

Published in Proceedings of the 8th Congress of Prehistory and Quaternary Studies, Nairobi, 5 to 10 September 1977, edited by Richard E. Leakey and Bethwell A. Ogot (1980), pp. 33-35. The International Louis Leakey Memorial Institute for African Prehistory, Nairobi. This is the only substantive application of my ideas of detailed spatiotemporal ordering of Palaeolithic typological units.

CONTINENTAL LINE-MAKING: A REEXAMINATION OF BASIC PALAEOLITHIC CLASSIFICATION

By B. K. Swartz from [selected writings](#)

In 1970 I criticized approaches to Palaeolithic classification. This paper is an initial attempt to present some positive ideas on this problem. It is proposed, contrary to the Berg-Wartenstein recommendations (Bishop and Clark 1967), that large-scale Palaeolithic 'culture'-unit formulation is a valid and needed procedure in palaeoanthropological study, and that such units should be established. This has not been done in the past because inductive, rather than deductive, procedures have been pursued. One agrees that research and data organization should proceed inductively but large-scale taxa can be deductively formulated. In practical terms this is seldom done. However, since most Palaeolithic archaeologists are unwilling to defer identifying excavated assemblages of artefacts and be content only with detailed description, analysis and geochronological placement of the materials under study. The definition of such units should be made objective by discovering diagnostic variation of the recovered remains from widespread areas in narrow chronological frames. These variations may be technical or functional attributes of types. Their selection should be based on spatiotemporal ordering--not cultural reconstruction.

HISTORICAL DEVELOPMENT OF PALAEOLITHIC CLASSIFICATION

In 1869 Gabriel de Mortillet, building on to Paul Gervais' idea of 'ecological' differentiation proposed two years before, established the first widely accepted chronological sequence of industrially defined time units from lithic data described in the greater Dordogne region of southern France (1869). He termed these units epochs and related them to Edouard Lartet's stratigraphically defined palaeontological subdivisions. In 1872 Gabriel de Mortillet extended the sequence by incorporating data from the Somme valley of northern France.

It was soon realized, however, that, in general, Old World Palaeolithic prehistory did not follow the same unilineal sequence as in France. Differences in South African materials lead Peringuey (1911: 17) to employ local terms, such as 'Stellenbosch'. Variations of core and flake industries lead Warren (1922) and Breuil (Breuil and Koslowski 1931: 454-455) to postulate what was eventually termed the Parallel Phyla hypothesis (Movius 1953: 163-164). which recognized that handaxes were not common to northern and central Europe. Movius' (1944) concept of the chopper-chopping tool tradition did the same for eastern Asia.

CURRENT PROBLEMS

At the present time Palaeolithic terminology is based on local chronology, rather than aerial chorography. Units, so defined, have proved to be intractable in formulating large distinct spatiotemporal divisions. African and other Old World Palaeolithic terms should be re-examined from the viewpoint of broad distributional diagnostic, instead of narrow chronological, variations. Many such diagnostics are undoubtedly subtle and careful comparative study will have to be done in order to detect and plot their frequencies. Some, however, are quite obvious morphological and/or technological features that can be plotted on a present-absent basis and, in addition, correlate with basic human physical type differences. These obvious features are easily plotted, and their limits can be termed 'lines', in contrast to the clines of frequency plotting. The initial establishment of such lines is crucial in sorting out the morass of Palaeolithic data confronting paleoanthropologists today, but scant attention is given to this ordering device (Swartz 1970).

In the past large integrative units have been attempted with partial success by extending *fossile directeurs* (if local technological sequences into broader continental stages. Such formulated stages have not proved to be of universal applicability. Citation credit for formulating such large stage segments is obscure in the published literature. It seems that such units tend to be formed by consensus understandings. The tripartite South African scheme of Earlier, Middle (originally called Eastern) and Later Stone Ages (really stages) was proposed by Goodwin (1928). In Europe, Breuil (1912) conceptualized the Upper Palaeolithic, hence the earlier remaining developments were the 'Lower' Palaeolithic, which in turn was further segmented, introducing a 'Middle' Palaeolithic subdivision.

Though the fact that such units, defined on the basis of the expansion of local chronologies, is proving to be less and less satisfactory, classification by specific cultural-stratigraphic units only was manifest at Burg-Wartenstein in 1965 (Bishop and Clark 1967, Recommendations I, L and O). The concepts of stages and traditions were ignored, and it was recommended that African stage terms be abandoned! A more reasonable approach would be to start with broad outlines and segment general broad phenomena, rather than extending specific narrow data.

The following classification is proposed as a beginning towards this goal:

AFRICAN CONTINENTAL PALAEOLITHIC LINES

(1) Murdock's Line

Proposed (Murdock 1959: 48), named (Swartz).

Location (north to south to east). Rift valleys to 16° south latitude, west to south Atlantic Ocean (see map).

Delimited lithic variation. Massive picks not a characteristic tool form east of the line (Sangoan-Lupemban-Tshitolian Industrial Complex sequence west of line, Stillbay-‘Magosian’-Wilton [and Smithfield] Industrial Complex sequence east of line).

Delimited physical type. Proto-Forest Negro (not Murdock’s pygmy) west of line, proto-Bushman (or ‘Boskopoid’) east of line.

(2) (unnamed)

Proposed (Swartz)

Location (west to east). Atlantic shore across the high Sahara, dips south into northern Nigeria sahel, crosses the Nile River just north of Khartoum, crosses back over the Nile north of Lake Victoria, penetrates the Rift Valley, crosses back over Lake Victoria, goes northeastward and then southeastward reaching the Indian Ocean in southern Somalia (see map).

Delimited lithic variation. ‘True’ Levalloisian facet-butted cores do not extend south of this line.

Delimited physical type. Neanderthal north of line, Rhodesian south of line.

OTHER OLD WORLD PALAEOLITHIC LINES

(3) McBurney’s Line

Proposed (McBurney 1950), named (Swartz)

Location (northwest to southeast). Thames River, England, across the presently inundated English Channel (south of Clacton-on-Sea), following the Rhine River to the Alps, exiting north at the tip of the Adriatic Sea. McBurney’s original line was west of eastern France and Italy. Collins (1969, fig. 11: 291) extends the line further to the northeast, including southern Scotland, skirting Jutland, following the edge of the Scandian glacier along the Elbe, then southwestward to the Alps (see map).

Delimited lithic variation. Southwest of line handaxes are abundant. Some bifacially flaked tools do, occasionally, penetrate--but are not typical forms.

Delimited physical type. Only ‘progressive’ Neanderthals are found west of the line.

(4) Movius’ line

Proposed (Movius 1944), named (Coon 1965: 48, map 3, 28)

Location (northwest to southeast). Himalayas, cutting directly south to the northern tip of the Bay of Bengal west of the Ganges-Brahmaputra delta (as drawn by Coon, who also extends it further north along the undoubtedly uninhabited Tien Shan). On the basis of the present physiography it should probably skirt the lower Bramaputra River valley and follow the mountainous area of western Assam (this is to the west of all demonstrated chopper-chopping tool sites). Movius (1948: map 4, 409) draws the line along the Ganges, the most easterly demonstrated occurrence of abundant handaxes (see map). Movius’ location is supported by the effect of river barriers for the present distribution of southeastern Asiatic hominoids (G.H.R. von Koenigswald, personal communication 1977).

Delimited lithic variation. Bifacially flaked 'handaxes' (not just cores) do not penetrate east of the line. Freeman (1977: 102-103) states that bifacially flaked picks, quite similar to forms found in western Acheulean contexts, are present in the Fen Ho valley, Shansi Province, northeast China.

Delimited physical type. Pithecanthropoids east of line.

(5) Huxley's line (proposed on the basis of zoogeographical evidence)

Proposed (Huxley 1868), who erroneously named it Wallace's Line after Wallace (1863), but Wallace placed the Philippines to the west of the line.

Location (south to north). Between Bali and Lombok islands, Borneo and the Celebes, Palawan and the remaining Philippine archipelago (see map).

Delimited phenomena. Eastern limit of undiminished Oriental fauna, not penetrated by man until Pleistocene time.

Delimited physical type. Australoids survive only to the east of the line. Indeed they do not penetrate west from Lydekker's Line, which isolates the Sahul Shelf upon which New Guinea and Australia rest.

More lines and the plotting of clines are needed to sort out significant spatiotemporal subunits satisfactorily, but even with the few lines proposed here some tentative generalization of basic industrial traditions is possible. Murdock's Line delimits what Swartz (1974: 80) describes as the Equatorial 'pick sub-tradition'. Movius' Line separates the 'great' handaxe and his chopper-chopping tool traditions. The recent recognition of abundant 'pebble' tools in eastern Europe, in addition to the Clacton industries suggests that McBurney's Line may represent the western frontier of a trans-Eurasian chopper-chopping tool distribution.

Since there is a tendency for one to take less seriously units defined by descriptive, rather than specific names, terms, perhaps consideration should be given to transferring out-moded and/or overused Industrial Complex terms as tradition indicators and substituting new, more narrowly defined terms for local and regional complexes.

REFERENCES

- Bishop, W.W. and Clark, J.D. (1967). *Background to evolution in Africa*. University of Chicago Press.
- Breuil, H. (1912). Les subdivisions du Paléolithique supérieur et leur signification. *Compte rendu du Congrès international d'anthropologie et archéologie préhistorique, Geneva*, 165-238.
- Breuil, H. and Koslowsky, L. (1931), Etudes de stratigraphie paléolithique dans le nord de la France, la Belgique et l'Angleterre. *L'Anthropologie*, 41, 449-488.
- Collins, D. (1969). Culture traditions and environment of early man. *Current anthropology*, 10, 267-316.
- Coon, C.S. (1965). *The living races of man*. New York: Knopf.
- Flint, R.F. (1957). *Glacial and Pleistocene geology*. New York: Wiley.
- Freeman, L.G., Jr (1977). Paleolithic archaeology and paleoanthropology in China. In : Howells, W.W. and Tsuchitani, P.J. (eds). *Paleoanthropology in the People's Republic of China*, 79-113. Washington : National Academy of Sciences. (Committee on Scholarly Communication with the People's Republic of China report no. 4).
- Gabriel de Mortillet, L. L.(1869). Essai de classification des cavernes et des stations sous Abri. *Comptes rendus hebdomadaire des séances de l'Académie des Sciences, Paris*.
- Goodwin, A.J.H. (1928). An introduction to the Middle Stone Age in South Africa. *South African journal of science*, 25, 410-418.
- Huxley, T.H. (1868). On the classification and distribution of the Alectormorphae and Heteromorphae. *Proceedings of the Zoological Society of London*, 294-319.
- McBurney, C.B.M. (1950). The geographical study of the older Palaeolithic Stages in Europe. *Proceedings of the Prehistoric Society*, n.s., 16, 163-183.
- Movius, H.L., Jr.(1944). Early man and Pleistocene stratigraphy in southern and eastern Asia. *Papers of the Peabody Museum of American Archeology and Ethnology*, 19, 1-125.
- Movius, H.L., Jr. (1948). The Lower Paleolithic cultures of southern and eastern Asia. *Transactions of the American Philosophical Society*, 28, 329-420.
- Movius, H.L., Jr. (1953). Old World prehistory: Paleolithic. In: Kroeber, A.L. (ed.). *Anthropology today*, 163-192. University of Chicago Press.

Murdock, G.P. (1959). *Africa: its peoples and their culture history*. New York: McGraw-Hill.

Peringuey, L. (1911). *The Stone Age of South Africa*. *Annals of the South African Museum*, 8, 1-218.

Swartz, B.K., Jr. (1970). Review: Further paleo-anthropological Studies in Northern Lunda (J. Desmond Clark). *American anthropologist*, 72, 704-706.

Swartz, B.K., Jr (1974). A stratified succession of Stone Age assemblages at Hohoe, Ghana. *West African journal of archaeology*, 4, 57-81.

Wallace, A.R. (1863). Paper delivered to the Geographical Society of the Malay Archipelago. London.

Warren, S.H. (1922). The Mesvinian Industry of Clacton-on-Sea. *Proceedings of the Prehistoric Society of East Anglia*, 3, 597-602.

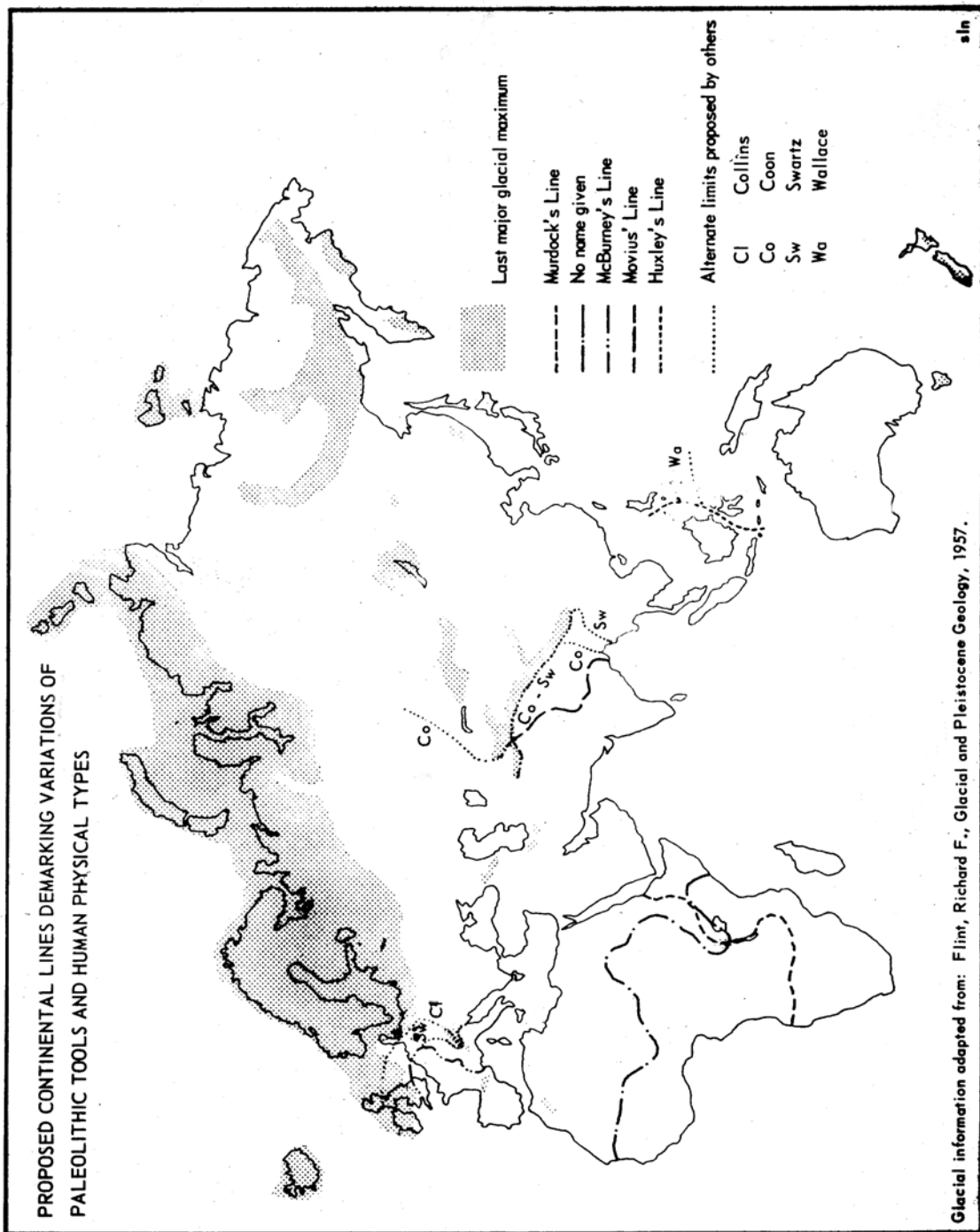


Fig. 1. Proposed continental lines demarcating variations of Palaeolithic tools and human physical types. Glacial information adapted from Flint (1957). Map drawn by Susan Nelson, Cartographer, Ball State University.