Discussion and Debate

The Limited Nutritional Value of Cannibalism

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In the many discussions on cannibalism, attention has been given to human flesh as a source of quality protein, but without the necessary quantification. A few calculations are therefore in order.

A 50 kg man might yield 30 kg edible muscle mass if well and skillfully butchered, and 30 kg edible muscle would yield about 4.5 kg (4500 gm) protein, or 4.0 kg protein assuming 90% digestibility.

Assuming quality protein requirements as 1 gm per kilogram of body weight, this would provide one-day's protein requirements for approximately 60 60-kilogram adults. One man, in other words, serves 60, skimpily.

Reducing the man-a-day ration to a more realistic man a week, this would barely amount to 9 gm quality protein per day, which might still be viewed as a useful protein *supplement* in a one-cereal culture experiencing protein malnutrition.

Less than one man per week for a group of 60 would not appear to be nutritionally worthwhile, even as a protein supplement to a cereal or tuber diet with limiting amino acids.

Considering its cost, then, the nutritional value of cannibalism may therefore be viewed as questionable, unless a group is in a position to consume its own number in a year. While human flesh may serve as an emergency source of both protein and calories, it is doubtful that regular people-eating ever had much nutritional meaning.

Late Pleistocene Extinction: A Note

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Guthrie (1968a) has demonstrated that the late Pleistocene extinction of large mammals in Alaska, including bison, horse, and mammoth, can be attributed to climatically influenced ecological factors. Their presence in Alaskan deposits found at four areas of interior Alaska—Fairbanks Creek, Engineer Creek, Cripple Creek and Gold Hill—indicates the Alaskan occurrence of extensive grassland environments, able to support a grazing fauna during Wisconsin glacial time. Extinction of these grazing forms in the area can be related to the severe reduction and destruction of the grassland habitat. Subsequent replacement of the grazing megafauna by browsing forms such as moose and caribou reflect the pronounced ecological shift. Guthrie's (1968b) study of small mammalian forms supports his conclusions. On the basis of Guthrie's work, it would seem that Martin's (1967) views are in need of revision regarding the role of man in the extinction of late Pleistocene large mammals.

Martin suggests that although massive extinction "occurred at a time of climatic change, the pattern appears to be independent of a climatic cause" (1967:114). In Martin's view, the major waves of extinction in any area occurred only after the arrival of prehistoric hunters; the pattern of extinction follows the route of cultural dispersal. Thus, a wave of Afro-Eurasian extinction is followed by similar occurrences in Australia, Northern Europe–Eurasia–North America, Southeastern North America, Central and South America. West Indies, New Zealand–Madasgascar respectively. Martin further stresses the fact that extinction occurred without replacement. Guthrie (1968b) has shown that in the Alaskan refugium extinction was closely related to habitat destruction and the loss of the grassland ecosystem. At the end of the Wisconsin glaciation, the climate became wetter and grassland gave way to woodland. Abrupt changes are similarly evidenced by the sedimentary record of the area.

It is possible that *Bison bison* supplanted, at least for a time, *B. priscus* (= *B. crassicornis*) and that, in Alaska, *B. priscus* became extinct before *B. bison*. Small mammal extinction may be related to the same causes that resulted in megafaunal extinction.

Thus, it would seem that the Alaskan or Nearctic link in Martin's chain of extinction