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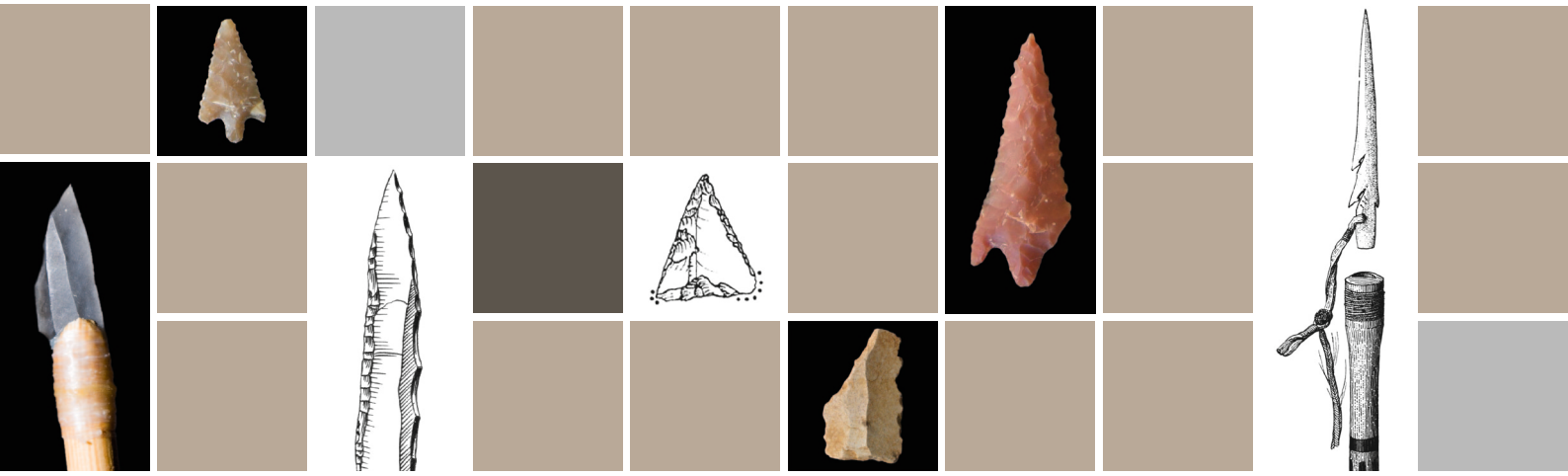
PROJECTILE WEAPON ELEMENTS FROM THE UPPER PALAEOLITHIC TO THE NEOLITHIC

Proceedings of session C83



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ON THE NOTION OF WAR WEAPONRY IN THE NEOLITHIC

Marie-Hélène DIAS-MEIRINHO

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Abstract

In the context of ongoing, multidisciplinary by the ANR project « GUEROPE » ("War and Violence in the first societies of Europe, an integrated approach", directed by L. Baray) and a doctoral thesis in progress, I present a study of weaponry, and particularly projectiles, used in interhuman violence. The study and resulting discussion are based on archaeological remains from the end of the Neolithic in France. Certain research procedures and preliminary results are presented in advance of an exhaustive publication in the future.

Key-words : weapon elements, war, end of the Neolithic, human bone remains

Introduction

"Les découvertes plus récentes de MM. De Baye et Prunières ont multiplié le nombre des vertèbres blessées, il en est qui ont reçu le trait de côté et de dos". "Ces flèches sont le témoignage des combats, elles avaient frappé, elles avaient pénétré dans les chairs et dans les os, elles ont été introduites avec le corps ou avec le squelette dans le sépulcre." (Cartailhac, 1896). These extracts from *La France préhistorique d'après les sépultures et les monuments* show that in the earliest works on Prehistory[1], weapon elements embedded in human bones already received a great deal of attention. The principal questions asked of these objects did not concern whether or not war existed during this period, but were rather strictly technical: is it possible that a projectile of this nature could be embedded in this way in this bone? (Cartailhac, 1896; citing the suggestions of de Mortillet). Once this phenomenon was accepted, the fact that these pieces are evidence of war was no longer questioned. There was thus no fundamental discussion on the definition of war or its particular nature during this period. At the time, this subject had no real consequences for the perception of the societies in question since the discipline was in the process of construction and concentrated on chronological aspects. Between these first works and 1970, no new discoveries were made to renew an interest in this type of artifact. The excavation of the hypogeum of Crottes in Roaix finally allowed J. Courtin to conduct new research on such artifacts dated the end of the Neolithic (Courtin, 1984), especially since this hypogeum contains a level interpreted as a "war level". The spectacular discovery of the frozen mummy of Similaun (Spindler, 1995) would also motivate a new interest in this subject. Not only were the personal objects (bow, arrows and quiver) of this individual preserved with him, but a radiographic examination revealed a weapon embedded in his flesh near one of his scapulae. These rare data open new research orientations into which the work presented in this paper is directly integrated.

Toward an anthropological approach to violence in ancient societies: the impact of weapons

We must be cautious when developing an anthropological approach to the violence of ancient periods. The major dangers involved in such an endeavor were noted by J. Zammit (1991) who said that we must avoid isolating a case as a trivial event, or generalizing it when considering cultural or social phenomena. We must also take into account the temporal factor since a chronological distortion can create the impression of a tendency based on several similar events. In addition, fluctuations can occur in seriations since objects are not always directly dated. Finally, the ideological distance of the period can prevent us from applying certain social concepts. The methods used to qualify a violent episode in one or several Prehistoric societies and to measure its duration or perceive its consequences, are still in their experimental stages. While impasses are expressed as concepts and interpretations that are rarely renewed (*cf.* Beyneix, 2007), ethnoarchaeological research can open new perspectives for study and interpretation. This complementary approach can inform us concerning the variables in certain behaviors, but as A. M. and P. Pétrequin warned in the context of their research in New Guinea: "l'erreur méthodologique serait de vouloir à tout prix plaquer, sur les sociétés néolithiques d'Europe occidentale, les modes d'organisation socio-économique d'Irian Jaya. Convergences et systèmes écologiques, en termes de tendances, ne signifient pas forcément identité des organisations sociales complexes, autrefois et aujourd'hui. Et sous peine de raisonnement circulaire, les conclusions temporaires de cette démarche ethno-archéologique ne pourront pas être utilisées par les ethnologues qui voudraient donner quelque profondeur historique à leurs démarches" (Pétrequin et Pétrequin, 1990). We thus do not have a principle founded on models that can be applied to both Prehistoric and ethnographically known societies, but rather a common domain of questioning that can be applied to phenomena that are difficult to interpret

[1] - From a historiographic point of view, the first authors studied early periods of Prehistory as much as late periods (for example, Cartailhac, cited here). For this reason, at this level of presentation, we retain the global term Prehistory since it fully transcribes the context of the first works to which we refer.

In the hoplological domain, which addresses human combative behaviors, the study of weaponry is a determinant factor. The interaction between strategies and weapons is sometimes so strong that it is difficult to recognize the effect of one on the other. In prehistoric contexts, we are far from being able to determine the strategies employed, but we can legitimately study the weapons used. Since in the societies of the end of the Neolithic in France hunting is an activity perceptible through faunal assemblages (with highly variable percentages in different sites, cf. Braguier, 2000), it is logical to suppose that we can distinguish between hunting weapons and war weapons. However, the proportion of animal bones with an embedded weapon is very low for this period (Cordier, 1990; Pape, 1982). This considerably limits the possibility of comparing animal remains with human remains, but even more so of isolating projectile weapons dedicated solely to hunting activities[2]. The corpus of human bones with embedded weapons seems to be the only source through which we can determine the use of specific weapons. One of the objectives of our study (project ANR « GUEROPE », dir. L. Baray) is thus to determine which projectiles were associated with violent confrontations between humans and to determine if it is possible to isolate these objects from the full range of contemporary weapons in order to define types exclusively associated with this utilization.

A systemic procedure

The first stages of this project were devoted to the construction of a reference collection constituted of weapons embedded in bones dated to the 4th and 3rd millennia, located over all of France. The succeeding stages were devoted to testing the methods that could address our research questions. It is here that we were confronted the major difficulty that some of the weapons cannot be extracted from the bones. This is the case of very deep impacts from which the weapon element cannot be removed without damaging the bone, or when the bone has healed around the weapon element. A technical solution to this problem was developed in collaboration with J. Zammit. A systematic radiographic procedure allowed us to record information (the internal structure of the bone and the characteristics of the weapon element) at a level almost equal to that of pieces removed from the bones. In addition to these first unpublished data, we also developed a systemic procedure combining technological studies of the projectiles, paleopathological observations and a system for estimating the terminal ballistic[3] for the end of the Neolithic.

A first basis of reflection on embedded weapon elements

Based on the reference collection[4] (61 objects: Table 1), which includes artefacts found over a large part of France, we defined three study sets: a set with clearly identifiable morpho-types, a set with undetermined morpho-types and a set with partial morphologies. All of these objects are made from stone and no point made from an osseous material has yet been discovered in this context in France.

The set of identifiable weapon morpho-types includes only five categories: transverse, lozenge-shaped arrowheads; triangular forms called “pointes aveyronnaises”; “classic” stemmed or barbed points (Dias-Meirinho, 2006); bifacial, lanceolate points with a wide stem; bifacial or foliate, lanceolate points (Fig. 1).

The set with undetermined morpho-types is composed of pieces whose basal part is identified but the apical extremity is not (Fig. 1). Before radiographic recording, four categories were identified: those with a wide geometric base, with a stem, with lateral basal notches, and blades with unretouched edges. We were able to anticipate the morphology of some pieces (wide geometric bases, cf. Fig. 2) and for these the interpretation of the photos obtained was thus not surprising. Radiographic recording was nonetheless indispensible for patheopathological and ballistic analyses. Our analyses also focused on other pieces in this ensemble, the blades with unretouched

[2] - Here we do not consider arrows that knock the animal out, which can be used in the hunting of small prey.

[3] - The terminal ballistic concerns the effects of the projectile on the object.

[4] - Boutin inventory (unpublished, as well as Guilaine & Zammit 2001; completed by us (« GUEROPE » ANR project, Dias-Meirinho & Zammit, in progress).

département	nombre de pièces
Alpes de haute provence	1
Aveyron	14
Bouches-du-Rhône	3
Gard	2
Haute Garonne	1
Hérault	5
Lozère	16
Marne	5
Tarn	1
Val d'Oise	2
Var	1
Vaucluse	9
Vendée	1
TOTAL	**61**

tabl. 1 : Study collection.

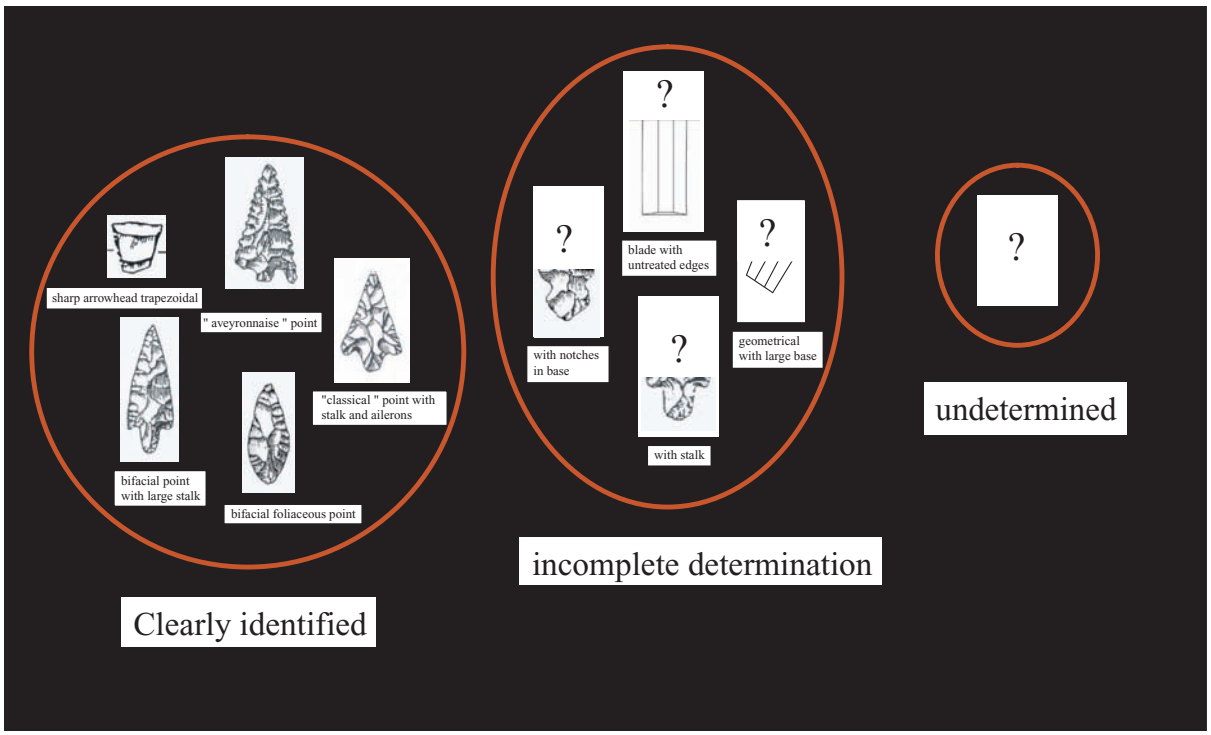

fig. 1 : The three ensembles of the study collection (the representations are examples but not the original pieces).

edges (Fig. 3), whose attribution as a projectile has never been clear. This is illustrated by their designation as "knife-lancets" by J. de Baye (1888) and the fact that they are not usually integrated in the typological classes of weapons (Piel-Desruisseaux, 1998; Binder, 1987)[5]. The two pieces that we have thus far studied come from the excavations led by J. de Baye in the hypogeums of the Marne (Les Ronces Villevenard 67751 and Villevenard 67633). The two non-extracted blades have large dimensions: the part extending outside of the bone measures 25 x 13 x 3.3 mm for the first piece, and 32 x 20 x 5.1 for the second one. Based on the first radiographic photos, we were able to estimate that the part remaining inside the bone was at least 32 mm long for the first and 18 mm for the second, resulting in a total length of at least 57 mm and 50 mm respectively. Unfortunately, since these photos were the first that we tested, their quality is not optimal. The contrast of the first photo is too weak between the bone structure and the weapon element, thus preventing us from reconstructing its complete morphology. We can simply estimate that this was a blade with an oblique truncation with a very small angle and unretouched edges. The second photo has a hematoma that partially masks the extremity of the blade (this part seems to be fractured at the interface of the hematoma). Our current results are thus mixed, but based on future photos with the appropriate calibrations, we hope in to be able to present our conclusions on the properties of these weapon elements, and in particular to determine the complete morphology of their apical extremity.

The last set, composed of undetermined pieces, contains objects fixed in bone tissue healed around it with only a very small surface visible, others that were broken at the junction of the bone at the time of impact or during an attempt at extraction by Neolithic people[6], and others that nearly completely penetrated the bone. The objects in this set have not yet been subject to radiographic analysis since we first concentrated the objects in the second set in order to refine our image capturing methods. In the future, we will integrate the data on these objects with those obtained from the two other sets.

We note that the objects studied fit perfectly with the usual technical and typological criteria of these morpho-types. We have not observed any technical over-investment in the fabrication, specific forms, or finishing of these pieces. The pressure retouch presents the same qualities and imperfections. In summary, these morpho-types do not diverge from the weapon element schemes found in contemporary domestic and sepulchral assemblages.

We can make one significant observation, however, which is that the range of weapon elements embedded in human bones is particularly restricted relative to the diverse corpus of weapon elements of this period[7], especially considering the wide geographic distribution of our study collection and certain strong cultural tendencies during this chronological period (Fig. 4). Moreover, among the morpho-types utilized, the perforating categories are more frequent (with greater diversity) than the transverse categories. The adoption of perforating weapons due to their penetrating properties thus also seems to be confirmed in the context of inter-human violence. This manifestation is integrated in the general tendency of observations that we can formulate for the end of the Neolithic: we are at the junction between the full diversification of weapons and definitive fixation of the stemmed and barbed points as the principal model for arrowheads (Dias-Meirinho, Ph.D. doctoral dissertation in progress).

Perspectives

The possibility of systematizing studies and confronting them with new research questions now seems to be

[5] - This reference is the current basis of the typologies developed for the Neolithic and particularly for the 3rd millennium (such as Bailly, 2002; and Furestier, 2005).

[6] - We do not disregard the possibility of post-depositional fractures, which we verify case by case.

[7] - This first observation with be further explored in our continuing study.

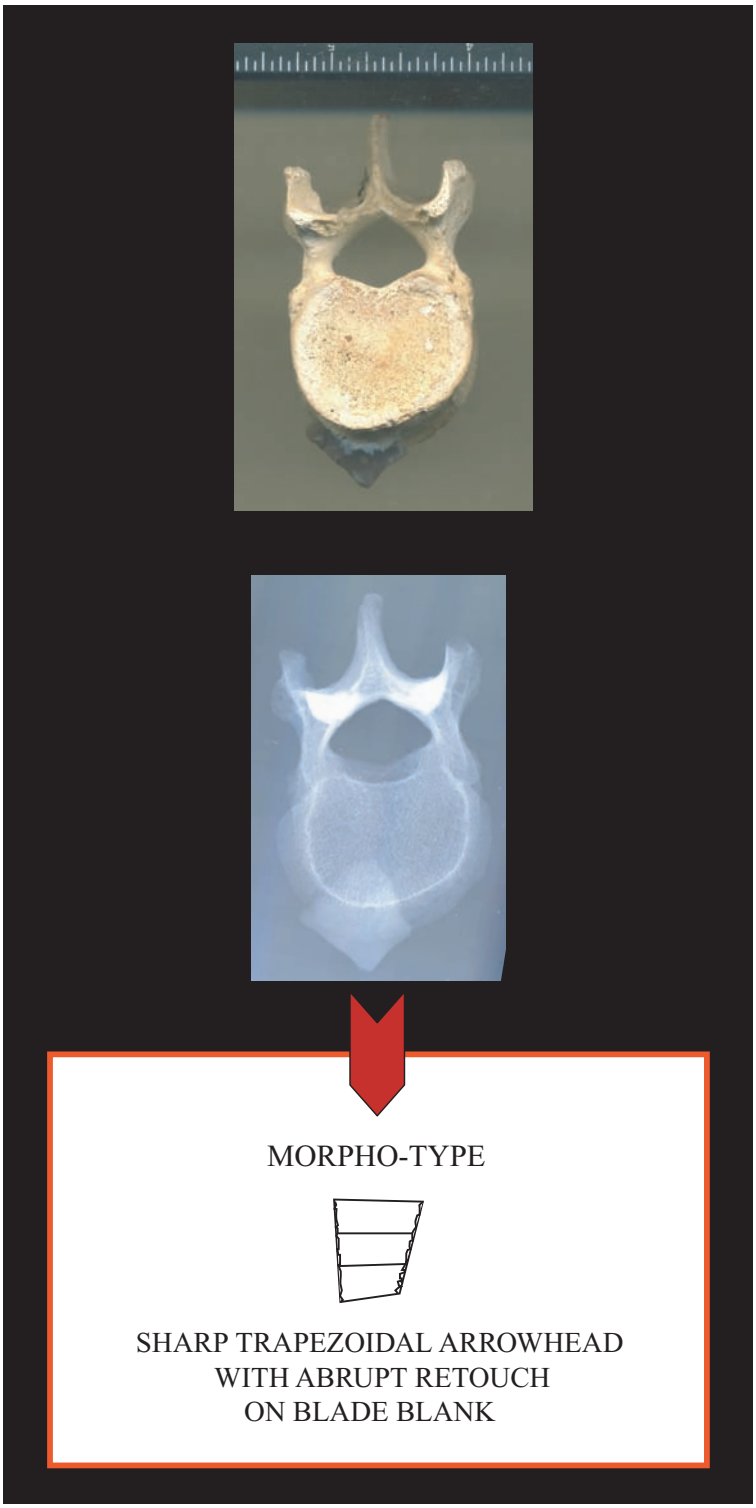

fig. 2 : La Pierre Michelot, Marne (Baye collection, Musée d'Archéologie Nationale). Weapon element with a wide geometric base and its radiographic image.

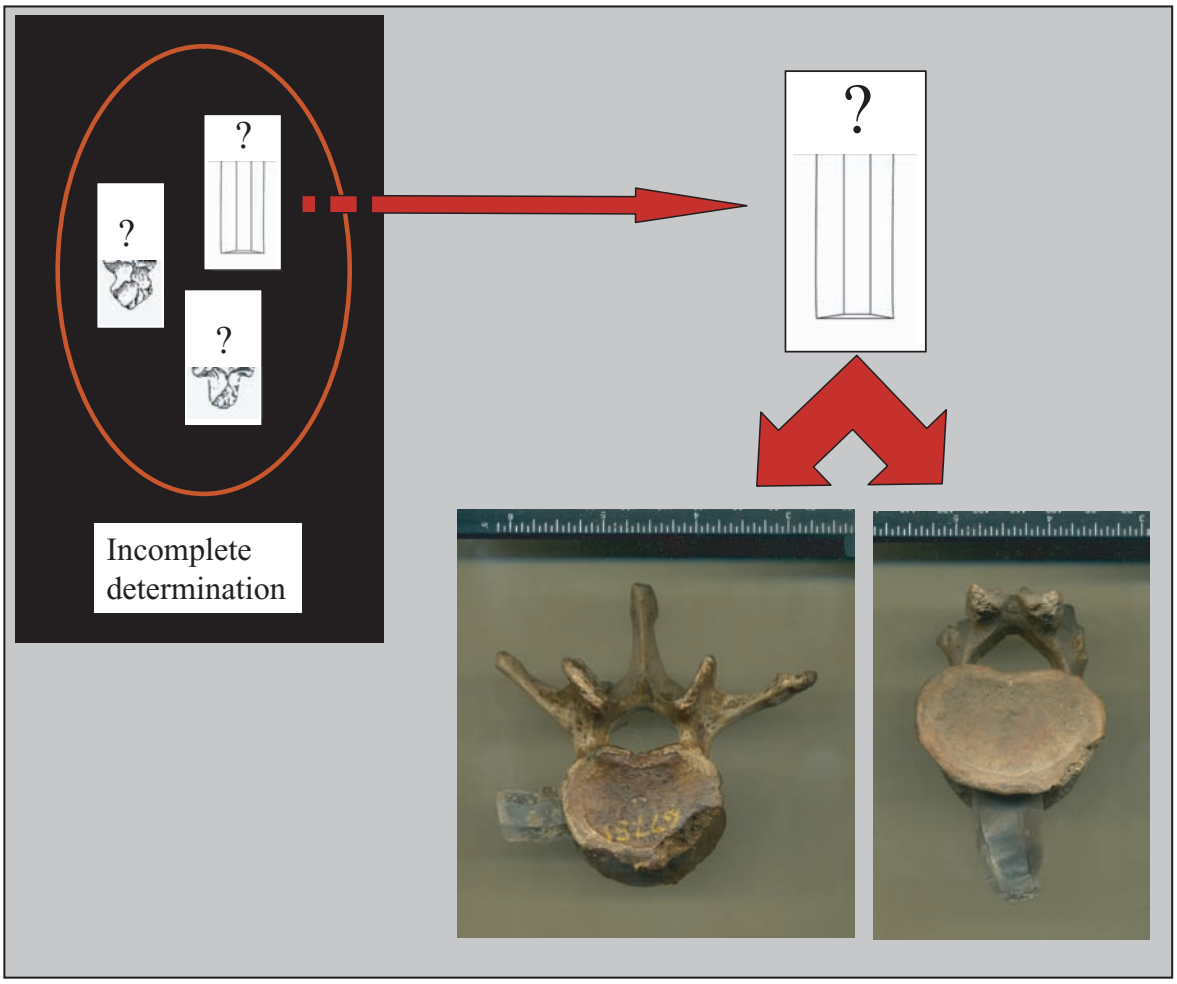

fig. 3 : Examples of pieces with unretouched blades embedded in them (examples from Villevenard, Baye collection, Musée d'Archéologie Nationale).

assured. It will thus be feasible to respond to the question of whether perforating morpho-types, and among them the stemmed and barbed model, accompany modifications in the conception and practice of inter-human violence in these societies. Do these constitute two parallel manifestations or a single response to modifications in the social and/or cultural structure of these societies? This research perspective will advance through exchanges and the integration of observed phenomena (in ethnology and physical anthropology) in the context of the ANR "GUEROPE" project.

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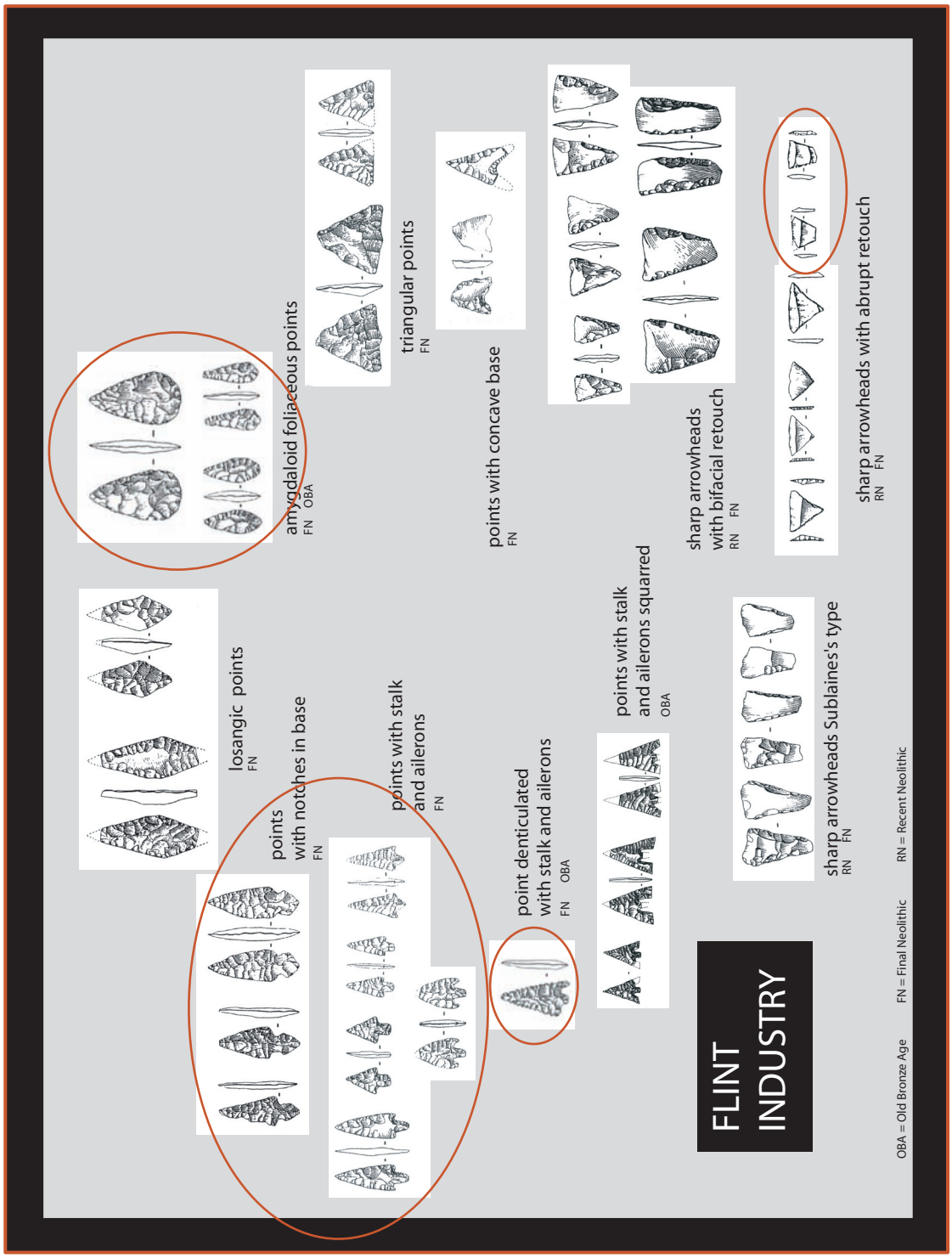

fig. 4 : Place of the morpho-types embedded in human bones within the principal morpho-types of the end of the Neolithic (from the Late Neolithic to the Early Bronze Age).

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