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# The Near Eastern connection: Early to Mid-Holocene relations between North Africa and the Levant

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To understand the development of culture change during the Mid-Holocene in North Africa and the Southern Levant culture contact between the two areas has to be well established. Unfortunately the data is obscure and equivocal except for the fact that Near Eastern domesticates entered Africa and spread throughout the continent. Land connections between the two regions are restricted to the Sinai "funnel", but the possibility exists that the Southern Levant and North Africa should be considered as part of a single area of influence.

## The physical connection

The two land masses are connected by the Sinai Peninsula with actual contact only in the area between the port towns of Suez and Port Said. All other connection has to be by water.

Today the Sinai is primarily a desert zone with annual rainfall usually less than 100 mm. There are several mountain areas, such as Gebel Katherina and Gebel Maghara which, because of their altitude, create special microenvironmental conditions and higher rainfall. The Mediterranean coastal strip from Gaza to the Nile Delta has a distinctive Mediterranean flora, but does not penetrate as far south as Gebel Maghara, 50 km from the coast, although the flora of the massif contains Mediterranean relicts (Shmida 1977).

The substrate of this coastal area comprises an east/west coarsening of sands with coarse-textured stable sands near the Suez Canal (Danin 1983: 21) and more mobile finer sands to the east. The vegetation in these dune areas is dominated by *Stipagrostis scoparia*, when it is protected from overgrazing (*Ibid*: 92). Other grazing comes from *Retama raetam*, which is also highly regarded as good charcoal material (*Ibid*: 94). Useful plants also found include *Artemisia monosperma* (fuel, building

material, dry season forage) and *Thymalaea hirsuta* (ropes). The dried leaves of the latter can be eaten by goats (Bailey and Danin 1981: 148). In the Sinai and Negev a number of salty and sour plants, usually rejected by livestock, exist as a counter against intestinal parasites carried by the annual plants most favoured by the animals (*Ibid.*: 149). These are mostly C<sub>4</sub> plants which may also serve the function of supplying necessary salts needed to prevent metabolic disorders. This pattern is similar to that of the Tuareg of Mali who go on a month-long trek to edge of the Sahara with their animals so they can graze the salt grasses and drink mineral-rich waters (Smith, S.E. 1980: 479). The good grazing would have offered a habitat for wild ungulates attractive to prehistoric hunters, and, of course, later for pastoral peoples using the coastal zone as seasonal pasture.

These coastal sands and salt marshes would have been the main avenue of connection between North Africa and the Levant. The question is: what conditions existed in the past that would facilitate either human occupation, or at least human passage?

A crucial factor in human land-use of this area would have been the availability of surface water. Since this is a winter rainfall zone virtually all standing water would have existed during the winter months, but the highly permeable sandy soils would have meant water only remaining in a few places for any length of time. In the Gaza Strip the water table near the coast lies just below the loess soils which in turn underlie mobile sand-dunes. This is tapped by modern agriculturalists in their *mawasi* field system to produce water-rich fruits and vegetables.

While palaeoenvironmental analyses from the Eastern Mediterranean during the Holocene are somewhat sparse, it would appear that climatic conditions were dry prior to 10,000 B.P. followed by moister conditions (Fekri Hassan, pers. comm.) Some authors suggest this wet period lasted until 8,500 B.P. with a drier interlude between 8,500 and 7,000 B.P. This was followed by a wetter period until 5,000 B.P. (Goldberg and Bar-Yosef 1982: 409). The moister periods would have produced good pasture advantageous to both wild and domestic animals, and such fluctuations would have influenced human use of the landscape, particularly when pasture for domestic stock was at stake.

In North Africa and the Sahara environmental conditions equally showed periods of fluctuating rainfall and evaporation, as seen in the changes in lake levels and pollen profiles. The Northern Sahara and Maghreb appear to have had somewhat different periods of higher rainfall from the Central and Southern Sahara as shown in the data compiled by Rognon (1976) and Rognon and Williams (1977). In the north wetter conditions appeared *ca* 15,000 B.P. and slowly dropped off to a low around 6,000 B.P. In contrast, the southern area had low rainfall until 9,000 B.P. and much wetter conditions were experienced between 9,000 and 8,000 B.P. (Servant and Servant 1980). An arid period between 8,000 and 6,500 B.P. was once more followed by a resurgence of greater moisture until 4,500 B.P. (*Ibid.*; Clark *et al.* 1973 Smith, A.B. 1980c) which is suggested as a shift from tropical depressions with fine rains to heavier monsoonal rains (Maley 1977; 1983).

During the same period the Fayum Depression was fed by waters from the Nile flood-plain (Butzer 1980: 271). This resulted in several high stands of the lake, manifested in diatomites and lacustrine sands, dated 8,100 B.P., 7,140 B.P. and in the 6th - 5th millennium B.C. The probability exists that the lake never completely dried up during this period, although it fluctuated in depth considerably during the Mid-Holocene. Thus, not only was there fresh water from the Nile itself, but also in this arm of the Nile stretching into the Western Desert.

### The Neolithic of Sinai

The conference held at Southern Methodist University in December 1973 on North Africa and the Levant (Wendorf and Marks 1975) was primarily concerned with problems of Pleistocene prehistoric research. Only limited attention was given to the Neolithic and the problems of early food production in these two areas. While a lot of information has been accruing on early farming communities of the Levant, the crucial area connecting the Levant with North Africa has only received attention during the years of Israeli occupation of Sinai after 1967, and is not as well known as areas further north.

Two major surveys were carried out in Northern Sinai. The first to Gebel Maghara (Bar-Yosef and Phillips 1977), the second along the coastal strip from Gaza to the Suez Canal (Oren 1982).

The survey of Gebel Maghara showed Harifian occupation dated to 10,230 - 9,970 B.P. (Phillips 1977: 217) and Pre-Pottery Neolithic B (PPNB) dated by analogy with sites further north to the second half of the 7th millennium B.C. (Mintz and Ben-Ami 1977: 244).

The archaeological traces were all stone tools, including projectile points, supporting the thesis that in these desert areas hunting was practised. That food production was excluded comes from other work in the southern Sinai, at least up to 8,000 B.P. (Bar-Yosef 1981a). No pottery Neolithic sites were located in this survey. The next identifiable occupation period was Late Bronze Age.

A similar dearth of late Neolithic material emerged from the survey of the coastal area. A few PPNB projectile points were found (I. Gilead, pers. comm.), but the vast majority of Holocene sites were of Chalcolithic and later age (Oren 1982: 183). The only areas where Pottery Neolithic material was recognised was at Qatif, near Gaza, at Rafi'a and well inland on the western margins of the central Negev in Wadi Luzan and Qades Barnea (Bar-Yosef 1981b). The Qatif site is dated to the 5th millennium B.C. No structures were recognised in the excavation (E. Oren, pers. comm.), but the fauna included domestic cattle and ovicaprids. The other sites may be older, *i.e.* end of the 6th millennium B.C., but this has to be verified by radiocarbon dating (*Ibid:* 231).

The general picture of land-use from these northern surveys, as well as others carried out in southern Sinai (Bar-Yosef 1981a), is the Pre-pottery Neolithic hunters

systematically exploited the hinterland of the peninsula and coast of the Gulf of Suez probably in an annual transhumant round. The Mediterranean coastal area, while showing traces, has not produced a sizeable settlement to compare with that at Wadi Tbeiq in southern Sinai (*Ibid.*: 11). Like the northern Sinai sites no domestic animals have been found in Pre-pottery Neolithic sites in the south.

### The archaeology of the Nile Delta and Fayum

The closest excavated site to the Levant in Egypt of similar age to the Qatif site is that of Merimda Beni Salame on the western edge of the Nile Delta excavated by Junker in 1927 - 28. This settlement was occupied in the 5th millennium B.C. and produced some culture traits at variance with what was to be found on contemporary sites in Upper Egypt. Of interest to us is the burial pattern, whereby the body was flexed on its side and accompanied by very few grave goods, other than the odd bead, bracelet or simple personal decorative item. This is a Saharan Neolithic pattern found in the central Sahara at Adrar Bous, and later in the Sahel (Smith, A. B. 1974a; 1974b). There appears little doubt that the occupants of Merimda were farmers with a mixed herding and agricultural economy. It was a sedentary community living in houses  $1.6 \times 3$  m in area (Hoffman 1980: 175) in which were found a variety of ceramic wares and stone tools with characteristic sickle gloss used for harvesting emmer wheat. The animal protein in the diet came from pigs, cattle and ovicaprids, as well as wild game and fish from the Delta, hunted using hollow-based projectile points, among others. The stone-tool kit also included polished axes.

Further to the south the Fayum Depression produced quantities of Neolithic material. No house structures were found, but underground silos attested to the storage of grains to carry the people throughout the year. As noted above, during the Mid-Holocene the high Nile levels repeatedly filled the depression making this area in the desert an acceptable place for people to live. Caton-Thompson (1934) divided the Holocene cultural material into two groups: "Fayum A" was considered older than "Fayum B". It turned out to be the reverse, with "Fayum B" sites lacking domesticated stock and pottery.

The "Fayum B" (now called Qarunian) is dated to between 8,835 and 7,500 B.P. The tool-kit was primarily microlithic, although flaked axes were numerous. There is no evidence for agriculture, although wild grains were probably harvested, if the bifacial blades were used as sickles. In contrast "Fayum A" (or Fayumian) appears to have been an agricultural society with the sunken silos, coarse, straw-tempered pottery and domestic stock: ovicaprids and cattle, as well as wild game (Trigger 1968: 68). The economy is very similar to that of Merimda and the radiocarbon dates of the 5th millennium B.C. indicate some degree of contemporaneity. The Fayumian peoples were possibly more transhumant or only occupied the site on a more seasonal basis than those at Merimda, thus the lack of structures. The Fayum Depression could have been their fall/winter camp after the harvest of the wheat and barley.

## The "Neolithic" in the Sahara

Several authors dealing with the Saharan ceramic industries have, in the past, assumed that ceramics and food production were equated "... sur le... terrain archéologique nord-africain et saharien... les preuves de l'existence d'une agriculture préhistorique ne sont pas encore données, bien que cette agriculture soit hautement probable au Néolithique; son existence est certaine... si nous la lions à celle de la céramique" (Camps 1974: 217). This has led to circular arguments in interpretation of cultural material and the way of life of Holocene Saharan peoples. As pointed out by Hays (1977: 201): "All of the sites exhibit generalized 'Neolithic' characteristics (e.g. ceramics, grinding stones, polished axes, bone harpoons), but direct evidence for domestication is rare".

Some very early dates for ceramics exist in the Sahara. The earliest are 9,370 to 9,330 B.P. from Tagalagal, Niger (Roset 1982a). Another date of 9,080 B.P. comes from Ti-n-Torha (Barich 1978a; 1978b), and *ca* 8,700 B.P. (Camps 1969). Two other dates related to this early period are known from Launey: 9,210 B.P. (Maitre 1971) and Tamaya Mellet: 9,350 B.P. (Delibrias *et al.* 1974). These early dates are consistent with those from harpoon/microlithic sites at Tagra, Sudan: 8,370 B.P. (Adamson *et al.* 1974) and 9,030 B.P. at Adrar Bous, Niger (Roset 1983). Equally early dates for ceramics have been run on samples from Nabta Playa: *ca* 8,100 B.P. (Banks 1980), and Sarurab II in Sudan (Hakem and Khabir 1984).

Because ceramics exist in association with these dates at many of the sites they are referred to as part of a "Neolithisation" process (Camps 1974; Roset 1982b), the assumption being that the appearance of ceramics is in some way connected with the origins of food production.

This same thinking has permeated the literature with respect to the appearance of seeds and grindstones. Initial claims for early attempts at domestication in the Pleistocene have been rescinded (Wendorf *et al.* 1984), but the problem is only partially resolved as we do not know when the earliest domesticated cereals were to be found in the Nile Valley.

Large numbers of grinding stones do not necessarily mean domesticated plants. They can be indicators of grain use, but we know today wild grains are still important commodities in transhumant pastoralist diet (see Smith S.E. *op. cit.*; Tubiana and Tubiana 1977; *etc.*).

Other early claims for domestication comes from work on faunal material from Saharan sites. On the basis of palaeoenvironmental interpretation Gautier (1980: 337) has suggested that the low biomass of the semi-arid environment of Mid-Holocene Eastern Sahara was not ideal for large herbivores, therefore the early cattle bones found at Nabta Playa dated to between 9,300 and 8,100 B.P. were domesticated, in spite of the very small sample of "large bovid/cattle" bones identified.

The real sign of domesticates from Nabta Playa comes from the appearance of ovicaprids which are exotics from the Levant. The earliest dates from site E-75-8:

6,595 B.P. (averaging the 12 "Middle Neolithic" charcoal dates ranging from 7,120 to 6,130 B.P.). These dates conform to Higgs' (1967: 166) data from Hauta Fteah where a date of *ca* 6,800 B.P. is suggested for early ovicaprid appearance.

The cattle bones are much more numerous from E-75-8, and are probably domesticates. If so, these would be the earliest dated domesticated *Bos* remains in Africa at the present, and supports the probability that they also occurred about this time in the Acacus Mountains of S.W. Libya (Mori 1965; Smith A.B. 1980a).

Few settlement structures have been found from this early period. One known structure with dates from E-77-5A, Nabta Playa, gives information of a type of shelter used in the 6th millennium B.C. (Wendorf and Schild 1980: 143 - 144). It would appear that most shelters of this early period, and on into the main period of pastoralism, were made from perishable materials, of the kind used by Sahelo-Saharan pastoralists today.

The initial pastoral occupation of the Central Sahara coincided with a wet phase between 6,500 and 4,500 B.P. This occupation produced a consistent cultural pattern, with minor regional variants, extending all the way from the Nile Valley at the confluence of the Blue and White Niles to Mali (Smith A.B. 1980b; 1984).

## Discussion

The relationships between the Southern Levant and North Africa during the Mid-Holocene are poorly documented. Pre-pottery Neolithic sites are more common in the Southern Sinai than along the Mediterranean coastal strip, and there is no evidence for food production on any of these sites. Pottery Neolithic sites are even scarcer. In fact this dearth suggests that links between the Levant and North Africa may not have existed between 8,000 - 7,000 B.P. The Late Pottery Neolithic site at Qatif was occupied at the same time as the rapid spread of pastoralism throughout the Sahara in the 5th millennium B.C., and when Near Eastern grains began to be cultivated on the edge of the Nile Delta and Fayum. Although the Near Eastern connection between the Southern Levant and sites in Northern Egypt, such as Merimda and Fayum, has been made on the basis of comparable stone tools and pottery (McBurney 1960; Trigger 1968; Clark 1971; *etc.*) the case for this is currently poorly substantiated. A problem area is the Nile Delta. The appearance of a settlement the size of Merimda in the 5th millennium B.C. strongly suggests that sedentary communities had previously been established, but have not yet been found as they would be under many metres of deltaic alluvium. From all accounts this was a rich environment from which wild game: animals, birds and fish, as well as plant foods could be exploited. The fact that pigs were apparently found in large numbers at Merimda underlines the more sedentary nature of the economy, but not simply a direct importation from the Levant.

Information flow could well have been in both directions. Ceramics were well-established in the Sahara and the Nile Valley by this time, possibly even before they

were found in the Near East. The pottery from Qatif is relatively crude, as is that from Wadi Quderat in the Western Negev (Bar-Yosef 1981b: 228) and from the Fayumian. This may represent the idea of ceramic manufacture being introduced through pastoral contacts with North Africa. The flaked stone axes of the Late Pottery Neolithic site at Qatif show similar lateral polishing to Central Saharan ones, and indicate comparable interest in woodworking.

The drier period in the Central Sahara ca 8,000 - 6,500 B.P. would have meant increased dependence on the well-watered Nile Valley by Saharan peoples. Under such conditions of stress it is possible that this was the impetus for closer man/animal relationships that finally led to the controls and manipulation of genetic material fundamental to the domestication process. The opening up of the grassland niche after 6,500 B.P. allowed an expansion of the pastoral way of life throughout the Central Sahara. This is coincident with the appearance of the first ovicaprids exotic to Africa. The coincidence of an equally amenable climate in the Eastern Mediterranean may have resulted in a mutual exchange of ideas between North Africa and the Levant.

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