

Early agriculture in the Southern Fayum Depression: some test survey results and research implications

My objectives in this paper are to discuss a research project I have just begun in the southern Fayum Depression (Fig. 1) and to relate this project to recent research on agricultural origins elsewhere in northeastern Africa¹. Because we have made only 6 one-day trips to the Southern Fayum, mainly to formulate research plans for more extended fieldwork next year, my emphasis here will have to be more on our research plans than on our results. Yet I think even our brief test surveys yielded information of general interest concerning early agriculture in this region.

These surveys consisted of walking and driving in the area between the Hawara Channel and the extreme western edge of the Fayum lake, from the edge of current cultivation south to the area of the Wadi Rayan (Fig. 1). My interest in this area results from the fact that, despite the northern Fayum's well-known importance in early agriculture and domestication (Caton-Thompson and Gardner, 1934; Wendorf and Schild, 1976), almost no attention has been given to the southern half of the Depression. Caton-Thompson and Gardner made a one day trip by automobile around the western edge of the lake and to the Wadi Rayan (1934: Plate CIX), and there have been excavations at several large sites in the south Fayum (Medinet Maadi, Bresciani, 1967; 1976; Qasr Qarun, Schwartz, 1969) and visits to larger known sites (Arnold, 1966), but no systematic surveys have been undertaken to locate Predynastic and Neolithic sites in these areas.

Indeed, despite the heavy concentrations of early agricultural sites on the northern lake shore, there are no reports, except of two small sites discovered by Caton-Thompson and Gardner (1934: Plate CIX) on the southwest shore, of substantial early occupation of what was the southern shore of the early Holocene Fayum lake.

Thus in our test surveys we wanted to determine if early sites were sufficiently

¹ I wish to thank Nadia Ashur of the Egyptian Antiquities Service for assistance in these test surveys. Co-principal investigator for the Fayum project is Mary Ellen Lane, of the Sorbonne.

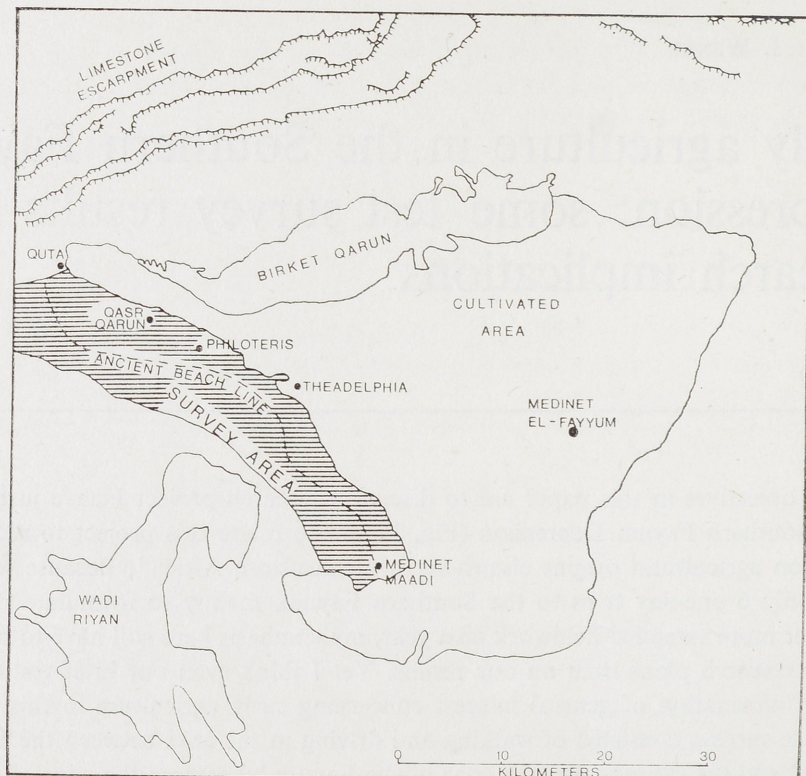


FIG. 1. Map of the Fayum Depression showing the limits of the area under survey

numerous in this area to warrant intensive surveys, and also whether Neolithic and Predynastic sites in this area — if they existed — possessed characteristics that would make their excavation a useful extension of what we know about early Fayum agriculture from excavations on the Fayum's northern shore.

More specifically, we were looking for sites that would allow us to determine if it is true, as Michael Hoffman recently suggested, that when “more prehistoric settlements in the Fayum have been excavated with... care, and when today's sophisticated analytical techniques are applied to problems like the nature of the transition from food gathering to food producing — from Fayum B to Fayum A — we will have answered one of the most important questions in Egyptian prehistory. For now it seems clear that the Fayum... could possibly hold the key to the nature of this transition” (1979: 190).

Another specific point of interest was whether or not the Fayum Depression and adjacent areas possess archaeological remains of any relevance to the reported (*e.g.* Wendorf *et al.*, 1979) Pleistocene “protoagricultural” economies that may have developed at Wadi Kubbaniya, Kom Ombo, and elsewhere in Upper Egypt.

The results of our test surveys — and let me once again emphasize the extremely limited duration of this work — are sufficiently positive that we have asked for a research concession for this area and are currently making plans for a field season of 3 months in summer, 1981.

Concerning the density of sites along the Pleistocene surfaces and early Holocene shore lines in the southern Depression, we did indeed find many unreported sites, but most are of Ptolemaic age and are between the currently cultivated areas and the Moeris shore line (Fig. 1). We found no earlier sites in this zone, nor did we expect any, as this area was under water until about 285 B.C. In our planned surveys we shall collect artifact samples from these sites and make preliminary maps of some of them, as they are currently being destroyed by the expansion of agriculture into the desert.

Concerning the presence of Neolithic and Predynastic settlements, we walked long segments of the three ancient shore lines and found many isolated stone tools and occasional sherds that are probably of these early periods, but in our opinion, many of the Predynastic and Neolithic occupations here are buried under sediments of the great floods of the Old Kingdom period, as they are on the northern lake shore (Wendorf and Schild, 1976), or under the several large Ptolemaic settlements and cemeteries in this area. It is interesting to note in this context that the one Predynastic settlement Caton-Thompson and Gardner found on the southern lake shore (1934: Plate CIX; Map 1) was discovered only because a few artifacts had eroded from the huge gravel banks marking these ancient shore lines. To reach this site they had to remove these lake sediments, and we hope to do similar trenching during the 1981 season.

The most positive aspect of our test surveys, and the focus of our research plans, is a site we have labelled FS ("Fayum Survey") 1. This large and apparently unrecorded Neolithic site is located on the southwestern side of the main gravel banks marking the Moeris shore line (Fig. 1), and is in the vicinity of what Caton-Thompson and Gardner called Neolithic "Site J" (1934: Plate CIX). But it is clearly a different site. They reported eroding limestone buttes and a complete absence of pottery at Site J, whereas FS 1 is not near such buttes and has abundant pottery. FS 1 covers at least two square kilometers, extending about one kilometer southwest from the ancient shore lines. Artifact density is highly variable, the densest areas containing on the surface scores of lithics, sherds, animal bones, and other debris, the lighter areas containing only one or two flints. Deflation in one area has disclosed what appear to be about 30 "hut floors", 1.5 × 1.5 m ovoid-shaped concentrations of pebbles surrounded by dense concentrations of lithics sherds, bones, and other cultural debris. The pottery closely resembles the plain redwares of the Fayum A complex.

Comparisons of surface artifacts at FS 1 with Caton-Thompson and Gardner's illustrations suggest that the two square kilometers of FS 1 contain scores of both Fayum A and Fayum B occupations. The microlithic aceramic deposits characteristic of Fayum B seem to be concentrated close to the ancient beach lines on the

eastern edge of the site, but they may be interspersed throughout the many Fayum A occupations and buried beneath these later deposits. There was no way to determine the depth of deposits at FS 1, but the black lake sediments under the sand on which the artifacts are scattered and the disconformities of the site's surface suggest there may be relatively deep deposits.

There have been numerous excavations of Fayum Neolithic sites, but in our estimation there are several reasons why FS 1 is an exceptionally significant site and offers an excellent opportunity to study the transition from food-gathering to food-producing in this part of Egypt. It is much larger than other reported sites of this age in the Fayum, and it apparently includes considerable intact and accessible architecture. Hassan has noted that for most early Egyptian agricultural sites "there is very little and sometimes no information whatever on the internal variability in the density and composition of artifacts. In many cases, also, basic information on the area or shape of the site and the average artifact density is lacking. The location of sites with respect to geomorphic features... is rarely noted. The case for the Predynastic of Egypt is worse..." (1980: 447).

FS 1 offers an opportunity to gather exactly these kinds of data. Also, the evidence suggests that the appearance of sedentary communities based on agricultural economies in the Nile Valley and the Fayum was the result mainly of the introduction of domesticated animal and plant species from areas in the Libyan desert and southwest Asia (Butzer, 1976: 11). Yet we know very little about how this introduction took place and how much indigenous domestication occurred (Clark, 1971). It is still possible that we shall find that the "mysterious gap" of 1,500 years between the Fayum B and Fayum A cultures involved considerable indigenous domestication and development of agricultural strategies. It is possible, for example, that the Fayum's transition to agriculture resembled agricultural origins in Mesoamerica and Peru, where it has been suggested (Flannery, 1973; Flannery and Coe, 1968; Wenke, 1980: 320 - 322) maize, beans, and other plants were domesticated by hunters and collectors in highland areas but were first brought into agricultural economies in coastal areas where large sedentary communities had existed for many millennia by exploiting the rich littoral areas. Such coastal communities may thus have been "pre-adapted" to the agricultural way of life.

FS 1 also may be relevant to the problem of the chronological sequence in which domestication, agriculture, and sedentary communities appeared in northeastern Africa. This sequence has been shown to be quite variable in other early agricultural centers (reviewed in Flannery, 1973), and this variation seems to reflect much about the causal factors involved in different sequences in which these phenomena appeared. Wendorf and his associates have suggested, for example, that grain "was used in the Nile Valley for more than 6,000 years... without any evidence for changes in settlement size, population density, or social organization" (1979: 1347) and that there might even have been "deliberate planting" of barley without any evidence of permanent habitations" (*ibid*).

We hope to address the question of the association of sedentary communities and agriculture/domestication by a systematic program of intensive surface collection and excavation of FS 1. We particularly hope to determine if sedentary communities, at least as inferred from architecture and seasonally specific plant and animal remains, existed at FS 1 before the introduction of domestic cattle, sheep, goats, wheat, and barley.

Another aspect of our investigations of these kinds of questions will be surveys to determine the presence or absence of Pleistocene sites like those of the supposedly protoagricultural communities of Upper Egypt. Our evidence concerning the earliest stages of agriculture is meagre for most areas of the world, especially Egypt, but if it is true that there was intensive grain use and even cultivation in Upper Egypt for many thousands of years in the Pleistocene without consequent radical cultural changes and the development of agriculture, this would seem to be a great contrast to the developmental pattern in Mexico, southwest Asia, and elsewhere. Hassan (1980: 446 - 447) suggests that plant domestication and agriculture may not have arisen directly out of these Pleistocene protoagricultural economies because of climatic changes and catastrophic Nile floods in the late Pleistocene, but even so, the 6,000 years of grain use to which Wendorf and his associates refer is much longer than the span between the beginnings of intensive grain use in the Fertile Crescent and the appearance there of agricultural villages. Why did Egypt apparently differ in this regard?

Suggestions include the effects of seasonal flooding in preventing dense occupations of the flood plains for parts of the year, so that groups had to break up into small subsistence units (Hassan, 1980: 438) and the "resistance" to the adoption of agriculture provided by the rich resources of the Nile Valley (Butzer, 1976: 11; Hassan, 1980: 446 - 447).

But much more research is needed to test these ideas, and we hope that the Fayum can provide critical information on these issues. We have made some test surveys of Pleistocene surfaces in the southern Fayum in an effort to locate Pleistocene sites of an age comparable to the possible agricultural sites in Upper Egypt, and we found isolated scatters of tools similar to those from Wadi Kubbaniya. But these lithic styles may persist very late into the Pleistocene in the Fayum (Wendorf and Schild, 1976), and only much more intensive surveying and test trenching will reveal whether or not there were intensive grain-using societies in the Fayum as early as 12,000 to 18,000 years ago. Wendorf and his associates point out that relatively cool evening temperatures, water availability, and sandy — not clayey — soils are primary limiting variables in the distribution of wild barley, and the wadis and sandy Pleistocene surfaces of the southern Fayum Depression would seem to offer environments at least as favorable as those of Upper Egypt for the growth of wild and domestic cereals. If systematic surveys and excavations do not reveal Pleistocene grain-collecting cultural remains, we must ask why this is so. There would seem to be no obvious answer.

If the archaeological remains of Pleistocene grain-collecting societies are found in the southern Fayum Depression, we have the problem of explaining why these communities also failed — assuming they did — to develop into sedentary agricultural communities. The floods mentioned as a limiting factor in the Nile Valley may not have been nearly as serious a threat in the Fayum, especially in the southern areas, where the beach areas would have had a very gentle slope. Of course, there is the consideration that it took thousands of years to adapt wild wheat and barley, which are native to cool, upland environments, to the hot lowlands of southwest Asia, and from there, possibly to the Nile Valley. But we might also ask why, if wild barley existed in Egypt in the late Pleistocene, it was not quickly adapted to Nile environments.

These and many other questions about early Egyptian agriculture will require extended testing with archaeological data, and we hope that our research in the Fayum will be especially productive in this regard.

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