Handaxes: New Perspectives from the Mâconnais and Beaujolais

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ABSTRACT
This paper presents a preliminary analysis of the open-air site of Charbonnières in the Mâconnais region of France. The collection of Georges Lamercerie, now housed within the Department of Early Prehsitory and Quaternary Ecology, University of Tübingen, was used as the basis for this study. The material was previously included in a BA thesis and, in this paper, is compared to assemblages that include handaxes from the adjacent region of Beaujolais.

RÉSUMÉ
Cet article présente une analyse préliminaire du site de plein air de Charbonnières dans le Mâconnais en Bourgogne du sud. La collection de Georges Lamercerie, maintenant logée au sein du département de préhistoire de l'université de Tübingen, a été utilisée comme base pour cette étude. Le matériel a été précédemment inclus dans un mémoire de bachelor. Dans cet article, ce site est comparé à des séries incluant des bifaces de la région adjacente du Beaujolais.

ZUSAMMENFASSUNG
In diesem Beitrag wird eine vorläufige Analyse der Freilandfundstelle Charbonnières im Mâconnais in der südlichen Bourgogne (Frankreich) vorgestellt. Die Sammlung von Georges Lamercerie, die jetzt in der Abteilung für Ältere Urgeschichte der Universität Tübingen untergebracht ist, diente als Grundlage für diese Studie. Das Material wurde zuvor in einer Bachelorarbeit untersucht und wird hier mit Faustkeilen aus dem benachbarten Beaujolais verglichen.

INTRODUCTION

Handaxes are one of the most iconic artifacts of the Paleolithic. Apart from their appealing appearance and strict symmetrical shape, the wide geographical and chronological distributions of handaxes are also impressive. This study focuses on the site of Charbonnières in the Mâconnais region

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and also considers the general distribution of handaxes in eastern France. Handaxes are abundant in the Mâconnais and the Beaujolais regions (Fig. 1), whereas they are quite rare further south in the Rhône Valley and adjacent regions, e.g., the Ardeche Gorge (Moncel et al. 1993; Moncel et al. 2008; Moncel et al. 2011).

Apart from their widespread geographical distribution, handaxes are also found across various time periods, from the lower Paleolithic up to the late middle Paleolithic. Due to the fact that they span several chronological periods, the classification of handaxes is difficult in the absence of distinct stratigraphically or scientifically dated deposits. Traditionally, handaxes have been classified on the basis of typological criteria such as those defined by Bordes (Bordes 1961) who used the shape and size of the objects to determine their chronological position.

In this contribution, we outline our initial examination of well-known but rarely analyzed sites in the Mâconnais and Beaujolais regions. One problematic aspect of these regions is the fact that many sites have been surveyed by numerous amateur collectors, meaning that the finds have been dispersed in various collections.

THE SITE OF CHARBONNIÈRES

Charbonnières is a small community in eastern France, situated 10 kilometers north of the city of Mâcon (Saône-et-Loire, Bourgogne-Franche-Comté). The Mâconnais is a region marked by its viticulture. It is delimited

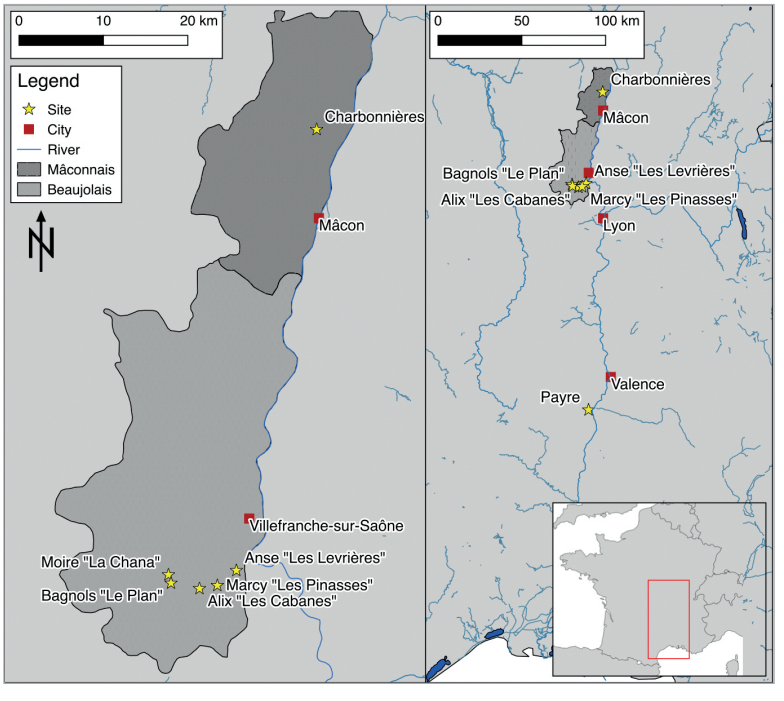

Fig. 1.
Paleolithic sites with handaxes in the Mâconnais and Beaujolais regions (map: D. Boysen).

by several natural borders: in the north by the confluence of the rivers Grosne and Saône, in the east by the river Saône and in the south by the Beaujolais region. The western border is formed by the foothills of the Massif Central (Hoyer 2011: 3).

The site is composed of more than 10 concentrations of finds that together form the site-complex of Charbonnières. These zones have been classified by Georges Lamercerie, who assigned a different code to each (e.g., CH1, 2, 3, etc.; Fig. 2), and are clustered over an area stretching more than three kilometers along the northern bank of the Mouge River, a tributary of the Saône. Additionally, the small river Biétor also plays an important role; while the Mouge forms a west-east axis, the Biétor functions as a lesser north-south orientated focal axis, which is especially important for areas CHA, CH9A+B and CH3 (Boysen and Nordwald 2017: 74; Boysen 2017: 12,13).

In order to understand the role of Charbonnières in the Paleolithic, it is important to note that the site is located on an outcrop of the regional flint-bearing loam, the so-called *argiles-á-silex*. Pieces of this type of flint can be collected over virtually the entire site complex and in the riverbeds. De Ferry describes the site as the source of the best flint raw material in the Mâconnais (De Ferry 1869: 16, 25).

Currently, most of the area is in agricultural use and one section has been transformed into a golf course. As mentioned previously, 12 different find areas have been identified within the overall site (Fig. 2); however, Area 6 could not be located due to the poor published record and lack of information (Boysen 2017: 12, 13).

This map shows the preliminary chronological attributions for the find zones. The assignments were made on the basis of typological arguments forwarded by the collector and still need to be reviewed. It is clear that the various time periods are widely distributed over all of the areas. Only areas CH3, CH4, CH7 and CH8 are characterized by a single time period.

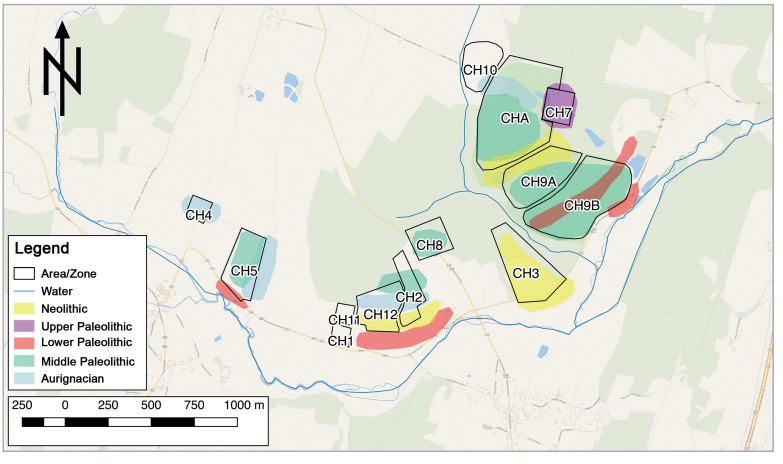

Fig. 2.
Map of Charbonnières and the areas defined by Georges Lamercerie taken from various hand-drawn sketches (map: D. Boysen).

With regards to the published record, this site is hardly mentioned in the available scientific literature, but is well known to the public as an area in which handaxes can be found. Consequently, the site has been surveyed by various collectors and amateur archaeologists. As a result, most of the handaxes found on site are now dispersed within private collections around the world. The first reference to Charbonnières dates to 1869 when H. De Ferry provided the first stratigraphical cross-section of the river Biétor (De Ferry 1869).

No further documentation was produced regarding Charbonnières for over 100 years. It was not until 1987 that further fieldwork was carried out by the GAM, the *Groupement Archéologique du Mâconnais*. The GAM carried-out a three-day fieldwork campaign and excavated six test trenches in area CHA, the so-called "*atelier*" or workshop area. These test trenches were located in the south-western part of the CHA area, where a concentration of Neolithic material (in yellow) overlaps with Middle Paleolithic material (in green). The GAM dated the finds in these trenches to the later Neolithic, which is in agreement with preliminary dates suggested by Georges Lamercerie. However, due to the ongoing agricultural activity in this area, no intact archaeological layers have been identified thus far. The ceramics in the assemblage have been attributed a rough archaeological date. Due to the fact that few tools have so far been found, and that there is an abundance of non-retouched flakes, it is possible that Charbonnières was an area where lithic raw material was collected (Barthelemy 1987: 1–5; Boysen 2017: 17–19).

In order to clarify the stratigraphic situation, a sondage excavation was carried out in 2021, which exposed an intact level of Middle Paleolithic flint extraction and encountered a MtA handaxe (Fig. 3) in this level.

The bifacial artifacts from Charbonnières

Following our brief introduction to the site complex of Charbonnières, we will now focus on describing the lithic collection of Georges Lamercerie. This paper is based on a Bachelor's thesis entitled "*Eine formenkundliche und technologische Aufarbeitung der Sammlung Georges Lamercerie*" (A typological and technological analysis of the Georges Lamercerie collection) which documents 646 individual artifacts (Boysen 2017: 41, 42) (Fig. 3).

The thesis focused primarily on the Middle Paleolithic artifacts in the collection. The most commonly found artifacts were bifacial pieces, followed by various types of scrapers. Surprisingly for a Middle Paleolithic corpus from this region, a relatively low number of Levallois-based artifacts were found (Boysen 2017: 42, 43; Frick 2016; Herkert et al., this volume). Furthermore, 68 bifacial tools (mostly handaxes) were also identified (Boysen 2017: 43).

In order to allow comparison, the classification system was adapted in line with Roe 1964 (Iovita and McPhrerron 2011: 64). In addition, new criteria were added to the classification system. The new criteria included

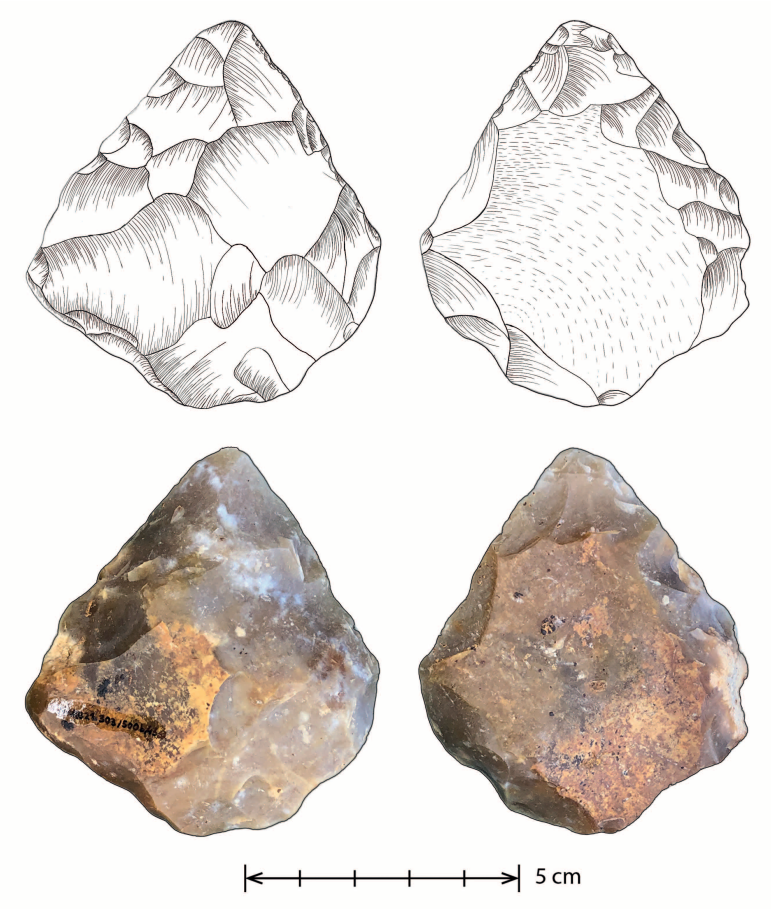

Fig. 3.
Handaxe found in the sondage excavations in 2021 (photo and drawing: D. Boysen).

the location of each artifact within the site complex, metric data such as length, width and thickness, the degree of patination and remaining cortex, length of the tip and the base of the handaxe, symmetrical aspects, cross-sections, the processing of the surfaces and the possible occurrence of a "backed" part. After addressing these criteria, technological investigations were carried out (Boysen 2017: 38, 39).

The Middle Paleolithic artifacts, and consequently 76% of the handaxes, were collected mainly in the CHA area (Boysen 2017: 44).

According to the metric data, the lengths of the recorded handaxes fall within a range of 51 to 104 mm, within which 50% of the handaxes are clustered between 60 to 80 mm. Similarly, the widths ranged between 40 to 60 mm, with most of the handaxes ranging between 50 to 60 mm. The widths of the handaxes follow a similar pattern, with the majority measuring between 20 to 30 mm (Boysen 2017: 44, 45, 47).

In order to understand the taphonomic processes on the site, the amount of patina on the handaxes was recorded. Only 13% of the han-

daxes had no traces of patina. Nearly 60% were patinated over 50% or more of their surface. In general, the patination has a cloudy white color that contrasts with the grey and earth-colored tones of the lithic raw material (Boysen 2017: 49, 50).

Another attribute studied as part of the research is the degree of remaining cortex. Using this characteristic as a reference, a number of hypotheses can be forwarded regarding the technological concept and the function of the site. About half of the pieces in the assemblage are fully decorticated. One quarter of the pieces have slight traces of cortex, and only few of the pieces have a higher degree of cortex, i.e., 30% to 50% (Boysen 2017: 49, 50).

When discussing handaxes, the aesthetic aspects are often debated (Le Tensorer 2012). These aspects include characteristics such as the symmetry and the overall proportions of the handaxe. In this study, the relationship between the length of the tip section and the length of the basal part of the handaxes has been examined. The extent of each section was defined as follows: the length of the tip is measured from the actual tip to the nearest broadest point. The base is measured from the "negative" tip to the furthest broadest point. Surprisingly, the elongation of the tip does not necessarily lead to an elongation of the base. Only slight trends can be observed. Nonetheless it is more likely that the length of the tip does not have a categorical effect on the size of the base. We have already mentioned the issue of symmetry. This study also discusses the symmetrical appearances of the handaxes from Charbonnières. Two thirds of the bifaces were identified as axial-symmetric (Boysen 2017: 48, 51).

The presence of a third surface was also taken into account. On the basis of percussion marks, these surfaces principally seem to represent residual striking platforms; 52% of the platforms displayed this phenomenon. In cases where a third surface was present, two categories were identified: one group where the surface is located laterally and another group with a basal platform, which is more common.

Furthermore, a correlation between the cross-section and the processing of the surfaces was carried out. Results of this correlation suggest that the artifacts examined are mostly biconvex and finely processed on both surfaces or are plano-convex with one finely and one coarsely worked surface (Boysen 2017: 50, 51). These observations are similar to those of Boeda et al., who discovered that the retouching of bifacial artifacts is most likely carried out on the convex surface of the handaxe (Boeda et al. 1990: 46, 48).

With regards to studying bifacial artifacts, the active edge, or "cutting edge," of the piece requires close examination. Therefore, the extent of the finer retouch on the handaxes was analyzed. Ten pieces were chosen for detailed investigation. Three different types of active edges were identified. Six examples displayed an asymmetrical active edge that covered most of one edge of the piece and extended over the tip. Two of the pieces were retouched all over, except for the basal part. The last category includes two pieces which were retouched only on one side. After this

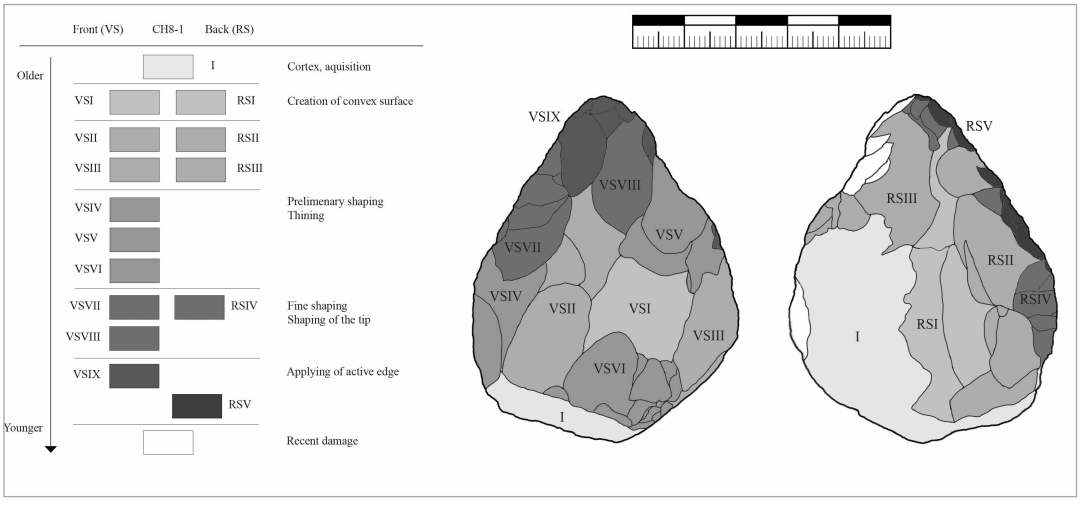

Fig. 4.
Workstep analysis of CH8-1 (graphic: D. Boysen).

edge was worn down, a second active edge was created on the opposite edge (Boysen 2017: 70, 71).

In order to understand the production and processing of the artifacts, a selection of objects was examined using a workstep-analysis following Frick and Kurbjuhn's methodology (Frick 2016; Kurbjuhn 2005).

Figure 4 depicts the workstep-process of biface CH8-1. The different graduations of grey in the schematic drawing of the handaxe identify each workstep. Worksteps can be single flakes, retouches or negatives, but they most likely represent multiple flakes. The darker the grey, the later the workstep was applied to the piece. In this example, the first workstep is represented by cortex, which represents the gathering and collection of the raw material (I). Following this step, the initial fundamental shape was created (VSI, VSII, VSIII, RSI, RS, II, RSII). Besides the preliminary shaping, the convex surface of the piece was created. Furthermore, as represented by steps VSIV, VSV, and VSVI, the frontal surface is increasingly shaped and made thinner. After this, the final shape is worked out through steps VSVII, VSVIII and RSIV. Handaxe CH8-1 is finished via the actual active edge of the piece. It was prepared on the front (VSIX) and finally applied on the back (RSV). Recent damage to the piece, probably due to plowing, can be identified on the back of the piece (white areas) (Boysen 2017: 74, 77).

COMPARISON

Surface finds are often difficult to associate with a specific stratum or time period. As handaxes are found across a broad time period, we can only estimate the period to which a particular axe belongs. In an attempt to identify a more specific time period for these pieces, the handaxes from Charbonnières were compared to handaxes from three different sites in

France: Grotte de la Verpillière I & II at Germolles; Lailly le Fond de la Tournerie; and Pech-de-l'Azé, Carsac-Aillac (Boysen 2017: 78).

The site of Germolles, consisting of two collapsed rockshelters, Grotte de la Verpilliére I & II (VPI & II), is located in southern Burgundy and is currently being excavated by Harald Floss and his team. Unfortunately, previous excavations at the VPI site greatly disturbed the stratigraphy. However, the VPII site was only recently discovered, so intact sediments could be excavated. The finds from this site were found to be associated with various time periods. The most relevant finds for the current study are the bifacial artifacts from the later Middle Paleolithic (Frick and Floss 2017: 3, 4, 6; Frick 2016, 2010).

With regard to the sites in northern Burgundy, the site of Lailly le Fond de la Tournerie is located near the border between the Departments of Yonne and Aube. The site was discovered and excavated in 1988 after construction of the A5 and A160 began, lasting from 1988 to 1993. A surface of 250 square meters was opened up and three archaeological strata were identified, dating from MIS3 up to MIS8. A total of 3540 Middle Paleolithic artifacts, including 11 bifacial tools, were found in this section (Depaepe et al. 1994: 163–166, 202).

The last site used for comparison purposes here is Pech-de-l'Azé I. This site is one of the four sites of the Pech-de-l'Azé complex situated in the dried-out valley of the River Farge. Similar to Germolles, the complex was discovered relatively early with the first excavations being carried out in 1828. Several renowned archaeologists such as Lartet, Christy, Peyrony and Vaufray worked on the site in quick succession. The remains of a young female Neanderthal were discovered in 1909, under more than 40,000 lithic artifacts. For the purposes of this study, the most important excavations are those carried out by F. Bordes (Soressi 2002: 25, 26, 28, 29).

Each of the three sites described above yielded handaxes or bifacial artifacts, which are here compared to the handaxes from Charbonnières. This comparative analysis has demonstrated that all of the sites have at least a small open-air component or, like Lailly, are totally open-air. The dates of the sites were distributed across a wide range, but all have a Middle Paleolithic component in common. Apart from Charbonnières, the finds from the other sites are from stratified contexts. The first differences are visible when looking at the lengths of the handaxes: whilst the handaxes from Charbonnières measure between 5.1 to 10.4 cm, the average piece from Germolles measures 6.5 cm, the pieces from Lailly are all between 10.3 and 14.9 cm and the artifacts from Pech-de-l'Azé have a mean length of 5.8 cm. Furthermore, differences in the shapes of the pieces are also observed. The handaxes from Charbonnières are cordiform, oval or elongated. The artifacts from Germolles are cordiform or elongated, while the artifacts from Lailly are triangular in shape. Only cordiform pieces are known from Pech-de-l'Azé. Pebbles and flakes were used as matrices in all of the four sites. Additionally, all of the sites have yielded symmetrical as well as asymmetrical bifaces. Cross-sections are

biconvex and plano-convex in Charbonnières and Germolles. On opposite ends of the scale are Lailly, where only plano-convex types are present, and Pech-de-l'Azé where only biconvex cross-sections have been identified. All of the pieces display residual cortex, a third surface, and a single active edge. In addition, the distance to a raw material source is relevant here. The site of Charbonnières is located on such a source, while a source exists in the immediate surroundings for Germolles and Lailly (Boysen 2017; Depaepe et al. 1994; Frick and Floss 2017; Frick 2016, 2010; Soressi 2002).

CHRONOLOGICAL ASSIGNMENT OF CHARBONNIÈRES

The fact that handaxes are found over such a long time span makes it difficult to assign them to a particular Paleolithic context, especially when they lack a stratigraphic context. The surface finds from Charbonnières fall into this category. Additionally, the abundance of typologically specific forms can be a result from the selective prospecting and collecting of artifacts. To this end, the artifacts in this study were compared to handaxes from different time periods. First, the homogeneity of the artifacts is noticeable. This kind of homogeneity and the lack of Levallois-based blanks suggest a chronological position in the "Moustérien de tradition acheuléene" (MtA; i.e., Mousterian of Acheulian tradition) type A (Bordes 1984: 137, 142).

The biconvex cross-section is considered typical of this chronological context, but these forms can be altered as a result of use resulting in a plano-convex cross-section (Soressi 2004: 14).

For the Micoquian context, Bosinski describes the technology of the "*wechselseitig-gleichgerichtete Kantenbearbeitung*." This describes one surface of the artifact being flattened to create a striking surface from which the second convex surface is struck (Bosinski 1987: 43, 89). Work on the Charbonnières artifacts started on one of the surfaces, but both surfaces were eventually worked. Thus, the "*wechselseitig-gleichgerichtete Kantenbearbeitung*" phenomenon is not observed in Charbonnières. Furthermore, the greatest similarities among the handaxes are found between the pieces from Charbonnières and Pech-de-l'Azé; these similarities include a unifacial active edge, which is also related to the MtA (Soressi 2002: 90, 91).

Regarding the handaxes from Charbonnières, a chronological position in the MtA is most likely for the majority of the artifacts. However, the larger and cruder pieces and the two *Keilmesser* demonstrate that the site was clearly used throughout most periods of the Paleolithic.

BEAUJOLAIS

The Beaujolais region is rich in Paleolithic sites. For the purposes of this study, only the sites where handaxes were found are included. Publications for this area are relatively rare and, when they exist, are generally outdated.

One of the few publications on the area is "*Le Beaujolais Préhistorique*" by Claudius Savoye (1899). In this contribution we include a number of sites surveyed by Christophe Gutty. André-Charles Gros has created the artifact drawings from the Christophe Gutty collection. The Site of Alix "Les Cabanes" represents multiple time periods dating from the lower Paleolithic to the Neolithic; a large quartzite handaxe represents the Acheulian, a broad Levallois-based industry is typical of the Middle Paleolithic, while diverse laminar artifacts indicate the Neolithic Period. The site is also known for its large outcrops of flint, used most commonly in the Neolithic periods, during which the site functioned as a so-called "*Atelier*" or workshop, a quarry site for preparing cores. In Anse "Les Levrières," cordiform or oval-shaped handaxes from the MtA are present (Fig. 5). As in Alix, artifacts from various Paleolithic periods such as the Acheulian, the Mousterian and several Upper Paleolithic periods are found and are mixed with abundant Neolithic material. The same combination of time periods, yielding handaxes and other artifacts, also occurs on other sites. Examples include Moire "La Chana" in which MtA handaxes were also found alongside Mousterian and Neolithic components; Marcy "Les Pinasses," where handaxes, Levallois-related artifacts, and Neolithic finds were found; and, lastly, the site of Bagnols "Le Plan," where Middle Paleolithic bifacial points and MtA handaxes were identified (Savoye 1899).

These two adjacent regions, the Mâconnais and the Beaujolais, thus require a common analysis.

CONCLUSION AND OUTLOOK

In this study, handaxes from the open-air site of Charbonnières in the Mâconnais region and from several sites in the adjacent Beaujolais region have been considered. Publications of these assemblages are rare. No real fieldwork, apart from superficial surveying by amateur archaeologists, has been carried out so far. Using various methods, including attribute-analysis and workstep-analysis, the pieces have been identified as being relatively homogenous in terms of their size, shape and technological processing.

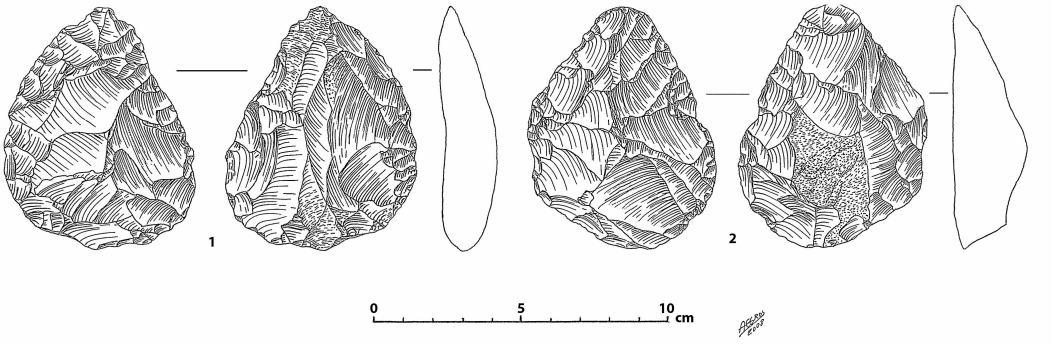

Fig. 5.
Handaxe from Anse "Les Levrières" (drawing: A.-C. Gros).

On the basis of these findings, the site, as well as at least part of the assemblage, has been assigned to the MtA. Furthermore, the site is a well-known source of lithic raw material. Most of the handaxes were not reduced to a completely unusable state, and multiple pieces can be identified as being blanks or preforms.

In addition, the Beaujolais region yields similar handaxes as those described here. Thus, comparisons should be made of artifacts from both regions in order to identify possible links between the two areas, e.g., in the use of raw material from Charbonnières as a matrix in Anse "Les Levrières." Again, the state of the literature on this topic and the lack of modern excavations and fieldwork need be remedied.

Future projects will involve the examination of these two regions so as to improve our understanding of the Paleolithic landscape in southern Burgundy and the Northern Rhône area.

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