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Exploitation of the cereals during the Pre-pottery Neolithic of Dja'de-el-Mughara: Preliminary results of the functional study of the glossy blades

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ABSTRACT

The village of Dja'de-el-Mughara (Northern Syria, excavated by E. Coqueugnot) is essential to understand the process of neolithisation in the Near East since the settlement was contemporary with the first attempts of agriculture in the area. Regarding that specific context, a key research direction to improve our knowledge of major technical and economic changes occurring in that crucial period is the functional study of the tools used by the inhabitants, more specifically their sickle blades (traditionally related to the glossy blades). This article deals with the various methodological aspects of this research on the one hand, and presents its first preliminary results on the other hand.

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1. Introduction: context and research topic

The "Neolithisation" refers to deep social, economic and cultural changes that enabled the emergence of the first sedentary farming and herding societies between 12,000 and 6500 BC in the Fertile Crescent (Aurenche and Kozłowski, 1999; Cauvin, 2010). These changes can be observed specifically at Dja'de-el-Mughara (Northern Syria), excavated by E. Coqueugnot (Coqueugnot, 2014) which yielded a continuous stratigraphy from the final PPNA (9310 cal. B.C.) to the beginning of the Early PPNB (8290 cal. B.C.) (Fig. 1).

The site was abandoned around 8200 BC. It is inhabited again during the Pre-Halaf period (beginning of the 6th millennium BC) and during the Early Bronze (3rd millennium BC) (Coqueugnot, 2014).

Dja'de el Mughara is located north-east of Aleppo, on the western bank of the Middle Euphrates river, upstream from the bridge of Qara Qosak (latitude 36° 37' N, longitude 38° 13' E). Archaeological excavations conducted since 1991 on the site were initially undertaken as part of the international rescue campaign linked to the construction of the Tishreen flood barrier on the Euphrates. They were one of the field operations of the Permanent Mission of the field operations of the Permanent Mission of El-Kowm-Mureybet created by Professor J. Cauvin in 1978. The

Tishreen dam was flooded in Autumn 1999 but the tell was preserved from the rising waters due to its topographical position which made further excavations possible. In 2007, following the discovery of wall paintings dated to the Final PPNA, an independent excavation program including restoration and heritage development operations was financed for a period of four years. Because of the war situation in Syria, field missions have been suspended since the spring of 2011.

The depth of the archeological layers enabled us to divide the pre-pottery occupation into 3 phases (Coqueugnot, 2014):

- Dja'de 1, (9310–8830 cal. BC) matches the end of the PPNA as known at the sites of Mureybet (phase III_B) (Cauvin, 1977; Aurenche, 1980; Ibáñez (Ed.), 2008) and Jerf-el-Ahmar (Stordeur, 2000; Stordeur and Abbès, 2002). The village comprises small rectangular units with tiled floors and walls made of mud and large stones, circular units and lighter structures. One subcircular half-buried building stands out by its large dimensions, with a diameter of nearly 7.5 m. Its walls are covered with polychrome geometric motifs which give it its name of "House with paintings" (Coqueugnot, 2014). It is reminiscent of the communal buildings of Mureybet, Jerf-el-Ahmar and Tell 'Abr (Stordeur et al., 2000; Yartah, 2004). Burial deposits are rare: one skeleton was found on the floor of the "House with paintings", with no sign of a grave, and isolated skulls on the floor of some domestic units or buried in foundation trenches (Chamel, 2014). The lithic industry is mainly laminar and

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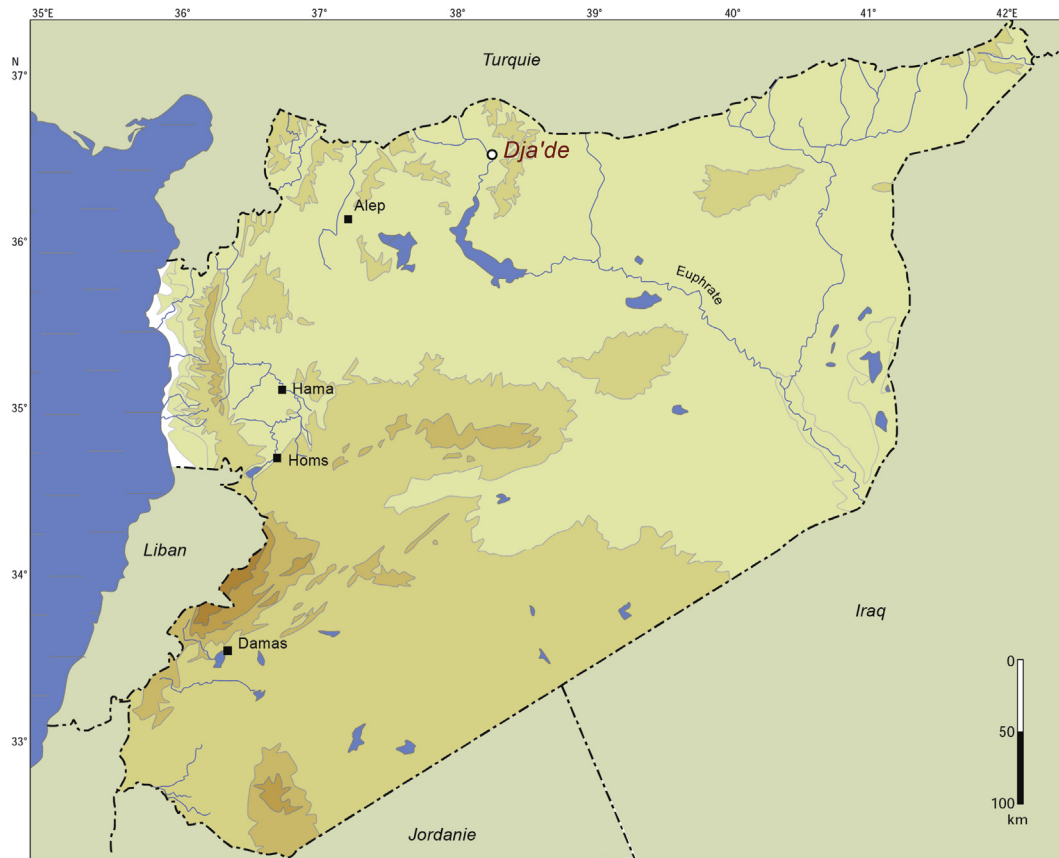


Fig. 1. Situation of Dja'de-el-Mughara, Northern Syria (© MOM).

characterised by unipolar and bipolar knapping that were essentially made on rough grainstones (Coqueugniot, 1994; Arimura, 2007). Laminar tools include arrowheads with retouched bases (Aswad arrowheads, Nevali Cori arrowheads, arrowheads with peduncle), piercing tools, burins and glossy blades. Typologically, scrapers, often shaped on flakes or unipolar blades, form the dominant category (Coqueugniot, 1994; Arimura, 2007).

- Dja'de 2, (8800–8500 cal. BC), matches the beginning of the Early PPNB. This phase is currently only documented at Dja'de. The houses are rectangular, often composed of several large cells. This phase is characterised by a large-scale dumping of butchery waste interpreted as the left-overs of communal meals (feasts) (Gourichon, 2004; Coqueugniot, 2014). Burial practices are more documented than in the previous phase, with the occurrence of collective graves often related to the architecture and isolated bone remains in open areas (Chamel, 2014). Bipolar laminar knapping which increases at the expense of unipolar debitage, aims at obtaining straight and regular blades, extracted from postero-lateral crest cores, cortical cores and naviform cores, the latter considered as a PPNB cultural marker (Coqueugniot, 1994; Arimura, 2007). Among the tools, arrowheads with clearly outlined tangs, Aswad arrowheads and rhombic arrowheads are characteristic features. A few spur blades typical of the Early PPNB from the Middle Euphrates are also present (Coqueugniot, 1994; Abbès, 2003; Arimura, 2007).
- Dja'de 3, (8540–8290 cal. BC), matches the Early PPNB *stricto sensu*, known at Mureybet (phase IV_A) (Cauvin, 2004; Ibáñez (Ed.), 2008). The architectural organisation of the village evolves compared with the previous phase: the houses are still

rectangular with mud walls and a stone framework, but now smaller and often single-celled. Foundation pebbles are systematically present. The houses are separated by open spaces that seem to be areas of activity, as documented by parallel low walls indicating the presence of "grill-plan buildings", postholes and fire pits (Coqueugniot, 2014). Burial practices are varied with primary and secondary inhumations located near or inside the cells. Over 80 individuals were also found under the successive floor layers of a two-celled rectangular building named "The House of the Dead" (Chamel, 2014; Coqueugniot, 2014). The lithic industry is based on laminar knapping using mainly bipolar core reduction with the help of a soft hammerstone. The knappers used very good quality flintstones (Coqueugniot, 1994; Arimura, 2007). Among the tools, arrowheads with tangs (Byblos arrowheads), blades with spurs and glossy blades are characteristic features.

This stratigraphic sequence is essential in understanding the process of neolithisation since it matches the time when humans began to domesticate their environment, steadily adopting a way of life based on farming and herding (Coqueugniot, 1998). Among the major economic changes during that time, the invention of agriculture is of the utmost importance. Dja'de's neolithic settlement matches in all likelihood the phase when the first attempts at wild cereals cultivation must have been made, before the apparition of first domestic cereals resulting from biological selection (Coqueugniot, 1998; Willcox, 2014). Indeed several pieces of evidence suggest the existence of pre-domestic cultivation in Dja'de as well as in other Middle Euphrates sites (Willcox et al., 2008; Willcox, 2014).

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