

One of the more-significant applications of radiocarbon dating in this country is in determining the dates connected with early inhabitants of North America. With the aid of this archeological tool, it has been possible to date the remains of ancient living sites in the Western United States, some of which have been uncovered at the AEC's Nevada Test Site. The first establishment of these sites, about 11,500 years ago, apparently coincided with the time a land bridge was open from Asia to America over what is now the Bering Strait. This was most likely the route taken by the first immigrants to America, a population of mammoth-hunters who used the Clovis arrow and spearpoint (Figure 2). Through the use of carbon-14 dating of bones of animals killed with Clovis arrows, it was possible to establish that the Clovis people preceded the bison-hunting Folsom people of the Southwest, who were long thought to be the first inhabitants of America.



*Figure 2. A Clovis arrowpoint chipped from flint by the earliest men on the American continent. The photograph is actual size.*

Carbon-14 is particularly useful in establishing a chronology in cultures, and this dating process is necessarily carried out in the context of known natural changes, the recorded reign of ancient kings, and other time-measuring devices, such as tree-ring dating. While radiocarbon dating is the most widely used method of measuring time covering the period of the last 50,000 years, significant advances have been made in other time-dating approaches using such long-lived, naturally occurring isotopes as thorium-230, potassium-40 to argon-40 decay, and rubidium-87 to strontium-87 decay. Thorium-230, with its half-life of 80,000 years, is best for dating materials in the range of 10,000 to 200,000 years; it also can be used for comparison purposes with the older carbon-dated materials. Because of their very long half-