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AURIGNACIAN GENIUS

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THE AURIGNACIAN IN SOUTHERN BURGUNDY

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THE AURIGNACIAN IN SOUTHERN BURGUNDY

Harald FLOSS, Christian T. HOYER
Claire E. HECKEL, Élise TARTAR

Abstract

Since the second half of the 19th century, Southern Burgundy has constituted one of the most important regions of Early Upper Paleolithic research in France, but with a remarkable discontinuity in research after the 1950s and considerable emphasis on the site of Solutré. Beginning in the middle of the 1990s, a research team from Tübingen University directed by H. Floss has been investigating this area, building on a tradition of research started by A. Arcelin and H. Breuil and carried on by J. Combier and H. Delporte. In spite of the long history of research in this region, it is clear that more detailed information in the form of absolute dates, chronostratigraphic studies, and technological reassessments of the Aurignacian industries is required. The Tübingen research team and researchers from several French institutions are filling gaps in current knowledge through ongoing excavation, survey, and collections analysis as part of a Projet Collectif de Recherche *on the Early Upper Paleolithic in the region. The present article summarizes the existing information available on the Early Aurignacian of Southern Burgundy as concretely as possible. Of particular significance are the sites of Solutré and Grotte de la Verpillière in Germolles. Some new open-air sites have also been recently discovered, e.g. at Germolles-en-Roche, Uchizy and Charnay-lès-Mâcon. This article provides an overview of our initial insights into the technological characteristics of the lithic and osseous industries.*

Keywords

Southern Burgundy, Grotte de la Verpillière, Aurignacian, lithic and osseous industry, ivory.

Introduction

While there are many Early Upper Paleolithic sites known in Central Eastern France, our knowledge of the emergence and character of the Aurignacian in the region remains incomplete. Southern Burgundy is situated between two regions (Dordogne and the Swabian Jura) known for assemblages that fit neatly into the classic "Early Aurignacian", or *Aurignacien ancien*, but the region has until recently suffered from a lack of high-resolution data. Protoaurignacian industries are increasingly being recognized in areas north of the Rhône valley, for example at the Grotte du Renne (Arcy-sur-Cure) and Trou de la Mère Clochette (Szmidt *et al.*, 2010), and some elements (e.g. bladelet cores) in the assemblages of our recent excavations have technological affinities with this phase of the Aurignacian. Regarding the osseous industry, the split-based points traditionally associated with the Early Aurignacian have also been recently associated with assemblages in which bladelet production sequences are more typical of the Protoaurignacian (Szmidt *et al.*, 2010).

Until recently, the only site yielding chrono-stratigraphical information about the Aurignacian in Southern Burgundy was Solutré. For several years, our investigations at Grotte de la Verpillière I near Chalon-sur-Saône have been yielding materials that enhance the database of the Aurignacian record in this region of France. In combination with newly-discovered open-air sites, this research provides techno-typological evidence that the Aurignacian occupation of Southern Burgundy was denser than has thus far been recognized (figure 1).

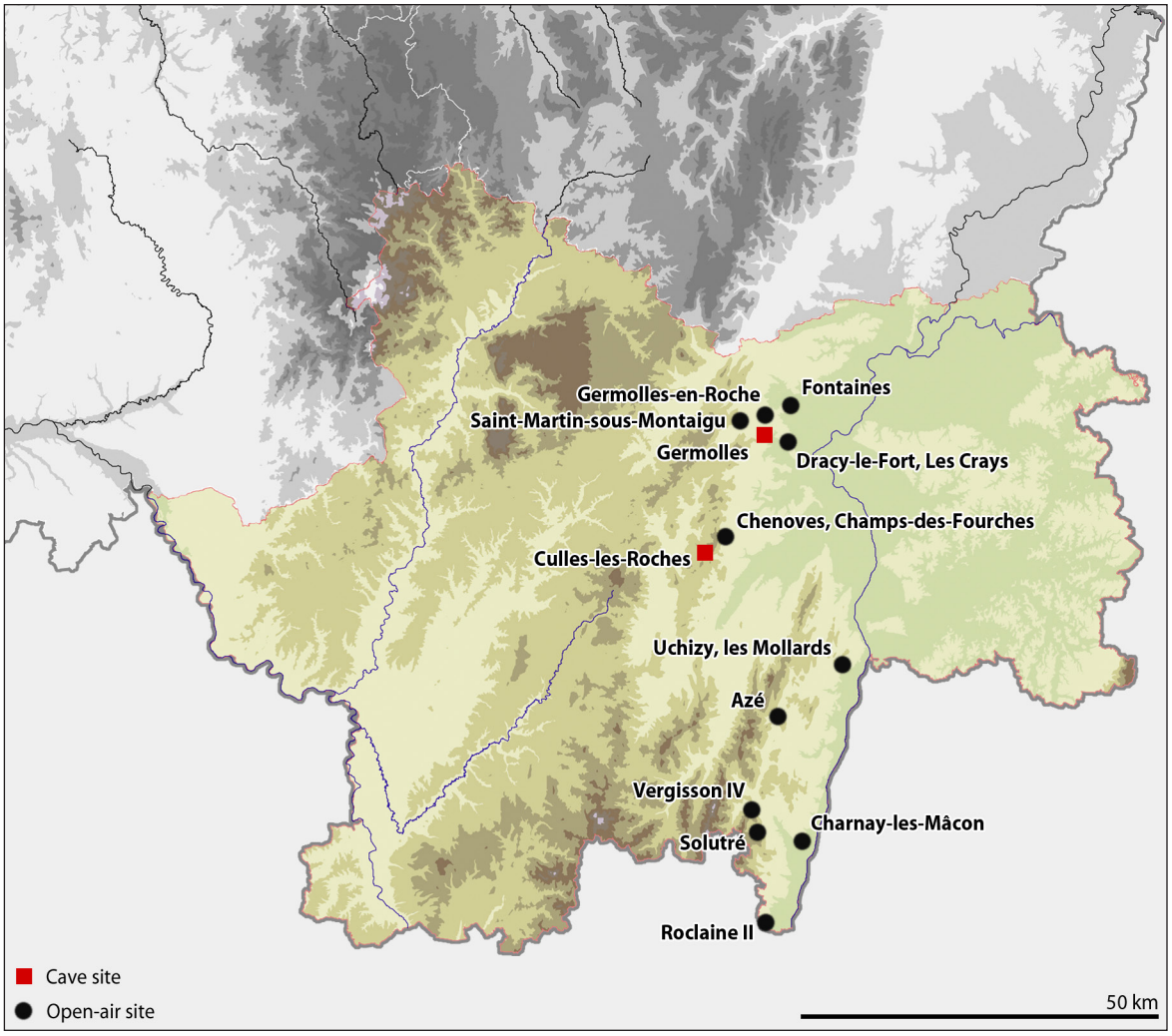

Figure 1 - Aurignacian sites in Southern Burgundy (Saône-et-Loire) (base map SRA Bourgogne and NASA).

1 - Solutré

At Solutré, the first excavators of the late 19th and early 20th centuries (eg. A. Arcelin and Abbé Ducrost) identified industries in the stratigraphic unit labeled "foyers de l'âge du cheval" that were later assigned to the Aurignacian (Combier, 1955). At the beginning of the 20th century, during the famous "*bataille Aurignacienne*", Solutré held a key role in solidifying the chronological position of the Aurignacian between the Mousterian and the Solutrean (Breuil, 1907). Later (in 1923), the Aurignacian was also discovered in trench G of the site, stratigraphically inferior to the "*magma de cheval*". Following J. Combier (Combier, 1955; Combier, Montet-White, 2002) the Aurignacian of Solutré is a classical Early Aurignacian with carinated pieces and split-based points. More recently, the Aurignacian was observed in the "*cailloutis rouge de base*" in sectors L13 and M12 of the site (Combier, Montet-White, 2002). Layer 6 of this complex was dated to 34 010 ± 610 (Ly-9245) and 33 970 ± 360 BP (SRLA-058). Layer 3, identified as Recent or Evolved Aurignacian (*Aurignacien recent*), was dated to 29 020 ± 170 BP (table 1). Recent excavations by N. Connet in the nearby sectors N11/12 yielded Aurignacian deposits with ornaments, rich bone and lithic industries, and dense faunal remains (figure 2; Connet *et al.*, 2005).

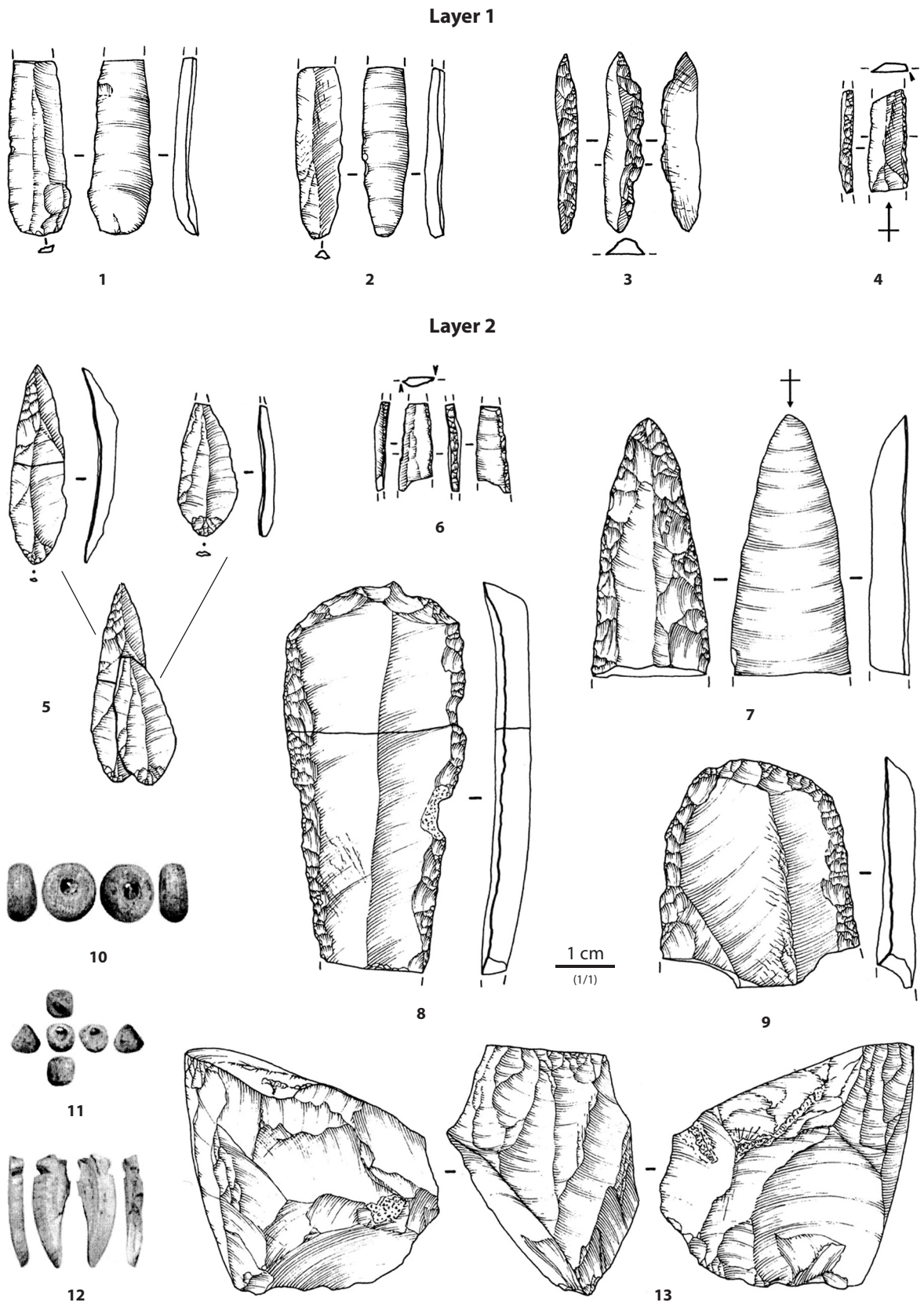

Figure 2 - The Aurignacian of Solutré: examples of the lithic industry and elements of personal decoration from layers 1 and 2 (from Connet *et al.*, 2005), 1-4: bladelets, partially retouched from layer 1; 5: two refit bladelets produced on carinated pieces; 6: Dufour bladelet; 7: Aurignacian blade; 8-9: end-scrapers; 10: disc-shaped bead made of ivory; 11: basket-shaped bead made of ivory; 12: notched marmot incisor; 13: bladelet core (Floss *et al.*, 2013: figure 5, edited).

2 - Germolles, Grotte de La Verpillière I

The second significant Aurignacian assemblage in Southern Burgundy is Grotte de la Verpillière I at Germolles (Côte chalonnaise; figure 1). This former rockshelter (figure 3), which appears as a cave today due to a massive late-glacial or postglacial roof-collapse, is situated on the banks of the Orbize river (a small tributary of the Saône) and was discovered in the 1860s. The history of research at the site is extensive and complicated (Dutkiewicz, 2011; Floss *et al.*, 2013). In concert with the new excavations, a review of records and assemblages from the old excavations in the late 19th century up to the sondages by J. Combier in the 1950s is ongoing. The Grotte de la Verpillière I at Germolles was first published by C. Méray in 1868 (Méray, 1869). In 1911, H. Breuil analyzed the artifacts from the site, drawing in part on the Aurignacian of the Grotte de Verpillière I in his definition of the Aurignacian (Breuil, 1911). Among the objects from the site that Breuil identified as typical of the Aurignacian are: "*une lame appointée massive à profonde coche bien retouchée au milieu du tranchant droit*", "*une lame large, terminée par un fort museau en ogive, très bien retouchée*", "*des grattoirs carénés typiques les uns trapus et courts, les autres s'allongeant en forme de bec*", and "*des grattoirs sur lames ordinairement fortes, très retouchés, parfois sur lames plus légères, parfois doubles*". Breuil also describes a plentiful bone industry, including *lissoirs*, incised rib fragments, pierced bovid teeth, numerous *poinçons* fashioned on flakes of bone, and what he identifies as "*une veritable pointe d'Aurignac aplatie*" (Breuil, 1911).

In the lithic industries from these old excavations we observe the presence of numerous text-book examples of carinated pieces with a high domed front (figure 4[1-6]). Unfortunately, no further information about the stratigraphic context of these finds is given. New excavations have confirmed the presence of such artifacts, and water-screening of the sediments has added a new class of artifact to the collections: bladelets of various type (figure 4[10-17]), including *lamelles torses*. A pyramidal bladelet core (figure 4[9]) with crossed negatives on the reduction face from the recent excavations, as well as numerous others from the old excavations (figure 5), might indicate the presence of "Protoaurignacoid" elements – though such interpretations must proceed with caution pending additional evidence and stratigraphic clarification.

Even if such finds from the recent excavations derive from unstratified or reworked sediments, which filled most of the primary chamber at Verpillière I's cave and have been removed in order to expose areas with preserved, unexcavated sediments, their close spatial arrangement may suggest formerly substantial sedimentary and archeological deposits from the Aurignacian. Some Gravettian artifacts are known from the recent excavations, they derive from small deposits inside and in front of the cave. No such deposits are indicated in the records from earlier excavations.

We also present here a series of radiocarbon dates made on elements typical of the Aurignacian bone industry of the area and on worked bones. These materials derive from the old excavations and from unstratified material from Grotte de la Verpillière I. These dates (table 1), range between around 32 000 and 30 000 BP (uncal.) and appear rather young in the light of the typical Early Aurignacian lithic and osseous industry, though J. Combier (1955) placed the Germolles Aurignacian typologically in a more recent context than that of Solutré. The dates presented here were established in the last years, and we look forward to adding absolute dates from several of the recently-discovered intact units very soon. A dating program that includes ^{14}C and ESR methods is under way and will deliver results soon after the 2014 field campaign.

J. Combier undertook a sondage in the southern part of Verpillière I in 1959 (figure 3), during which he documented a stratigraphic sequence containing Mousterian, Chatelperronian and Aurignacian levels partly separated by sterile deposits (figure 6). Comparable stratigraphic sequences have been observed during the recent excavations (figure 7), although the geological conditions vary slightly between different zones of the cave.

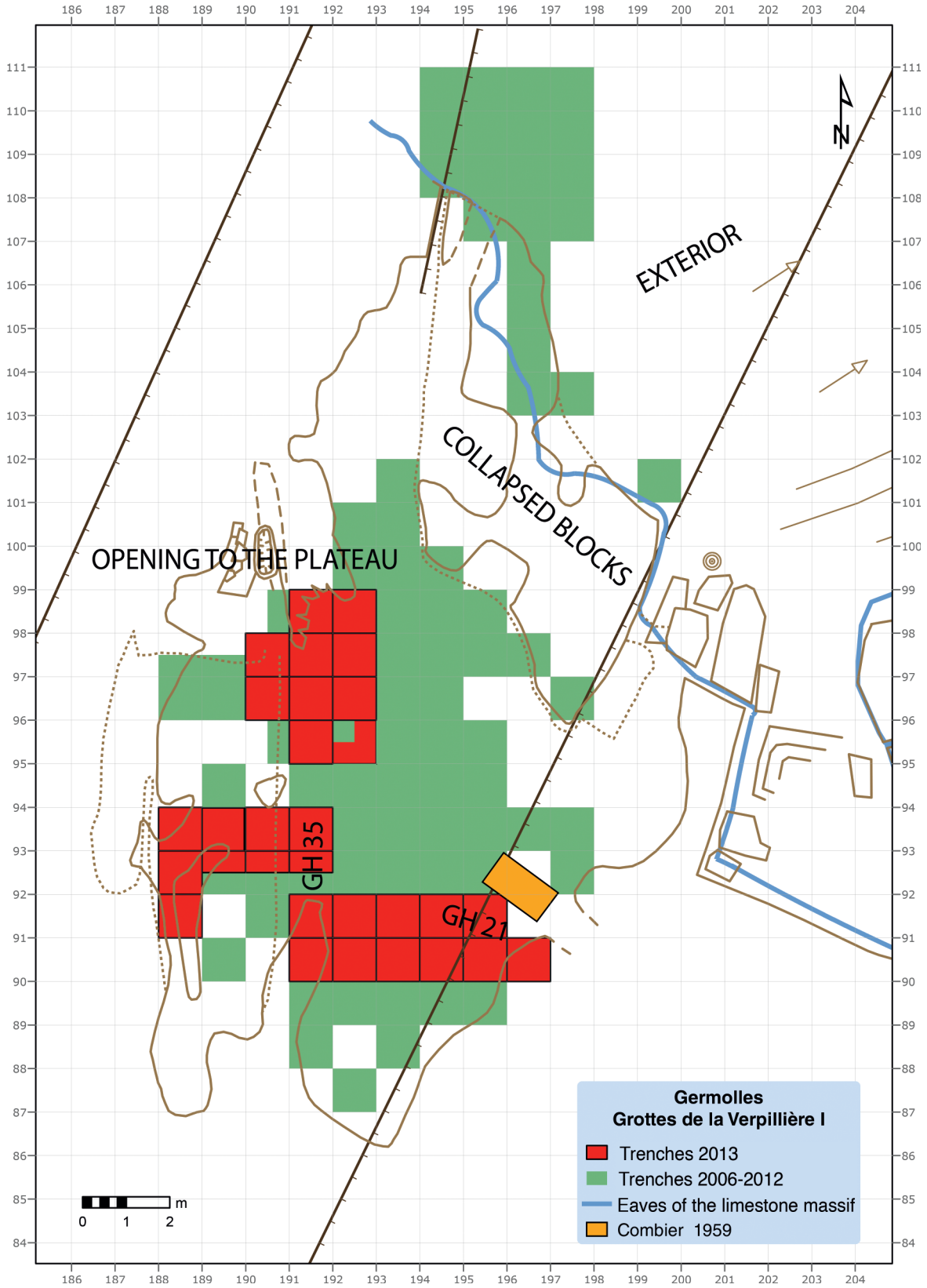

Figure 3 - Germolles, Grotte de la Verpillière I: excavation plan showing the zones excavated by the Tübingen University team since 2006 and by Jean Combier in 1959.

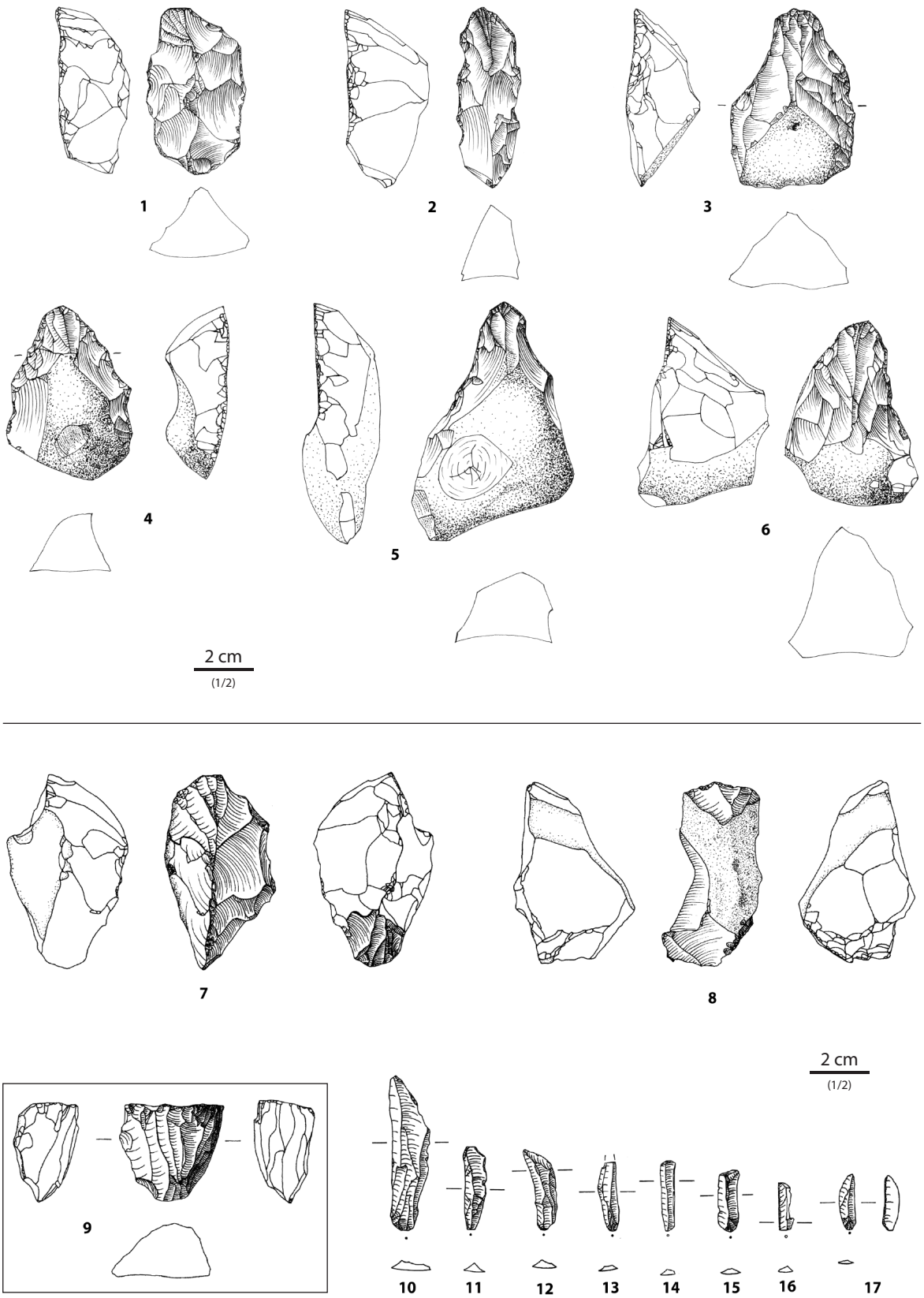

Figure 4 - Germolles Aurignacian lithic industry from Verpillière I cave. Above, old excavations, 1-6: carinated pieces. Below, recent excavations (Tübingen University), 7: double carinated piece; 8: carinated piece; 10-17: diverse bladelets, partially retouched. In frame (9), Protoaurigacian (?) bladelet core (Floss *et al.*, 2013: figure 6).

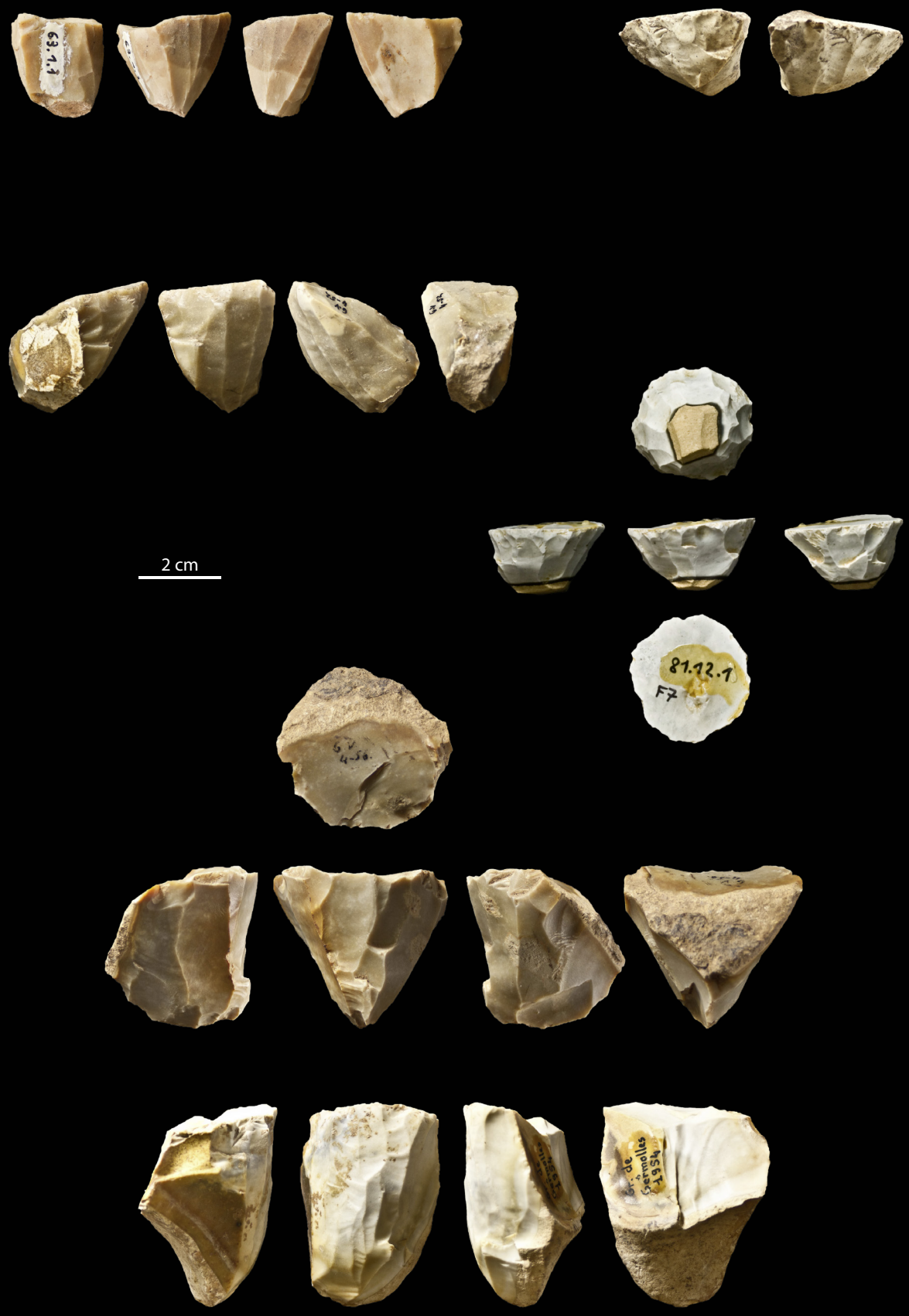

Figure 5a - Germolles, Grotte de la Verpillière I. Pyramidal cores from the early excavations with probable affiliations to the Protoaurignacian. Stratigraphic attribution is unknown (photos: E. Dutkiewicz, editing: K. Herkert).

Figure 5b - Germolles, Grotte de la Verpillière I. Pyramidal cores from the early excavations with probable affiliations to the Protoaurignacian. Stratigraphic attribution is unknown (photos: E. Dutkiewicz, editing: K. Herkert).

Site name	Lab No.	Datation (non cal.)
Germolles, Grotte de la Verpillière I	GrA-49115	30 090 + 190/-180 BP
Germolles, Grotte de la Verpillière I	GrA-49120	30 290 + 190/-170 BP
Germolles, Grotte de la Verpillière I	GrA-49127	30 660 + 200 (-180 BP)
Germolles, Grotte de la Verpillière I	GrA-49121	31 490 + 200/-190 BP
Germolles, Grotte de la Verpillière I	GrA-49122	31 660 + 120/-190 BP
Germolles, Grotte de la Verpillière I	GrA-49118	32 130 + 210/-200 BP
Solutré	CAMS-36628	29 020 ± 170 BP
Solutré	SRLA-058(CAMS)	33 970 ± 360 BP
Solutré	Ly-9245	34 010 ± 610 BP

Table 1 - Non-calibrated ^{14}C – datings from Germolles, Grotte de la Verpillière I and Solutré.

Despite the highly complex stratigraphy produced by geological processes – like standing water in the southern part of the cave and solifluction in the western-central part due to an influx of sediments and water through a large opening in the roof (figure 3) – and a complex excavation history, excavations over the last seven years have exposed several zones of intact deposits (figure 8) typologically attributed to the late Middle to the early Upper Paleolithic. These zones are considered representative of the original stratigraphic conditions in the various areas of the cave, as they were before the early excavations. Through ongoing excavations, solid correlations between different parts of the cave bearing intact sediments are being made and will soon be improved by final excavation work and accompanying analyses (figure 7). Regular micromorphological sampling and analysis have been used to distinguish remaining intact deposits from disturbed deposits and will also be finalized after the 2014 field campaign. Very promising intact deposits related typologically to Aurignacian occupation are GH (geological horizon) 21 (in the south-eastern zone of the cave) and 35 (in the western zone). GH 21, discovered in 2012, contains a small lithic assemblage with a typical Aurignacian retouched blade (figure 9[20]) and several bladelets. This sedimentary unit totaled a quarter of a cubic-meter and was delimited by the activities of J. Combier to the east and an erosional channel to the northwest. The total number of artifacts from GH 21 is 14, among them 5 lithic artifacts; the remaining faunal elements have provided little information of consequence.

GH 35 is exposed over just one and a half square meters with a total volume of almost one cubic meter. Preliminary results of micromorphological analysis strongly suggest that this unit remains intact. Slight influences of bio- and cryoturbation are not excluded, and a weak effect of floating water may not be excluded, but should not have led to critical turbation of the unit. GH 35 contains 204 single finds, including several pieces of charcoal and burnt bones as well as 72 lithic artifacts in a variable spectrum of raw materials. Beyond the local Cretaceous flint, there is a clearly non-local light-colored flint, tertiary chert, and quartzite. Several pieces bear traces of heating. The assemblage (figure 9) is characterized by a strong presence of blades and bladelets. Debitage took place on-site, and the blades are regular in shape. One of the bladelets originates from a carinated core. There are ten retouched pieces; among these are four laterally retouched blades and an atypical endscraper (figure 9[19]). This piece bears black residue that could indicate evidence of hafting. In the inventory, we also note the presence of burin spalls and wastes from splintered pieces.

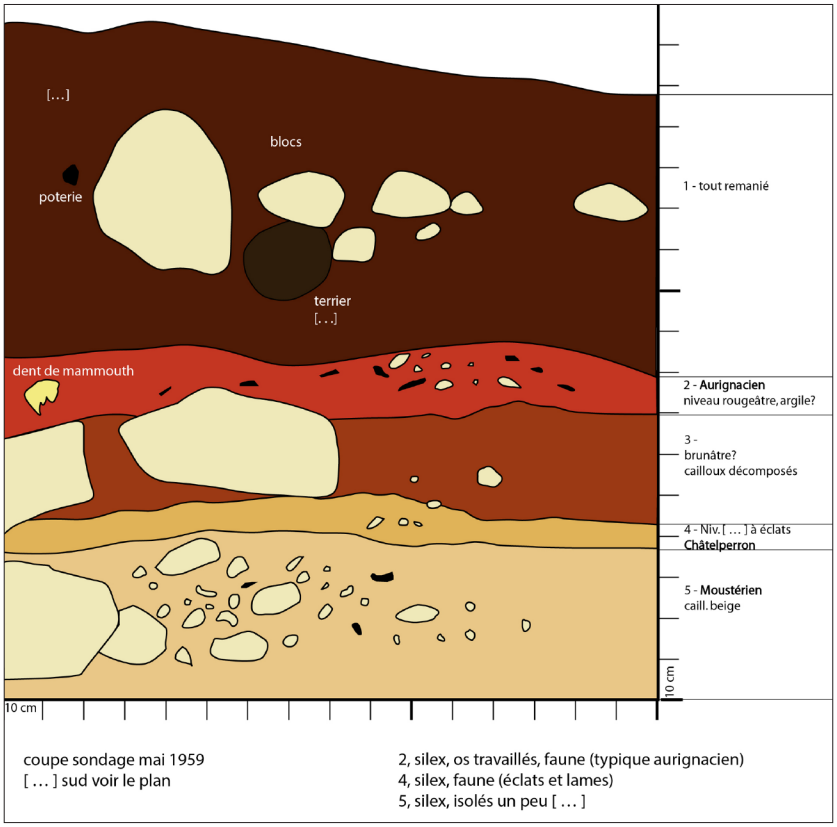

Figure 6 - Profile from Combier's 1959 sondages in the Grotte de la Verpillière I. Through archival and field research, the layers depicted were located in 2009 and appear to continue intact (drawing: Dutkiewicz 2011, after J. Combier).

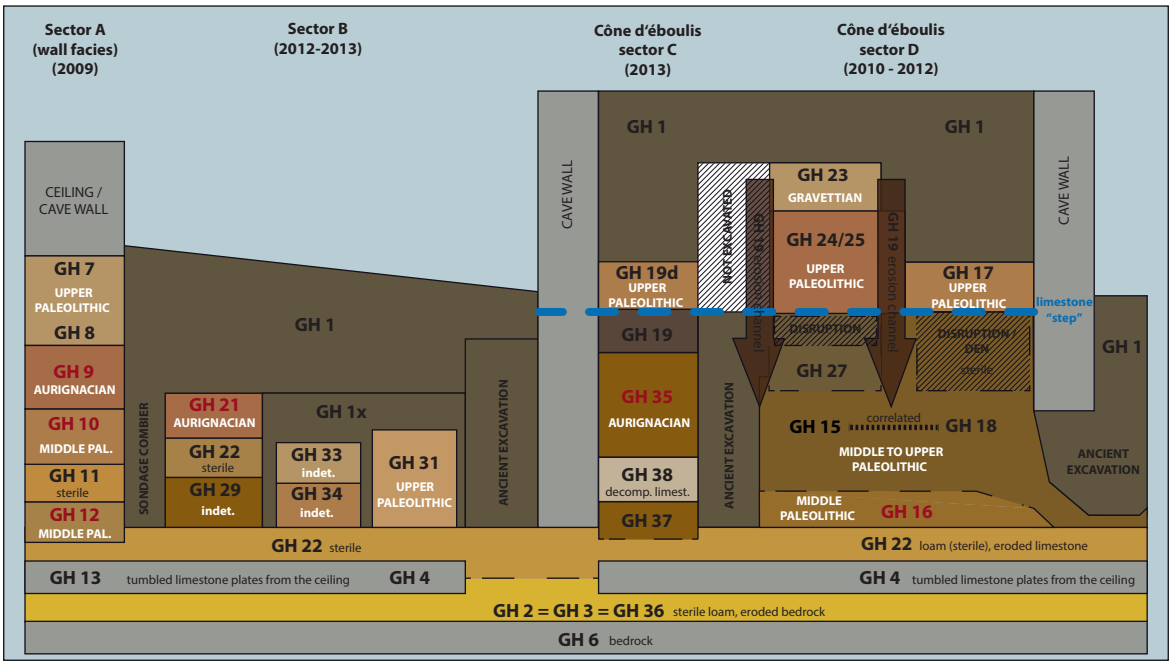

Figure 7 - Diagrammatic stratigraphy from the Verpillière I at Germolles in sectors A-D. Units with chronostratigraphically significant industries are noted in red. Further consolidation and correlation of intact layers is in progress through ongoing excavation.

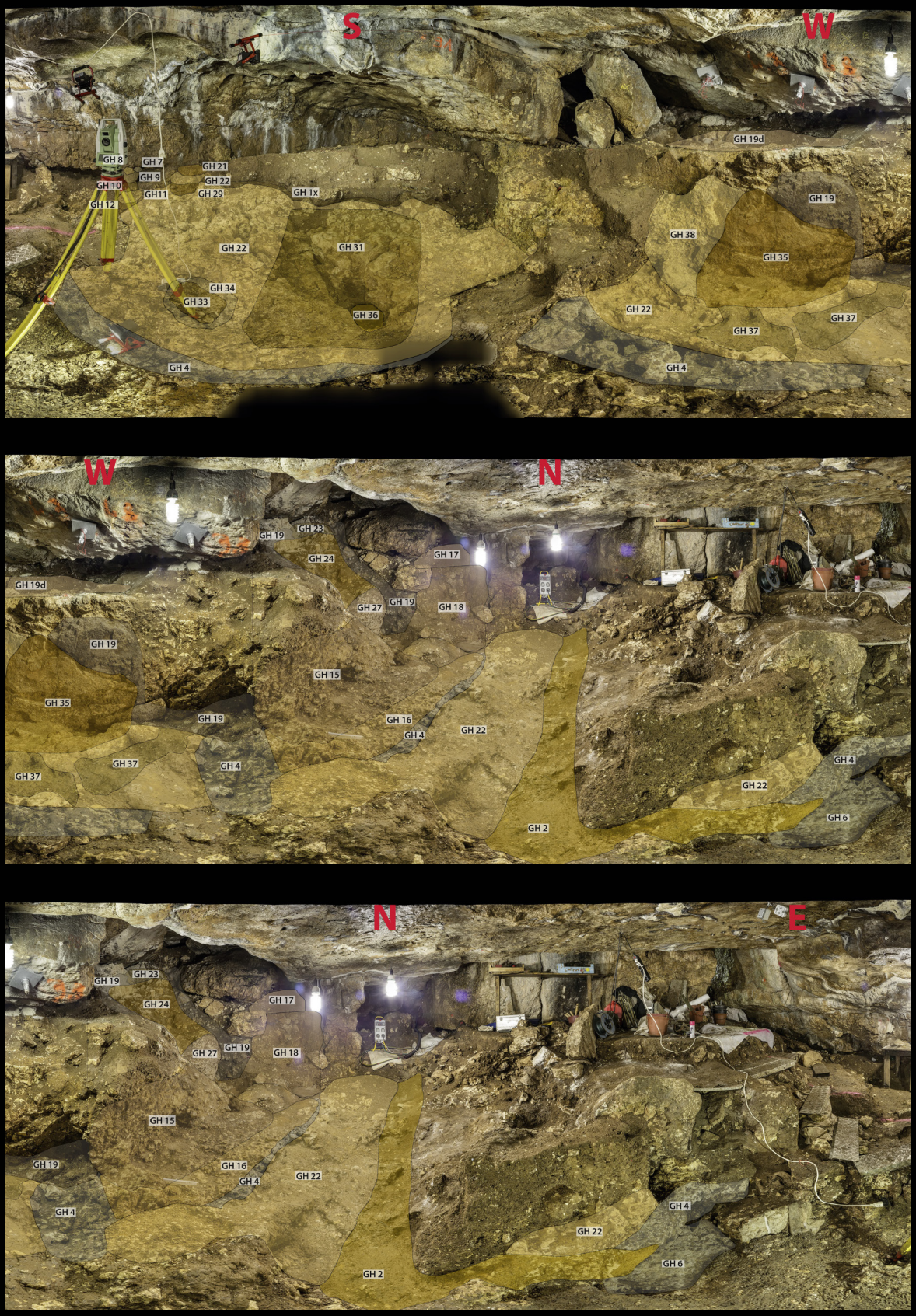

Figure 8 - 360° panorama of the interior of the Grotte de Verpillière I, Germolles (2014). The positions of the different sedimentary units discovered during the Tübingen excavations are indicated in various colors. Numerous ancient excavations since the 1860s have complicated the stratigraphic situation dramatically.

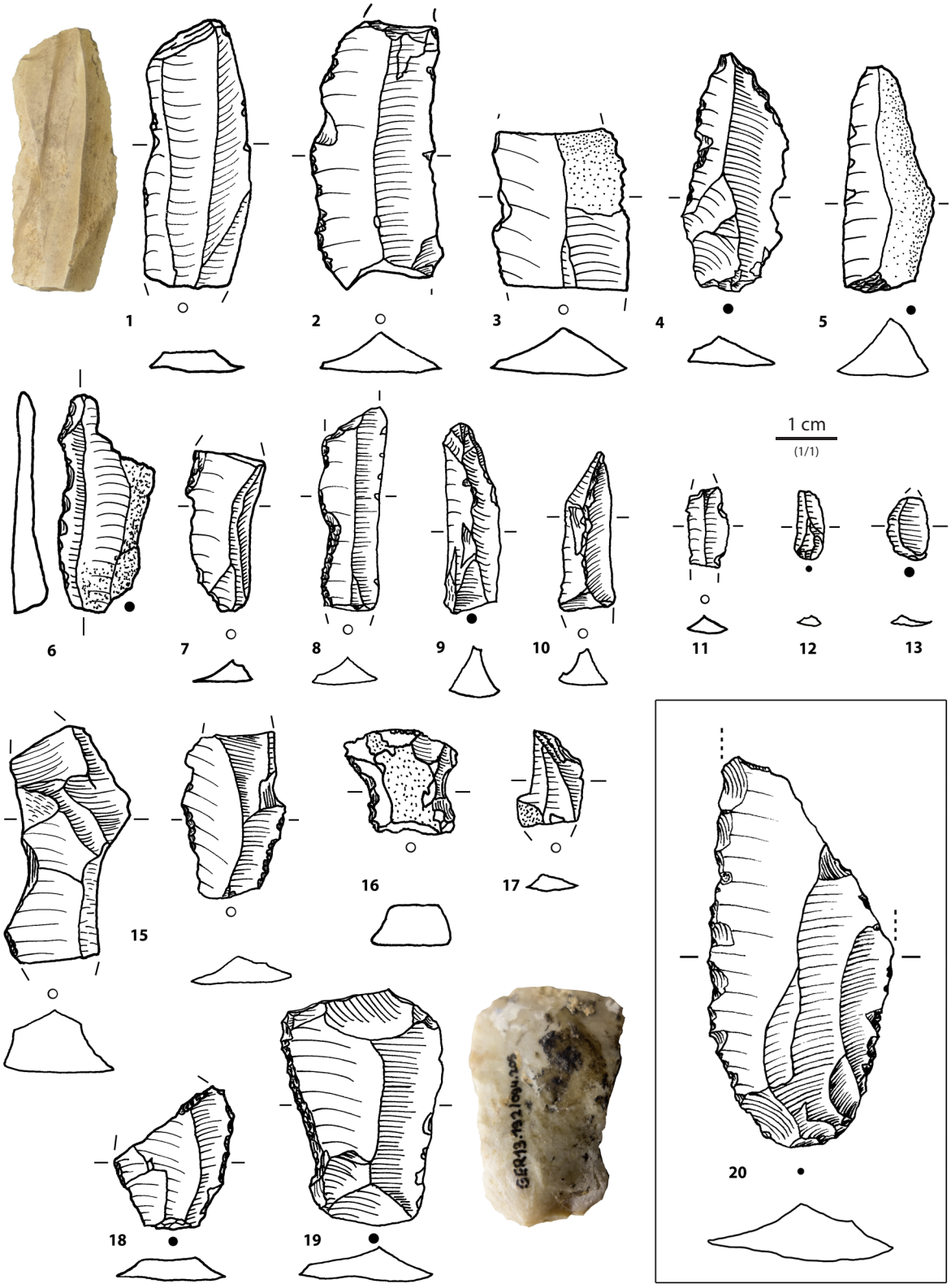

Figure 9 - Lithic industry from GH 35 (1-19) and GH 21 (20, in frame): 1: blade made from lacustrine tertiary silex. 2, 7, 8: retouched blades. 3-5, 14-15, 17-18: blades. 6: retouched flake. 8, 16: laterally retouched blades. 9-10: Chutes de burin. 11-13: bladelets, 11: twisted bladelet, probably from carinated piece.19: atypical endscraper, the ventral face showing black residues possible related to hafting (photo). In frame, 20: Aurignacian blade from GH21.

Osseous Industry and Ornaments in Southern Burgundy

The Grotte de la Verpillière I has yielded a rich assemblage of osseous tools (figure 10) and ornaments (figure 11). Table 2 provides a typological overview of the 79 osseous artifacts currently available for study. This assemblage includes artifacts from the recent excavations (since 2006) and some pieces from earlier excavations in the collections of the Musée Denon in Chalon-sur-Saône. Future analyses will incorporate additional material from the Denon collection and any new relevant finds from ongoing excavation at the site. The stratigraphic provenience of these pieces is uncertain, as they derive from disturbed deposits during the new excavation or from previous excavations with poor documentation of provenience.

The assemblage of artifacts in reindeer antler is composed of projectile-point fragments, an intermediate tool "*sur baguette*", a cylindrical center-perforated bead, and diverse byproducts of antler tool manufacture, including a blank and rough-out for point production, a tongued piece (*pièce à languette*), and ten antler bases (both shed and unshed) bearing signs of debitage. The bone artifacts fall into the following categories: lissoirs (smoothing tools), awls, chisels, and retouchers. Ivory exploitation is evidenced by a point fragment, a lissoir, a fragment of a probable incised ring, three flakes diagnostic of debitage by percussion and four fragments bearing undiagnostic tool traces. Eight perforated animal teeth have been recovered during the recent excavations (six fox canines, one vestigial canine of red deer, and one bovid incisor).

Many features of the osseous industry have a strong affinity with known techniques and artifacts from the Aurignacian. The antler waste products and byproducts demonstrate evidence of the splitting-and wedging reduction procedure (Liolios, 1999, 2003; Tejero *et al.*, 2012). This approach to antler is extremely common in the Aurignacian, and largely (but not completely) replaced in the Gravettian by the groove-and-splinter method of reduction (Goutas, 2009). Similarly, the presence of ivory flakes produced by knapping provides evidence of an approach to ivory reduction that is also characteristic of Aurignacian (Heckel, Wolf, 2014). Unfortunately,

	Antler	Bone	Ivory	Teeth
Finished objects				
Points	8		1	
Wedges	1	3		
Lissoirs		13	1	
Awls		6		
Retouchers		10		
Rectangular bead	1			
Pierced fox canine				6
Pierced red deer canine				1
Pierced bovid incisor				1
Ring			1	
Other ind. objects		4		
Waste products				
Point rough-out	1			
Raw blanks (*baguettes*)	3			
Tongued piece	1			
Shed and unshed antler bases with signs of working	10			
Flakes or fragments with signs of working			7	
TOTAL	**25**	**36**	**10**	**8**

Table 2 - Inventory of osseous industry and ornaments studied from Verpillière I.

Figure 10 - Selected elements of the osseous industry at Verpillière I: a broken antler point (1), a fragment of a lissoir (2), and antler production blank (3), an antler tongued piece (4), an ivory lissoir (5), and an awl made on a long bone diaphysis (6).

none of the points have retained their bases, and cannot be conclusively assigned to a specific type. However, the overall morphometric characteristics of these points are highly similar to those known for split-based points. Incidentally, the collection includes a tongued piece (figure 6[4]), an artifact type that has been conclusively demonstrated to be the byproduct of the manufacture of split-based points typical of the Early Aurignacian phases (Tartar, White, 2013).

Two ornamental artifacts are more ambiguous. One is a highly polished, regularly incised ivory ring fragment (figure 10[5]). Were this part of a circular ring, the complete object would have been approximately 10 cm in diameter. It has few equivalent in the French Aurignacian. It should be noted, however, that a fragment of an ivory ring polished on all sides but not incised was recovered from the Protoaurignacian layers at Isturitz (Soulier *et al.*, 2014; Heckel, personal observation). Decorative osseous artifacts with regular, parallel incisions along the sides are also not inconsistent with known Aurignacian artifacts (Laplace *et al.*, 2006; Tartar, 2009). Much more elaborately shaped and incised pieces are known in the Aurignacian of the Swabian Jura (cf. Floss, this volume). The other ornamental artifact from the site is a cylindrical bead made of antler, perforated in the center (figure 10[4]). Ivory beads similar in form have been recovered at Hohle Fels Cave in the Swabian Jura. It can also be noted, though, that this piece has formal correlates in the French Gravettian assemblages of Abri Pataud, le Blot, and les Peyrugues (Allard *et al.*, 1997; Bricker, 1995; Chauvière, Fontana, 2005). A chronological attribution of this artifact based on typology remains uncertain at this point.

The rest of the osseous artifacts are entirely compatible with known Aurignacian osseous assemblages. Even so, they do not present techno-typological features specific enough to permit exclusive assignment to this technocomplex. Aside from the bone retouchers, which are known as early as the Lower Paleolithic, the artifacts can be attributed to the Upper Paleolithic in general (*e.g.* awls, perforated teeth, figure 11[1-3], etc.).

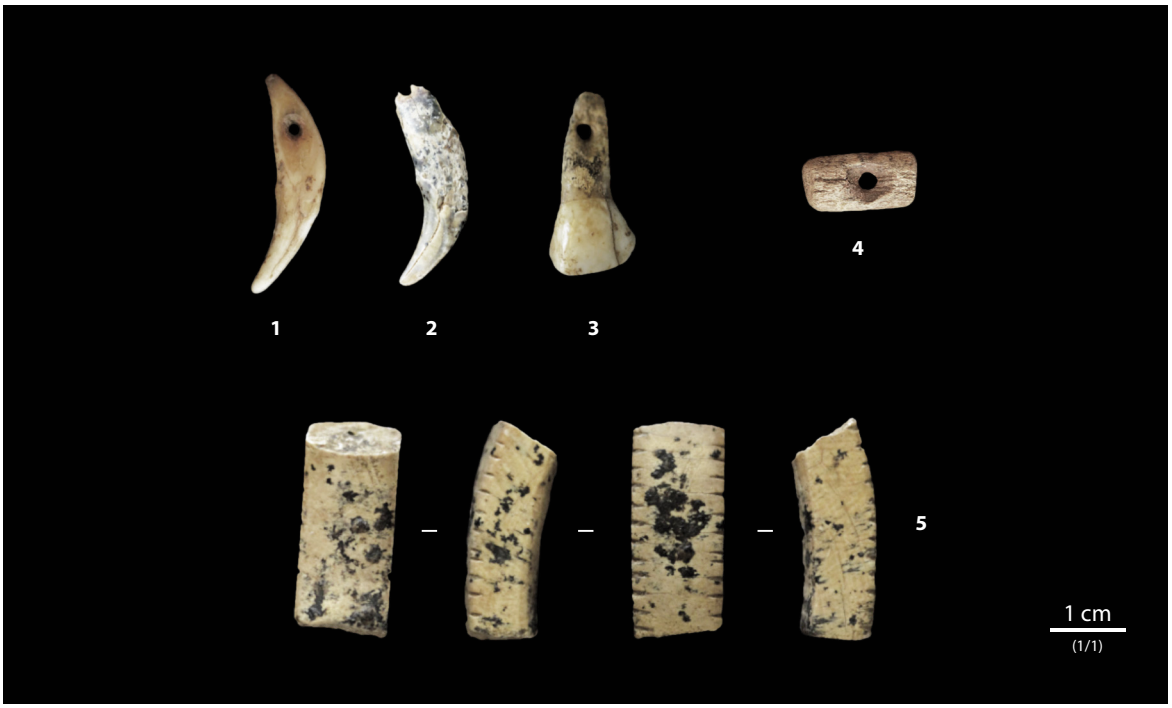

Figure 11 - Selected ornaments from Grotte de la Verpillière I: Two perforated fox canines (1-2), a perforated bovid incisor (3), the antler bead (4), and the ivory ring-fragment (5).

None of the pieces are typologically suggestive of the Gravettian, and technological traces attributable to the Gravettian (such as groove-and-splinter debitage) are also absent. Based on this evidence and the relative scarcity of Gravettian elements in the lithic assemblage, we consider it highly likely that most if not all of the osseous artifacts (wedges, lissoirs, awls, and perforated teeth) are of Aurignacian origin. As noted above, diagnostically Gravettian artifacts are limited almost exclusively to a limited zone in front of the cave, while all artifacts discussed here derive from the interior.

Given the numerous excavations conducted at the site, the known osseous industry presented here is almost certainly only a very small fraction of an originally large and varied osseous industry from Verpillière I.

Ongoing excavations still hold the potential to uncover stratified Aurignacian deposits such as those documented by J. Combier (Combier, 1959). While we are confident of a general Aurignacian attribution for most of the osseous industry, we remain much less certain regarding the phases of the Aurignacian that these artifacts represent. The technological and chronological sequence of the Protoaurignacian, Early Aurignacian, and Evolved Aurignacian remains very poorly defined in the region, and clarifying this sequence is one of the primary goals of current research in the area.

For example, the traditional role of split-based points as *fossiles directeurs* of the Early Aurignacian has been challenged by the association of such points with Protoaurignacian lithic assemblages at several sites, including l'Arbreda (Ortega Cobos *et al.*, 2005; Wood *et al.*, 2014), Fumane (Broglio *et al.*, 1996), and, notably for the region of Eastern France, at Trou de la Mère Clochette (Szmidt *et al.*, 2010). In a very general sense, antler was used in the Early Aurignacian for the production of projectile points, and ivory was primarily used for the production of portable art and ornaments (Liolios 1999; Tartar *et al.*, 2006). Exploitation of these materials in the Protoaurignacian are much less clearly structured, and assemblages from this period frequently contain points, tools, and sometimes ornaments made of ivory (cf. Tartar, this volume). Interestingly, the lithic assemblages from the Aurignacian of Trou de la Mère Clochette and Arcy-sur-Cure have been attributed to the Protoaurignacian (Bon, Bodu, 2002; Szmidt *et al.*, 2010). Some elements of the lithic assemblage at Verpillière I could support Protoaurignacian occupation of the site, but this potential remains to be confirmed by further analysis. If this proves true, the idiosyncrasies of the osseous industry could reflect occupation of the region during a particular phase of the Aurignacian. Some commonalities can be observed between the ivory industries at Verpillière I and Trou de la Mère Clochette, but these two sites do not permit regional-scale generalizations about ivory exploitation to be made. A beveled ivory piece, ivory points, and other utilitarian artifacts are known from the Aurignacian at Trou de la Mère Clochette. (Brou *et al.*, 2012). As at Verpillière I, there is little evidence of ivory bead manufacture at the site. At Arcy-sur-Cure, on the other hand, ivory beads and rings were discovered, along with round ivory rods whose purpose remains ambiguous (Julien *et al.*, 2002; White, 2002). Interestingly, two ivory beads were recovered at Solutré, typical of the Early Aurignacian of southwestern France, though one reflects morphologies also known in Swabian Jura (Connet *et al.*, 2012). It should be noted that the use of ivory for purposes other than ornament production is known in the Protoaurignacian of Western Europe, and also in the Early Aurignacian of the Swabian Jura. The latter is a context in which ivory is used on all aspects of Aurignacian material culture: portable art, musical instruments, ornaments, tools, and projectile points (Conard, Bolus, 2006; Hahn, 1972; Hahn, 1986; Wolf, 2013).

Continued fieldwork, dating of osseous materials, and ongoing analysis of the lithic assemblage are necessary to refine this preliminary understanding of patterns of osseous material use in the Aurignacian of northeastern France. But whether the patterns of osseous material use in northeastern France, and particularly the idiosyncratic use of ivory, are due to regional cultural

variation or to chronological shifts in osseous industries within the Aurignacian, it is clear that the Aurignacian osseous technologies of the region present a rich area for further archeological study. Specifically, these assemblages hold the potential to improve our understanding of geographical and chronological variation in expressions of "Aurignacian Genius".

3 - Open air sites with Aurignacian affinities

Surface-finds collected by amateur archeologists have identified promising areas for additional open-air sites and cave sites, some of which will be systematically surveyed in the years to come. These include Germolles-en-Roche, Saint-Martin-sous-Montaigu, Fontaines, Culles-lès-Roches and a potential site in the village of Dracy-le-Fort. Further south, there are the sites of Chenoves/ Le Champ des Fourches and Uchizy les Molards (figure 1).

Probably the largest of these open-air sites is Germolles-en-Roche, situated at about 1.2 km east of Grotte de la Verpillière I. This site has yielded a rich laminar industry with large, thick blades (Gros, Gros, 2005), various types of burins and scrapers, among them nosed and carinated pieces. While the whole site, bearing finds from the Middle Paleolithic up to the Gallo-Roman era, measures about ten hectares, the zone bearing the early Upper Paleolithic assemblages is limited to approximately 0.6 ha. For the moment, about 100 of the 540 known pieces from this area have been analyzed by the Tübingen team thus far. Through continued survey and excavation, the assemblage is expected to grow significantly in the years to come.

About three kilometers southwest of Germolles is the vast open-air site of Saint-Martin-sous-Montaigu (more than 20 ha in total), a site whose particular geomorphological situation recalls that of Solutré. In 2009, the Tübingen University team carried out a test excavation (Floss, 2010). This expansive site complex contains several occupation areas dating from the Mousterian to the Gravettian period. At a particular spot called "Vignes de la Roche, secteur II", an area with a size of about 1 ha, lithic artifacts with Aurignacian affinities, again with nosed and carinated cores, have been discovered (Gros, Gros, 2005). These observations are further supported by some dozens of pieces from recent surveys conducted under the direction of our team, and further analysis of these materials is in progress.

Dracy-le-Fort, les Crays, also provides a small Aurignacian lithic industry, recognized on the basis of thick retouched blades (Gros, Gros, 2005).

Chenoves, Champ-des-Fourches is another open-air site, situated 16 km south of Germolles and surveyed by J.-N. Blanchot. This locality in particular has yielded thick and transversal burins, which could indicate the presence of an Evolved Aurignacian. It seems that there are several denser concentrations of Aurignacian material in this site, which covers several hectares.

Uchizy, les Molards is one of the rare Paleolithic open-air sites in the so-called Tournugeois, halfway between Mâcon and Chalon-sur-Saône. This site (0.5 ha large) has been surveyed by J. Duriaud, and the lithic industry (figure 12) is characterized by large, thick blades. Among the approximately 1000 lithics known, more than 100 retouched pieces could be identified. The presence of both carinated pieces and bladelets indicates the onsite production of bladelets. The tool assemblage is dominated by numerous endscrapers, burins, and retouched blades (Floss *et al.*, 2013).

In the extreme south of our survey area, Solutré has long stood alone as a prominent Aurignacian site. Aside from the evidence there, only some isolated finds with Aurignacian affinities were known from Azé (Floss, 2000), Vergisson IV and Roclaine II.

A new open-air site, excavated by INRAP and probably belonging to the Aurignacian is Charnay-les-Mâcon, ZAC Europarc Sud (Lecornué, 2012). In addition to the lithic industry, the conservation of an occupation surface is notable. The lithic assemblage contains large, thick

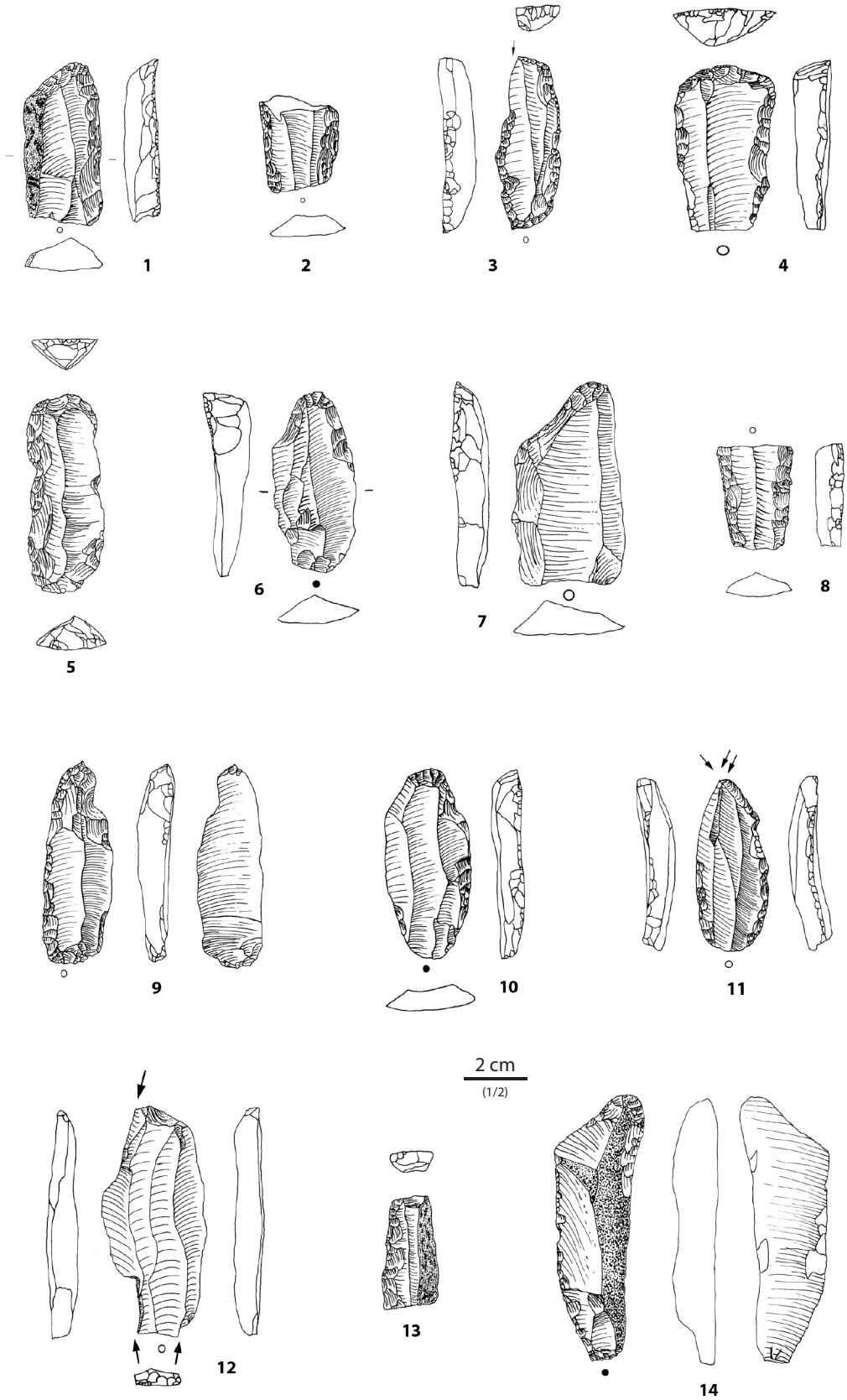

Figure 12 - Uchizy, Les Molards, lithic industry. 1: end-scraper; 2: retouched blade; 3: burin on truncation; 4-7: end-scrapers; 8: retouched blade; 9: pointed blade, laterally retouched; 10: end-scraper; 11: dihedral burin; 12: double burin; 13: retouched blade; 14: end-scraper (Floss *et al*., 2013: figure 7).

blades, carinated bladelet cores, Aurignacian blades, and particularly elongated straight bladelets with ventral retouch. The latter reminds us of the Protoaurignacian, though such a categorization of the Charnay pieces is currently investigated by E. Cormarèche and under discussion with F. Le Brun-Ricalens.

The technological and typological affinities of all of these assemblages support the hypothesis of an Aurignacian assignment. Nevertheless, we must be cautious, as we could be dealing with assemblages dating up to the last glacial maximum.

Ongoing detailed technological analyses aim to answer the many remaining questions about the Aurignacian occupation of Southern Burgundy. Particular focus is being placed on refining a model of the internal variation presented by different phases of the Aurignacian and on the dating and absolute chronology of the arrival and dispersal of early populations of Anatomically Modern Humans in the area.

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