

F France

- F 1 Veaux near Malaucene
- F 2 Murs
- F 3 Gordes, valley of Largue
- F 4 Valley of Largue
- F 5 Mourre de la Cabane
- F 6 Vigne du Cade
- F 7 Cennes-Monesties
- F 8 Mur-de-Barrez, Bellevue
- F 9 Commercy

- F 10 La Petite-Garenne
- F 11 Les Martins
- F 12 Grand Pressigny
- F 13 Lumbres
- F 14 Champignolles
- F 15 Auchy-la-Montagne
- F 16 Fourquerolles
- F 17 Frocourt
- F 18 Jamericourt

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F 55 VILLEMAUR-SUR-VANNE, "LES ORLETS", AUBE DISTRICT

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The rural district of Villemaur is located some 40 kilometres east of Sens (Yonne) and 20 km west of Troyes (Aube) in a small region called "Pays d'Othe" (see catalogue entry F 52, fig. 1). The mine of Villemaur-sur Vanne "Les Orlets" (or "Champignolles") lies within the same dry valley as "Le Grand Bois Marot", but it is located on the opposite hillside (orientated to the west, see catalogue entry F 54, fig. 1). This site (like Plis "le Buisson Gendre" and Villemaur-sur-Vanne "le Grand Bois Marot" belongs to the Pays d'Othe mining complex — see catalogue entry F 54, fig. 8). The hillside slopes more than in the case of "Le Grand Bois Marot" and it is orientated to the west. The erosion was more severe than on the opposite hillside, thus, immediately under the thin layer of topsoil is the Coniacian chalk (C4-6H).

Although it is less famous than “Le Grand Bois Marot”, this site has been known for a long time for yielding quantities of axe roughouts. One of the local collections to which we have access contained more than 600 axes coming from this hillside. And it is even possible that the excavations carried out in the fifties by C. Drioton (1954) were undertaken on this hillside rather than on that of “Le Grand Bois Marot”.

Four flint-seams were exploited. Since these seams are bedded horizontally, they all outcrop somewhere on the slope:

- seams 1 and 2 only occur at the top of the mine and consist of small flint-nodules;
- seam 3 consist of a 5–10 cm thick slab that had been exploited over an area more than 50 m long;
- seam 4 is double: two beds of nodules are separated by 20–40 cm; like seam 3, this seam had been widely exploited.

Lower down on the site, it seems that some flint-pockets were unevenly scattered in the substratum.

The site was to be crossed by the construction of the A5 motorway for over 100 m, therefore a rescue excavation was started. After scraping the whole surface that showed extraction structures, *i.e.*, *ca.* 11,000 m², a 6 m wide trench was dug all along the scraped surface (Fig. 1). We first drew the fill of sixty shafts as well as the stratigraphy of each trench, then we manually excavated the remaining portions of about forty structures. Lastly, 20 structures were plotted in three dimensions. In addition, we made casts of several traces of tools as well as a part of an underground extraction side working (Fourquet 1992).

We used several sources of information to determine the extension of the site:

- 1 — the topsoil scraping carried out for the excavation defined the width of the site;
- 2 — 200 metres away, north of the motorway route, the repairing of an embankment had intersected several shafts so that we could note the occurrence of extraction structures;
- 3 — some aerial photographs taken by the archaeologists working on the A5 motorway showed an area sprinkled with circular spots which were also located north of the motorway route;
- 4 — much information was given by R. Dijon, an amateur, who had collected more than 600 axe roughouts on the site.

The combination of all these elements leads us to estimate that the site covers an area of 15–40 hectares.

The reading of the plan (Fig. 2) as well as the counting of the structures of the site were made particularly difficult by the mining which had been extremely intensive. The extraction took place in pits and above all in shafts. The deepest shafts, sunk in the heart of the site, reach 5 metres depth. In these shafts, seams 3 and 4 were jointly exploited (Fig. 3). The mining took place in underground radiating side workings.

On the western edge of the mine, at the foot of the hillside, we intersected several shafts which had not lead to any exploitation for they had not met any flint-seams

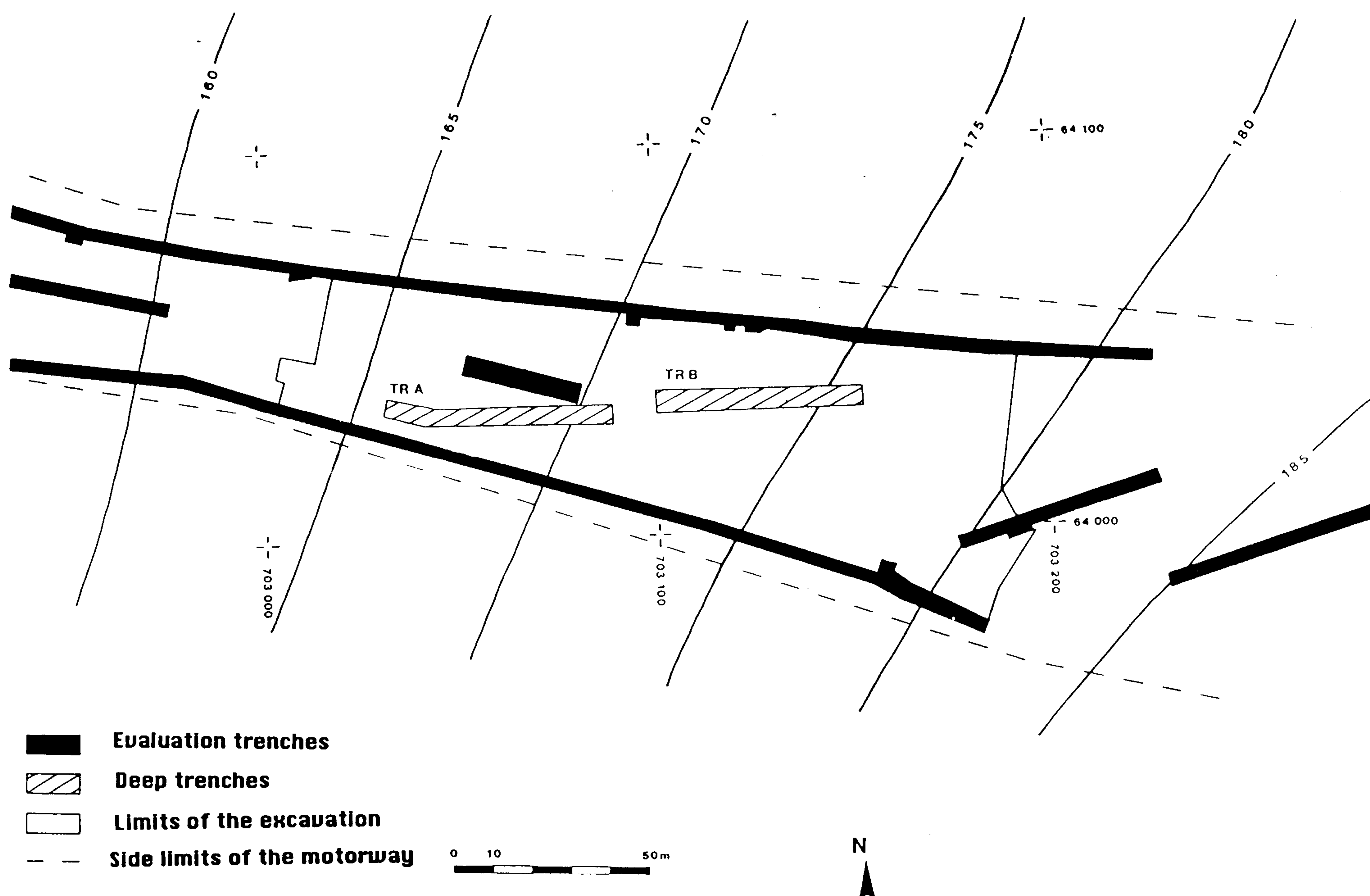


Fig. 1. F 55 Villedaur-sur-Vanne "les Orlets". Plan of the site with the different phases of excavation.

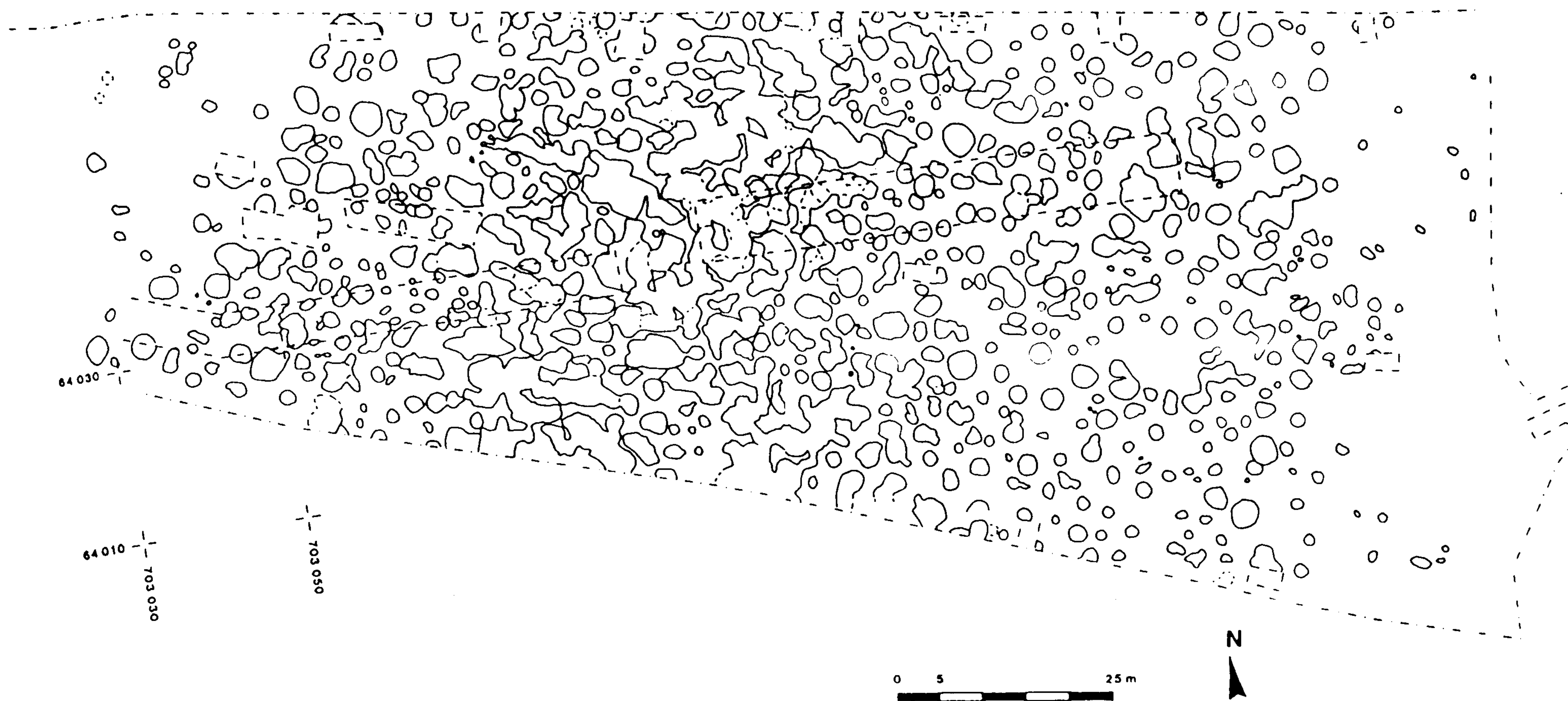


Fig. 2. F 55 Villedaur-sur-Vanne "les Orlets". Plan of the site.

(Fig. 3). These trial shafts recall the ones identified at Le Grand Bois Marot (Site 53).

In opposition to the site in Le Grand Bois Marot, we did not find any workshop waste preserved *in situ* upon the surface. However, we managed to sample and study remains of several chipping-floors which were trapped in the upper parts of the shafts.

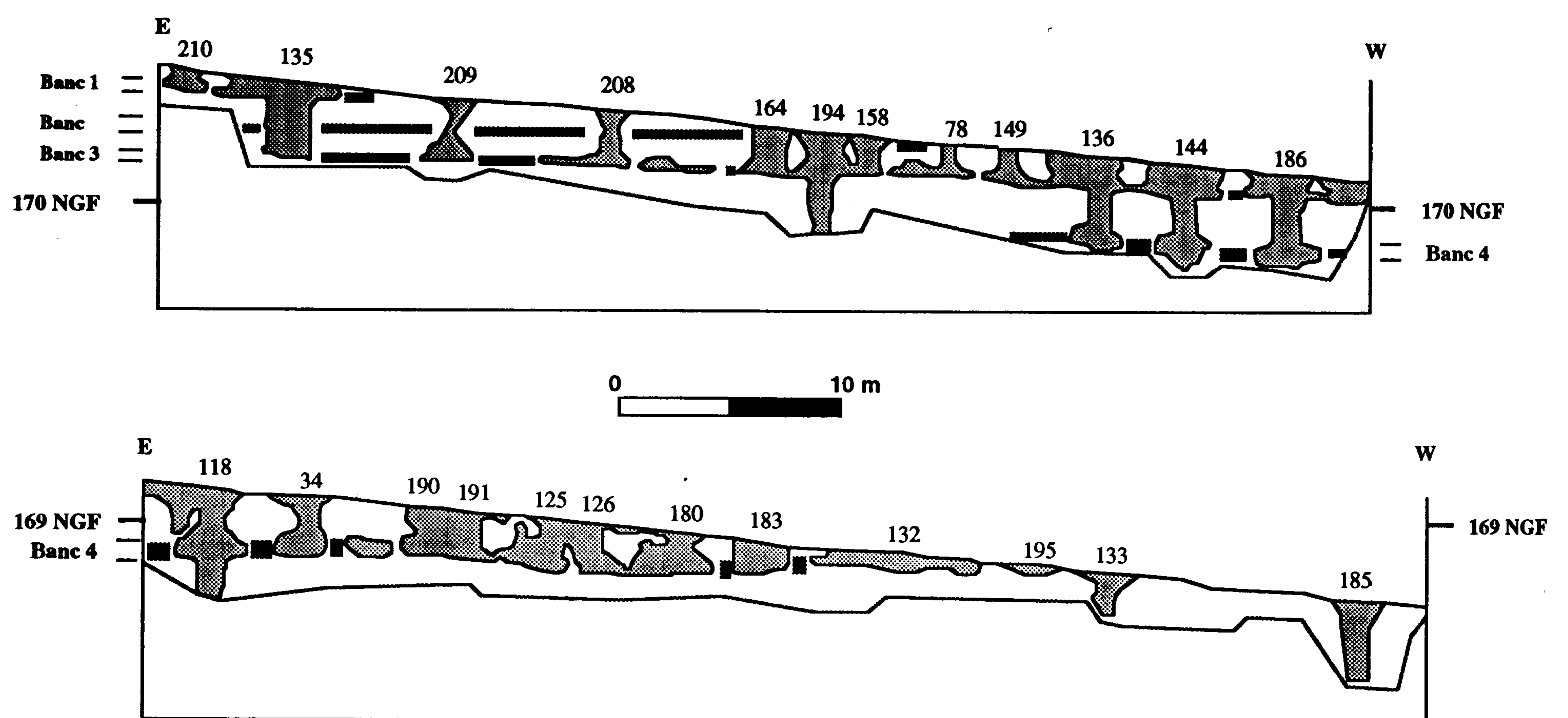


Fig. 3. F 55 Villemaur-sur-Vanne “les Orlets”. General cross-section of the site.

As in the case of Villemaur “Le Grand Bois Marot”, the main type of production in Villemaur “Les Orlets” was axe manufacturing. But flake and blade productions also existed. One of the flake production processes was characterized by a reduction sequence close to the Levallois method (*ca.* 10 cores): the cores were prepared by centripetal bifacial or unifacial flakes. From two to five flakes were produced from this kind of core. This type of reduction sequence is only known, for the Neolithic period, in a Chasseen context, in Canneville, Oise (Hamard 1987).

As noted above, chipping floors did not exist but knapping waste was numerous at the top of the shafts. It was composed of a lot of axe shaping flakes, as in Bois Marot. Other types of flake, related to other reduction sequences, were rare and, for the most of them, not distinguishable from axe roughing-out flakes.

The lithic analysis method used in Orlets was elaborated during the Bois Marot study. The results of Bois Marot study, where chipping floors were nearly complete, allowed us to evaluate the more partial results at the Orlets mine. The different axe shaping stages, clearly recognized at Bois Marot, existed in similar proportions at the Orlets mine, in spite of an heterogeneous production. Shaping and finishing flake percentages were however lower because of a larger rate of cortex and partially cortex flakes, which it was difficult to assign to one of the reduction sequences. Compared with the experimental data, it was nevertheless possible to say that the entire axe shaping sequence was represented at the Orlets mine, as at Bois Marot mine.

The preparation of axe sides before flaking during the finishing stage was minimal. The rate of prepared butts among finishing thin flakes was very low, as at the Bois Marot mine. But traces of this process existed in small proportion and was therefore not unknown on the part of Orlets axe makers. The finishing flakes with prepared butt could occur during the regularising of the active edge. On the finished

products, the polishing of the active edge was particularly careful and it seems that the finishing shaping of the active edge was also neat.

Chipping floor preservation at the Bois Marot mine allowed us to estimate the rate of successful and removed products against discarded missed products. Such an analysis was impossible at the Orlets mine since the chipping floors were not well-preserved. But this question could be tackled by a study of the reasons for the discarding of axe roughouts. As at the Bois Marot mine, more than the half of axe roughouts at the shaping and finishing stages were discarded for reasons of awkwardness which could be avoided by an experienced knapper; these results could reinforce the hypotheses of occasional knappers. But it was also possible that the most axe roughouts were “deviant” pieces (Chauchat 1991), *i.e.*, not according to the desired production. Most of the axe roughouts discovered in the Orlets mine could be “deviant” pieces. It was possible to determine several degrees of “deviation”. The pieces most close to manufacturing standard were few (about ten pieces in 160). They fulfilled several criteria of regularity, which was rare in the case of other roughouts (Fig. 4):

- the sides were relatively regular, the working edge was broad and the apex was pointed;
- the median lines of the two surfaces were symmetrical and approximately central, the convexity of the surfaces was acceptable;
- most of them were discarded after breakage occurring as a result of inner faults in the raw material and of incorrect holding of the roughouts. Discarding of axes for the reason of awkwardness was rare.

On the other hand, other pieces had aberrant characteristics (Figs 5–6):

- from the point of view of the nodule choice, most of these pieces were made of nodules rejected after extraction as coming from one of the bad quality flint sources which were little exploited for the final production;
- from the metric point of view, part of these axe roughouts was too thin with regard to working edge breadth, or too thick (which produced pieces with an obtuse working edge), or too short with regard to breadth, or too thin with regard to length (which produced fragile unfunctional pieces); a lot of them had nevertheless been knapped up to the end of the shaping stage and, on others the finishing stage had been begun;
- most of them were discarded for reasons for awkwardness or bad choice of nodule; these axe roughouts were irregular and unfitted for polishing, even those of which the finishing stage had been almost completed.

The “deviant” axe roughout characteristics could indicate that the pieces of raw material unsuited to manufacturing of functional axes were abandoned and then used by novice knappers. The hypotheses of organized apprenticeship is improbable but it is possible that the younger inexperienced knappers collected extraction flint rejects to practise knapping. These observations could show that all knapping waste issued from the knapping of novices and that all raw material fitted for manufacture was taken away from the mine and knapped elsewhere. If these hypotheses were true,

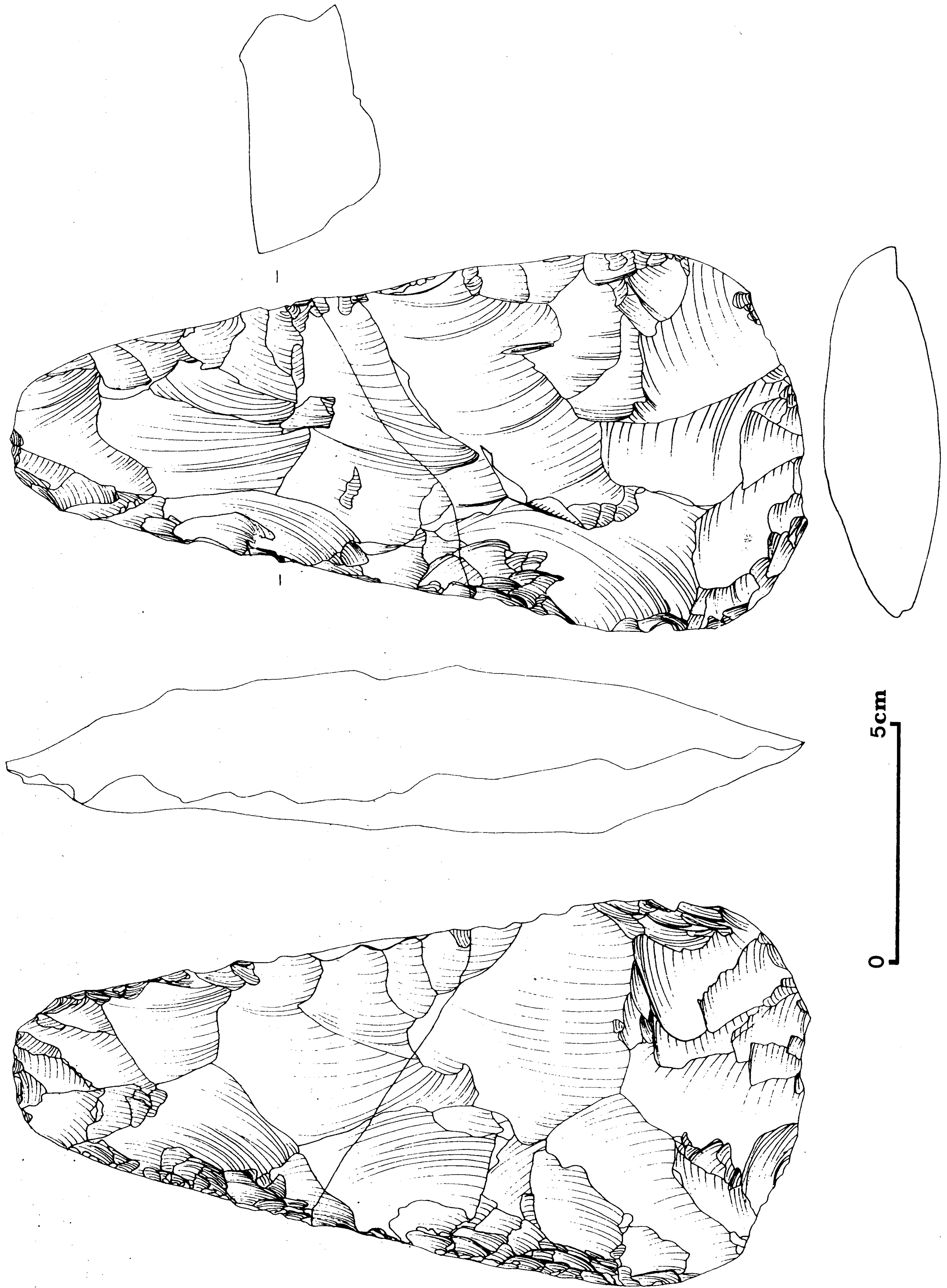


Fig. 4. F 55 Villemaur-sur-Vanne "les Orlets". Example of a "slightly deviant" axe roughout. Discarding reason: breakage.

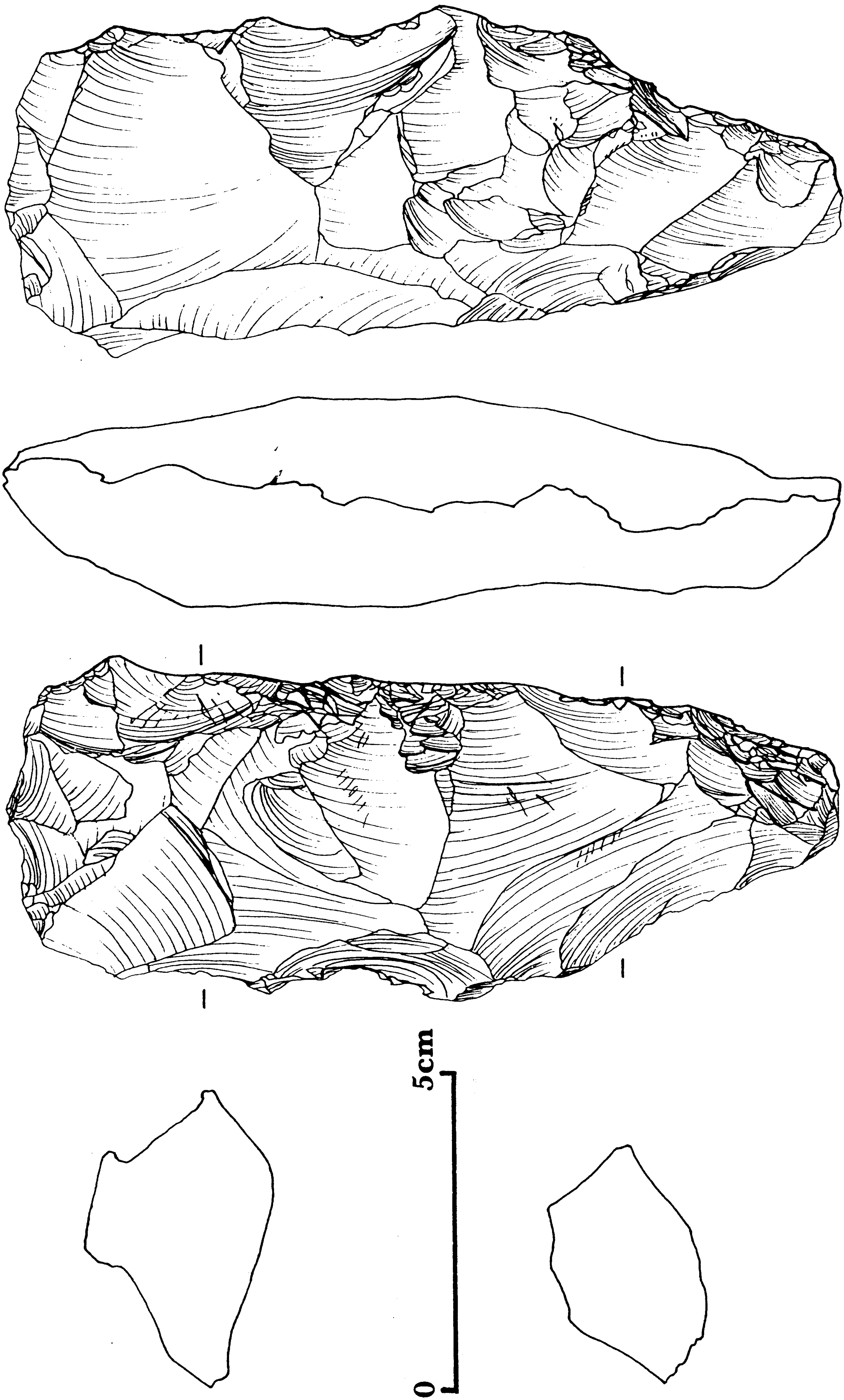


Fig. 5. F 55 Villemaur-sur-Vanne "les Orlets". Example of "deviant" axe roughout. Discarding reason: hinged flakes.

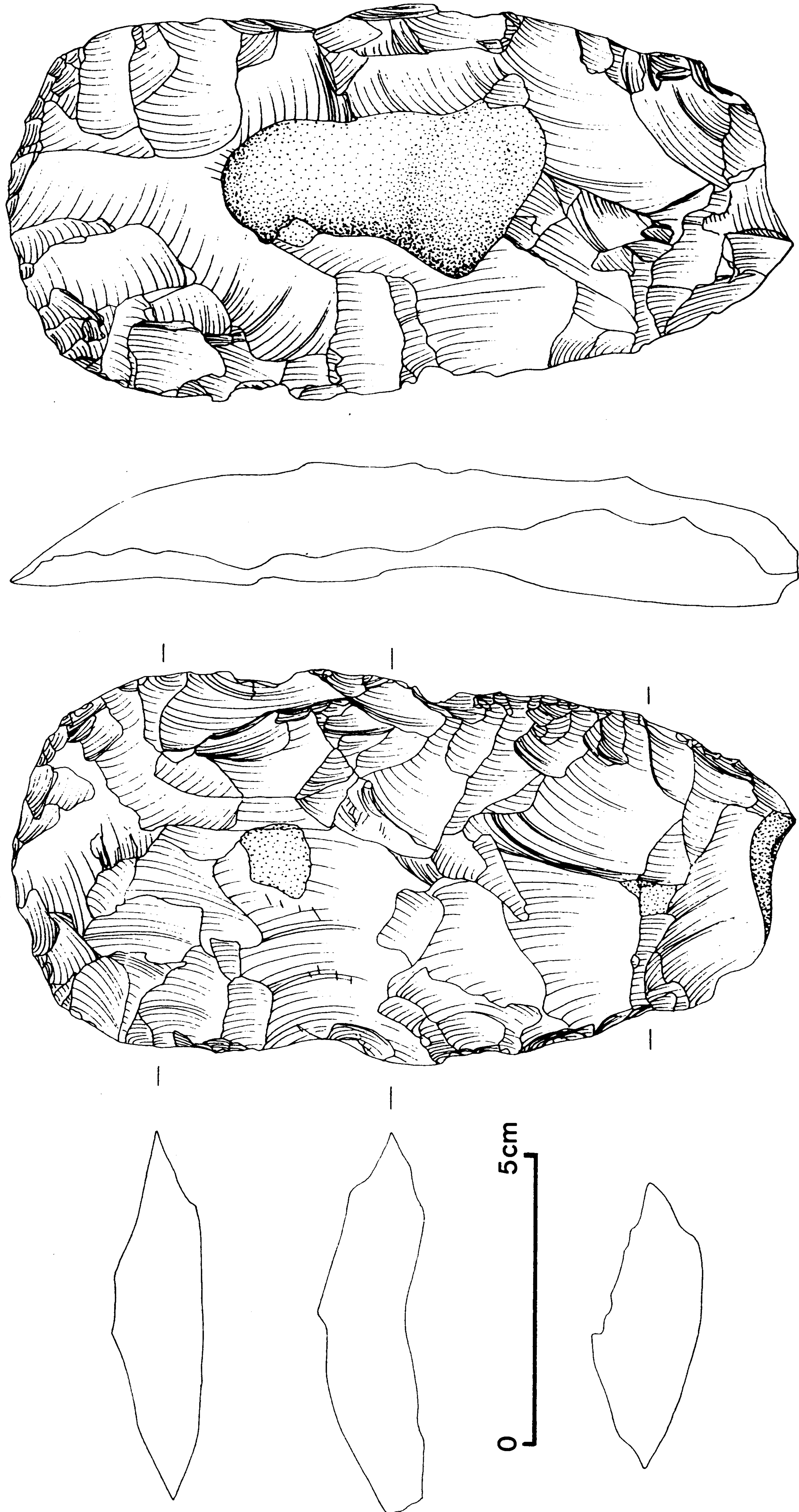


Fig. 6. F 55 Villemaur-sur-Vanne 'les Orlets'. Example of "deviant" axe roughout. Discarding reason: fault in raw-material (too thin nodule).

however, the distribution of flake technical categories would be more divergent from the experimental data. In addition, the relative abundance of axe finishing flakes did not square with the number of axes that had reached the finishing stage, which were very scarce. Lastly, some non-deviant pieces existed which had been discarded for technical reasons, but obviously knapped on the extraction site. Finally, these observations are not incompatible, however, with the hypotheses that complete axe shaping was probably undertaken on the extraction site itself, and that the level of technical ability of the axe makers was relatively low.

Together, the minimal technical know-how, axe shaping on the extraction sites and abundance of mines in most of the valleys inhabited during the Neolithic period, suggest an occasional exploitation of the flint outcrops for local needs. The extent and way the distribution of finished products was organized, however, cannot yet be established. As is shown by ethnoarchaeological examples, the exploitation of mining sites by local populations is not contradictory to distribution of products to far-away areas.

The series of red deer antler artefacts from Villemaur-sur-Vanne “Les Orlets” (567 pieces from 128 features) is by far the most interesting of the four excavated mines located along the A5 (an average of 4 objects per shaft partially excavated). It includes 73 to 88 debitage elements, 3 to 5 roughouts, 284 tools and 190 fragments. The nature of the tools varies more than that from the other mines. Excepting the picks, there are 2 burins, 3 double-tools which could be interpreted as levers, 6 pointed or sharp perforated double-tools and 4 to 5 hammers. The shape of the picks is similar both to ones from Serbonnes, where complete segments of antlers as well as palms and lower parts were used, and to Le Grand Bois Marot, where numerous tines had their basis modified. Manufacturing techniques are exceedingly varied. We recognized traces of cutting, fire setting, the use of chisels over previously prepared supports.

Although it is not systematic, the spatial distribution of the different products on the site reveals some differences in the assemblages. Structures yielding tools made from complete segments of antlers as well as their manufacturing debris are usually distinct from the structures that only yield hafted tines. According to the observations noted about the artefacts from the three other mines, these differences should have chronological significance; some structures yield artefacts typologically dating to the middle Neolithic, others yield artefacts of late/final Neolithic aspect. The spatial analysis at “Les Orlets”, however, demonstrates that the debitage techniques are not here a reliable chronological criterion. As far as the degrees of the tool-abrasion are concerned, they also cannot be used as representing a strict handling of the raw material and consequently as indicating the chronology. This tool-wear depends more on the hardness of the substratum on which the tools were used. The artefacts are unevenly distributed, their number varies between the shafts and depending on the surrounding substratum.

An almost complete ceramic vessel was found at a depth of 1 m in the filling of a 3.80 m deep shaft. This shaft was abandoned without being exploited (Fig. 7). The shape of this vessel recalls the shapes found on Michelberg, N.B.M. or “*Groupe de*

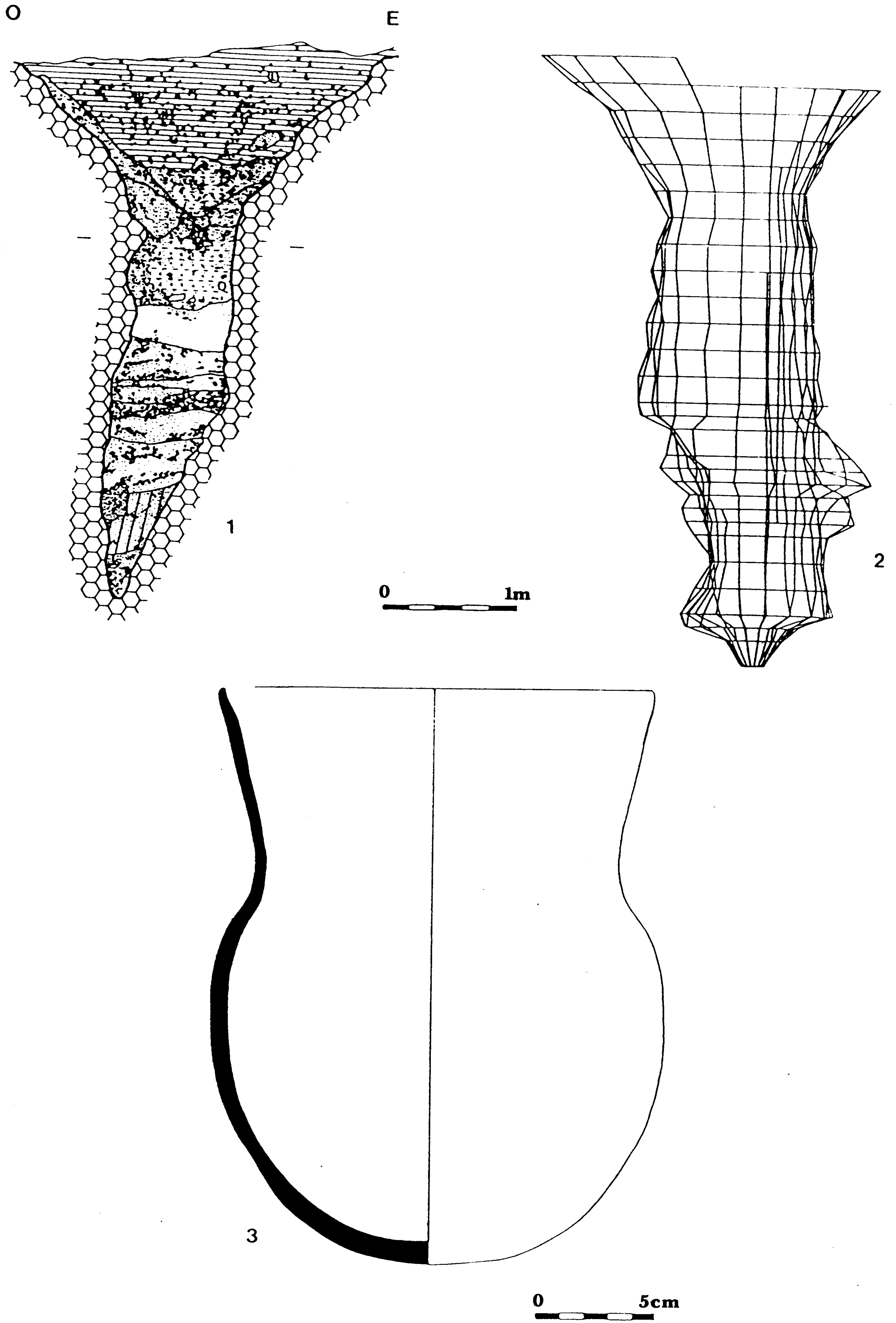


Fig. 7. F 55 Villedieu-sur-Vanne "les Orlets". Shaft 18, cross-section, 3D representation, and the pottery vessel.

Noyen” settlements. The nearest sites, excavated and attributed to these cultures, are located more than 30 km away from the mines.

No settlement remains were found. In one of the shafts a child’s burial was found (Chambon 1995) lying in the funnel-entrance of a small shaft. The body was lying on its right side in a sagging position. The child was accompanied by a necklace composed of teeth, 2 beads of red deer antlers imitating the “*craches*” of red deers and a small tubular bead made of bird bone.

As yet, we have no radiocarbon dating, several elements (pottery vessel, the red-deer antler industry and the nature of the production of the lithics), however, suggest elements from the Chalcolithic (according to the European chronology, or middle Neolithic II according to the French chronology).

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