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A new ^{14}C dating for the Late Stone Age of Horn of Africa

The cave-shelter of Harurona is in the Southern Nationals, Nationalities and Peoples Regional State (North Omo, Offa, Gesuba) in the south-west of Ethiopia, about 1,370 m above sea level (sheet 0637 B3-1:50,000 GESUBA-ETHIOPIA; Lat N 06° 41' 45", long E 37° 30' 35") (Fig. 1). It is a small cave with overlooking shelter opening into a trachyte formation about 6 meters above the level of the river Weyo, one of the many modest streams which blaze deep in the Ethiopian upland. In that point the river has a ford where still today the women and children of the nearby villages get water and lead the cattle to drink.

The shelter is about 14 m wide and on average 3 m deep, while the vault is about 3,5 m high. On the walls of the cave can be seen several engravings whose stylistic characteristics belong to the first period of the Ethiopian-Arab style¹, suggesting a chronological collocation between the end of the third millennium and the course of the second millennium B.C.²

The discovery of the place is due to the members of the R.E.G. Company (Geographical Research Explorations) in Scarlino (Grosseto), who in February-March 1994 had organised an expedition to retrace part of the route of the Italian explorer Vittorio Bottego in Southern Ethiopia at the end of 19th century (1895-97). It was the first expedition of the project "Ethiopia 100 years after Vittorio Bottego", sponsored by the "Società Geografica Italiana" and the Genova Natural History Museum. During this first part of the expedition, walking back from the route lake Abaye-river Omo, some members of R.E.G. located a cave with some engraved figures near the village of Gesuba, about 30 km south of the small town

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¹ Cervicek 1971; 1978-1979; Joussaume 1981.

² Bachechi 1995; 1999; 2000.

of Soddu. Besides the Ethiopian authorities also the collaborators of Grosseto Natural History Museum were informed of the discovery. Some time later the Museum decided to organise a group-work who registered and photographed the new engravings. It was done in February-March 1995 at the time of the second part of the R.E.G. expedition, who were to go down in a dinghy along the river Omo for about 400 km as far as Lake Turkana.

In 1995, during the discovery and recording of the rock engravings, it had been noticed the presence of an important deposit of anthropic origin, containing lithic tools; soon after coming back to Italy the Ethiopian authorities were asked

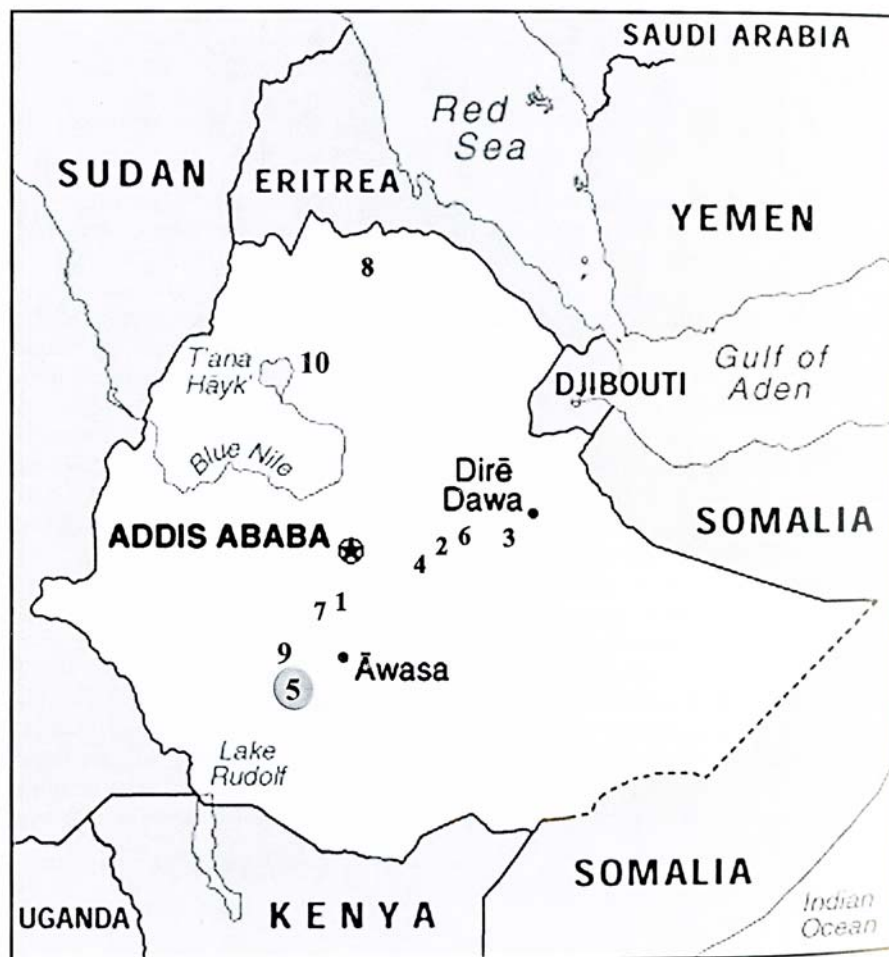


FIG. 1 – Geographic location of LSA areas dated ^{14}C in Ethiopia. 1) Bulbula; 2) Lake Besaki; 3) Laga Oda; 4) K'one; 5) Harurona; 6) Aladi Springs; 7) Macho; 8) Gobedra; 9) Moche Borago; 10) Lalibela e Natchabiet.

for a digging authorisation. At last, after some years, the digging campaign started at the end of 2002³.

After setting up a meter grid, a drilling was made by the cave opening, on the whole the affected surface was 7 square meters. In this way it was possible to reach the basis rock 2 meters from the deposit surface and dig up a sequence of sediments, divided into four layers and at least six phases, going from the end of the Pleistocene to the whole Olocene. On the basis rock it was found a grey layer, totally sterile, for a power of 30 cm. It is a thick sediments deposit of aeolian origin, probably collected after a volcanic eruption. The level on the grey layer is a dark red-brown muddy deposit 35 cm thick, highly concreted, containing rare remains of macrofauna. Proceeding upwards we find a very thick (about 100 cm), brown-red, muddy-clayey layer, containing numerous collapse rocks from the shelter walls. Finally, there is a present or subpresent layer made up of grey sediment, muddier and clayey in the lower part, unconnected and dusty in the upper part, of aeolian intake and partly coming from the crumbling cave walls and vault, 35 cm thick and with modern or contemporary ceramic materials.

Lithic tools have resulted to be diffused in the whole stratigraphic sequence, starting from the first phase of human settlement.

The deepest anthropic stratum has given back scarce lithic industry and rare animal bones, still under determination: their state of preservation is not good due to effects of corrosion and fragmentation. The preliminary study of this industry, almost completely obtained from obsidian, has shown a similar quantity of scrapers and microliths (each of the two groups makes up about 35-40% of the whole industry), while among microliths are to be found mainly truncations, bent back blades and geometric microliths (a group that makes up about 10% of the whole industry, with uncommon microlith crescents).

The middle part of the sequence is divided into two phases separated by two rocky blocks, fell down from the shelter wall: so we have an anti-fall phase and a post-fall phase. As on neither blocks lying on the bottom have been found marks of wall engravings, the lower deposit should be older than the wall engravings, while the one on the rocky blocks might come before or after the engravings. From the point of view of the lithic instruments it seems there are no differences between the deposit composition of these two phases which would continue the technical tradition of the oldest complex in the layer below: it must be underlined a bigger quantity of microlithic tools, in particular microlith crescents, at the expense of the other geometric forms and, in the total complex, of the substratum as well.

The layer above corresponds to the present occupation and the materials found there have few ceramic elements with no decoration and rare lithic industries on obsidian or flint, besides rare remains of the present fauna.

³ The excavation was possible thanks to permits given by the Ethiopian Authorities (Authority of the Researches and Conservation of Cultural Heritage) and financing of the Italian Foreign Office. We thank: Dr Gigar Tesfaye, ARCCCH Expert Archaeologist and Mr Eyasu Gajabo, Offa Woreda Education Office Coordinator, for their help and for taking part in the excavation works.

TAB. 1. - ^{14}C dating of LSA areas in Ethiopia⁴.

PLACE	TYPE OF AREA	CULTURAL STAGE	AGE BP	NATURE OF SAMPLE	LABORATORY	REFERENCES
<i>Bulbula</i>	surface	LSA	27050±1540	charcoal	SUA-588	Gasse, Street 1978
	"	"	11870±300	"	SUA-494	
<i>Lake Besaka</i>	surface	LSA	22080±305	shell	UW-495	Brandt 1982
<i>Fejx 4</i>	"	"	19460±205	"	UW-493	
	"	"	19280±215	"	UW-494	
<i>Laga Oda</i>	shelter	LSA	15590±460	charcoal	SUA-475	Clark, Prince 1978
	"	"	10270±170	"	SUA-474	
<i>K'one</i>	surface	MSA/LSA	14670±200	shell	I-8322	Williams <i>et alii</i> 1977
<i>Harurona</i>	shelter	LSA	12070±70	charcoal	Beta-17490(ams)	this work
<i>Aladi Springs</i>	surface	LSA	11070±160	shell	I-7970	Williams <i>et alii</i> 1977
<i>Macho</i>	surface	LSA	10330±90	charcoal	SMU-86	Humphreys 1978
<i>ETH-73-3-111</i>						
<i>Gobedra</i>	shelter	LSA	10110±140	charcoal	P-2238	Phillipson 1977
	"	"	7130±165	bone	GX-4680	
<i>Lake Besaka</i>	surface	LSA	4785±120	charcoal	I-8330	Williams <i>et alii</i> 1977
<i>Laga Oda</i>	shelter	LSA	3510±105	charcoal	SUA-473	Clark, Prince 1978
<i>Moche Borago</i>	shelter	LSA	4370±70	-	-	Gutherz <i>et alii</i> 2002
<i>Lalibela e Natchabiet</i>	surface	LSA	2520±80	-	-	Barnett 1999
<i>Moche Borago</i>	shelter	LSA	2180±45	-	-	Gutherz <i>et alii</i> 2002
	"		1915±65			
	"		1480±60			

During excavations have been found scarce organic elements, among which just one coal residual from the basis of the oldest anthropic layer, about 1.60 m deep from the present surface. The sample was sent to the Beta Analytic inc. laboratory in Florida, which thanks to the mass spectrometry through accelerator technique (AMS) has obtained the date of 12070±70 BP (Beta-174905).

This date adds up to the small group of dates published for the Late Stone Age of Ethiopia and in particular fits in, unique example from a stratigraphic deposit of Southern Ethiopia, around the end of what has been called phase A of Ethiopian Blade Tool Tradition⁵. An exhaustive study of the Harurona shelter industries will say if the cultural sequence continues with industries with characteristics typical of phases B and C.

⁴ There are two more ^{14}C dating but they are considered unreliable by experts: Porc Epic I-7971 (5700±110; Clark, Williamson 1984) e Lake Besaka SUA-459 (4750±160; Williams *et alii* 1977).

⁵ Brandt 1986.

At the moment we can just place the date of Harurona in the Late Stone Age, a stage which in the area of Horn of Africa lasts at least 20,000 years and if the available dates for the Ethiopian LSA areas are still insufficient to try to determine a clear dating, nevertheless it is more and more evident a chronological sequences it will be possible to refer to during the study of the Ethiopian lithic industries and their techno-typological evolution. In this regard the results of the archaeological research carried out in the Harurona deposit will be a very important stage of the cognitive route related to the prehistoric and proto-historic phases of Southern Ethiopia. Here our area is a very rare case we know of stratigraphic sequence during a relatively long period, from 12,000 years ago until today⁶, the Harurona shelter and its deposit will certainly become a fundamental reference point for the follow-up in the study of Horn of Africa.

(Translated by Laura Baggiani)

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⁶ In the south of Ethiopia only other two Pleistocene stratified deposits, besides that of Harurona, are known: Akirsa and Moche Borago. At the moment they are still being studied by a team of French experts led by Professors R. Joussaume and X. Gutherz.

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RIASSUNTO. — UNA NUOVA DATAZIONE ^{14}C PER LA LATE STONE AGE DEL CORNO D'AFRICA. — La nota presenta una datazione ^{14}C inedita, proveniente dal riparo di Harurona in Etiopia meridionale. La data va ad accrescere il piccolo gruppo delle datazioni relative alla Late Stone Age del Corno d'Africa.

RÉSUMÉ. — NOUVELLE DATATION AU ^{14}C RELATIFS AU LATE STONE AGE DANS LE CORNE D'AFRIQUE. — La note présente une datation ^{14}C inédite de l'abri de Harurona en Ethiopie méridionale. La datation va enrichir le petit group des datations relatifs au Late Stone Age dans le Corne d'Afrique.

SUMMARY. — A NEW ^{14}C DATING FOR THE LATE STONE AGE OF HORN OF AFRICA. — The note presents an inedited ^{14}C dating of the Harurona shelter in Southern Ethiopia. The date increases the small number of dates referring to the Late Stone Age in Horn of Africa.