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Plant remains from the Neolithic site at Armant: preliminary report

The plant material comes from the sites MA21/83 and MA21a/83 at Armant in the Upper Egypt. The sites are situated at the margin of the Western Desert near the cultivation zone. Archaeological excavations were carried out in 1985, 1986 and 1988 by B. Ginter, J.K. Kozłowski and B. Drobniewicz of the Jagiellonian University and A. Dagnan-Ginter of the Archaeological Museum in Cracow in cooperation with the German Institute of Archaeology in Cairo (Ginter *et al.* 1989). The geology of the area was studied by M. Pawlikowski from the Academy of Mining and Metallurgy of Cracow (Pawlikowski, this volume).

On the basis of the archaeological material the chronology of the site was defined as a local variant of the Nagada culture. Three settlement phases were distinguished. Their radiocarbon dating was performed by M. Pazdur in the C-14 Laboratory in Gliwice. The settlement lasted from 5,100 to 4,820 b.p. in uncalibrated years or 6,000 to 5,540 B.P. after calibration (Ginter *et al.* 1989).

Rich plant material was represented by fruits, seeds, fragments of ears, grass stems, vegetative parts of other plants, and by charcoal and scarce impressions on daub (Fig. 1). Two hundred samples with plant remains were collected by the author during field seasons 1986 and 1988. In addition, all charcoal pieces found in each layer were collected (except surface layer at 0 - 5 cm depth) and a portion of them was kept for future taxonomic identification. Plant remnants were encountered within individual layers and inside separate features, most commonly in the hearths. Samples were taken only in places of undisturbed stratigraphic sequences and clearly defined archaeological context. Two preservation types were observed, charred and uncharred ones. Charred fragments occurred in the hearths, uncharred in postholes while other features contained charred and uncharred remains. The color of remnants varied from yellow to brown. They were air-dried and very fragile, their state of preservation made wet sieving impossible because any contact with water caused their disintegration.

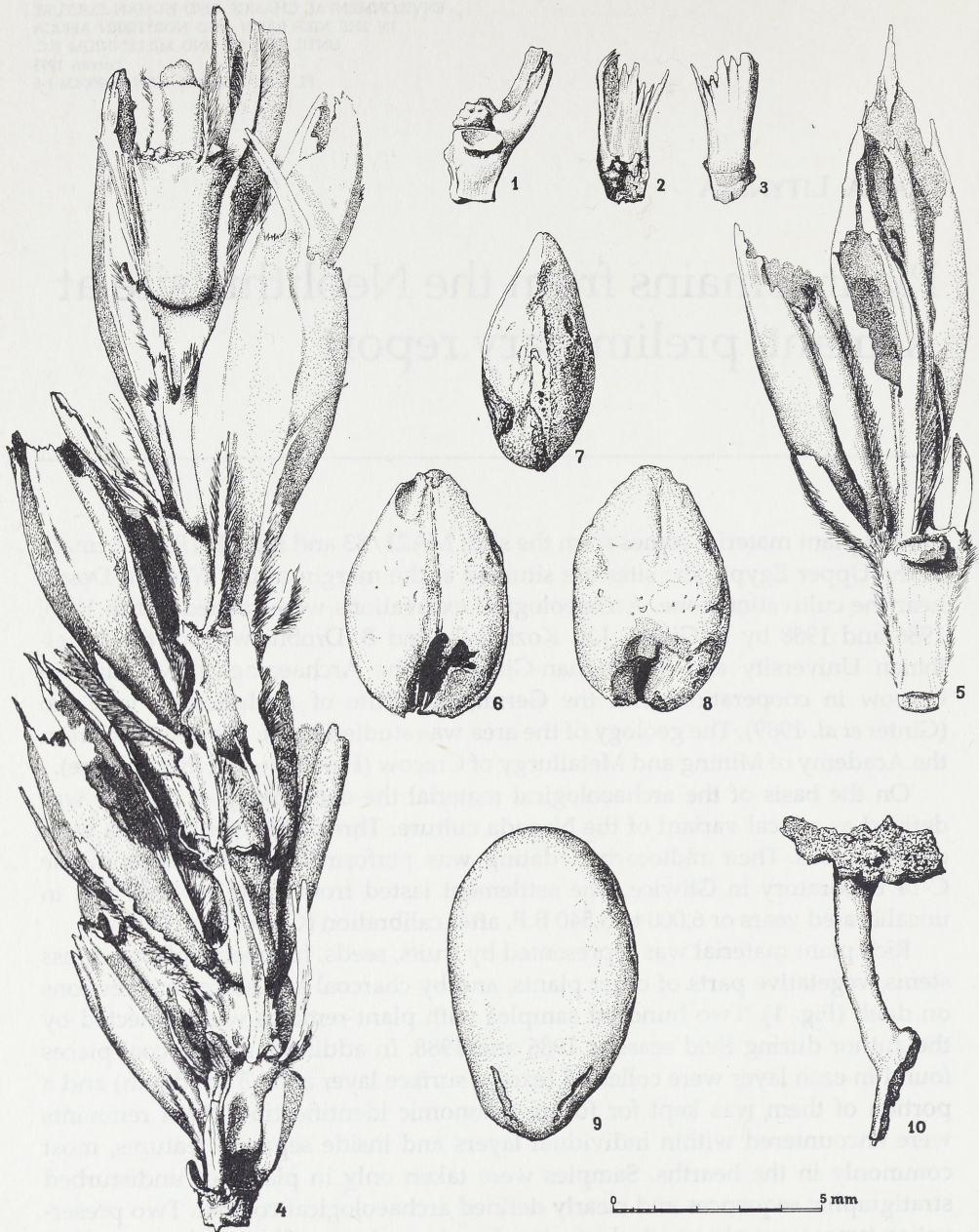


Fig. 1. Armant, Upper Egypt. Sites Ma 21-21a/83;

1 - 3: *Triticum dicoccum* Schübler. 1: spikelet base, 2 - 3: one glume; 4 - 8: *Hordeum vulgare* (L.) Lam., naked. 4: spike fragment, 5: triplet fragment, 6 - 8: one grain; 9: *Citrullus colocynthis* (L.) Schrad., seed; 10: *Compositae* indet., fragment of flat receptade.

Table 1

Plant macrofossil from the Neolithic site near Armant.

Species	Occupation area	
	Ma 21/83	Ma 21a/83
	Number of determined remains	
<i>Triticum dicoccum</i> Schübler	606	86
<i>Hordeum vulgare</i> L. em. Lam.	28	298
<i>Hordeum distichum</i> L. em. Lam.	5	
<i>Cerealia</i> indet.	3	3
<i>Lens culinaris</i> Medicus	3	
<i>Citrullus colocynthis</i> (L.) Schrad.	158	
Papilionaceae		1
Papilionaceae <i>Vicia</i> type		1
<i>Echinochloa crus-galli</i> (L.) P.B.	1	
<i>Carex</i> sp.	5	
Graminae indet.	4	1

The determination of plant macrofossils is not yet completed but already many cereal remains have been identified (Table 1).

Wheat is represented by numerous charred glumes and 2-grained spikelet forks and by scare caryopses and rachis internodes. Spikelet bases show the disarticulation of rachis of a form of *Triticum dicoccum*. Detached glumes on the other hand, show certain characters which resemble spelt *Triticum spelta* and not emmer *Triticum dicoccum*. Emmer glumes have two distinct lateral nerves on the ventral and dorsal sides and slightly concave surface between them in the basal portion of the glume. With spelt, glume basis is broader and only the ventral nerve is clearly marked. The lateral glume side is convex and has 4 - 5 distinct nerves. Glumes from Armant are as broad as typical spelt glumes, have one distinct nerve of the keel on the ventral side, and parallel venation on the lateral side. They differ from *Triticum spelta* in that the venation does not reach the lowermost end of glume. All fossil glumes have damaged apexes and the shape of the shoulder is not visible. In spite of this unusual combination of characters the ancient specimens belong to *Triticum dicoccum* Schübler. The determination of this material was discussed with Professor Willem van Zeist.

The remains of barley *Hordeum vulgare* L. em. Lam. include caryopses, spikelets and ear fragments. Most of them are preserved in uncharred condition. The grains have spindle-like outline and broad and shallow ventral furrow. Delicate and wrinkled fragments of lemma and palea are attached to several caryopses. Rachilla is visible at the base of palea. Abundant rachis fragment were composed of up to 6 internodes and often had spikelets attached. Five ear fragments were identified as *Hordeum distichum* L. em. Lam.

Other cultivated plants were represented by seeds of *Lens culinaris* Medicus. They all were uncharred and had traces of insect activity.

Fairly abundant were seeds of *Citrullus colocynthis* (L.) Schard., a wild plant of the family Cucurbitaceae. Uncharred grey seeds, narrow ovate in outline, were preserved detached or in small lumps. Nicolaisen (1963) writes that seeds of the

colocynth can be eaten after boiling and drying. Other wild plants are represented by few specimens from the *Compositae*, *Papilionaceae*, *Cyperaceae* and *Gramineae* families.

References

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