

# THE ALCHEMY OF TIME

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Film #10-103

**SUBJECT AREA:** Human origins, cultures of people, primitive technology, beginning archaeology, introductory anthropology.  
**GRADE LEVEL:** High School, College, University, Adult  
**LENGTH:** 16mm color/sound - 26 minutes

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Directed by: DR. EARL H. SWANSON, JR.,  
With the assistance of the  
NATIONAL SCIENCE FOUNDATION  
PURCHASE PRICE: \$310.00 - RENTAL PRICE: \$25.00

## SYNOPSIS

Heat treating of lithic materials is a process believed to have been used by Early Man in the making of stone tools and weapons. Don Crabtree, Research Associate, Idaho State University Museum, discusses the probable use of heat treatment as a step in the manufacture of Clovis, Folsom and Cumberland fluted projectile points. He explains that various lithic materials require different heating and cooling temperatures in order to produce changes in the material. The net effect is to anneal the glassy rock, making it easier to flake. Some materials change color during the heat treating process while no visible changes are noticeable in others. Crabtree indicates that heat treating may be related to the manufacture of the Clovis, Folsom and Cumberland points during a period of between 8 and 11 thousand years ago. Crabtree demonstrates the highly refined percussion and pressure flintknapping techniques required to produce these three unique styles of Early Man points. Slow motion photography illustrates these techniques.

## VOCABULARY

- |                        |                      |
|------------------------|----------------------|
| 1. Heat treatment      | 6. Channel flakes    |
| 2. Flute               | 7. Lenticular        |
| 3. Moose antler billet | 8. Denticulate       |
| 4. End shock           | 9. Striking platform |
| 5. Step fracture       |                      |

## INTRODUCING THE FILM

Student preparation - Survey student interest, knowledge and comprehension of lithic technology by:

1. Examination of replicas of aboriginal points as compared to the replicas made by Don Crabtree.
2. Discuss environmental changes affecting Early Man and other living species in North America during the period of between eight and eleven thousand years ago.

## CONCEPTS

1. Heat treatment often changes lithic material in color by oxidizing iron and gives almost all lithic material a lustrous finish on the flaked surfaces.
2. Clovis and Folsom points illustrate the evolution of fluting techniques in Western North America. The Cumberland point shows a technique similar to that required in the making of some blades.
3. The disappearance of fluting may be related to the disappearance of extinct mammals which were once hunted by Early Man.

## QUESTIONS

1. How was heat treatment discovered?
2. Why would heat treatment be important in the making of fluted points?
3. What does fluting accomplish?
4. Is heat treatment the only sophisticated technique used in the making of Clovis, Folsom, and Cumberland points?

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