Excavations at Tel Qishron – The Lithic Assemblage

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The lithic assemblage of Tel Qishron can be divided into two components discovered in the same layers, but which belong to different periods: the Middle Paleolithic and the 3rd millennium BCE, respectively. The first group, recognized during the excavation but not analyzed in detail, is composed of patinated flakes and blades produced using the Levallois technology (Fig. 1:1). These items, clearly intrusive in the Intermediate Bronze Age strata, show strong analogies with the lithic assemblage of the Middle Paleolithic quarry site found few meters away.[1] The second group, identified during the excavation by virtue of the flint not being patinated, is comprised of ten Canaanean blades, the only diagnostic items studied in detail and the subject of this analysis.

THE RAW MATERIAL

The Canaanean blades discovered at Tel Qishron are made using homogeneous flint with a fine to medium-fine grained texture. The flint is generally matte and opaque. Color varies from light grey to light beige/brown, and is usually not uniform, having darker grey/brown bands. The presence of inclusions, quite large in several items, comprises a variable which may derive from different geological formations. This raw material seems to be characteristic of the Canaanean blades found in Northern Israel (Shimelmitz 2009; Shimelmitz and Rosen 2014), and differs from the chocolate-brown flint typical of the Shephelah and surrounding areas (Futato 1996; Manclossi *et al*. 2016, 2019).

Several pieces show irregular black lines on their surfaces, produced by contact with metallic plow points (Fig. 1:3–5). These elements indicate that the blades were found close to the surface, which was affected by modern cultivation.

TECHNOLOGICAL ANALYSIS

Canaanean blades are large, regular blades, generally having a trapezoidal cross-section. In our assemblage, most of them have parallel edges and dorsal ridges, a straight profile, and a relatively thin section (Fig. 1:3). These elements are characteristic of the pressure technique, and the dimensions of the blades—larger than 21-22 mm—suggest the use of a lever-pressue system (Pelegrin 2012b). Indeed, with the exception of one narrow blade (20 mm), all the blades are at least 30 mm in width (and as large as 36 mm). Nevertheless, some blades are more irregular (especially in the delineation of the edges and nervures) and the use of indirect percussion cannot be completely ruled out (see Pelegrin 2006, 2012a).

In addition to the morphometric aspect, the use of the lever-pressure system is suggested by the proximal end of one blade (Fig. 1:7 which shows

1 The lithic assemblage from Area F will be published separately.

the typical short, hight, and thick bulb. Moreover, the inclination of the dorsal ridges in relation to the knapping axis indicates the use of a vice which immobilized the core in order to exert pressure. In addition to this blade, another one (Fig. 1:6) preserves its original proximal end. Although the morphology of the bulb is not distinctive of the lever pressure systen (it is not protruding, but rather widespread), the regularity of the edges and its profile suggest the use of this technique platform preparation and other technical features seem to suggest differences in the way removal pressure was exerted. In the first case, the butt is plain and quite large. Its dimensions, and the presence of a lip, indicate the use of an antler point (Fig. 1:6a). On the other blade, the butt is facetted, with an impact point that is quite small and well inside of the pressure surface. The absence of a lip and the presence of cracks on the bulb indicate the use of a copper pressure point (Fig. 1:7a).

Very little information concerning the knapping method is available. All the blades have a trapezoidal cross-section, (usually showing intercalated order of the dorsal negatives), and do not preserve any cortical elements. This seems to suggest that the blades were detached in the central part of the reduction sequence (e.g., Manclossi *et al*. 2016). Only one blade (Fig. 1:2) differs from the others, and it was probably detached among the first removals. On its right side, it shows part of the preparation of a crest, and indicates a preliminary shaping of the core in order to obtain the adequate convexities. The presence of a big inclusion in the flint explains the irregularity of the detachment, which removed part of the core.

CANAANEAN BLADE BLANKS AND TOOLS

The Tel Qishron Canaanean blade assemblage includes incomplete blades, all of which are retouched or show some traces of utilization. The blanks were generally little modified, and the main typological distinction is the presence/absence of glossy edges. This luster is typical to Canaanean blades and suggests their use as sickle elements or reaping knives.

The glossy-pieces

The assemblage includes three blades with a single glossy edge, and one blade with luster on both the edges. In most of the cases the glossy edges are re-sharpened, and the retouch which removes the luster is rather short. The non-glossy edges are not retouched but show some macrotraces of utilization. Excluding the retouch of the glossy edges (which is not connected with the manufacture of the tools, but rather with the maintenance of the cutting edge), minimal modification characterizes the manufacture of Canaanean sickle blades. The blanks were, indeed, snapped in shorter segments either by controlled and intentional breakage or by truncation, although there doesn't seem to be a standardized length (the longest piece is 13.8 cm long and the shortest is 5.7 cm long, with an average of 8.3±3.8 cm).

The non-glossy pieces

The assemblage also includes six Canaanean blades without glossy edges. Excluding the longest blade, almost complete and fractured at the proximal end (L=13.7 cm), and another long blade with a distal fracture (L=7.3 cm), this group is comprised of segments with a more uniform length (between 4.5 and 5 cm), created with an intentional breakage at both extremities. Truncated pieces are, indeed, absent among the non-glossy Canaanean segments. All the unretouched edges are damaged and, with the exception of one retouched blade which shows fine and regular denticulation similar to the re-sharpened sickle elements, all the other edges are retouched, creating a couple of generally symmetrical notches on both the edges (Fig. 1:4-6).

DISCUSSION

Although the lithic assemblage collected at Tel Qishron represents a small, selected sample, it provides information that is important for reconstruction of the chipped-stone tool system during the Intermediate Bronze Age. Excluding the presence of Middle Paleolithic remains, this single-period site was occupied at the end of the 3rd millennium BCE, and the lack of possible contamination by Early Bronze Age components allows for a better characterization of the IBA Canaanean blade production and distribution system.

While Canaanean blades are diagnostic tools of the Early Bronze Age, their presence during the Intermediate Bronze Age has been recognized at different sites (e.g., Betts 1991; Dever 1973; Payne 1983; Rosen 2012). In most of these studies, the continuation of Canaanean blade production was primarily identified based on typological considerations, and less emphasis has been assigned to the technological aspects. The recognition of the lever pressure technique, one of the most sophisticated knapping techniques, has important implications for reconstructing the socioeconomic structure associated with their production and distribution. Considering the skills and knowledge required to master this technology, only a few flint knappers were able to produce long and regular blanks and supply the great demand for Canaanean blades, which were then transformed into tools directly by the users (e.g., Manclossi and Rosen 2019). The continuation of this technology during the Intermediate Bronze Age indicates that these specialists continued to produce and exchange their products with farmers, despite the great transformation of society at the end of the 3rd millennium BCE. Although the data are still scarce, the use of different raw materials, and the attestation of different modalities in the preparation and procedures for detaching blades, may indicate that the production and distribution system of the Early Bronze Age continued unchanged in the Intermediate Bronze Age (but see Shimelmitz and Rosen 2014).

On the other hand, the Canaanean blade assemblage from Tel Qishron seems to suggest that blade dimensions increased through the time (e.g., Weacher 1958; Hanbury-Tenison 1986; Betts 1992; and see also Rosen 2012). Although the number of Canaanean blades dated to the Intermediate Bronze Age is quite small for any statistical conclusion, and large blades occurred also in earlier periods (Manclossi *et al.* 2019), wide blades are more common at the end of the 3rd millennium, when narrow blades are almost absent. Another metric difference observed of Tel Qishron Canaanean blades is related to their thickness (T= 7.6± 1.6 mm). These blades are significantly thicker than those of older assemblages (the average thickness of Canaanean blades during the Early Bronze Age is 5mm). This variation in blade size may be related to the manufacture and maintenance system of Canaanean blade tools, notably to the hafting modalities and re-sharpening procedures (see also Rosen 2012).

Production and distribution of Canaanean blade blanks, and the manufacture and maintenance of Canaanean blade tools are two complementary aspects of the same specialized system, based on the division of labor between flint knappers and farmers. Technological continuity, attested by use the lever technique, seems to suggest substantial stability in the production and distribution system until the end of the Intermediate Bronze Age. But further research is needed to better understand if and how farmers' roles changed in the manufacture and maintenance of their tools.

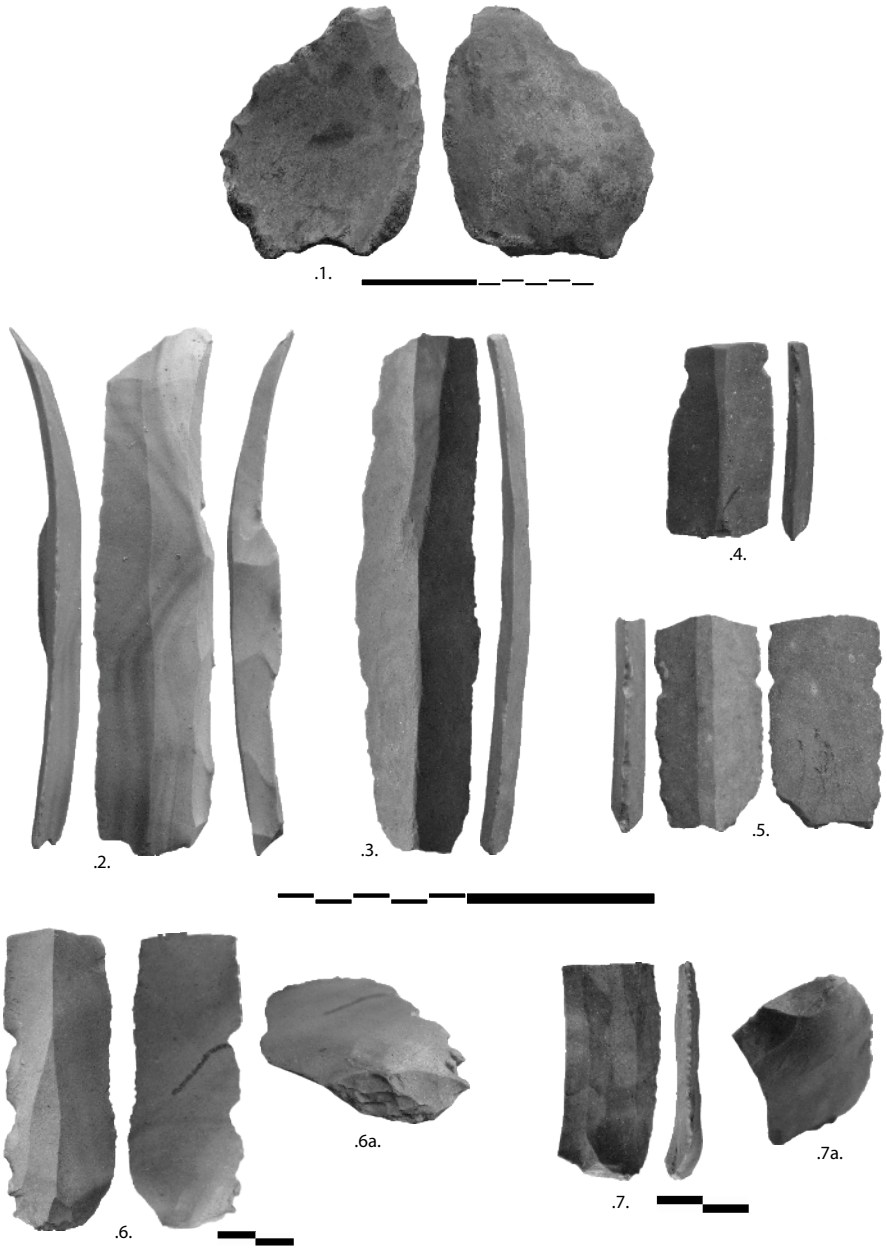

Figure 1. A sample of the lithic assemblage from the Intermediate Bronze Age village at Tel Qishron. 1. Middle Paleolithic Levallois flake; 2. Neo-crest Canaanean blade with marginal retouch on the left edge; 3. Canaanean blade with marginal retouch on both the edges; 4-5. Fragment of Canaanean blade with marginal retouch on both the edges; 6. Retouched Canaanean blade with a denticulated delineation on the left edge; 6a. Details of the facetted platform preparation with visible crack indicating the use of metallic point; 7. Canaanean blade with marginal retouch on the left edge; 7a. Details of the plain platform preparation with visible lip indicating the use of antler point.

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