News of Science

Hunters or Hunted?

During recent years, Raymond A. Dart, to whom belongs the credit of having discovered the first of the Australopithecines, has written at considerable length about the social life of these interesting and controversial "man-apes" from the early Pleistocene of South Africa. In various papers, from 1948 onward, he has pictured these creatures as fire-users, hunters, and bone-collectors (more specifically, head-hunters), and as possessing a primitive bone-tooth-horn culture. One must perforce admire the ingenuity and imagination displayed by Dart in his reconstruction of australopithecine society. Yet the data upon which his deductions are based, and hence his conclusions themselves, have proved somewhat short of convincing to at least some students of human evolution.

The evidence advanced by Dart [*Am. J. Phys. Anthropol.* N.S. **6**, 259 (1948), *et seq.*] for the deliberate use of fire by these creatures has not withstood critical analysis [Oakley, in *An Appraisal of Anthropology Today,* Tax *et al.,* Eds. (Univ. of Chicago Press, 1953), pp. 29–31; *Weekly Evening Meeting Roy. Inst. Gr. Brit.* (20 Nov. 1953); *Am. J. Phys. Anthropol.* N.S. **12**, 9 (1954); also see comments by Straus, *Science* **120**, 356 (1954)]. Moreover, competent students, such as Oakley [*Weekly Evening Meeting Roy. Inst. Gr. Brit.* (20 Nov. 1953)] and Von Koenigswald [*Proc. Koninkl. Ned. Akad. Wetenschap. Ser. B* **56**, 403 (1953)] have ascribed the accumulations of nonaustralopithecine bones found in the australopithecine deposits to the activities of carnivores, including hyenas. Yet Dart and his pupil Hughes have persisted in their attempts to dismiss the bone-accumulating hyena as a myth [Hughes, *Am. J. Phys. Anthropol.* N.S. **12**, 467 (1954); Dart, *Ann. Rept. Smithsonian Inst. for 1955* (Washington, D.C., 1956), p. 317; Dart, *Am. Anthropologist* **58**, 40 (1956)] and to attribute these amassments to deliberate, selective, collecting proclivities of the "man-apes"—this despite well-attested evidence of bone-accumulation by cave-dwelling hyenas in the Pleistocene [Zapfe, *Forsch. u. Fortschr.* **15**, 269 (1939); *Z. Gesamtgebiet Geol. u. Mineral. sowie d. Angewand. Geophys.* Suppl. **12**, 1 (1954)]. Indeed, Dart [*Ann. Rept. Smithsonian Inst. for 1955* (Washington, D.C., 1956)], with more fervor than persuasiveness, has conjured up an "osteodontokeratic culture" for the Australopithecines from these piles of bones and has reconstructed therefrom his notions of the hunting techniques of these animals. To equate the supposed weapons of the Australopithecines with those of Hercules and Samson may appeal to one who is convinced that these Pleistocene primates are his lineal ancestors; but it is scarcely justifiable.

Just as Oakley (*vide supra*) demolished the supposed proofs of australopithecine pyrotechny, Washburn [*Am. Anthropologist* **59**, 612 (Aug. 1957)] recently has presented evidence which seriously questions the reality of the so-called "osteodontokeratic culture" of the "man-apes." While looking for baboons in the Wankie Game Reserve, Southern Rhodesia, in 1955, Washburn made systematic records of the bones found in 35 recent kills of carnivores. The distribution of bones in these kills (skulls and vertebrae preponderating) caused him to conclude that the high frequency with which nonaustralopithecine skulls, jaws, and upper cervical vertebrae occur in australopithecine deposits does not necessarily constitute evidence that the "man-apes" were hunters; rather, it may be a consequence of selective eating by carnivores, for such a type of bone collection is the result of the normal eating habits of these animals. Although he emphasizes that a variety of animals may have been involved as agents in the production of these accumulations of fossil bones, Washburn is strongly inclined to the belief that hyenas were an important factor. He notes that the brown hyenas of Kruger National Park collect the heads of medium-sized antelopes, baboons, and a few carnivores. Not only are these the kinds and distribution of bones found in australopithecine deposits, but in addition, hyena coprolites have been found therein. Washburn thus concludes that it is "probable that the australopithecines were themselves the game, rather than the hunters."

Dart's "osteodontokeratic culture" hitherto was, at best, *sub judice*. Washburn's dispassionate and objective study now makes its actuality even somewhat less than improbable.

WILLIAM L. STRAUS, JR.
Johns Hopkins University

NSF Support for Life Sciences

The Division of Biological and Medical Sciences of the National Science Foundation has announced that the next closing date for receipt of research proposals in the life sciences is *15 January 1958*. Proposals received prior to that date will be reviewed at the winter meetings of the foundation's advisory panels, and disposition will be made approximately 4 months after the closing date.

In addition to funds for the support of basic research in the life sciences, limited funds will be available during the current fiscal year for the support of research facilities and programs at biological field stations. Inquiries should be addressed to National Science Foundation, Washington 25, D.C.

AEC Office in Tokyo

An Atomic Energy Commission office was opened in Tokyo, Japan, on 15 November. W. H. Pennington has been appointed scientific representative to head the office, with P. A. Roessler as assistant.

The Tokyo office will aid in the scientific and technical aspects of the rapidly expanding atomic energy developments in Japan. The new unit's activities will include liaison with the Japanese atomic energy authorities and scientists in connection with implementation of the bilateral agreement for cooperation in the uses of atomic energy. The AEC scientific representative will also assist the Department of State, the International Cooperation Administration, and the U.S. Information Agency.

Engineering Salaries

The average engineering teacher in American colleges and universities earns a salary of $6634 per year. He adds consulting and other engineering work to bring his total annual earnings to $8862. He earns more if he teaches in a privately endowed institution than he does if he teaches in a public institution, and he earns more on the Pacific Coast than anywhere else in the nation.

These figures come from a new survey by the American Society for Engineering Education of 1956 engineering salary figures originally gathered by the Engineers Joint Council. The A.S.E.E.'s