

Lower and Middle Paleolithic Sites and Artifacts in the Swiss Canton of Basel-Stadt

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ABSTRACT

The canton of Basel-Stadt, situated in the northwestern part of Switzerland, is divided into three communities: the city of Basel and the two rural communities of Riehen and Bettingen. Basel-Stadt is surrounded by France and Germany and the canton of Baselland. Although glaciers did not cover this area during the penultimate and last glacial periods, only a few finds and sites from the Lower and Middle Paleolithic have been recorded here. The sites, distributed in all three communities of Basel, Riehen and Bettingen, are found at elevated locations some distance away from the present bed of the Rhine River.

Though small in number, the finds from these sites reveal that perhaps *Homo erectus* and certainly Neanderthals were present in the area of Basel-Stadt. The recovered material represents mostly isolated finds which are often impossible to date directly. We can only estimate their age with the aid of typology and by comparing them with artifacts from stratified contexts. In other cases, the few artifacts present are associated with fauna remains. The work below describes the small number of little-known but in some cases important Lower and Middle Paleolithic finds from the canton of Basel-Stadt. Some are published here for the first time for an international scientific audience.

RÉSUMÉ

Le canton de Bâle-Ville se situe au nord-ouest de la Suisse et se subdivise en trois communes : la ville de Bâle et les deux communes rurales de Riehen et Bettingen. Le canton de Bâle-Ville est entouré par la France, l'Allemagne et le canton de Bâle-Campagne. Bien que cette région n'ait pas été recouverte de glaciers durant l'avant-dernière et la dernière période glaciaire, seuls quelques objets et sites du Paléolithique inférieur et moyen sont connus à ce jour. Les sites se répartissent sur les trois communes de Bâle, Riehen et Bettingen et se trouvent en position surélevée, à une certaine distance du lit actuel du Rhin.

Bien que leur nombre soit faible, les découvertes réalisées sur ces sites montrent que peut-être *Homo erectus* et certainement des Néandertaliens vivaient dans le canton de Bâle-Ville.

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Pour la plupart, il s'agit de découvertes isolées qui ne peuvent souvent pas être datées directement. Pour les dater, on doit avoir recours à des critères d'ordre typologique et à des comparaisons avec des artefacts provenant de contextes stratifiés. Dans d'autres cas, les quelques artefacts sont associés à des restes de faune. Le présent article décrit les découvertes peu nombreuses, mais parfois importantes, du Paléolithique inférieur et moyen réalisées sur le périmètre du canton de Bâle-Ville. Certaines de ces découvertes sont publiées ici pour la première fois pour un public scientifique international.

ZUSAMMENFASSUNG

Der Kanton Basel-Stadt liegt im Nordwesten der Schweiz und ist in drei Gemeinden unterteilt: die Stadt Basel und die beiden Landgemeinden Riehen und Bettingen. Der Kanton Basel-Stadt ist umgeben von Frankreich, Deutschland und dem Kanton Baselland. Obwohl dieses Gebiet während der vorletzten und letzten Eiszeit nicht vergletschert war, sind nur wenige Funde und Fundstellen aus dem Alt- und Mittelpaläolithikum bisher bekannt. Die Fundstellen verteilen sich auf die drei Gemeinden Basel, Riehen und Bettingen und befinden sich in erhöhter Lage in einiger Entfernung vom heutigen Rheinbett entfernt.

Obwohl ihre Anzahl gering ist, zeigen die Funde dieser Fundstellen, dass vielleicht *Homo erectus* und sicherlich auch Neandertaler im Kanton Basel-Stadt lebten.

Zumeist sind es Einzelfunde, die oft nicht direkt zu datieren sind. Ihr Alter kann nur mit Hilfe der Typologie und durch Vergleich mit Artefakten aus stratifizierten Kontexten vermutet werden. In anderen Fällen sind die wenigen Artefakte mit Faunaresten assoziiert. Der folgende Artikel beschreibt die wenigen, aber zum Teil bedeutenden alt- und mittelpaläolithischen Funde aus dem Kanton Basel-Stadt. Einige der Funde werden hier zum ersten Mal für ein internationales wissenschaftliches Publikum publiziert.

BASEL – REHHAGSTRASSE (REHHAG STREET)

In November 1969, workers discovered animal bones during the construction of a storage reservoir in the Rehhagstrasse (Fig. 1, 1). The site is located in the area of the Bruderholz, a hill in Basel on the left side of the Rhine River. Investigations of the site were subsequently undertaken under the direction of Prof. Elisabeth Schmid from the Laboratory of Prehistory at the University of Basel. These investigations led to the recovery of other bones. The finds lay under a 4-m deep sterile loess layer. The bone remains include teeth and bone fragments of mammoth (*Mammuthus primigenius*), bison (*Bos bonasus*) and wild horse (*Equus* sp.) and an upper molar and antler fragments of giant deer (*Megaloceros giganteus*) (Schmid 1970).

The fragmented distal end of a retouched flake was also found and is the only evidence of human presence at the site (Fig. 2). On the basis of the find situation, and the associated faunal remains, the artifact has been assigned to the Middle Paleolithic (Schmid 1970). According to Schmid (1970), it is a fragment of a convergent scraper that she compares with two convergent scrapers from the red clay layer at Achenheim IIIf (Bosinski 1967).

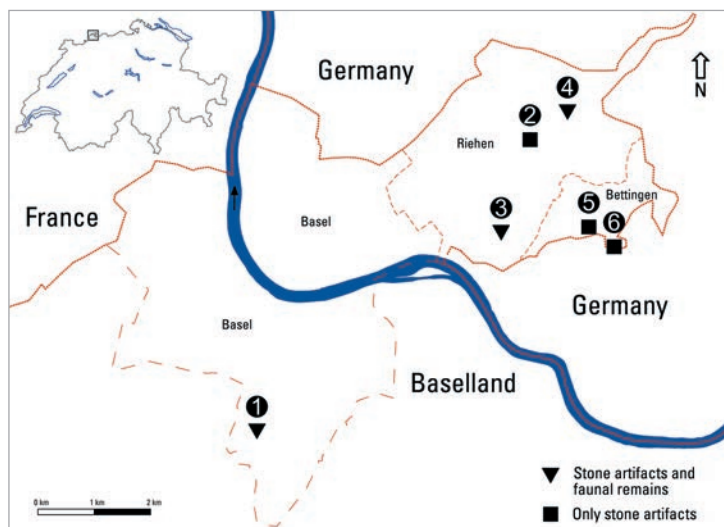


Fig. 1. Lower and Middle Paleolithic sites in the canton Basel-Stadt. 1: Basel - Rehagstrasse, 2: Riehen - Ludwig-Courvoisier-Strasse, 3: Riehen - Am Ausserberg 71 and 75, 4: Riehen - In der Au, 5: Bettingen - Auf dem Buechholz 3, 6: Bettingen - Im Junkholz (drawing and © N. Spichtig, Archäologische Bodenforschung des Kantons-Basel-Stadt).

RIEHEN – LUDWIG-COURVOISIER-STRASSE (LUDWIG COURVOISIER STREET)

On October 9, 1999, Hans Jürg Leuzinger, honorary collaborator with the Archäologische Bodenforschung Basel-Stadt (Archaeological Service of Basel-Stadt), found a pebble in the back dirt of a construction pit in the *Ludwig-Courvoisier-Strasse* in Riehen (Fig. 1, 2). The pebble is 13 cm long and of coarse, alpine metaquartzite, which is found in the gravels of the Rhine River and ill-suited for knapping because of its heterogeneity. As the sediments from the construction pit are composed of loess layers, this pebble must have arrived here as a result of human activity. Two of the longitudinal edges are sharp, leading H. J. Leuzinger to conclude that it must be a stone artifact (Jagher et al. 2003). It is in fact a pebble tool, or chopper. Some parts of the natural pebble surface are present, and two cutting edges are also evident, formed by alternating retouch (Fig. 3, 1-3). The chronological attribution of the artifact has proven difficult to determine, even after different geoarchaeological investigations were undertaken in the construction pit, and small quantities of sediment found on the artifact were analyzed. However, despite these analyses, the Riehen chopper still lacks a stratigraphical context, its age remaining uncertain. Since choppers are rare in the Middle Paleolithic, it is probable that the artifact dates to the Lower Paleolithic (Jagher et al. 2003).

Jagher et al. (2003) compare the chopper from Riehen with pebble tools from Raedersdorf, Sondersdorf and Walheim in Alsace, in the Département of Haut-Rhin. These artifacts are isolated surface finds and thus lack a stratified context. One chopper from the *Loessière Sundhauser Ouest* (Département Bas-Rhin) in Achenheim was found within a stratified layer which is between 350,000 and 550,000 years old. Traces of



Fig. 2. Basel – Rehagstrasse. Fragmented distal end of a retouched flake (photo and ©: P. Saurbeck, Archäologische Bodenforschung des Kantons-Basel-Stadt, modified by H. Koehler).

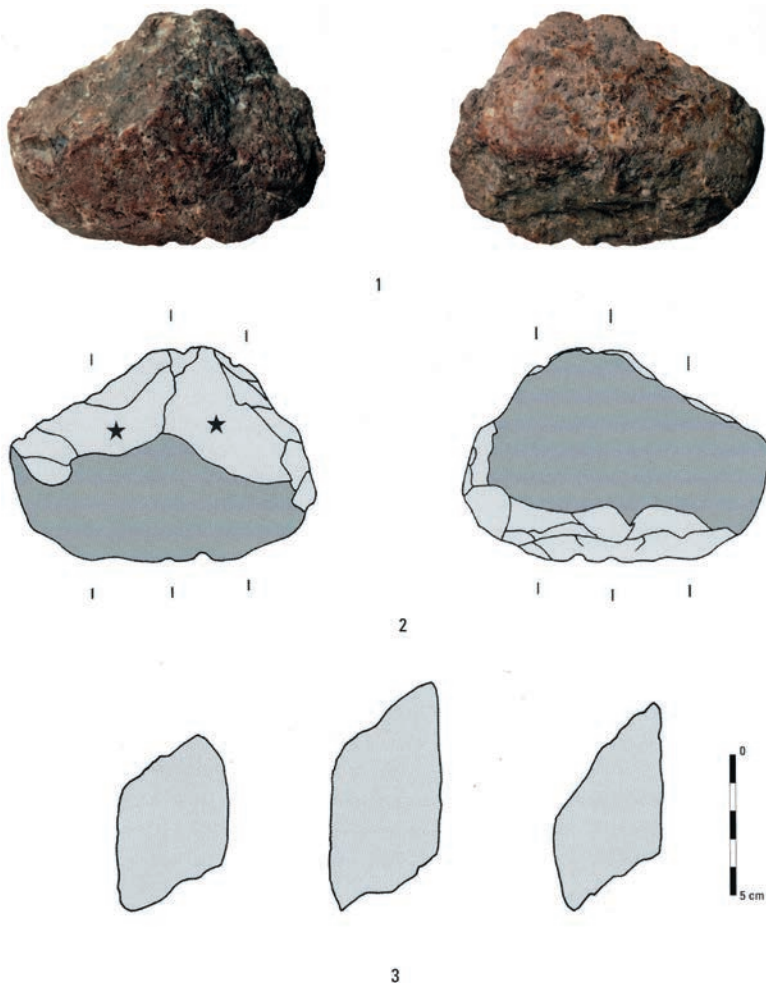
Fig. 3.

Riehen – Ludwig-Courvoisier-Strasse. Chopper in alpine metaquarzite.

1 Photo and ©: P. Saurbeck, Archäologische Bodenforschung des Kantons-Basel-Stadt.

2 Front and back view of the chopper. Dark grey: pebble surface; light grey: retouches. The stars show the two primary retouches (drawing: R. Jagher, in Jagher et al. 2003).

3 Sections of the chopper (drawing: R. Jagher, in Jagher et al. 2003).



hearths and a carbonized horse tibia were found in the same sedimentological ensemble as the chopper (Jagher et al. 2003; Le Tensorer 1998; Schnitzler and Sainty 1992). Based on their patina, Jagher et al. determined that the Alsatian surface finds also belong to the Lower Paleolithic (Jagher et al. 2003).

Pebble tools have also been found in different localities in the neighboring canton of Baselland, but these finds are also very difficult to date without a stratigraphical context. Most of them were found in fields and in association with Mesolithic and Neolithic stone tools. One of them, a chopper from Münchenstein, was found together with a convergent scraper dating to the Middle Paleolithic (Sedlmeier 2016)

RIEHEN – AM AUSSERBERG 71 AND 75

Like the site of Basel-Rehhagstrasse (see above), this site was discovered during construction work carried out in the summer of 1967. The find was made during earth removal carried out prior to the construction of a family house at Am Ausserberg 75 and at Am Ausserberg 71; the site yielded several animal bones which were found at a depth of 3 m (Fig. 1, 3). Archaeological investigations were subsequently undertaken by E. Schmid. The numerous, well-preserved bones, recovered within three different loess layers (Fig. 4), were identified as hyena (*Crocota crocuta*), bison (*Bos bonasus*), horse (*Equus* sp.), mammoth (*Mammuthus primigenius*) and giant deer (*Megaloceros giganteus*) (Schmid 1967, 1968, 1971). Of particular note here is the recovery of numerous remains of hyena, especially adult individuals, and one more or less complete skeleton of a young animal. Some bones display hyena bite and claw marks. Several hyena coprolites, which have a diameter between 3 and 4 cm, are also of interest (Fig. 5) (Schmid 1967, 1968, 1976). Radiocarbon dating of the bones provided two dates of between 50,000 and 46,000 BP (Sedlmeier 2008).

According to E. Schmid (1967), three flakes were also found, providing evidence of human activity on the site; one is a fragment of a small flake of red radiolarite (Fig. 6), while the other two are small natural stones. There are also some small fragments of birch charcoal (Schmid 1967).

Initially this site was seen as a Neanderthal encampment. Subsequently it has been re-interpreted as a hyena feeding area located adjacent to a waterhole. This remains the predominant hypothesis today (Schmid 1976; Sedlmeier 2008).



Fig. 4.
Riehen – Am Ausserberg 75.
Horse bones in the sediment.
(Photo and ©: E. Schmid,
Archäologische Boden-
forschung des Kantons-
Basel-Stadt).



Fig. 5. Riehen – Am Ausserberg 75. Coprolites of hyena (photo and © P. Portner, Historisches Museum Basel).

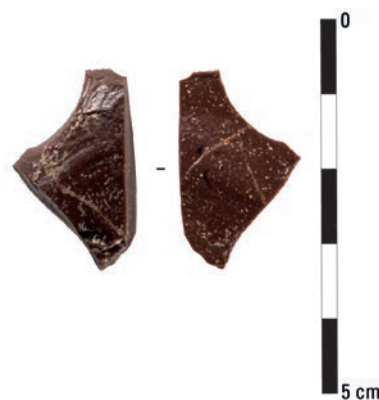


Fig. 6. Riehen – Am Ausserberg 75. Fragment of a flake in red radiolarite (photo and ©: P. Saurbeck, Archäologische Bodenforschung des Kantons-Basel-Stadt).

RIEHEN – IN DER AU, RESERVOIR

In his book *Geschichte des Dorfes Riehen* (History of the Village Riehen), D. L. Emil Iselin (1923) mentions that during the construction of a reservoir in 1886 in the area known locally as In der Au, stone tools and the remains of a hearth, together with bones from aurochs were uncovered (Fig. 1, 4). Unfortunately, the finds are now missing; therefore, no further information can be gleaned of what was potentially a very important site probably dating to the (Middle?) Paleolithic.

BETTINGEN – AUF DEM BUECHHOLZ 3

Around 1987, the author made the first discoveries of lithic artifacts in a field in the area known as Auf dem Buechholz in Bettingen (Fig. 1, 5) (Braun 1999a; Leuzinger 1994a). They are recorded along with other Neolithic finds which were discovered in the surrounding fields by the author, and by Hans Jürg and Urs Leuzinger (Leuzinger 1998). The author continues to carry out surveys in this field and in the surrounding area.

In February 1998 the author discovered a hand axe (Fig. 7 and Fig. 8) which was made from a quartzite flake. This raw material can be found in the gravels of the Rhine River. The hand axe is 10 cm long, with a maximal width of 6.4 cm and a maximal thickness of 3.5 cm. Its point is inclined; the original point was probably already broken during the Paleolithic period and the ventral surface underwent additional retouch (Braun 1999a, 1999b). According to the typology developed by François Bordes (1961), the object is an atypical almond-shaped hand axe. The right base on the dorsal surface of the Bettingen hand axe displays the remains of the natural surface of the pebble, or a so-called *talon reserve*, which according to Bordes is typical of almond-shaped hand axes (Bordes 1961; Braun 1999b). For Sedlmeier (2008), the piece is a lanceolate-type hand axe, according to the typology of hand axes established by Bordes.

As it is a non-stratified find, it is difficult to assign an accurate date to the hand axe. It could date to the Lower or Middle Paleolithic (Braun 1999b). As lanceolate hand axes are typical of the Central European Micoquien, Sedlmeier suggests that the hand axe from Bettingen dates to between around 60,000 and 40,000 BP (Sedlmeier 2008).

Up until now only six hand axes have been found in Switzerland; two are bifacially backed knives (*Faustkeil-*

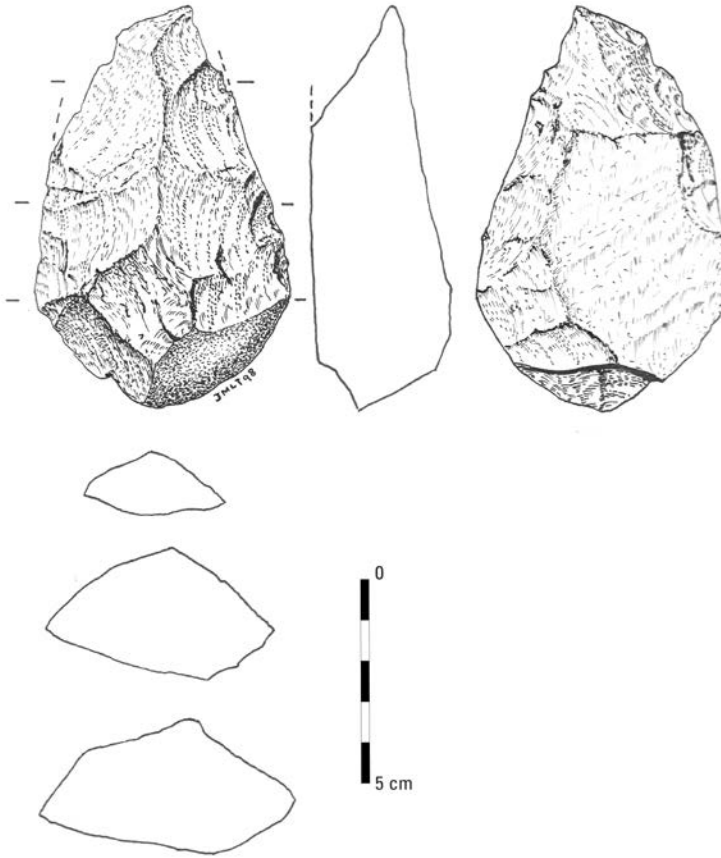


Fig. 7.
Bettingen – Auf dem Buechholz 3. Handaxe in quartzite
(drawing: J.-M. Le Tensorer, in Braun 1999b).



Fig. 8.
Bettingen – Auf dem Buechholz 3. Front and back view
of the handaxe in quartzite
(photo and ©: P. Saurbeck,
Archäologische Bodenforschung des Kantons-
Basel-Stadt).

schaber respectively *biface à dos*) (Braun 1999b; Braun and Schwarz 1999; Brogli 2008; Kaiser and Braun 2006; Le Tensorer 1998). For this reason, the finding of the hand axe at Bettingen is very important, not only for Swiss Prehistory, but also for the broader region.

Some years before the discovery of the hand axe, the author found a quartzite flake in the same field (Fig. 9). It is a relatively thick flake with a plain platform remnant displaying significant retouch on the left side of the dorsal surface. Unfortunately, there is an old fracture at the distal end of this flake. It could be regarded as a fragment of a sidescraper. In view of the fact that a hand axe was found in the same locality, and given that this find is also made of quartzite (not the same kind of quartzite as the hand axe), we can assume that the retouched flake dates to the Lower or Middle Paleolithic. Neolithic artifacts from the area are made from the local chalcidony or Jurassic flint (Braun 1999a, 1999b).

BETTINGEN – IM JUNKHOLZ

In May 1990 the author discovered several Neolithic stone artifacts in a field in the area known as Im Junkholz (Fig. 1, 6; Leuzinger 1994b), an area where the author continues to discover finds (Braun 1999c, 2012, 2017). In terms of the quantity of finds, this is the largest and most important Neolithic site in Basel-Stadt.

One object, found in the year when the site was first discovered, has already attracted attention because it is made of red radiolarite. It is a Middle Paleolithic Levallois core measuring 6 cm in length, 4 cm in width, with a maximal thickness of 1.6 cm (Fig. 10). The reduction face shows the negative of only one flake, which was struck on the distal side. The underside shows the remains of the natural pebble surface alongside removal negatives resulting from the preparation of the core. The radiolarite raw material could also have been found in the gravels of the Rhine River. It is not clear if this Levallois core comes from the same context as

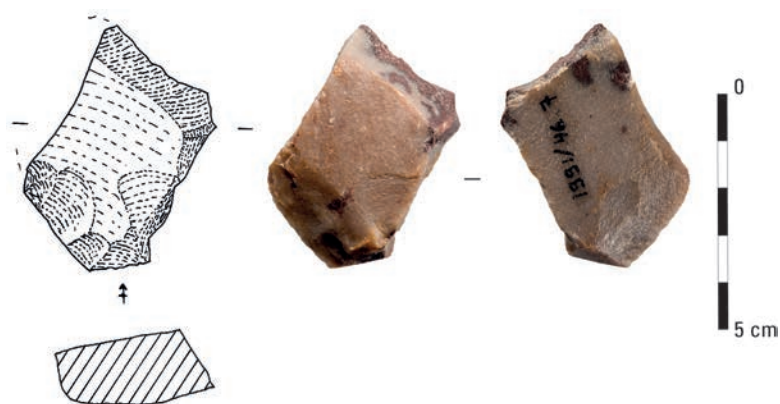
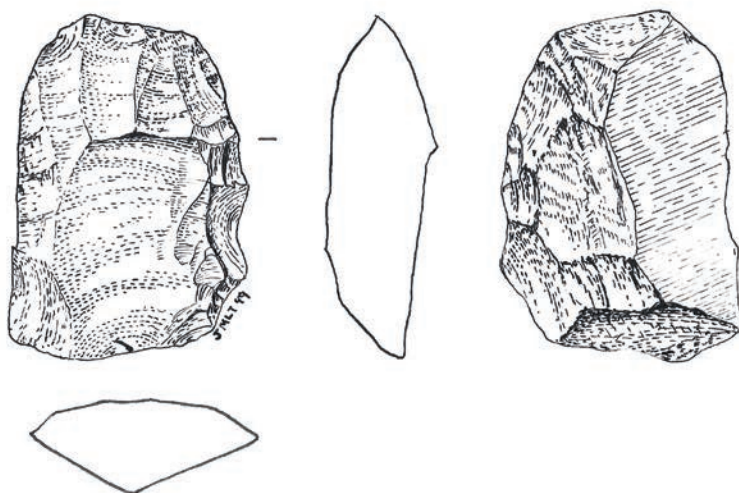


Fig. 9. Bettingen – Auf dem Buechholz 3. Fragment of a re-touched flake in quartzite (drawing: U. Leuzinger, in Braun 1999; photo and ©: P. Saurbeck, Archäologische Bodenforschung des Kantons Basel-Stadt).



Fig. 10. Bettingen – Im Junkholz. Levallois core in red radiolarite (drawing: J.-M. Le Tensorer, in Braun 1999b; photo and ©: P. Saurbeck, Archäologische Bodenforschung des Kantons-Basel-Stadt).



the hand axe and the retouched quartzite flake. Both find sites are about 600 m apart as the crow flies (Braun 1999b; Jagher 1999).

The Levallois core indicates that Neanderthals were present in this locality long before the Neolithic. The hand axe and retouched quartzite flake from *Bettingen – Auf dem Buechholz 3* provide additional evidence for this (see above).

CONCLUSION

Although there are not many recorded Lower and Middle Paleolithic finds from the Swiss Canton of Basel-Stadt, those that have been recovered indicate that Neanderthals, and probably *Homo erectus*, were present in this

region. Although all of the finds are important, the hand axe from Bettingen and the chopper from Riehen are of particular significance for prehistoric research on a supra-regional scale.

As this area was not covered by glaciers during the penultimate and last glacial periods, it can be expected that more sites and finds will be discovered in the future. Systematic field surveys and monitoring of construction pits are thus important for future research.

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