

Conference Report on Session 85 “Tracking the Neolithization Processes on Both Sides of the Sinai: a Bridge Between the Near East and North-Eastern Africa”

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At the 25th Annual Meeting of the European Association of Archaeologists in Bern (4th–8th September 2019), the Session 85 entitled “Tracking Neolithization Processes on Both Sides of the Sinai: a Bridge Between the Near East and North-Eastern Africa” was organized by K. Kapustka, J. Vieugué, F. Bocquentin and E. Huyscom. Its main objective was to bring together researchers working in the Near East with those working in North-Eastern Africa. Based on various topics such as settlement patterns, architecture, graves, pottery, lithic, fauna, botanical remains *etc.*, authors were requested to provide syntheses regarding the type and pace of changes as well as related transformation mechanisms occurring with the shift from hunter-gathering to farming communities in a wider chronological frame from their own field of interest. Rather than tracing ways of diffusion, long-distance contacts or cultural exchanges, the intention of this session was to identify in a better way the major steps of the processes involved from different approaches and perspectives. It is clear that typical characteristics and aspects of Neolithization occurred in different order and at different times in the two larger regions. The main question was to understand differences and similarities of these processes.

As an introduction, the four organizers of the session presented a short history of understanding the Neolithization process over a century of animated debates. Today, Neolithization is seen as a long process taking its roots possibly as far as the beginning of the Epipaleolithic and therefore implies an evolution in successive stages linked to each other, not without discontinuities, however. Cultural (namely economic, demographic, social and symbolic) and ecological (climatic, environmental) factors are considered simultaneously. The notion of a unique zone of influence (or origin) has given way to the hypothesis of polycentric evolution. In the Levant, though exchange networks are still roughly known, the accurate nature of contacts between the different regions remains only very partially understood. However, it seems likely that a mosaic of cultural entities participated at their own pace, in a common dynamism that contributed to the rooting and stabilization of the new Neolithic lifeways. Our knowledge of the hunter-gatherer/ farmer-herder transition in North-Eastern Africa is extremely unbalanced when compared to the Levant. First, the absence of sites along the Egyptian Nile valley is of real concern for understanding evolutionary trends. Second, although surface collections have witnessed a dense network of Mesolithic and Neolithic sites further south in Sudan,

extensive excavations remain too scarce yet for drawing a general picture of the phenomenon. However, exceptional sites provide robust data that will hopefully be expanded in the future with increasing field work in this area. The chronology is divided in three major economic steps: Epipaleolithic which refers to hunter-gatherers without pottery (Early Holocene); Mesolithic (9th–6th/ 5th millennium calBCE) which refers to hunter-gatherers with Pottery; Neolithic (6th/ 5th–4th/ 3rd millennium calBCE) which refers to agro-pastoral communities (with or without pottery). The dates of transitions differ greatly between ecosystems and become more recent towards the south of the Nile Valley.

Fourteen 15-minutes presentations were given by researchers covering a variety of topics. Three talks focused on archaeo-anthropological data given from different perspectives. L. Varadzinová *et al.* presented the exceptional cemetery of Sphinx located in the Jebel Sabaloka (Sixth Cataract, central Sudan). The burial ground, located within the settlement but separated from the living, started around 6600 calBCE. 47 individuals have been unearthed so far. Half of the skeletons were directly dated; the great majority were adults. Emphasis was given to burial types and the evolution and diversification of burial rites over time; major changes were observed for the beginning of the 6th millennium by the appearance of grave goods. M. Honneger and I. Crevecoeur compared the Mesolithic (7800-6700 calBCE) and Neolithic (6000-5500 calBCE) burial practices and human remains from the major site of El Barga (Northern Sudan). Between 2001 and 2014, 47 Mesolithic individuals and 108 Neolithic individuals were excavated. The important discrepancies observed between these two occupations (funerary recruitment, burial positions, and grave goods) suggest profound social changes and a possible replacement of the populations. Dental and cranial morphometric analyses strongly support this hypothesis, with the Mesolithic showing stronger affinities with Late Pleistocene populations. F. Bocquentin on her side proposed a synthesis on burial practices in the Levant. She emphasized the changing relation between dead and living over time, witnessed by their spatial proximity and/ or practice of long-term handling of corpses or skeletal remains through complex treatments. In the southern Levant, the evolutionary scheme is far from being linear but shows, generally speaking, a greater variability of funerary treatments from the Early Natufian onward. It reaches its peak during the Middle and Late PPNB. Major changes in funeral practices

during the 7th millennium testify a slow decline of the major active role that the dead played in the community, likely linked to new beliefs.

Three talks focused on settlements and facilities. The presentation on Sai Island by E. Hildebrand and T. Schilling was an in-depth comparative study of storage features and their importance during the Neolithization process. The potential variation of storage facilities or related mechanisms (social and environmental storage) was presented together with their archaeological evidence. A review of storage facilities known in the Nile valley shows a development from robust pits to above ground storage. M. Jórdeczka *et al.* and P. Bobrowski *et al.* presented the results of recent field work at Khor Shambat, Khartoum District, and Nabta Playa; Khor Shambat was explored through four test trenches (approximately 60 m²). About 30 burials have been unearthed as part of a multistage cemetery (Mesolithic, Neolithic, Meroitic and post-Meroitic period) dominated by Neolithic burials. Moreover, a rich Mesolithic (7th and 6th millennium) and Neolithic (5th and 4th millennium) occupation was explored. Pottery, stone tools and fauna were numerous and presented in detail. The preservation is excellent and allowed residue analysis. Recent work in Nabta Playa Basin permitted the discovery of several sites covering the complete Mesolithic and Neolithic chronology from the 9th to the 4th millennium. It highlights the Early Holocene colonisation of the Western Desert. The domestication of *Bos* is likely, and the early population are considered to represent hunter-gatherer - cattle-keepers. Features such as pits, hearths, tumuli and seasonal huts have been reported as rich in lithic, pottery and faunal assemblages.

About lithics, N. Shirai presented a study on the main characteristics of the Fayum Neolithic assemblages where it is possible to question a Levantine influence, especially from the 6th millennium onwards. His analyses of continuities and discontinuities in the development of arrowheads and sickle blades suggest two different kinds of transmission/ innovation processes: Arrowheads characterized by frequent loss and replacement would have been more variable and experienced a rapid evolution of new forms. On the contrary, sickle blades of seasonal use over several years would demonstrate less variability over time. Consequently, the latter were a better marker for exogenous influences. K. Kapustka's presentation was about lithic production from several sites in Sabaloka area, with an emphasis on the production of gouges. Most types of artefacts do not change significantly during Neolithization in central Sudan, however, gouges were characteristic for the Neolithic period. During the Mesolithic there is no clear link between raw material and tool types while gouges are made of rhyolite exclusively. One source is known at Rhyolite site near Fox Hill where production took place. Gouges are however spread over long distances showing well organized networks of manufactured tools. Experimentation and use-wear analyses are ongoing, in order to better understand their

function which remains unclear. B. Jakob talked about Upper Nubia lithic assemblages, more specifically about the typological developments observed on the site of Wadi El-Arab (8300-5400 calBCE). Products are mainly flakes obtained from single and opposed platform cores. Debitage does not show a major break between Mesolithic and Neolithic. However, the sudden appearance of bifacial points in Upper Nubia at the end of the 7th millennium suggests an influence from Egypt. It coincides with the early phase of the Egyptian Neolithic and the arrival of livestock.

J. Vieugué and A. Eirikh-Rose presented a critical review of the beginning of pottery production in the Southern Levant. Based on the analyses of ten major pottery assemblages attributed to Early Pottery layers, they conclude that incised (so called *Yarmoukian*) and red painted pottery (so called *Jericho IX*) were in fact manufactured and used by the same people. Based on percentages of decorated vessels, techniques and designs, they distinguished four main entities which correspond to four distinct geographical areas. Through functional analysis (typometry and use-wear) various usages of ceramic vessels linked to food activities were identified. E. Garcea *et al.* presented the pottery variability of late foragers and early herders in the Jebel Sabalok; assemblages come from surface collections and test pits. Large quantities of pottery were found from the lowest levels onwards at Sphinx dated to 8800-8600 calBCE. In contrast, sherds at some Neolithic sites are rather scarce and may represent temporary settlements. An evolutionary pattern is observed in the frequencies of different decorative techniques and motifs. The possibility that impressed decorations were exported to the Northern Levant through maritime trade was suggested.

A. Emery-Barbier and M.C. Jolly-Saad presented palaeobotanical remains from Kadruka 1 and 23 cemeteries (Upper Nubia, end of 5th millennium calBCE). Abundance of chaff remains indicates that they were spread under and/ or around the skeletons; cereals may have been used as bedding, offerings or perhaps ornamentation. Cultivation of Poaceae, mainly Panicoideae, is probable but not certain. Wheat phytoliths have a very low frequency. Triticeae, and in particular barley, are well attested in tombs and may provide evidence of the social status of the deceased. I. Vella Gregory and M. Braas presented the new excavation project by UCL taking place since 2017 at the site of Jebel Moya (Southern Gezira, Sudan). It is a multi-phase site with deposits dating back to 5000 calBCE. Five trenches were excavated. Trench 2 has yielded Mesolithic and Neolithic sherds and animal clay figurines; a burial was found in Trench 3. All trenches were sampled for archaeobotanical remains.

Lastly, L. Gourichon and L.K. Horowitz presented a review of archaeozoological Levantine data and the domestication process. Goat, sheep and cattle husbandry was in progress since the EPPNB in the North whereas it appears in the South by the MPPNB. Data are less reliable for pig but at least by the LPPNB its domesti-

cation is proven in both regions. Parallel to that, a very marked drop in gazelle hunting occurred during the MPPNB in both regions, even it remains predominant at some sites in the Mediterranean Hills and the Eastern Jordanian desert. Except for sheep introduced into the South, zooarchaeological and genetic data support evidence for independent, local domestication events.

In conclusion, talks were extremely interesting and diversified in terms of topics and the scales of study they represent. Direct and detailed comparisons between the Near East and Africa remained, of course, premature because the history of research is much more extended in the Near East where syntheses are flourishing. However, session discussions were very intense and fruitful in a convivial atmosphere giving everyone the feeling that such gatherings are essential and should be repeated in the future. In fact, the Nile valley's Mesolithic seems quite disconnected from contemporaneous cultures of the Levant, the Neolithic, on the contrary, let us all suppose that connections might emerge during the mid-7th/ 6th millennium... discussions to be followed!

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Programme of Session 85 Tracking the Neolithization Processes on Both Sides of the Sinai: a Bridge Between the Near East and Northeastern Africa. 25th Annual Meeting of the European Association of Archaeologists, University of Bern, 6th September 2019

On the eve of Neolithisation: Social, economic and spiritual strategies of late hunter-gatherers buried at the sixth Nile cataract. *Lenka Varadinová, Charles University, Prague; Ladislav Varadin, Charles University, Prague; Petra Havelková, Natural History*

Museum, Prague; Isabelle Crevecoeur, CNRS; Stanley H. Ambrose, University of Illinois Urbana; Matthew A. Fort, University of Illinois Urbana

The evolution of funerary practices and population from Epipaleolithic to Neolithic: The emblematic case of El-Barga (Sudan). *Matthieu Honegger, University of Neuchâtel; Isabelle Crevecoeur, CNRS*

What place for the dead in the Levantine Neolithic process? *Fanny Bocquentin, CNRS*

The role of storage in the Neolithisation process: Perspectives from Sai Island and beyond. *Elisabeth Hildebrand, Stony Brook University; Timothy Schilling, United States National Park Service*

Life on the river bank. View from the Mesolithic and Neolithic Khor Shambat. *Maciej Jórdeczka, Polish Academy of Sciences; Przemysław Bobrowski, Polish Academy of Sciences; Marek Chłodnicki, Archaeological Museum Poznań; Marta Osypińska, Polish Academy of Sciences; Iwona Sobkowiak-Tabaka, Polish Academy of Sciences; Łukasz Maurycy Stanaszek, State Archaeological Museum Warsaw; Lucy Kubiak-Martens, Biax Consult*

Neolithic in the western desert in light of research conducted in the Area of Berget el Sheb and Nabta Playa. *Przemysław M. Bobrowski, Polish Academy of Sciences; Maciej Jórdeczka, Polish Academy of Sciences*

Local development and Levantine influence seen in the lithic technology of the Fayum Neolithic in Egypt. *Noriyuki Shirai, University Colledge London*

Visibility of Neolithisation within lithic collections from Central Sudan. *Katarína Kapustka, Academy of Sciences, Prague*

Nubian lithic industries between the 9th and the 6th millennium BC in the context of the Neolithisation of North-Eastern Africa. *Bastien Jakob, University of Neuchâtel*

The beginning of the pottery productions in the southern Levant (7th millennium calBCE): A critical review. *Julien Vieugué, CNRS; Anna Eirikh-Rose, Israel Antiquities Authority*

Hierarchical settlement systems and pottery variability of late foragers and early herders at Jebel Sabaloka, Sudan. *Elena A.A. Garcea, University of Cassino and Southern Latium; Lenka Varadinová, Charles University, Prague; Ladislav Varadin, Czech Academy of Sciences, Prague; Stanley H. Ambrose University of Illinois, Urbana*

Results of paleobotanical analyses carried out at the Kadruka site in upper Nubia. *Aline Emery-Barbier, CNRS; Marie-Claude Saad, CNRS*

Pastoralists who practice agriculture: New perspectives from Jebel Moya (Sudan). *Isabelle Vella Gregory, University of Cambridge; Michael Braas, University College London*

Landmarks in early animal domestication: An inter-specific and inter-regional study of the Levantine record. *Lionel Gourichon, CNRS; Liora Kolska Horwitz, The Hebrew University of Jerusalem*