

***Elephas recki* from Dandero, Northern Danakil Depression, Eritrea**

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SUMMARY: Molar fragments assigned to *Elephas recki* (Elephantidae, Proboscidea) were collected from the Mahabale/Dandero region, about 150 km south of Massawa at the base of the eastern escarpment of Eritrea near the Red Sea coast, on the western edge of the Danakil Depression. The site has yielded abundant remains of vertebrate fossils, including reptiles and mammals. Acheulean tools, e.g., bifacial handaxes and cleavers were also found at this site. Stratigraphic sections comprise over 500 meters of middle Pleistocene fluvial and lacustrine sediments (the Upper Danakil Formation), biostratigraphically dated to circa one million years old.

1. INTRODUCTION

Elephantid material collected from the Mahabale/Dandero region (Fig. 1, Bottom), includes one large molar fragment with at least eight plates in the socket of a small partial cranium, and a fragmentary isolated molar with three plates. Cranial fragment clearly show diploe (bone air cells, typical of advanced proboscideans). The larger tooth fragment is an upper right third molar (Fig. 2, A and B), maximum plate width 98 mm, height 202 mm, occlusal length 160 mm, lamellar frequency 5, enamel is crenellated (folded) and 2.5 mm thick, hypsodonty index (height/width) is 2.06. The smaller tooth fragment is probably an

upper right (based on molar wear on pretrite, height, and apparent parallel plates), possibly second or third molar, plate width at least 60 mm, height at least 145 mm, occlusal length 45 mm, lamellar frequency about 6, enamel is crenellated (but appears less folded than in the larger fragment) and is 2.95 mm thick, hypsodonty index cannot be calculated. Based on characters described in the classic works of Beden (1980, 1983, 1987) and Maglio (1973), these molars are tentatively identified as *Elephas recki* Dietrich 1915, no subspecies designation can be given as yet. We follow Maglio (1973) and use *Elephas recki*, rather than *Elephas (Palaeoloxodon) recki* as employed by Beden (1983). *E. recki* is well

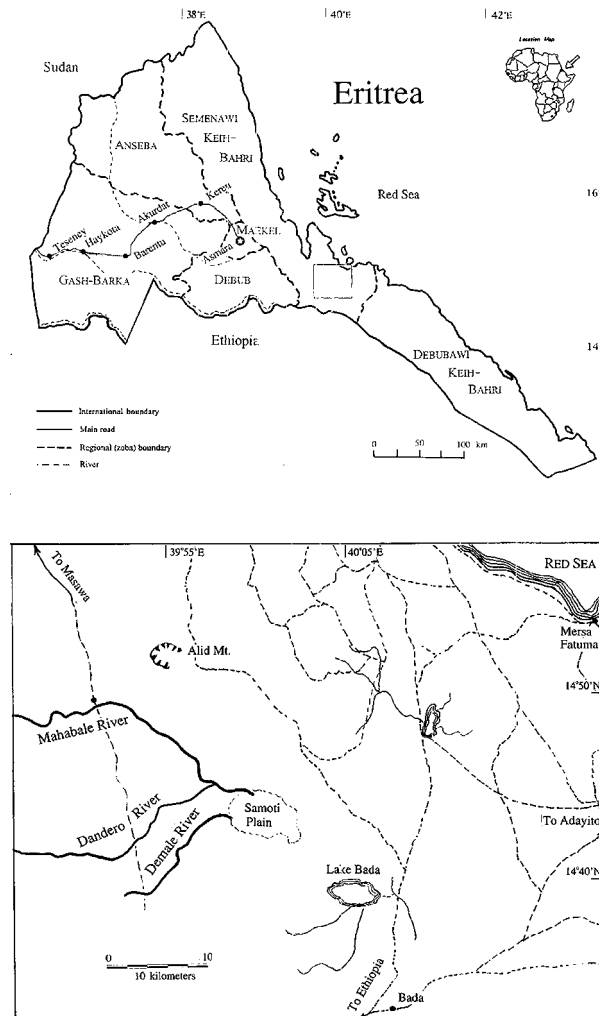


Fig.1 - TOP. A location map of Eritrea in the Horn of Africa, and a map of Eritrea. Area within the rectangle is enlarged below. BOTTOM. A simplified map of the northern Danakil region, focusing on the study area. In 1999 a team from the National Museum of Eritrea (NME) conducted a salvage/rescue collection of specimens described in this paper from Dandero River and vicinity. In 2000 a team of Italians from the Buia Project received permission to survey in the area between the Demale and Mahabale Rivers which includes the Dandero River (drawings by J. Shoshani).

known late Pliocene to middle Pleistocene taxon from Africa (Maglio 1973). Beden (1983; cf. Todd 1997) identified five subspecies of *Elephas recki*, from oldest to youngest: *E. r. brumpti*, *E. r. shungurensis*, *E. r. atavus*, *E. r. ileretensis*, and *E. r. recki*. Beden (1983) provided a phylogeny of these five subspecies.

2. FINAL REMARKS

Mahabale/Dandero is located circa 20 km south of Buia; the partial cranium of *Homo* sp. was found a few hundred meters from Buia (Abbate *et al.* 1998). Geologically and biostratigraphically we believe that the Dandero and the Buia material are comparable in age,

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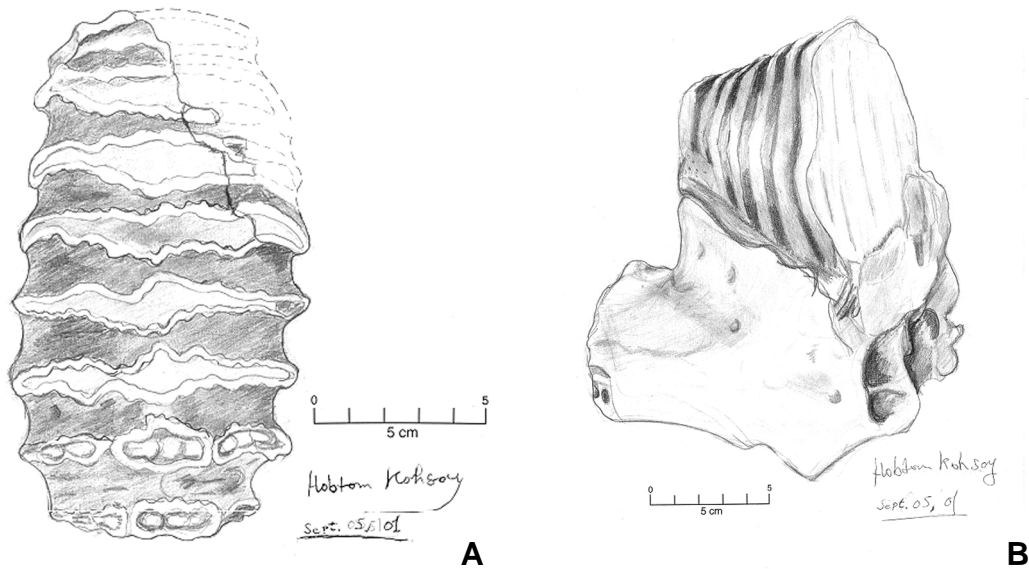


Fig.2 - A. Occlusal view of an incomplete right upper third molar of *Elephas recki* (NME 99.55) collected in Dandero River. B. A posterior three-quarter view of the molar depicted in A, with a portion of the maxilla (drawings by Habtom Kahsay from the original; note: This is an artistic rendering, thus the scale is not the same in all directions).

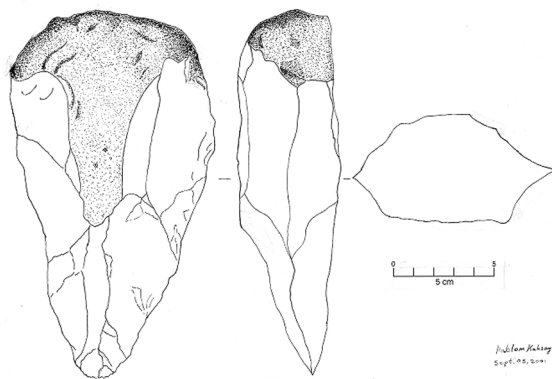


Fig.3 - A bifacial hand axe (NME CB-12-1 99.101): plan view, side view, and cross section from Cabuia, near Dandero, Northern Danakil Depression, Eritrea. This Acheulean hand axe, made from quartzite, is one of many hand axes found in Cabuia/Dandero area, dated to about one million years ago. Other tools found in this area include choppers and cleavers made from basalt, chloriteschist, garnetschist, grandiorite, granite, limestone, and quartzite (drawings by Habtom Kahsay from the original).

which is between faunal stages 3 and 4 of Maglio (1973), or between *E. r. ileterensis* and *E. r. recki* of Beden (1983), but closer to the latter. Faunal stage 3 of Maglio (1973), comparable to subspecies *E. r. ileterensis* of Beden (1983) and dated to early Pleistocene, is the typical form found in Members J, K and L of the Shungura Formation (Omo, Ethiopia), originally described from Ileret (East Turkana, Kenya), also found in Olduvai Bed II (Tanzania). Faunal stage 4 of Maglio (1973), comparable to subspecies *E. r. recki* of Beden (1983) and dated to middle Pleistocene, is found in the upper level of Member L of the Shungura Formation (Ethiopia), Koobi Fora and Ologesailie (Kenya), and in Olduvai Beds III and IV (Tanzania).

The geology of this region has been described by Sagri *et al.* (1998) and Walter *et al.* (2000). Buffler & Walter (2001), and Walter *et al.* (1997a, 1997b) provided specific information about Mahabale/Dandero. The Acheulean tools found at Dandero include handaxes (Fig. 3), cleavers and choppers.

All fossils and artifacts collected from the Mahabale/Dandero region are housed at the National Museum of Eritrea.

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