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Letters

Hominid arsonists?

Paleoanthropologist David Pilbeam states that the discovery of a 2.5-million-year-old hominid skull "raises the whole new issue of what drives species change" because this dating challenges the view that worldwide climatic change around 24 million years ago spurred hominid evolution through a shift in Africa to a more savanna-like habitat ("Skull Gives Hominid Evolution New Face," SN:8/16/86,p.100).

It is conceivable the food gathering habits of this particular hominid group may have inadvertently fostered the growth of prairie on its territory long before the arrival of savannas. This phenomenon would simply require adoption of an acculturated trick no more complicated than the trick an entire tribe of monkeys in Japan learned within a single generation when presented with rice strewn on a beach. The entire colony quickly learned to throw the sand and rice into tidal pools; they then gathered the clean rice floating on the

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Cover: Computer simulations of blood flow through the heart may be a useful tool for designing mechanical heart valves. Shown is one example of a "ball-in-cage" heart valve, set against a frame from a sequence of two-dimensional, computer-generated pictures in which the valve is represented by a circle. The streamlines around the valve and in the heart chamber indicate blood flow patterns at one moment during a heartbeat. (Photo: NHLBI/ Illustration: Peskin & McQueen, NYU)



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surface. Brighter hominids could have as quickly and easily grasped the fact that accidental fire saved them the bother of searching out and chasing food because animals, reptiles, insects, etc., when trapped and killed by fire, were easy to find on a denuded landscape. They might then have adopted a friendly affinity with fire and learned to spread it in order to increase the food yield.

A reflex reaction model for such behavior was recently seen on public television when a wild chimpanzee family was presented with a highly feared threat in the form of a stuffed leopard. They repeatedly attacked, sometimes with sticks, and finally in an act of supreme bravado dragged it by the tail through the grass. Substitute a branch with its leaves afire, a fearsome object to most animals, and it becomes clear that only a similar amount of bravado is needed to spread fire.

Certain prairie conservationists favor the technique of regular, controlled burning on conservation areas in order to simulate natural lightning fires that once kept these areas

free of trees and brush. It can be seen that if a large and growing tribe of hominids adopted the proposed acculturated behavior, it would lead to the spread of prairie on their territory. The rich, moist diet it provided would be especially welcome during drought periods, a time when fire spreads quickly. A tribe using this technique would obviously increase more rapidly than others, since predators would be discouraged by the fire and would only feed on fringe leavings well away from the fire front. This area would become an open, inhospitable, scorched earth barrier to intruders and, as a result, an area to which the incendiary hominids could safely retreat at night, since it was now relatively free of predators and vermin.

Such an early hominid affinity with fire would provide the soft, rich diet essential to evolutionary change and appears to be a precursor to the complete control of fire that allowed *Homo sapiens* to survive an ice age.

John Chipura
Park Ridge, Ill.

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