A Quest for Human Traces

Taphonomy and Archaeology in the Upper Pleistocene of the Northern Yukon Territory. A Glimpse of the Peopling of the New World. RICHARD E. MORLAN. National Museums of Canada, Ottawa, 1980. xxvi, 398 pp., illus. Paper. National Museum of Man Mercury Series. Archaeological Survey of Canada Paper No. 94.

The time when the New World came to be occupied by humans is still in question. It is known that Beringia was a faunal bridge from the Old to the New World during the Cenozoic (*1*). At the end of the Pleistocene, particularly during the warmer periods between 120,000 and 70,000 years ago and also between 50,000 and 25,000 years ago, when the amount of water bound in glacier ice was reduced, it was at times covered by water and became a strait, as it is today. During the colder stages from 70,000 to 50,000 and from 25,000 to 15,000 years ago it was mostly uncovered to form a bridge, and passage was possible. Alaska and the Yukon area became the eastern part of Beringia. An exit to the continental south through a corridor between the Laurentian and Cordilleran ice shields was almost always open. It probably was never closed completely for more than a millennium, and even during such times some animals could have crossed the icy barrier. On the other hand, even when the corridor was wider it did not provide a link sufficient to form Beringia and lower North America into a unit with respect to fauna and flora. They were distinct environmental provinces with contacts of varying intensity.

There are good reasons to believe that humans as hunters and gatherers adapted to subarctic climatic conditions in the Old World at least 60,000 years ago (*2*). It is possible that they were present in Beringia at that time, but this has yet to be documented archeologically. So far there is no evidence that humans were present even in Siberia earlier than 40,000 years ago (*3*), and the oldest sites that have been found in Beringia are about 11,000 years old (*4*).

In such cases archeologists normally have to wait until luck offers sufficient evidence. This is not so in Beringia, where for the past 14 years planned Canadian research has been conducted to clarify the question by systematically collecting Upper Pleistocene fossils in Old Crow Flats in the northwestern Yukon Territory. There have been three field projects: the first, which concentrated on faunal aspects, by the National Museum of Natural Sciences, Ottawa, under C. R. Harington (*5*); the second by the University of Toronto under W. N. Irving and R. Bonnichsen (*6*); and the third by the National Museum of Man, Ottawa, under R. E. Morlan. The book reviewed here is the first detailed report of the National Museum of Man project, begun in 1975, and includes accounts of the first collection made by Irving in 1967 during his tenure at the museum and the potentially relevant archeological objects from Harington's material.

The majority of the fossils, which came from nearly 200 locations, were found out of context, but in recent years more and more objects have been observed and documented in stratigraphic position. The basin is filled by lacustrine and fluvial sediments intersected and exposed by the postglacial Old Crow River. The base (Unit 1) is formed by a lake clay of Illinoian age. Unit 2 is reworked clay from the end of that stage or early Sangamon times and contained some fossils. Units 3, 4, and 5 are mainly alluvial sediments with concentrations of fossils. Unit 6 is another glacial lake clay of later Wisconsinan age. Units 7, 8, and 9 are other alluvial sediments or peat layers formed during the postglacial drainage period that started about 12,000 years ago. Carbon-14 dates for Unit 5 lie between 32,000 and 41,000 years ago. The base of Unit 4 has given indefinite dates of > 50,000 years ago. It is formed by a disconformity (A) underlain by tephra that according to fission track estimates is not older than 80,000 years.

Most of the vertebrate remains were found in Units 4 and 5. They consist mainly of mammoth, bison, horse, and caribou. This is a rather rich fauna for the northern Yukon Territory in the Wisconsinan Period. All four animals are good potential prey for human hunters, as has been documented in Europe for this time range (*2*). Collagen dates from redeposited Old Crow bones range from 38,000 to 22,000 years ago, with a concentration around 28,000 years ago. These are slightly later than the direct dates obtained from the units. Collagen dates from Unit 7a lie between 14,000 and 11,000 years ago, with a peak near 12,000 years ago.

But what about humans themselves? The author concentrates on a detailed discussion of taphonomy and archeology, thus adding to the technical observations that have been given by Bonnichsen (*6*). Taphonomy is the enterprise of reconstructing the processes embedding fossils, well known in paleontology. Archeologists would be well advised to put more thought into problems of this kind before attempting to reconstruct human activities. That is the crucial argument of this book: there is no direct evidence at this point that the animals were killed by humans. For that we would need either an observed "kill site" or a projectile point of stone or bone stuck in animal remains. Projectile points appear in the Old World as available weapons for this time range (*1*). Cutting or working marks made on bones after the death of the animals but before "burial" sedimentation would document butchering or productive use by humans. Intentional flaking of bone, like intentional flaking of stone, is also difficult to prove. Similar results can be produced by natural forces through the combined effects of freezing and moving bone fragments even if no pebbles are present. In addition, polishing and scratching can be caused by sand. The author acknowledges these problems, but few systematic studies of the effects of natural forces have as yet been carried out (*6*). On the other hand, there are some Old Crow specimens with traces for which such origins seem unlikely. Among them are a polished horse mandible (NaVk-5:1), a caribou antler billet (NbVl-1:15), and a mammoth tusk fragment (MlVl-2:142–37). There are also pieces such as NbVl-2:12 and MlVl-2:27–1 found in situ that have deep cut marks as well as strangely patterned shallow ones. The probability that they were worked by humans is higher than 80 percent. Unfortunately these are all isolated specimens, as is the famous fleshing tool made from a caribou tibia (MlVl-1:1c). This tool was not found in stratigraphic context but has been dated to the upper range of the collagen samples, before 22,000 years ago. There are also scattered stone tools collected out of stratigraphic context in the basin area that could belong to the times before the last glacial lake. On the other hand, those found in the lowest part of Unit 8 may be dated to the transition from the Pleistocene to the Holocene about 12,000 to 10,000 years ago.

To conclude: The Old Crow Basin was a faunal refuge during the older Wiscon-

sinan Period from before 80,000 to about 22,000 years ago. Its hunting potential was excellent for humans adapted to cooler climatic conditions. Bone fragments that must be considered as potentially modified by humans and even true artifacts such as the fleshing tool have been found there. Though these could have been made from well-preserved older bones that were collected from reopened sediments after the time of the last glacial lake, there remain specimens observed in the old sediments whose status as artifacts this reviewer, in his experience, cannot dispute, such as NbVl-2:12 and MlVl-2:27–1 with their cutting marks. It must be kept in mind, however, that they all are isolated finds and that archeologists need stratified assemblages before they can prove the presence of humans beyond doubt. It is to be hoped that such sites will soon be found in the Old Crow Basin.

HANSJURGEN MÜLLER-BECK
Institut für Urgeschichte,
Universität Tübingen,
D7400 Tübingen, West Germany

References and Notes

1. D. M. Hopkins, Ed., *The Bering Land Bridge* (Stanford Univ. Press, Stanford, Calif., 1967).
2. D. Mania and V. Toepfer, *Königsaue: Gliederung, Ökologie und mittel-paläolithische Funde der letzten Eiszeit* (VEB Deutscher Verlag der Wissenschaften, Berlin, 1973).
3. I. A. Mochanov, *Occas. Pap. Dep. Anthropol. Univ. Alberta* **1**, 54–66 (1978).
4. W. R. Powers and T. D. Hamilton, *ibid.*, pp. 72–77.
5. C. R. Harington, *Syllogeus*, No. 15 (National Museum of Natural Sciences, Ottawa, 1978).
6. W. N. Irving, *Occas. Pap. Dep. Anthropol. Univ. Alberta* **1**, 96–101 (1978); R. Bonnichsen, *Archaeol. Surv. Canada Pap.* No. 89 (National Museums of Canada, Ottawa, 1979).

Kin Organizations

The Versatility of Kinship. Essays Presented to Harry W. Basehart. LINDA S. CORDELL and STEPHEN BECKERMAN, Eds. Academic Press, New York, 1980. xviii, 382 pp. $40. Studies in Anthropology.

Explanations of family can emphasize the relation between kin organization and changing ecological, economic, and political conditions; they can emphasize the limited human possibilities for regulating mating and sexual relations, for rearing children and perpetuating the gene pool, for cooperatively accomplishing domestic labor, and for passing on wealth and productive means to the next generation; they can also emphasize the cognitive and linguistic abilities one must acquire and use to properly identify and interact with relatives; and of course, these emphases can be integrated. The anthropological literature on kinship, moreover, contains firsthand reports of kin organizations, analyses of these descriptions, and abstract comparisons that focus on individual development, on change within groups, and on synchronic variation within and among groups and even over the primate order itself.

The Versatility of Kinship reflects several of these concerns. The volume is a collection of 15 essays honoring Harry W. Basehart, professor emeritus at the University of New Mexico. The contributors are mostly Basehart's colleagues and students and scholars who share his professional interest either in African ethnology or in the Native American ethnology of the Southwest.

The book conjoins these interests with, for example, studies on Tierra del Fuego food foragers of historic times, of Eastern Creek Indian resurgence in modern Alabama, of Swiss peasants, and of urban immigrants to New Zealand and to New England. In doing so, it attempts to pinpoint some of the variables that affect the way families and communities are organized in various times and places. Many of the contributions are explicitly comparative either across time or between geographically or culturally related peoples.

The paper by Keesing, for instance, traces the relationship between the Solomon Island Kwaio's childhood dependence on kin and the "ultimate" moral imperatives that regulate cooperative living; the paper by Spuhler compares cultural, linguistic, archeological, geographical, and genetic covariance among Hopi-Tewa and related Aztec-Tanoan groups; the paper by Aberle compares marriage rates and the rules that regulate them among various Navajo and Western Apache peoples; and the paper by Lamphere, Silva, and Sousa describes how predominantly rural Azores-Portuguese families change when the women enter the work force upon immigrating to New England.

Despite the admirable attempt by Cordell, Beckerman, and Hammel to relate the papers in this volume, there is little coherence beyond the versatility theme. Many of the papers will be of interest only to area specialists. Three, however, are innovative enough to make the volume important, and at least one contains a statistical muddle that could be pedagogically useful for methodologists.

I was particularly disturbed by Netting's use of statistics in analyzing Torbell (Swiss) marriages. Briefly, he reviews 250 years of marriages among patrilines. He then partitions the patrilines into groups of patrilines, choosing the number of groups and their membership so that groups will have the highest possible rate of endogamy. Comparing the rates of marriage between "groups," he tautologically finds the rate of group endogamy much greater than chance (.0001). From this, he concludes that economic stability during the last three centuries has led to "quantitative consistencies of marital choice" (p. 266). Of course, with such methodology even economically unstable villages that have limited numbers of patrilines and therefore recurring patriline marriages could be shown to have patterned endogamy. It is difficult, in fact, to imagine any random phenomena that could not be grouped after the fact into some number of patterns and "proved" highly unlikely by such an approach.

The best papers in this volume are three on the resilience of kin organizations that trace descent exclusively through females. Since Morgan's pioneering research on the Iroquois during the last century, it has been observed that such organizations are statistically associated with economies where females make a substantial and valued contribution to a horticultural subsistence base. The corollary to this observation is that once political economic change begins to alter this horticultural base the inheritance rules are increasingly challenged, giving way to the patrilineal and cognatic estate distribution rules we find in the modern world.

This inference has some support—several southeastern and midwestern Native American groups were once matrilineal and now are not—but the evidence is too inconclusive to warrant a confident statement that 20th-century matriliny is doomed. On the contrary, the evidence presented by Klara Kelley on the Navajo, by Karla Poewe on the Zambian Luapula, and by Elizabeth Colson on the Gwembe and Plateau Tonga of Zambia strongly suggests that under some conditions matriliny may be versatile enough to persist.

Kelley describes the changing political economy of the Navajo immediately prior to their 1864 incarceration at Fort Sumner. Although pastoralism almost always favors male property rights, the development of commercial livestock production among the Navajo failed to destroy matrilineal organization. Kelley suggests that the establishment of the reservation made land inalienable and therefore permitted largely matrilineal residence rights to persist. Since trade and credit were controlled by non-Nava-