Le mobilier en pierre de Bouqras. Utilisation de la pierre dans un site néolithique sur le Moyen Euphrate (Syrie)
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Document Version
Publisher's PDF, also known as Version of record

Publication date:
1986

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):

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This work gives the results of a study on artifacts of different stone materials, recovered from the VIth millennium Pre-Pottery Neolithic B settlement Tell Bouqras during the 1976-1978 excavation seasons.

Bouqras is situated on a remnant of a Late Pleistocene terrace on the right bank of the Syrian Euphrates, close to the road between the towns of Deir ez-Zor and Meyadin. Its location on the edge of two ecological zones, the steppe and the river valley, is reflected by plant and animal remains from the neolithic deposits, which represent species characterizing both the arid, almost treeless steppe environment and the well watered and wooded valley at that period.

In 1965 a sounding was made on this tell by H. de Contenson and W. van Liere, providing an outline for its cultural assemblage. A decade later, a team from the Biologisch-Archaeologisch Instituut of the University of Groningen and the Instituut voor Pre- en Protohistorie of the University of Amsterdam started excavations in the southern area of the 2.75 ha large mound. During the three seasons of work some 25 buildings were cleared near the surface and a row of five 7.50 by 7.50 m trenches were dug down to virgin soil on the highest part of the tell (fig. 2). Here a stratigraphy of 10 building phases, together c. 5 m thick, provided a chronological sequence from 6 400 to 5 900 BC.

The majority of the stone artifacts - especially of flint and obsidian - were collected in the above mentioned five "deep trenches", while material from 19 "shallow trenches" exposing several of the four last building phases, was occasionally added to enlarge small tool type samples from the deep trenches. The study comprises a sample of the chipped stone industry (flint and obsidian), ground stone chopping and splitting implements, stone vessels and small grinding and pounding tools. According to the artifact category and tool type, the analysis takes morphological, metrical features and (macro)traces of wear into account, leading in some cases to interpretations of function. Moreover a chronological and geographical survey is given on projectile points, chopping and splitting tools and stone vessels in the Near East.

Raw materials of the chipped stone industry are fine grained tabular flint, probably carried to the site over some distance, river-pebbles or coarser flint from the nearby Euphrates river-bed, and obsidian from eastern Anatolian sources. Ground stone implements and stone vessels are made of regional limestone and of various kinds of exotic hard rocks, most likely imported from the Taurus mountain range. For grinding and pounding tools flint river-pebbles were usual.

The analysis of the flint and obsidiandebitage is based on c. 8 900 artifacts collected from three deep trenches, while the tool sample (c. 4 900) was collected from all five deep trenches and occasionally from shallow trenches. Chipped implements make up
18% of the industry, and when unworked blades, bladelets and flakes with edge wear are included, flint and obsidian artifacts used as tools reach 30% of the industry. Obsidian numbers 10% and 25% in the tool kit and the debitage respectively and 18% in the whole industry. According to the mass of unworked flakes (many with cortex), flint working - from core preparation to tool trimming - took place on or near the site. In addition to unworked flakes (1,544), an equal number of bladelets (width equals or is less than 12 mm), of which 66% are of obsidian, were found. Unworked blades are less numerous (790). The few cores are mainly prismatic and to a lesser extent irregular, naviform or conical; crests occur on prismatic and naviform cores. Percussion as well as pressure was used for the removal of blades and bladelets from the cores.

Bouqras' tool kit comprises projectile points, scrapers, burins, drills/perforators, sickle blades, various retouched blades, bladelets and flakes; given percentages bear on the total number of tools recovered in the deep trenches. According to the breakage pattern on the tips, a group of morphologically similar implements were designated as projectile points (4.6%). Except for a few single shouldered and leaf-shaped points, the projectile points are characterized by a central stem. The main form has pronounced rounded or angular shoulders, ventral retouch on the tip and a stem trimmed by a semi-abrupt or flat invasive retouch (Byblos points). A large type with flat parallel retouch on the shoulders and a slim stem, a variety of the Byblos type, has been called the Bouqras point. Furthermore, some Amuq 1 points were present; Amuq 2 points were only recorded in the shallow trenches. On the principal that the maximum weight for arrowheads is 7 to 8 gr., a division has been made between arrowheads and spearheads.

Scrapers (9.7%) mainly consist of the end of blade type; other types are double scrapers, flake scrapers, carinated, circular and burin-scrapers. Almost all have a convex working edge. The amount of specimens with transverse fractures opposite to the scraper edge is high (60%); edge damage on some of the tools suggests that they were used in a scraping, not in a planing motion.

Burins are numerous in the assemblage (22.8%), especially burins on fractures and dehedral burins. Burins on truncations, natural pans and lateral retouch also occur. Several kinds of perforators and drilling tools (1.7%) should be mentioned: shouldered types, some with double points, beaks, reamers, matchlike perforators (rare in the deep trenches, but numerous elsewhere) and drill-bits. Drilling and perforating have been observed frequently on all kinds of objects from the site.

In comparison to many neolithic settlements, sickle elements are rare in Bouqras (1.9%). There are two shapes: parallel sided blades and blades or flakes with divergent sides, suggesting different ways of hafting on the site. Parallel sided specimens are reported to have been mounted in line with the sickle shaft, whereas the specimens with divergent sides were obliquely mounted. Worked as well as unworked edges were found, but no serrated edges.

Of the various retouched blades (37.9%) and bladelets (8.8%) it should be said that chipping of the edges often occurs; truncation however is seldom met. Special mention must be made of blades with natural pointed ends and a marginally retouched base.
which shows on its ventral side the removal by burin blow of one of the edges. Several
do double backed obsidian blades (strangulated blades), reported on settlements north and
north-east of Bouqras, were also collected. Flakes (10.7%) bear occasional retouch on
the edges.

Chopping and splitting tools, which number c. 100 specimens including fragments, were
manufactured from different kinds of stone by pecking, grinding, sawing and polishing.
Most of these artifacts were recovered in a burnt house which yielded an extensive
inventory of object categories comprising white ware, stone ware, grinding and pounding
tools, flint and obsidian implements, matting, basketry and different kinds of
anthropomorphic and animal figurines. On the basis of the kinds of wear traces on
cutting edges, traces left by hafting, percussion marks on butts etc., functional groups
have been distinguished. There are axes and adzes, i.e. hafted implements used with
direct percussion, and chisels, which are used with indirect percussion. With the help of
wear patterns, another distinction could be made between (falling) axes and adzes: the
cutting edge of the first shows diagonal striations, the cutting edge of the latter, striations
parallel to the length axis. Long slender blades with percussion marks on the butt and a
striation pattern parallel to the tool's axis, have been defined as chisels. A variety of
these tools, smaller in size, without percussion damage on the butt and made of softer
stone, have been called paring chisels.

The prehistoric village yielded an important number of complete stone vessels (c. 50)
and vessel fragments (c. 1 750). The complete ones were found for the most part in the
debris of the so-called burnt house, while from all levels of the deep trenches fragments
were recovered (c. 270 in total). Like the chopping and splitting tools, regional limestone
together with imported hard stone were used for their manufacture, although the latter in
a smaller amount. Shapes are open bowls with flattened bases, carinated vessels of
different sizes on four feet or with a flat base. Outstanding for the Bouqras stone ware is
the high craftsmanship of the manufacture; in particular, the numerous miniature carinated
vessels, among which some were made of hard rock, required a skilful artisan and most
probably the use of a lathe.

The last category of stone objects in this study is a collection of tools, traditionally called
percussion and grinding tools, or even sling stones. The deep trenches yielded about
460 such objects, usually made of flint pebbles or to a lesser extent of softer stones.
Different in diameter and weight, the share a more or less globular shape, often flattened
or faceted by use. The surfaces show battering marks and traces of grinding and
polishing.

As a rule, the analysed object categories were found in secondary position in the
stratified building levels of the deep trenches as well as in the fill of the architecture
exposed in the shallow trenches. The earlier mentioned burnt house however
represented a rare exception to this. Here a rich collection of different artifact categories
can undoubtedly be associated with the dwelling, although its collapse disturbed the
interior arrangement and made interpretation of the activity areas speculative. Apart
from a few objects which apparently were on the floors when the fire broke out, the
majority of the material was found mixed with the debris, suggesting that they had fallen
from an upper structure, a roof or may be partly from shelves along the walls. The proportions of the categories treated here are given in figures 86 and 87.

When considering the evolution within those categories through the occupation period of the settlement, the picture gives an impression of a certain stability. There are some changes in the flint industry, for example the increase of local coarse flint exploitation and, in addition, a gradual size reduction in unworked blades and flakes. In the tool kit and debitage, there are fluctuations of type percentages during the 500 year long habitation (fig. 4A and B). On the other hand, when leaving aside type samples which are unrepresentatively small, one does not observe typological changes in the composition of the tool range. Stable also is the import flow of exotic raw materials during the occupation.

While forming part of the Levantine PPNB cultural complex of the second half of the VIth millennium, Bouqras at the same time represents a regional manifestation, that region broadly coinciding with the drainage basin of the Middle (i.e. Syrian) Euphrates. To its regional traits belong miniaturised vessels of hard and soft stone, found in the upper levels, ground stone chopping and splitting tools, bipolar crested cores and various stemmed points throughout the occupation deposit. Special ties with the north and north-east are noticeable by the occurrence at Bouqras of strangulated blades and side-blow blade-flakes, typical artifacts related to obsidian rich industries in the mountain range. In particular with regard to stone ware from the burnt house, close parallels are found in the Sinjar, in a Pre- and Proto-Hassuna context (Umm Dabaghiya, Kültepe, Tell Sotto), which is slightly younger than this collection, and also in the several centuries later central Mesopotamian site Tell es-Sawwan. When Bouqras is abandoned at the disappearance of the PPNB in the first half of the VIth millennium, some aspects of its material culture, for example pottery, architecture and stone ware manufacture, seem to continue in above mentioned areas.