES OF GEOLOGIC MATERIALS BY PREHISTORIC CULTURES



IN IOWA

Modern society relies heavily on geologic materials for survival. Many of these materials are processed so that their natural form is no longer evident and their geologic origin not apparent. Prehistoric Native Americans also depended on geologic materials for survival. However, their use of various minerals, deposits, and landscape elements did not alter these materials to the extent that modern technology does. Ancient Iowans used geologic materials for everyday tools as well as in symbolic and ceremonial contexts. In many instances, these uses reflect a pervasive Indian view of unity with the environment.

Native Americans have lived in Iowa for more than 11,000 years. Until about 2,500 years ago, small bands lived by hunting game and gathering wild plants. These people, referred to as Archaic cultures, relied on stone, bone, shell, and wood for tools, and they made containers, rope, and clothing from vegetation and animal hide. Some Archaic groups built hide or mat-covered huts with floors dug into the earth.

About 2,500 years ago, Native Americans (Woodland cultures) began cultivating native plants in the rich soil along Iowa's streams to supplement their hunting and gathering. They also began to make pottery from local clays, and soon afterward they established trade networks for exotic items such as marine shell, obsidian (volcanic glass), copper, and mica. This brochure shows some of these imports as well as local geologic materials used by Native Americans.

William Green, former State Archaeologist of Iowa, worked with the Iowa Geological Survey in compiling this information. For questions concerning artifacts or possible archaeological sites contact the Office of the State Archaeologist, Iowa City.



(Left) Mineral and rock material traded into Iowa between 100 B.C. and 300 A.D. includes (top to bottom) **mica** from the Appalachians, **hematite** from the upper midwest, **catlinite** from southwest Minnesota, **copper** from the Lake Superior region, and **obsidian** from the Yellowstone National Park area.



Projectile points were made from chert (flint), a form of silica present in many Iowa rock units. The smaller points were used on arrows and the larger points on spears, darts, or knives.



This rare **copper celt** (left) from a southeastern Iowa site was probably used for ceremonial purposes by a person of high status (Woodland culture).

Stone tools (right) were ground from igneous and metamorphic rocks collected from glacial deposits or stream gravels. Durable axes (top) and celts (bottom two) were attached to wooden or bone handles and used to break firewood, smash large bones, and girdle trees.



FRONT COVER

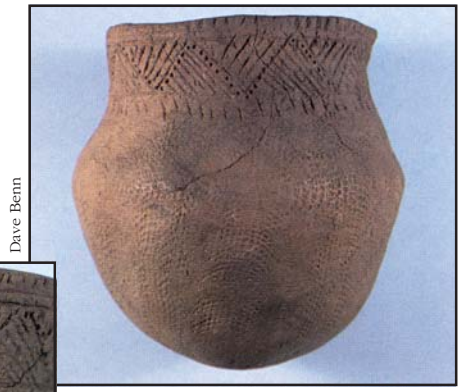
Prehistoric people in Iowa depended on the land's geologic resources for making pottery and stone tools. They fashioned earthen-ware vessels from clays found along river channels or outcrops of shale. This large vessel from northwest Iowa was made about 400 A.D. Note how its surface has been roughened by twisted cords.

Photo by Dave Benn

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Pottery clays were obtained from stream deposits or shale bedrock. Tempering materials such as sand, crushed rock, and burned clam shell strengthened the ceramic vessels. The surface of this vessel from northeast Iowa (ca. 600 A.D.) has crescent-shaped designs on the body and (close-up) twisted-cord or fabric impressions on the rim.



Dave Benn

Ceremonial and religious objects were made from a variety of materials. The **platform pipe** below, dating to ca. 100 A.D., is a bird effigy from southeast Iowa made from a northern Illinois claystone.



(Above) This eastern Iowa **platform pipe** was carved from a crystal of calcite (ca. 100 A.D.).



Images of humans, animals, and other forms were carved on sandstone cliffs and cave walls, and on resistant outcrops of reddish Sioux Quartzite. A notable figure found on rock faces across northern Iowa is that of a thunderbird or a human portraying a hawk or eagle. **Petroglyphs** such as these probably had ceremonial importance (1100-1200 A.D.).

Utilizing easily tilled soils in river valleys and in the Loess Hills, Iowa's ancient farmers raised **food crops**, as shown by the tiny seeds of goosefoot (upper left) and a 2.5" corn cob (left). Both were recovered from 800-year-old storage pits.



At the **fish weir** near Amana (left), stream cobbles were arranged across the Iowa River channel. Fish could be speared or netted as they passed through the narrow downstream opening of the "V."

Woodland groups built **burial mounds** on high ridges or on terraces overlooking junctions of river valleys. Mounds may have also served to mark hunting territories, and as spiritual links with the Earth (Fish Farm Mounds State Preserve, Allamakee County).



Jean Prior



(Above) Reconstructed **earth lodge** in Mills County. (Right) An excavated floor shows an extended entrance, interior storage pits, a central fire pit, and the location of support poles and wall posts (1000-1300 A.D.).



People of the Mill Creek (1000-1300 A.D.) and Oneota (1100-1700 A.D.) cultures grew crops in mounded rows, as shown in these rarely preserved **ridged field patterns** in O'Brien County. Note sets of parallel ridges.

Around 1400 to 1700 A.D., Indians in Iowa engraved elaborate depictions of bison (below), birds, and other creatures on flattened and polished **catlinite tablets**. Catlinite (also called "pipestone") is a soft claystone unit within the Sioux Quartzite Formation.



Protective, overhanging ledges along valley walls (**rock-shelters**) were frequently inhabited by Native Americans (Wildcat Den State Park, Muscatine County).

