Book Reviews

Meat Eating in Primates

The Predatory Behavior of Wild Chimpanzees. GEZA TELEKI. Bucknell University Press, Lewisburg, Pa., 1973. 232 pp., illus. $15. The Primates.

As the only cultural artifacts that commonly survive for our inspection, tools have long been a focus of theorizing about the behavior of early man. Another focus has been the transition from a mainly vegetarian diet to meat eating, thought to have been inaugurated among higher primates by *Australopithecus*. In a classical demonstration of the comparative ethological approach, studies of another surviving anthropoid, the chimpanzee, now necessitate reappraisal of both issues. Although chimpanzee tools need only slight preparation and are soon discarded, their use undermines the unique status of man as the only primate tool user. The chimpanzees of the Gombe National Park in Tanzania, under continuous study since 1960 by Jane van Lawick-Goodall and her colleagues, have yielded key information not only on this point but also on the habit of eating meat. As we learn in more detail in this book deriving from fieldwork at Gombe by the author in 1968 and 1969, they are also skilled hunters. The point is significant, for although meat eating had already been described by DeVore and Washburn and others in baboons, most of the prey seemed to be stumbled upon rather than hunted. The tendency was to relabel baboons as not predators but omnivores. While chimpanzees eat only a little meat—at Gombe it probably makes up less than 1 percent of their diet—and while they do not hunt often—averaging about 10 hunts per year—the Gombe studies leave no doubt that this is no casual activity but a pattern of behavior deeply rooted in the collective life of this highly social primate.

Of the 132 incidents of meat eating known to have occurred in a decade of studies on this community of about 50 chimpanzees, 49 are known from fecal analysis and the discovery of carcasses. Of the 83 directly observed incidents, prey were killed in 46. The 56 prey identified included all six mammals common in the area that might be potential prey, most common by far being young baboons. As is well illustrated by photographs and samples of field protocols, all three phases, pursuit, capture, and consumption, are definitely group activities. In the pursuit phase, always by males in the incidents described, one may see some animals quietly taking stations along possible escape routes, watching intently as a companion maneuvers for a direct leap at the prey. In contrast with the silent concentration of the first phase, the capture is followed by wild excitement, with vocal chorusing audible at great distances, often bringing other animals to the site of the feast.

There are many points of interest in the process of food sharing and consumption. The eating is unhurried, and several hours may pass before the last morsel is consumed. The chimpanzees show every sign of savoring the meat. Brains are a special delicacy, often mixed with a "wodge" of leaves from which the juice is sucked at leisure. Such wodges as well as pieces of meat and fragments of bone may pass through several hands after initial division of the carcass by several males, each then becoming the focus of a cluster of companions waiting for a chance to take a portion or begging for it with special gestures and vocalizations. The carcass may eventually be shared by as many as 15 chimpanzees. The sharing is singularly unaggressive, and there is an unusual suspension of the rules that usually govern the priority of access to food during competition according to rank in the dominance hierarchy. Meat sharing is the unique circumstance in which the alpha male may be seen begging for food from a subordinate who would flee in terror on his approach in other feeding situations.

There can be no doubt that predatory behavior is deeply rooted in the social life of the chimpanzee. The meat eating of nonhuman primates can no longer be dismissed as casual omnivory. The opened baboon skulls from which brains are eagerly removed are remarkably like those found by Raymond Dart with australopithecine remains. This much chimpanzees can accomplish without the aid of hunting tools. This discovery does not, however, undermine the hypothesis of Dart and others that significant changes in the hunting behavior of *Australopithecus* occurred with the onset of tool using. Whereas studies of group hunting in social carnivores such as lions and hyenas demonstrate that a key advantage is the collective ability to take prey larger than themselves, the prey known to be taken by chimpanzees are much smaller than they are. Tools may well have been necessary for the emergence of this next step in the evolution of human carnivory. However, this other predatory anthropoid, excitable and ebullient it is true, is hardly the picture of vicious cruelty that some of the more colorful reconstructions of australopithecine personality have led us to expect.

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Noneutherian Mammals

Life of Marsupials. HUGH TYNDALE-BISCOE. Elsevier, New York, 1973. viii, 254 pp., illus. $15. Contemporary Biology.

The publication of this book marks a special point in the development of zoology in Australia. *Life of Marsupials* is the first text to comprehensively review the general biology of this intriguing group of mammals. The author clearly describes the many physiological adaptations which fit a variety of marsupial species into their environments. In doing so, he offers emphatic refutation of the hoary idea that marsupial organization is in some way inferior to that of eutherian mammals.

The first part of the book describes the relationships and origins of marsupials. Tyndale-Biscoe presents a new hypothesis to account for the present distribution of marsupials in Australia and South America. He suggests that, in the early Cretaceous, primitive forms of multituberculates, eutherians, and marsupials were equally distributed throughout the world. When the angiosperms radiated in the early Tertiary, the first mammal group to evolve adaptations to exploit these new food sources gained an advantage. Thus, Tyndale-Biscoe suggests that on each continent