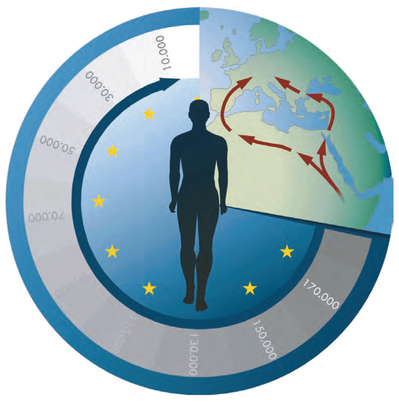
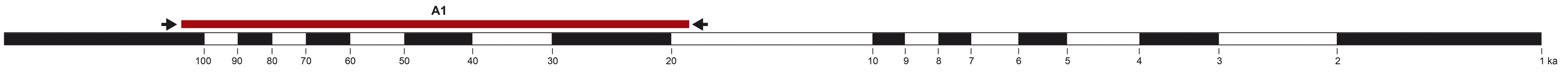


When humans conquered high-altitude Mountains

J. Richter & R. Vogelsang

Institute of Prehistoric Archaeology, University of Cologne



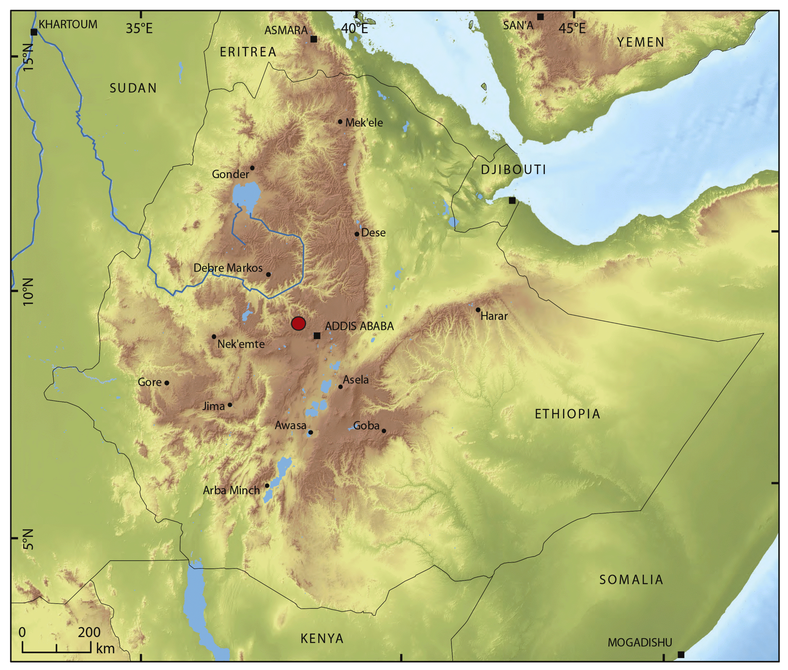
Sanetti Plateau, Bale Mountains/Ethiopia (4100 m asl.).

Introduction

High-altitude mountain habitats are regarded as unfavorable for human occupation and basic findings of high altitude human physiology research can impressively illustrate this:

- Moving in mountains requires a five times higher energy demand than in flat terrain (Riechsteiner 2002).
- Only a fraction of the maximum metabolic power measured at sea-level is available at high altitude (Cerretelli 1976).
- Water losses of 2% of the body weight cause a 20% loss of physical efficiency (Swiss Army Regl. 53.180).
- With 100 m of increasing altitude the first menstruation is delayed by three months, as one of the lasting effects of chronic hypoxia (Heath & Williams 1981).

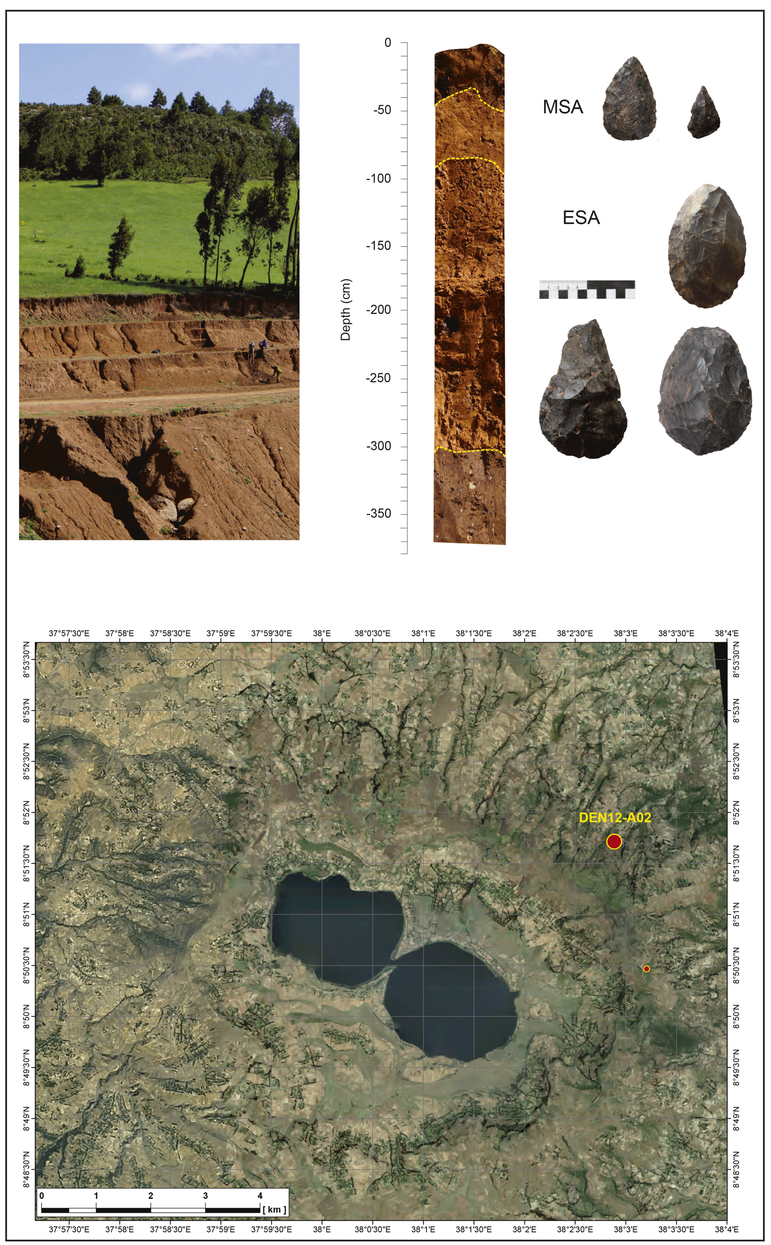
Therefore, it seems reasonable that humans would only be pushed into such conditions by decreasing land resources in the lowlands following rapid population increase or ecological changes.



Location of Mount Dendi.

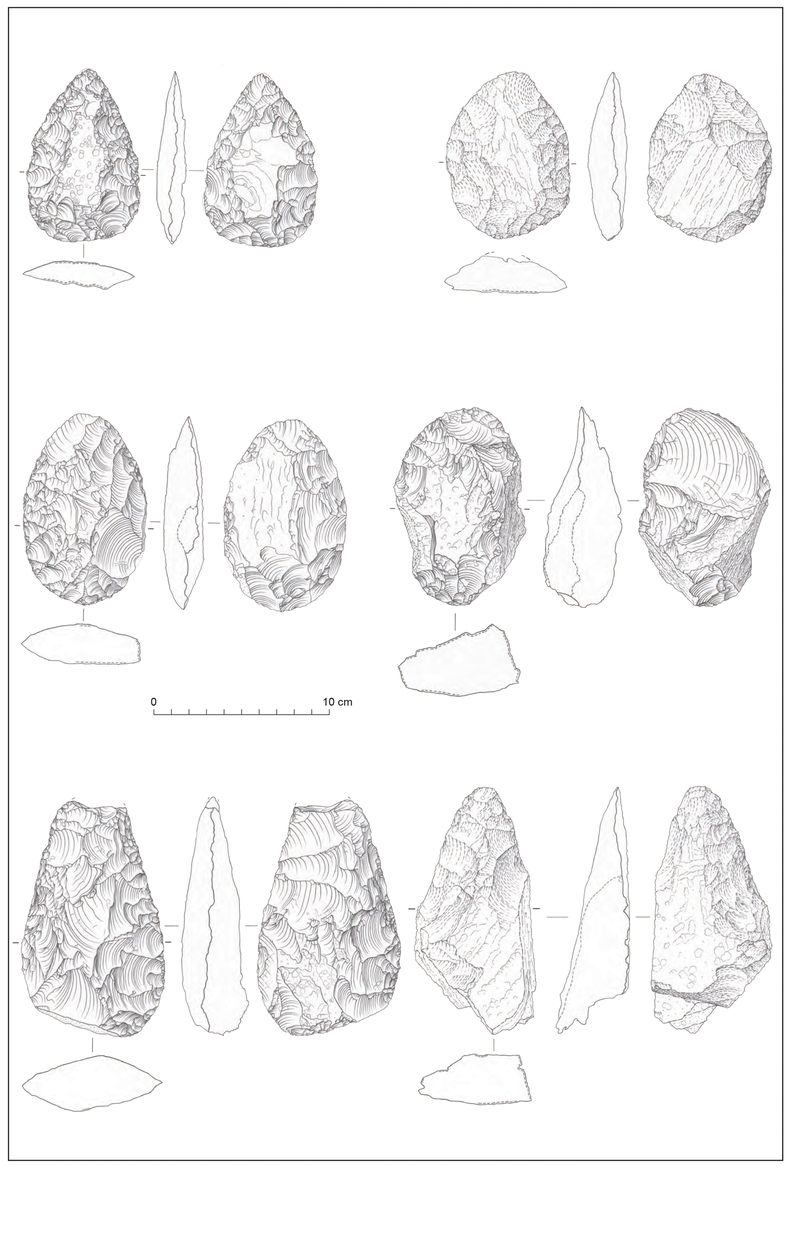
Mount Dendi

Archaeological investigations on Mount Dendi (3270 m a.s.l.) located on the Ethiopian Plateau, question this assumption. Archaeological sites from all Stone Age periods were found on the slopes of the caldera enclosing the two crater lakes. Of special importance is a Late Acheulian inventory (DEN12-A02) with handaxes and cleavers that proofs the presence of humans at high altitudes already at this early period.



DEN12-A02

Artefacts are located on three artificial terraces, made by road works. Acheulian artefacts are not found on the uppermost terraces, where solely Early MSA artefacts were collected.

The Acheulian assemblage from the two lower terraces is characterized by a heterogeneous tool spectrum but very similar „chaines opératoires". In the majority of cases, the platy natural surface of the obsidian is partly preserved and sometimes used as a natural backed edge. Facial and lateral preparation were first completely finished on one face and then on the other. The same concept is found in the MSA assemblage and might indicate a long-term tradition.

Why humans conquered this high-altitude habitat already at this early time is still an open question. Was the area a usual habitat or was it only used as a refugium during times of environmental stress? The analysis of sediment cores from the crater lakes will elucidate the climate history of the area and might help to answer this question.