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these sites on fully dressed subjects. I therefore recommend using the easiest site to find, the iliospinal anterior. The investigator stands in front of the subject and places both hands around the pelvic region while he looks for the site with the thumb. It is important to hold the subject firmly, since with the pressure of the thumb looking "blindly" for the reference site he might tend to lose his balance. Once the site has been determined, the thumb maintains contact with it until the tip of the anthropometer's staff is touching the site frontally; at that moment a quick reading is made.

Skinfold (skinfold caliper). The standard sites for skinfold measurements are the triceps, sub-scapular, and supra-iliac regions. Of these, the last two may present cultural difficulties because of the reluctance of many subjects, especially women, to uncover these regions. The sub-scapular region can be measured on a clothed subject, however, provided that no more than a flat, loose regular shirt is worn. The shirt should

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During the last decade, paleoanthropological discoveries of great significance have occurred in the Lake Rudolf basin (Leakey 1973, Howell and Coppens 1974). While many of the new finds relate to Plio/Pleistocene hominids, there is also a growing body of data concerning the cultural adaptations of the early Holocene (Robbins 1972). Perhaps the most fascinating aspect of these later prehistoric adaptations centers on the skillfully fashioned bone artefacts which have now been found at sites on all sides of the lake. Prehistorians have been especially interested in the Lake Rudolf material because of the striking resemblances to bone implements made in areas as far removed from one another as eastern Zaire, Egyptian Nubia, and the western Sahara. This paper comments on the bone tools from Lake Rudolf and reports on some unpublished specimens recovered in 1969.

The first discovery of a bone point near Lake Rudolf occurred during the 1932-33 expedition to the Omo Valley directed by Arambourg (1947). Since then at least 319 additional points have been recovered, most of them from the Lothagam site (Robbins 1974). Over 90% of the Lake Rudolf finds may be described as unilaterally barbed points, but there are also a few with barbs on two sides as well as some barbless bipoints.

In 1969, my fieldwork at sites near Lothagam resulted in the recovery of 26 bone points (fig. 1). The majority of the implements were recovered from lake sediments which occur within a former inlet of the lake bounded by the Lothagam and Napedet hills. It can be seen that they include both unilaterally barbed as well as barbless points. In general, the points are similar to those found at Lothagam. Length of the complete barbed specimens ranged from 6.1 to 7.7 cm; the number of barbs varied from 2 to 7. The barbless points measured 8.5, 10.5, and 15.6 cm in length respectively.

Most of the Lake Rudolf points have been found on the surface of Holocene high lake levels and are assumed to be associated with these beds because the implements were used for fishing at the lake edge. The oldest specimen, a 16-cm-long barbed point, was recovered at the Omo from a conglomerate dated to $9,100 \pm 300$ B.P. (Butzer, Brown, and Thurber 1969).

be folded at the site and measured. (It usually will measure around $\frac{1}{3}$ to 1 mm.) Then the skinfold measurement may proceed, subtracting the cloth's thickness from the total. All other areas must be free of clothes for a valid measurement. It is important to hold the skinfold firmly and with an even pressure between the thumb and index finger throughout the reading.

References Cited

- GONZALO, ROBERT. 1967. Anthropometrische Ergebnisse einer Querschnittwachstumsuntersuchung an Sued-West-Anatolischen Kindern. Unpublished Ph.D. dissertation, University of Kiel, Germany.
- . 1974. Ergebnisse einer Anthropometrischen Untersuchung im Staate Tlaxcala, Mexico. *Schriften des Naturwissenschaftlichen Vereins fuer Schleswig-Holstein* 44. In press.

At the Lothagam site there is a single radiocarbon date of $7,560 \pm 1,000$ B.P. (UCLA 1245E) based on a shellfish sample excavated from about 12 ft. below the surface in a bed of lacustrine sandy-clay (Robbins 1974). Points have been found on the surface of the sandy clay and *in situ* within the overlying beach sands. The latter are estimated to be between 6,000 and 7,000 years old.

All but one of the points found in 1969 between Lothagam and Napedet were on the surface of lake sediments or lying in close proximity to them. These sediments have been dated by radiocarbon to between $8,420 \pm 165$ and $6,010 \pm 155$ B.P. (Robbins 1972). The exception was the bipoint shown in figure 1a, which was embedded *in situ* in a white sandy-clay sediment with bedded molluscs. The shelly matrix was actually adhering to the specimen when it was excavated. A mollusc sample obtained from the same bed 17 m away from the point yielded a radiocarbon date of $7,960 \pm 140$ B.P.

There is an isolated radiocarbon date of $4,800 \pm 100$ B.P. obtained on a freshwater oyster sample from along the lower Turkwel Valley, where a bone point was recovered (Thomson 1966). However, the spatial relationship between the artefact, which was a surface discovery, and the dating sample is not clear.

While the above dates could certainly be strengthened by additional evidence, they do suggest a date ranging from about 9,500 to 4,500 years ago, with the likelihood that most of the specimens were made 8,000 to 6,000 years ago.

Of the total number of points I have recovered, 83% (253) were located on the surface, most of them on sandy or sandy-clay sediments of lacustrine or littoral origin. There is the strong likelihood that many of these artefacts were lost while people were fishing. Bone points have also been recovered from within habitation layers at Lothagam, where they are directly associated with Late Stone Age (Mesolithic) tools such as microliths and scrapers, potsherds, and food refuse consisting mostly of catfish and Nile perch.

How were the bone implements used? The position of those found lying on the lake sediments, sometimes in association with freshwater molluscs, implies either shallow-water wading or use of a boat. Most reports (e.g., Whitworth 1965) have stated that the Lake Rudolf bone points were harpoons. The basis for this interpretation is not clear, however, and there is a general need to establish more precise functional definitions of bone points used during prehistoric times. Typical bone harpoons used by relatively recent Thule Eskimo groups are characterized by holes for fastening a line to the detachable head. As far as we are aware, the Lake Rudolf points lack line-attachment holes, although artefacts with such holes drilled through their bases do occur at other sites in Africa (see Arkell 1953). It is

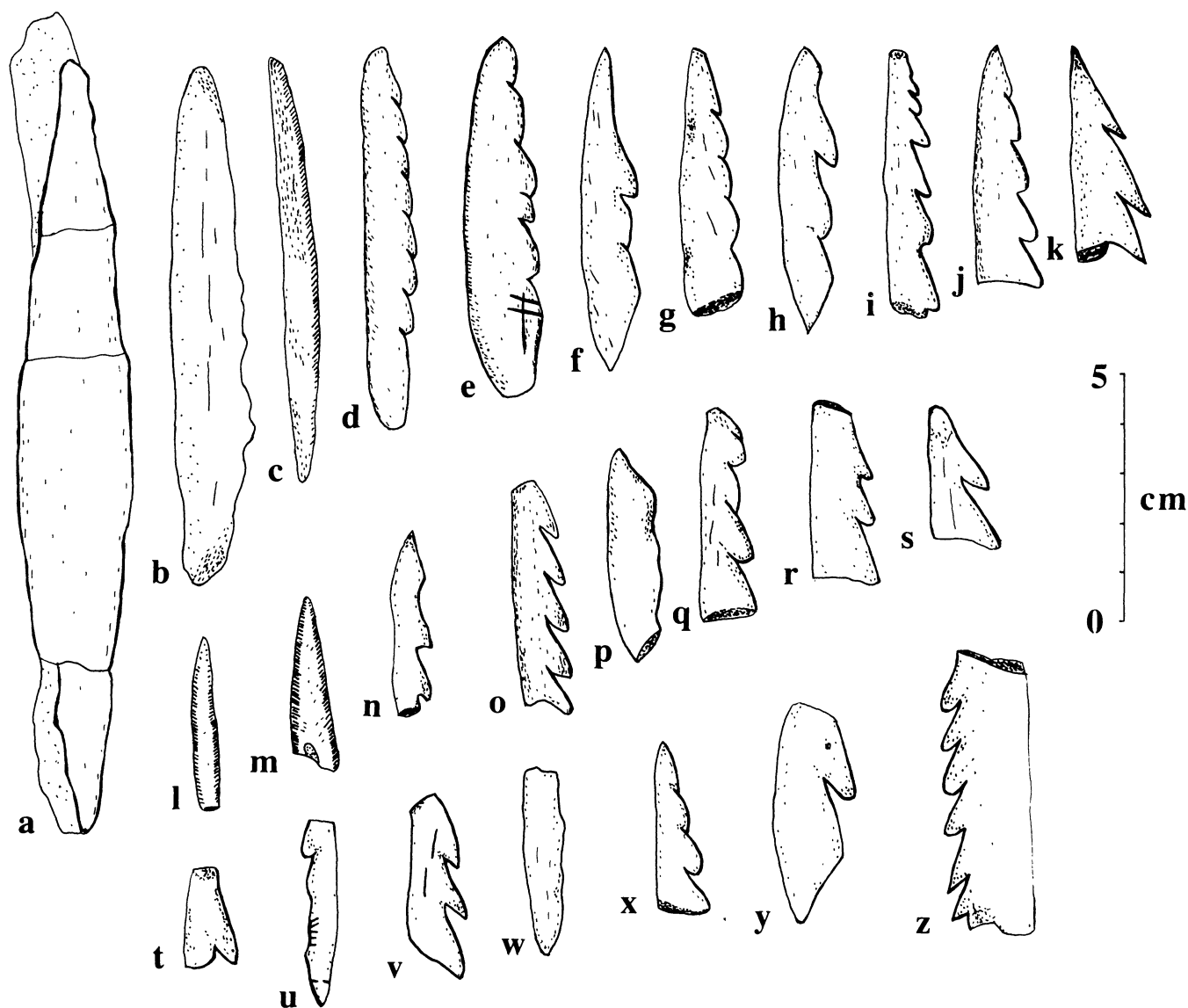


FIG. 1. Bone artefacts recovered from the Lothagam area in 1969. *a*, barbless bipoint with matrix adhering recovered *in situ* from site Zu-6, located between Lothagam and Napedet; *b*, *i*, *q*, points from site M-10 near Emurabwin hill; *j*, point from near the north end of Napedet; *e*-*h*, *k*-*o*, *r*-*z*, points recovered from the surface of sites situated between Lothagam and Napedet. Drawings by S. R. Munyao and L. H. Robbins.

possible that the deep notches on the bases of some of the larger Lake Rudolf points may have been fashioned for the purpose of securing harpoon lines. Certainly, detachable harpoon heads would have greatly facilitated the catching of Nile perch, which often weighed several hundred pounds. On the other hand, smaller varieties of catfish could easily have been obtained with spears or even bows and arrows. In that case, many of the points could have broken when they struck against the bottom of the lake itself.

Lake Rudolf was a former contributor to the Nile system through the Sobat River, and it is well known that similar bone points occur along the Nile in the Sudan (Arkell 1949). Did the Lake Rudolf bone artefact tradition spread into the area from the Nile valley, or vice versa? Recent radiocarbon dates for barbed bone points recovered along the White Nile at Tagra in the Sudan are in general agreement with the Lake Rudolf evidence (Adamson, Clark, and Williams 1974). Until many more dates are available, we can only suggest that there was a rapid spread of ideas along the enlarged lakes and rivers during the early Holocene in parts of northern and eastern Africa.

References Cited

- ADAMSON, D., J. D. CLARK, and M. A. J. WILLIAMS. 1974. Barbed bone points from Central Sudan and the age of the "Early Khartoum" tradition. *Nature* 249:120-23.
- ARAMBOURG, C. 1947. *Mission scientifique de l'Omo, 1932-33*. Paris: Museum of Natural History.
- ARHELL, A. J. 1949. *Early Khartoum*. London: Oxford University Press.
- . 1953. *Shaheinab*. London: Oxford University Press.
- BUTZER, K. W., F. H. BROWN, and D. L. THURBER. 1969. Horizontal sediments of the lower Omo Valley: The Kibish formation. *Quaternaria* 11:15-29.
- HOWELL, F. C., and Y. COPPENS. 1974. Inventory of remains of Hominidae from Pleiocene/Pleistocene formations of the Lower Omo Basin, Ethiopia (1967-1972). *American Journal of Physical Anthropology* 40:1-16.
- LEAKEY, R. E. 1973. Evidence for an advanced Plio-Pleistocene hominid from East Rudolf, Kenya. *Nature* 242:447-50.
- ROBBINS, L. H. 1972. Archaeology in Turkana District, Kenya. *Science* 176:359-66.
- . 1974. *The Lothagam site*. Michigan State University Museum Anthropology Series 1 (2).
- THOMSON, K. S. 1966. Quaternary fish fossils from west of Lake Rudolf, Kenya. *Breviora* 243:1-10.
- WHITWORTH, T. 1965. Artifacts from Turkana, northern Kenya. *South African Archaeological Bulletin* 78:75-78.