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Mathilde Minotti

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# Bones Tools from Buto Ila-b at Tell el-Iswid (Sharqiya)

Tell el Iswid is located in the north-eastern Delta and it was occupied from the early fourth millennium BC - the Lower Egyptian Culture period (LEC)- until the early third millennium BC (Naqada IIIC) . These last years, the excavation was mainly focused on the Buto Ila – Buto IIIa period. These phases are characterized by a lightweight architecture and hollow structures (trenches, posts and storage pits), until Buto IIb, then a mud brick architecture appears which seems to mark a turning point in the settlement patterns. The exact nature of this occupation (collective or individual dwellings, specialised activity areas) is still unknown to us, but the study of the artefacts that will be carried out in the coming years may help us to define it.

This poster aims at presenting the methodology adopted to analyse the bone implements. This research has shed light on the ways in which objects were shaped and on their probable function.

The conservation of bone material is relatively poor at Tell el-Iswid and in the northern Delta. Several post-depositional processes and the salinisation of soils lead to the degradation of the bone surface that makes it difficult to identify the bone industry. However, in the sandier levels at the base of the LEC sequence, a better preservation allows to highlight the presence of this type of industry in the settlement.

## Method

TYOLOGY and DEFINITON

OBSERVATIONS & USE-WEAR ANALYSIS

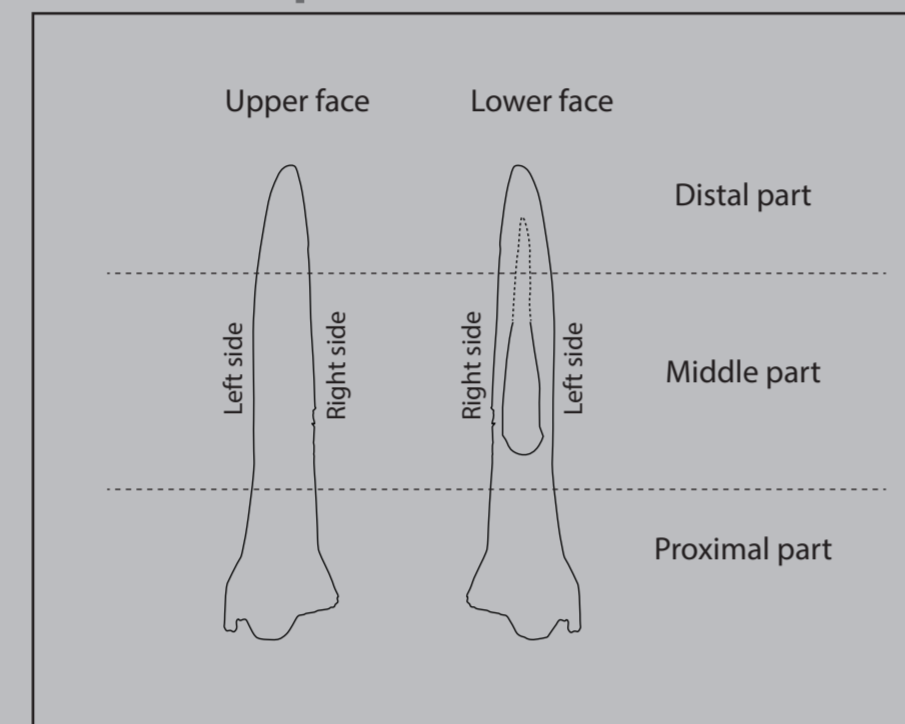
INTERPRETATION & FONCTION

## Typology



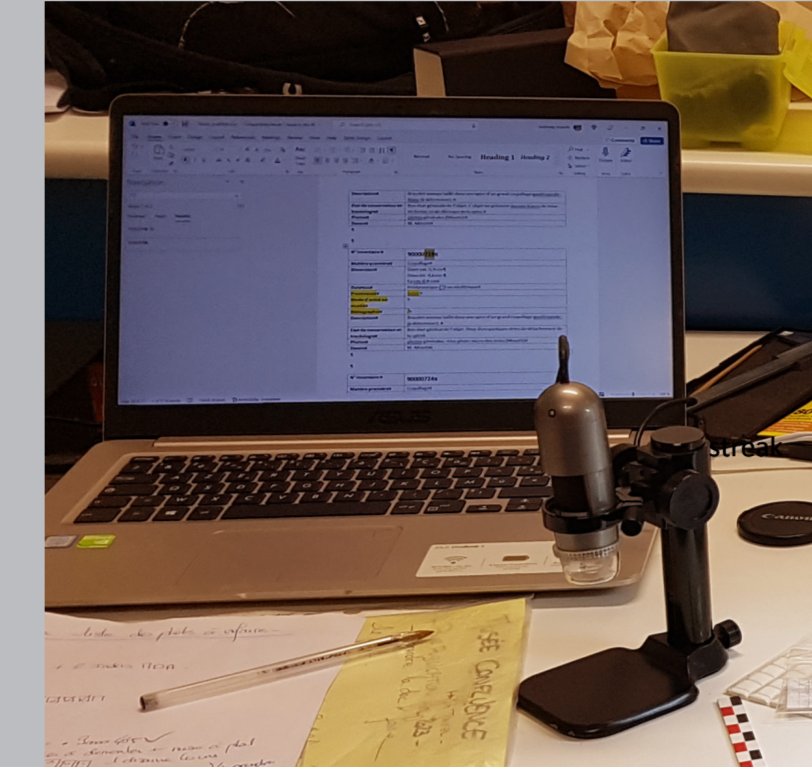
The categories of tools are defined according to the nomenclature published in the collection of "Fiches typologiques de l'industrie osseuse préhistorique" (twelve notebooks published alternately by the University of Provence, CEDRAC and the SPF between 1988 and 2004).

## Description



The tools are presented with the active part upwards. Thus, it is possible to describe and lateralize the parts of the artefact, or the location of the traces (traces) observed according to the upper or lower face, the left or right side, the proximal, middle, or distal parts.

## Use wear analysis



The description of the objects and their observation at high magnification aims at reconstructing the manufacturing process of each of them, but also to recognize the modes of use. Each artefact was observed with the help of a DinoLite® digital microscope, using magnifications ranging from x20 to x70.

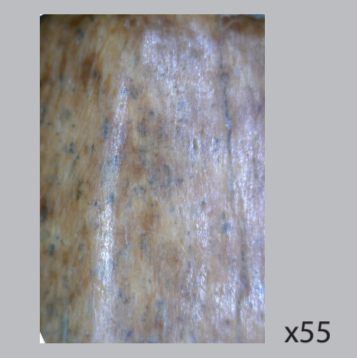
## Stigmata



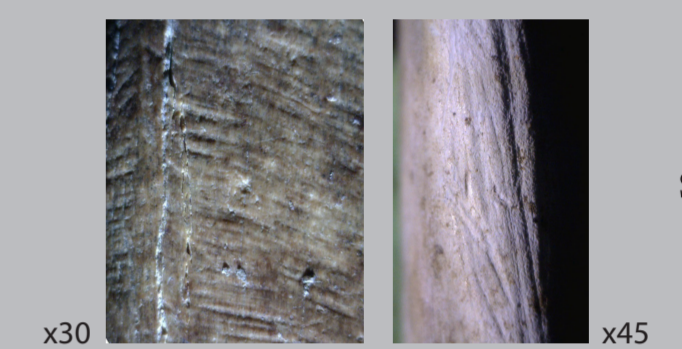
Removal scar



Burnt



Polish



striation



## Buto Ila 2 Bevels

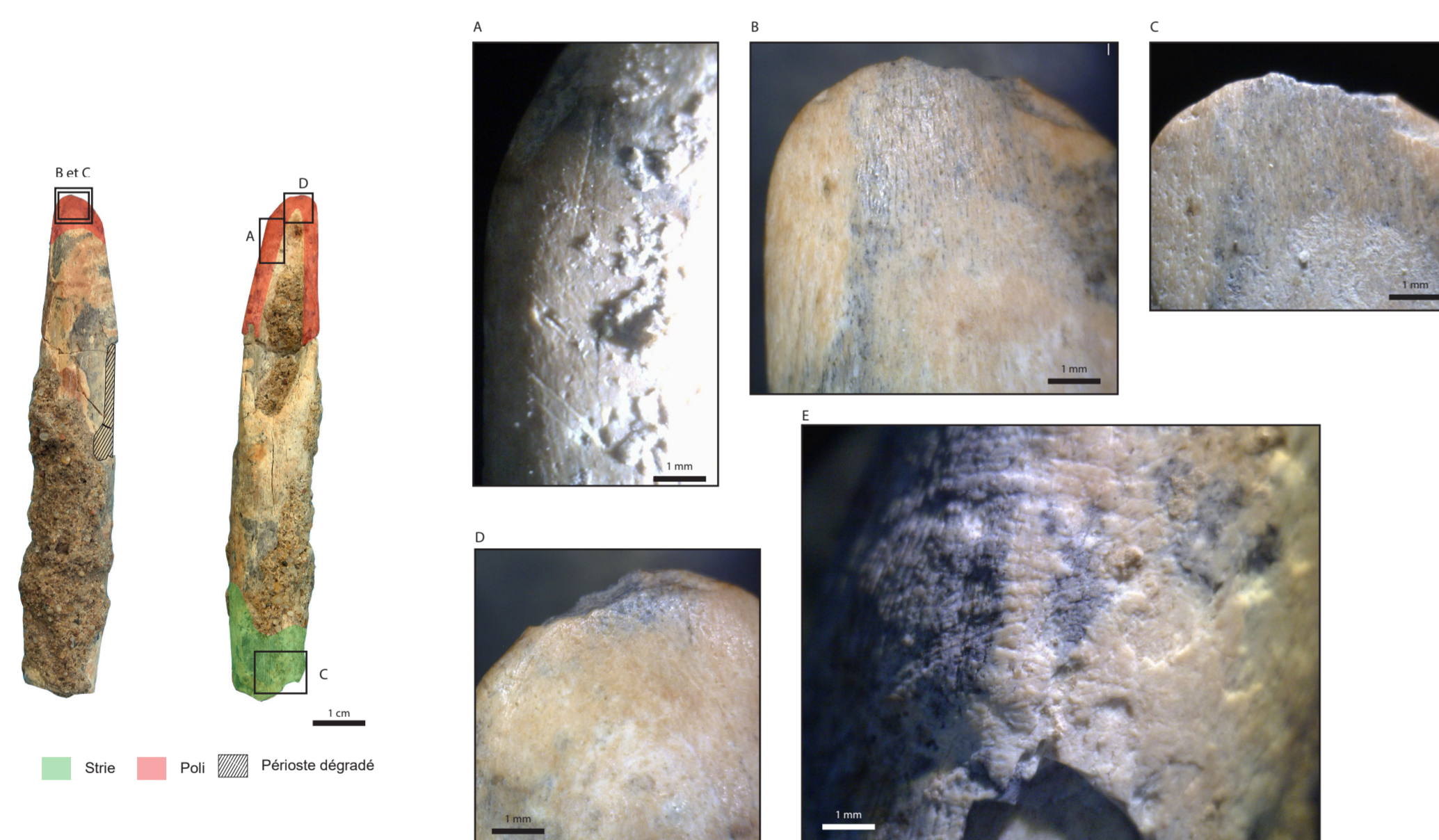
The bevels are characterized by subparallel edges converging towards the distal end, the beveling is done in the longitudinal axis of the objects. The bone supports may or may not be split. The proximal part can either retain the bone distal epiphysis, or it can be shaped.

The two bevels found at Tell el Iswid are made from goat long-bone diaphysis. The bevel was removed by a large removal in the longitudinal axis of the pieces on unsplit supports. The proximal parts have retained their original volume. The object ISW11-031 did not preserve the distal epiphysis, unlike the larger bevel ISW18-002.

### Bevel ISW11-031

US 9591 = Dating Buto Ib – Buto Iia  
Dimension : L. 9,6 cm ; W. 1,5 cm

The bevel seems to be complete. The proximal part is thus voluntarily tubular, and the tool may have been supported by a handle as indicated by the striations on this part. The piece is poorly preserved, with encrustations and the periosteum partly flaking off due to the salty soil. The distal part is better preserved. The polishing due to use is readable on the bevel. A greasy and shiny polish (A and D) develops on the whole of the active part on the lower face and is limited to the tip on the upper face (B and C). These features indicate that the tool worked at a closed, grazing angle, in a gliding motion on a surface of animal or plant origin. At the tip, three small overlapping removals show that the tool repeatedly 'bum'ed into the material being worked. The tip of the object is very slightly thrown back to the left, which may have been caused by more pressure being exerted on the right side.

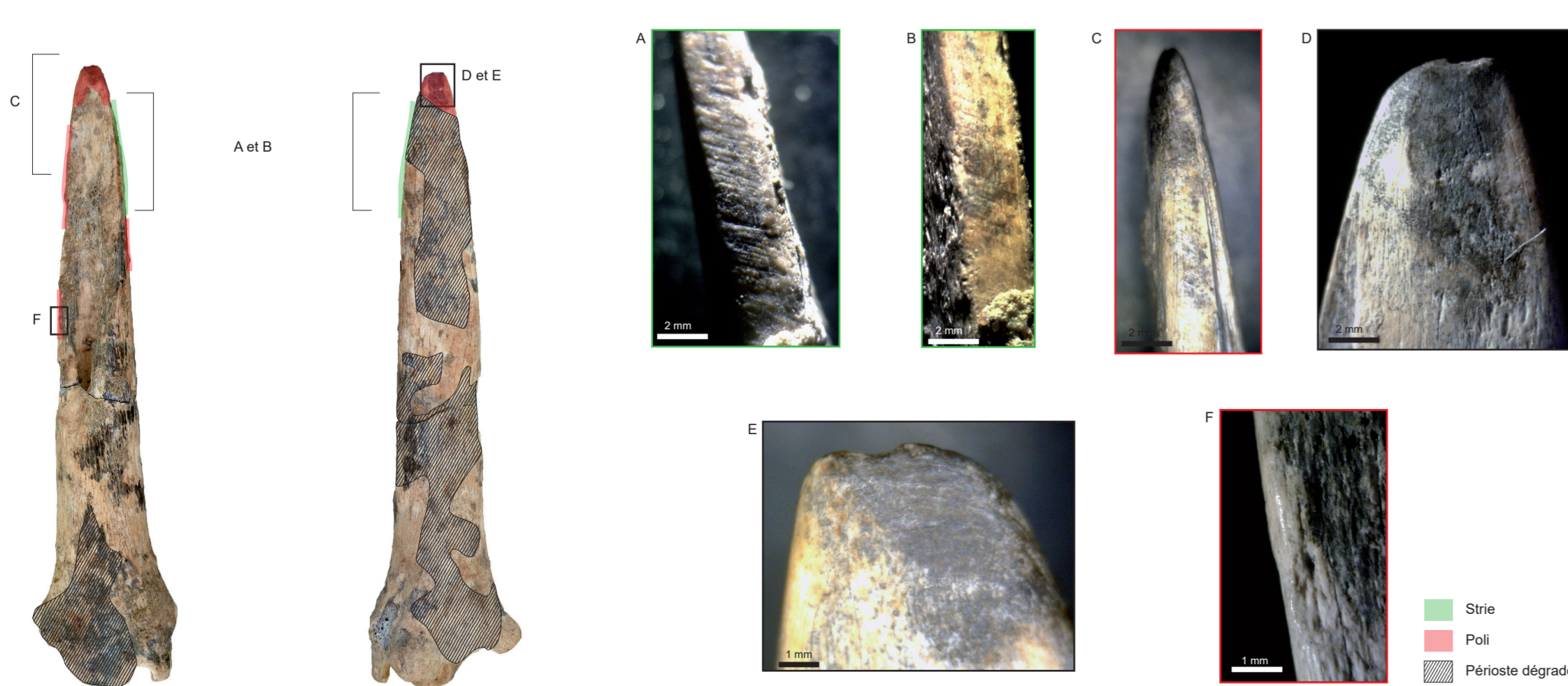


Bone bevel ISW11-031: Photos; Traces : A and B bold polish covering the lower and upper faces of the cutting edge; C, lower face -and D-upper face- Smooth of the blade edge and small removals scar, a bright polish due to use; E, Streak perpendicular to the longitudinal axis, trace left by a handle? (Photos : M. Minotti)

### Bevel ISW18-002

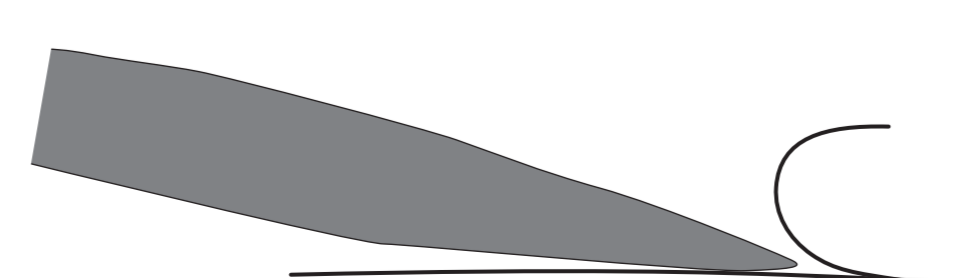
US 18034 in storage pit 4814 = dating Buto Ila  
Dimension L. 12,4 cm ; W. 0,6 to 2,9 cm

This tool is sufficiently preserved to allow the observation of manufacturing traces and use wear. Evidence of shaping is limited to a range of striations on the left side of the distal part. Small, parallel, and short striations are only visible under grazing light and indicate probable shaping by abrasion or 'knife cutting' (A). Long striations on the longitudinal axis overlap these shaping traces and are therefore subsequent. They could indicate the preferential working axis of the tool (B). On the right side, the surface is smoothed by a polish that covers the traces of manufacture (C). The tip of the tool appears to have been burnt (C & D) after its use as the removal on the tip is covered with black burnt marks (E). The action of this tool appears to have been to penetrate, as indicated by the shiny polished surfaces on the mesial part (F). The fracture of the tip and the location of the polish suggest that the tool was used in a grazing angle and that the material was pushed back.



Bone Bevel ISW18-002: General photo (R. El Hajjoui); Traces: A. shaping striations "knife cut" or abrasion; B. Longitudinal striations overlapping the shaping striations (use?); C. Slight and non-covering polish; D. Fire mark on the point; E. Removal scar of the point and a non covering polish; F. Bright and greasy polish on the edges of the tool on the mesial part. (Digital microscope, M. Minotti).

This tool probably worked as a scraper or smoother. The glossy polish on the active part could indicate use on organic material



## Buto IIb 1 Harpoon

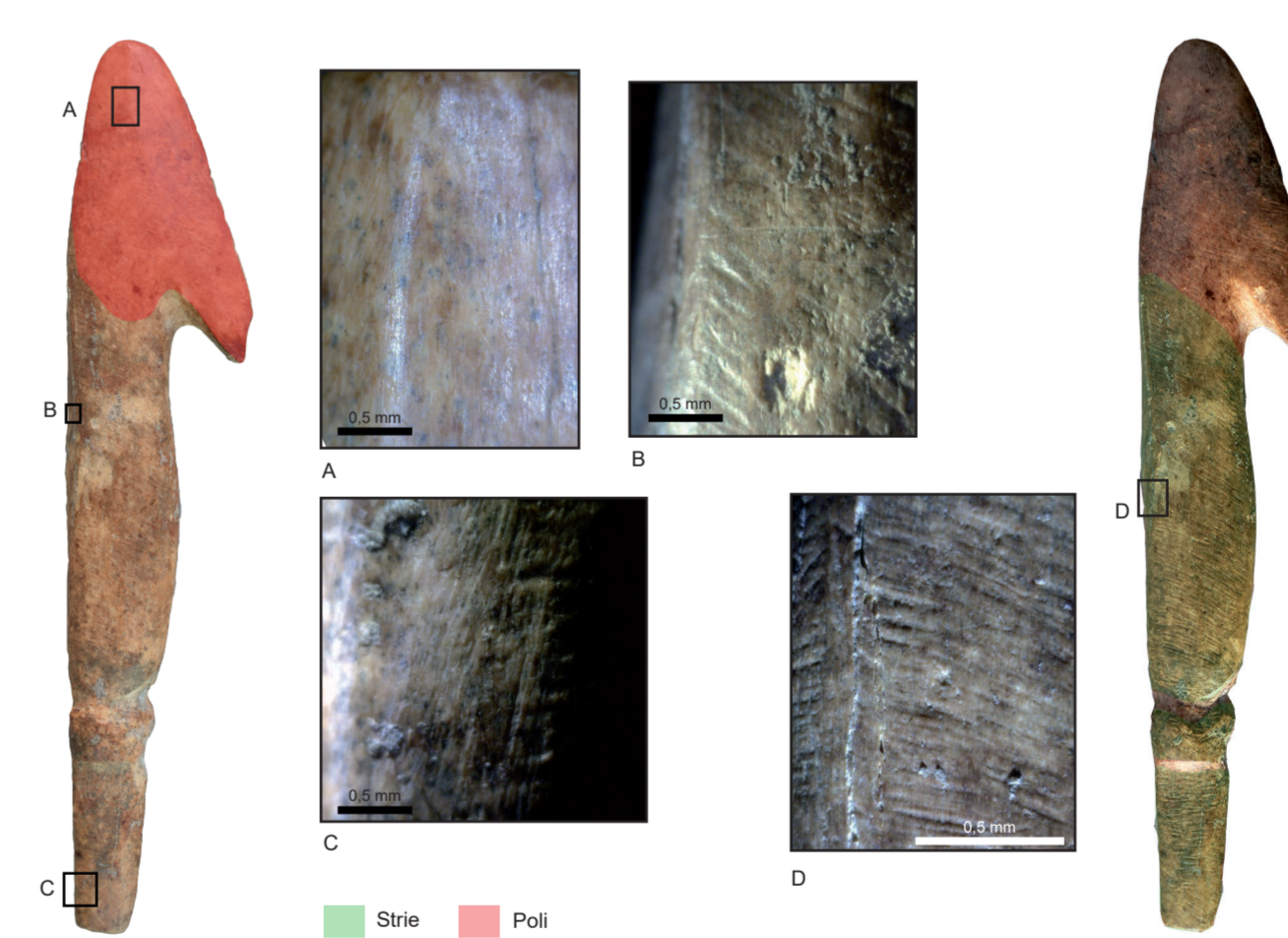
The harpoon is a weapon characterized by a smoothed, sharp edge or pointed distal part, and a thinned proximal part which allows to fix it to a shaft or a fishing line. It can have one or more barbs.

### Harpoon ISW18-003

US 18455 storage pit 4935, dating Buto IIb  
Dimension : H. 11,9 cm, W. 2,4 cm

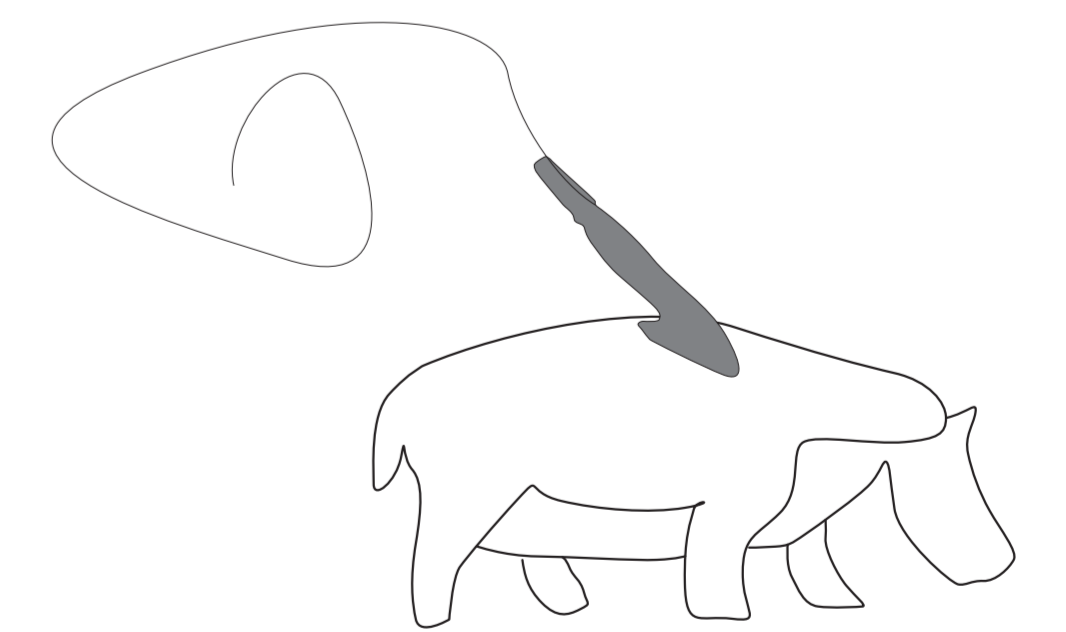
The bone harpoon ISW18-003 found at Tell el-Iswid is complete and very well preserved. It was found in a storage pit dated through the ceramic assemblage to Buto IIb. It presents a smoothed distal sharp part and a single barb extends the tip. This flattened barb is convex and the tip is fractured. The shaft - middle part - is straight and individualized. Between the cuboid base -proximal part- and the shaft there is a break marked by two grooves that run along the entire circumference. These grooves probably served for the ligature of the fishing line.

The harpoon is entirely shaped, which makes it impossible to determine the origin of the primary block; it is probably a relatively thick and dense bone. The support block is a fragment of elongated bone shaped by abrasion or 'knife cutting', as evidenced by the short parallel striations that cover two-thirds of the harpoon (D). The later shaping and finishing seem to have been done by scraping (C), witnessed by long and fine striations intersecting the former over a large part of the sample. The double groove in the proximal part also overlap all the shaping striations. A long streak running perpendicular to the axis is isolated and probably due to use (B).



Bone harpoon ISW18-003: General photos with and without grazing light (R. El Hajjoui); traces: A. Use polish; B. Use streaks; C. Use streak; C. Scraping streak (fitting or shaping) D. Shaping streak "knife cut" or shaping on grinding wheel (Photos M. Minotti).

The fracture of the barb tip and the greasy polish covering the distal part indicate that the object has been used. The distal part penetrated some (animal?) material and the tip of the barb broke off during its extraction.



## Conclusion

The bone tools described above have certain characteristics in common. All the supports are long bones of small mammals. The epiphyses are preferred as they offer the possibility of shaping thin, long and resistant objects. The shaping is carried out with the same technique. Indeed, short striations parallel to each other cover the whole of the harpoon and part of one of the bevels, giving the surfaces a "wavy" effect that is particularly visible in grazing light. These traces can be evidence of two shaping techniques: shaping by abrasion on a grinding wheel or shaping with a knife and flint blade. Based on the published technological experiments, we were not able to distinguish between the two. We would therefore like to carry out new experiments and observations to try to distinguish the two techniques. All tools bear use wear (scratches, polishing and removal). The organization of these traces on the tools allows us to assume different activities such as polishing, scraping, or perforating. The shiny polishes are typical of the work on organic materials. These bevels could have been used for the preparation of plant fibers for basketry, spinning or certain elements of the light architecture. In the predynastic representations, the single-barbed harpoon seems to be reserved for crocodile or hippopotamus hunting and the traces found on this harpoon correspond to this type of use.



Mathilde Minotti  
mathilde\_minotti@yahoo.fr