

Regional variability on the 'Southern Route' of modern human dispersal into Eurasia

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The "Southern Route"- from East Africa to South Asia, via the Arabian Peninsula- is now most popular hypothesis on modern human dispersal into Eurasia (better-known as 'Out of Africa', ca.120~50ka (Petraglia et al. 2010). Survey and excavation of archaeological sites in both Arabia and India have been rapidly progressing over the last decade, while timing and frequency of 'Out of Africa' is under controversy. The major discoveries are as follows: 1) Nubian industry in Southern Arabia which is similar to that of North and East Africa (ca. 100ka.: Rose et al. 2011); 2)Leptolithic industry which is subsequent to the Nubian in Southern Arabia (40~8ka: Hilbert et al. 2012); 3)Levallois-like industry in Eastern and Southern Arabia (e.g. FAY-NE Assemblages B and A, ~30ka: Armitage et al. 2011; SD1, 55ka: Delagnes et al. 2012), 4)Microlithic Rostamian industry in Southwestern Iran (41~35ka.cal.BP: Conard and Ghasidian 2011), 5)various mode III assemblages of South Asia (90?~40ka: Petraglia et al. 2012), 6)scraper dominant assemblages in Pakistan and Central, West India (e.g. 16R dune: ~26ka: Misra 1995), 7)South Asian microlithic industry in Central, South India and Sri Lanka (36ka~: Perare et al. 2011). However fossil records are recovered only from Sri Lankan and South Indian sites associated with microlithic industry. Those microlithic industry has typical artifacts which are considered as indicators of modern human behavior, such as backed blades, stone or ostrich egg-shell beads, ocher fragment with geometric engraving, as well as bone-antler objects. The oldest dating of South Asian microlithic industry shows is around 3.6ka (cal BP) and appears to be younger than fossil records or archaeological remains of modern human from Southeast Asia and Oceania. On the other side, there is no clear evidence of microlithic technology on the way from East Africa to South Asia for the moment, with exception being Rostamian industry in Southwestern Iran. A regional patchy pattern of archaeological evidences becomes apparent with sorting of recent discoveries into tempo-chronological sequences and the distributional pattern of microlithic/ non-microlithic industries seem to correspond well to regional differences of palaeoenvironment (see Petraglia et al. 2010: fig.3). The modern human is considered to have adapted to diverse ecological niches before Out of Africa. Therefore it is also possible to consider that the patchy pattern on distribution of microlithic/ non-microlithic industries from Arabia to South Asia would indicate mosaic of different behavioral phenotypes of modern human in various environments rather than coexistence of different human groups in parallel. Recently authors have been studying Palaeolithic sites in Veesar Valley, Sindh, Pakistan, with the above-mentioned perspective (Noguchi et al. 2012). The sites are located in crescent dunes of the western fringe of the Thar Desert. Assumed Middle/ Upper Palaeolithic assemblages excavated from the strata likely correspond directly to the site surface during the formation of the dune. Dating, palaeoenvironment and geomorphology of the sites are expected to lead to further understanding of adaptive strategies of the modern human in diverse ecological niches on the 'Southern Route'.

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