
The emergence of Late Acheulean patterns of biface production and resharpening (on materials of Hugub locality, 600-500 ka, in Ethiopia)

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Résumé

Our report is addressed to the problem of origin of a novel technology of biface production and biface resharpening, both of which are traditionally associated with Late Acheulean. The Hugub locality in Ethiopia reported here has been securely dated to between 600–500 ka ago (Gilbert et al., 2016). The site is sufficiently rich in artifactual and paleoenvironmental data, and vast in the preserved *in situ* artifact-bearing unit to become a benchmark for the study of evolutionary changes in lithic technologies during this period.

The studied lithic assemblage from Hugub yields numerous bifaces, most of which are amenable to morphometric analysis. Metrics indicate an apparent bimodality of Hugub bifaces. The Index of Pointedness (the ratio of biface maximum width to the width of the tip measured at 3/4 of the overall length) divides them into two major groups: broad-tipped ovates and pointed bifaces. Ovate bifaces with broad tips are more abundant than pointed bifaces. Most ovates and pointed bifaces are shaped in the plano-convex method. The interdependence between maximum length and thickness of ovate bifaces implies biface size reduction, which could result from modification and edge rejuvenation. The analysis indicates the highest proportion of bifaces made on flakes among large-sized ovates, and a significant decrease of bifaces on flakes among medium-sized and small ovates, as well as substantial decrease of maximum thickness among small-sized ovates. Apparently, these peculiarities are also caused by reduction of ovate bifaces. Most ovate bifaces seem to have been initially made on large flakes, as seen in the larger size ovates, but ventral surfaces of flakes are difficult to identify due to heavy reduction of edges and faces. Almost all small-sized ovates are completely bifacial tools, also likely the result of on-site reduction through rejuvenation. Among pointed bifaces, some smaller size pointed bifaces grade into sub-triangular bifaces or diminutive bifaces similar to MSA-type bifacial points – that are traditionally associated with the Final Acheulean/early MSA.

Regarding the flaking technology in the Hugub site, our analysis indicates that dorsal surfaces and striking platforms on flakes exhibit a predominance of irregular dorsal surfaces (i.e., having an uncomplicated and non-standardized pattern of few removals from different directions) and minimal preparation of striking platforms that are mostly plain or dihedral. The assemblage shows a paucity (< 10%) of flakes with parallel and convergent removals, and virtual absence of faceted platforms (only four items) that are found exclusively on flake tools. A non-Levallois recurrent flaking method is clearly present. The absence of Levallois

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debitage would be consistent with an earlier age for the Hugub assemblage; this coincides with the recent data from the Kapthurin Formation, where no evidence for Levallois reduction is found in earlier Acheulean assemblages dated to 545–510 ka. We conclude that Hugub site documents the earliest emergence of new patterns of biface manufacture and resharpening that are traditionally associated with the Late Acheulean.

Mots-Clés: Late Acheulean, biface production, biface resharpening, Ethiopia, Africa