The archaeology of the first farmer-herders in Egypt : new insights into the Fayum Epipalaeolithic and Neolithic

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9. Synthesis

9.1. Research background and aim

The beginning of farming and herding in human prehistory has been an important research topic in archaeology, but apart from the fact that major domesticates like wheat, barley, sheep and goats have diffused from the Levant to Egypt, the beginning of farming and herding in Egypt has not been sufficiently studied. The Fayum is the region in northern Egypt where the earliest evidence of farming and herding was found by previous researchers in the last century, but the situation in which Levantine domesticates were employed in the Fayum looks different from that in the Levant. Whereas the appearance of sedentary settlements have certainly preceded the beginning of farming and herding in the Levant, no substantial dwellings have been found in the Fayum, even after the appearance of Levantine domesticates. The primary aim of my research is thus to consider when, how and why farming and herding started in Egypt, and special attention was paid to the Fayum in order to achieve this aim. A major question is whether the situation in the Fayum should be explained as a matter of preservation or as a reflection of past reality. If the latter was the case, then it must be explained why Levantine domesticates were introduced to the Fayum and how a farming-herding lifeway without sedentism was realised.

9.2. Research results

9.2.1. Revision of the Early-Middle Holocene chronology of the Fayum

As described in Chapter 3, previous research in the Fayum in the last century has already revealed the basic sequence of cultural development in the Early-Middle Holocene. Holocene human occupation in the Fayum was supposed to have started in the 7th millennium cal.BC, and the culture of this period is designated as Epipalaeolithic. Epipalaeolithic people lived on hunting and fishing, and their culture is characterised by the predominance of microlithic artefacts and a lack of pottery. The next major human occupation in the Fayum was supposed to have started in the middle 6th millennium cal.BC, and the culture of this period is designated as Neolithic. Neolithic people lived on farming and herding as well as hunting and fishing, and their culture is characterised by the appearance of pottery and bifacially-retouched elaborate flint tools. It has been argued on the basis of insufficient data that there was no human habitation in the Fayum around 6000-5400 cal.BC. During this time, a significant change in subsistence and material culture, which is recognised as the transition from the Fayum Epipalaeolithic to Neolithic, took place. This transition has been considered to have occurred due to the abandonment of the Fayum by Epipalaeolithic foragers and the arrival of farmer-herders from outside the Fayum.

However, research in the surrounding regions of the Fayum in the last decades has revealed that there were certainly recurrent climatic and environmental deteriorations in the Early-Middle Holocene but a desiccation event in the first half of the 6th millennium cal.BC was around 6000-5800 cal.BC, as reflected by the abandonment and subsequent reoccupation of human settlements in the Western Desert. Furthermore, recent research in the Western Desert has also found many lithic artefacts which are very similar to those found in the Fayum, and these new finds are radiocarbon-dated to the first half of the 6th millennium cal.BC. In the light of such situations in the surroundings of the Fayum, it is unlikely that the Fayum was uninhabited until 5400 cal.BC. Therefore, it was expected that new

field research could find evidence to reduce the chronological gap between the Fayum Epipalaeolithic and Neolithic.

As mentioned in Chapter 3 and Chapter 5, radiocarbon dates obtained by new field research as well as re-calibration of all the radiocarbon dates obtained through past research demonstrate that the Fayum Neolithic is dated to around 5700-4200 cal.BC, whereas the Fayum Epipalaeolithic is dated to around 7100-6000 cal.BC. Although the time span of both cultures must be further attested by more data, it suggests that the break of human habitation in the Fayum in the first half of the 6th millennium cal.BC was shorter than previously believed, and that the blank period corresponds to that known in other parts of the Western Desert.

9.2.2. The origins of the Fayum Neolithic material culture

As described in Chapters 2, 3 and 4, recent research in the Western Desert has found many lithic artefacts which are very similar to those found in the Fayum, and these new finds are radiocarbon-dated to the first half of the 6th millennium cal.BC. In addition, as noted in Chapter 8, the development of research on Neolithic cultures in the Levant has also given more accurate dates to characteristic lithic artefacts which resemble the Fayum ones, thereby making more sound comparisons possible. Furthermore, it has been recognised that some peculiar projectile points were quite widespread from the southern Levant to northeastern Africa since no later than the 7th millennium cal.BC. My research in the field and in museums also found that such peculiar projectile points in the Fayum, which have not drawn much attention from previous researchers, are quite notable and significant in understanding the origins and development of Fayum material culture in the Early-Middle Holocene. Firstly, the Ounan point, which is typical in northeastern Africa in the 8th - 7th millennia cal.BC but has not been explicitly reported in the Fayum, certainly existed in the Fayum. Secondly, bifacially-retouched small projectile points, which are reminiscent of those of the Pre-Pottery Neolithic and Pottery Neolithic cultures in the southern Levant, Negev and Sinai in the 7th - 6th millennia cal.BC, also existed and were numerous in the Fayum. The fact that the sequence of the development of projectile points was almost synchronous in these regions suggests that there were steady flows of technical knowledge, stylistic information and symbolic beliefs across these regions. It is considered that the establishment of such a sociocultural network in this period was definitely the background to the diffusion of farming and herding from the southern Levant to Egypt.

The timing of the advent of farming in the Fayum can be specified by focusing on peculiar sickle blades. Neolithic sickle blades in Lower Egypt are thoroughly bifacially-retouched and deeply and coarsely serrated on a lateral side. Sickle blades which share these characteristics are known only in the Lodian culture of the southern Levant in the early 6th millennium cal.BC, and such sickle blades declined in the southern Levant after this period. Therefore, it is reasonable to consider that the technical knowledge of farming as well as domesticated wheat and barley was certainly diffused by migrants to Lower Egypt no earlier or later than the early 6th millennium cal.BC.

A remaining question is; what was the driving force for the diffusion of farming and herding from the southern Levant to Egypt. Even though the establishment of a sociocultural network across the southern Levant and Egypt no later than the 7th millennium cal.BC is suggested by the spatial distribution of archaeological cultures, this does not necessarily mean that farming and herding should have diffused from the southern Levant to Egypt simultaneously. In the course of sociocultural contacts, there would have been a push factor on the Levantine side or a pull factor on the Egyptian side for the diffusion of farming and herding to take place at a particular time. Field research in the Fayum serves to understand the situation on the recipients' side when the diffusion took place.

9.2.3. Land use and resource scheduling in the Fayum Epipalaeolithic and Neolithic in terms of lithic technological organisation

Field research in the Fayum aimed to understand how Epipalaeolithic and Neolithic people exploited a circumscribed lacustrine environment and adapted their subsistence to changing climatic and environmental situations. The research achieved its aim firstly by surveying the northeastern part of the Fayum Depression and studying the spatial distribution of human occupation loci and resource patches, and secondly by studying lithic artefacts collected at the occupation loci and locating the sources of lithic raw material.

As described in detail in Chapter 5, due to severe surface deflation, the preservation of surface archaeological remains is generally bad, and no evidence of substantial dwellings was found on the surface by the new survey. Nonetheless, there is an apparent pattern in the spatial distribution of Epipalaeolithic and Neolithic remains. They tend to concentrate near past water margins like lakeshores and wadi terraces, suggesting that people's life heavily depended on water and such aquatic resources as marsh plants, fish, and waterfowl. In other words, people were tethered to water margins. The spatial distribution of artefacts such as sickle blades and grinding stones suggests that harvesting and grinding/pounding activities also took place near water margins.

Previous researchers have suggested on the basis of the lack of substantial dwelling remains that Fayum people were nomadic and moved seasonally. However, considering their need to maintain a close link to drinking water and rich aquatic resources in a harsh desert environment, it seems unrealistic that all the people moved their residential bases far away from lakeshores, even temporarily. As discussed in Chapter 3, the seasonality of all the available wild food resources in the Fayum also suggests that there was probably no season of severe food shortage in the year, and hence Fayum people would have had no reason to leave for other remote places in order to look for food. Therefore, it must be understood that the lack of substantial dwellings in the Fayum is probably due to perishable building material and bad preservation, and hence is not the evidence for the absence of sedentism. It must also be considered that a water-tethered life since the Epipalaeolithic period was a good precondition for the introduction of farming and herding in the Fayum.

Although no substantial dwellings were found at the occupation loci which were recorded and investigated through the new survey, dense scatters of lithic artefacts were seen at most occupation loci. These lithic artefacts do not tell how long a locus was actually occupied, but they give a clue as to how Epipalaeolithic and Neolithic people made, used, and discarded tools in relation to their subsistence and residential/ mobility strategies.

As described in Chapter 6, the study of lithic artefacts collected at several Epipalaeolithic localities/sites near former lakeshores revealed that the majority of tools were made on flint pebbles which were readily available within easy walking distances from the localities/sites. Flint pebbles were transported to the localities/sites and knapped there, as indicated by collective dumping of lithic debitage products there. Besides the localities/sites near former lakeshores, one interesting Epipalaeolithic remain was found at a place which is far away from the former lakeshores. It is an isolated concentration of lithic artefacts on a wadi terrace close to the northeastern rocky fringe of the Fayum Depression, and is considered to be a watching station where Epipalaeolithic hunters observed game animals while making tools by using flint cobbles scattered in the surroundings. It can be considered that some people routinely took hunting trips to the rocky terrain, whereas the majority of people remained near lakeshores.

On the other hand, as described at length in Chapter 7, the study of lithic artefacts collected at several Neolithic localities/sites near the former lakeshores revealed that the majority of tools were made on flint cobbles which were not readily available around there. Flint cobbles were

transported over long distances, which cannot be walked in a day, from the gravelly terrain of the Fayum Depression to the localities/sites near former lakeshores and stockpiled there. A study of the distribution of different types of flint cobbles and cores suggests that there were at least two types of localities/sites. One is a residential base, and another is a task location. It seems that tools were made at residential bases and transported to task locations, or cobbles were transported to task locations and tools were made there according to arising needs. Cobbles tended to be used wastefully at task locations and thoroughly at residential bases. It is considered on the basis of this observation that Fayum Neolithic people principally employed a logistical mobility strategy, while maintaining residential bases in several essential resource patches near water margins and have procured additional resources from remote places by dispatching task persons routinely, rather than moving their residential bases to those places. Since cobble sources are in barren terrain, it is probable that routine visits to the cobble sources were embedded in other activities like pastoral grazing trips.

In summary, despite the lack of substantial dwellings, other circumstantial evidence strongly suggests that the Fayum people through the Epipalaeolithic and Neolithic periods were not nomadic but were tethered to water margins, even though they cannot be called sedentary in a strict sense. A simplistic dichotomy between either nomadic or sedentary does not explain precisely the situation of the Fayum people. As mentioned in Chapter 4, sedentism does not emerge as people move less and less until they do not move at all, and a reduction in movement as a group generally requires increased movement as individuals. Considering the Fayum ecology, which is different from that of the original habitat of Levantine domesticates, it can be said that a farming-herding lifeway in the Fayum Neolithic was probably not possible without the protection of the domesticates from local predators by lakeshore-tethered if not fully sedentary people. On the other hand, it can also be said that increasing dependence on farming and herding was not possible without a constant supply of external resources like flint cobbles for toolmaking, which was enabled by an increase of individual logistical moves.

Given these situations in the Fayum, it is still unclear why Levantine domesticates were introduced when they became available to Fayum inhabitants, even though wild food resources seem to have been constantly available and more cost-efficient than domesticates. As discussed in Chapter 4, according to optimal foraging models, it is assumed that domesticates were added to the diet of Fayum Neolithic people when some of the higher-ranked profitable wild food resources or resource patches became temporarily or perpetually unavailable. This could have been caused by either unusual weather conditions and environmental disturbances, or the loss of access to the higher-ranked profitable resources or resource patches due to population increase and overcrowding in a circumscribed area like the Fayum. Therefore, it is important to put the beginning of farming and herding in the Fayum in a wider geographical and chronological context.

9.3. Contextualising the beginning of farming and herding in the Fayum into the Neolithisation of the Levant and northeastern Africa

As mentioned in Chapter 2 and Chapter 8, a driving force for the diffusion of farming and herding from the southern Levant to Egypt would be climatic and environmental changes in the 7th millennium cal.BC centring around 6200 cal.BC. A particularly important event is probably the southward shift of the Intertropical Convergence Zone, which has reached the southernmost part of the southern Levant during the Early Holocene climatic optimum. The effects of the southward shift of the Intertropical Convergence Zone and the northward shift and subsequent return of the polar front would have been not only the desiccation of the southern Levant, Negev and Sinai, but probably also the transition from a summer and winter rain regime

to a winter rain regime in the Negev, Sinai and northern Egypt. This would have enabled winter crops like Levantine wheat and barley to thrive in these regions. In other words, it can be assumed that no matter how close and frequent the sociocultural contacts between the southern Levant and Egypt had been in the Early Holocene, the diffusion of Levantine winter crops could not have occurred before climatic conditions became favourable for them. It was not until the early 6th millennium cal.BC that the diffusion of farming to Egypt became possible.

Previous researchers have asserted that the beginning of farming and herding in Egypt was unreasonably later than that in the Levant, without taking the ecology of Levantine domesticates into account. The possible diffusion of Levantine domesticates and technical knowledge of farming and herding from the southern Levant to Lower Egypt in the early 6th millennium cal.BC suggests that it took place soon after the remarkable climatic and environmental change around 6200 cal.BC. It must be reconsidered that the late beginning of farming in Egypt is definitely not a reflection of Egyptian people's unreasonable reluctance or resistance to adopting a new subsistence for a long time, but would merely have been due to an ecological reason.

On the other hand, farming and herding in the Fayum Neolithic seem to have been minor additions to the major subsistence forms of hunting and fishing for a millennium, and essential tools for farming like sickle blades did not exhibit a notable technological improvement for such a long period. These facts seem to suggest that Fayum Neolithic people passed through the initial phase of encounter with exotic new food resources quickly by knowing their relative profitability in advance and adding them to the diet, but did not immediately place them in a high rank, probably because they had more profitable wild food resources. An intriguing question here is not why Levantine domesticates were added to the diet of Fayum Neolithic people, but rather why those domesticates retained their minor position in the diet for such a long time, without dropping out of the diet. If farming and herding had turned out to be unsuitable in the Fayum environment after an initial attempt, they would have dropped out of the Fayum subsistence. However, as discussed in Chapter 7, Fayum Neolithic people made unprecedented time and labour investments in lithic raw material procurement and toolmaking for a series of new activities, and it is obvious that they kept making special efforts to maximise the yield of farming and herding. Therefore, social reasons for such a situation must be considered.

As described in Chapter 3 and Chapter 4, the social circumstances of the Fayum Neolithic are not well known, and no new information about these aspects of the Fayum Neolithic was obtained in the field. Although competitive aestheticism is assumed in the manner of toolmaking in the Fayum Neolithic, there is no clear archaeological evidence to support the model that socioeconomic competition between ambitious individuals for higher status drove them to produce surplus food to be served on special occasions like feasts in order to attract their followers. Increasing demographic pressure from around the Fayum and growing population/resource imbalances within the Fayum in the 7th - 6th millennia cal.BC would be more likely reasons for adopting domesticates and attempting to intensify farming and herding.

As described in Chapter 3 and Chapter 5, the number and density of Neolithic localities/sites are much larger and higher than Epipalaeolithic ones, and population increase in the Fayum Neolithic is evident, although how and why it occurred in this period are not certain. As discussed in Chapter 8, it is quite possible that the influx of migrants from the southern Levant to Lower Egypt occurred in the early 6th millennium cal.BC, but their spatial extent and demographic impact on population in Lower Egypt are still unclear and probably small. On the other hand, as mentioned in Chapter 2 and Chapter 8, general population increase in the Egyptian Western Desert in the Early Holocene is attested by the wide distribution of human occupation loci and the fast spread of similar

material cultures. The recurrence of depopulation in arid regions and population aggregation in well-watered regions in the Western Desert is also known throughout the Early-Middle Holocene. Therefore, it is likely that such a demographic trend in the Western Desert affected the Fayum to some or a large extent. Even if the Fayum was very rich in wild food resources, and even if the balance between human population size and available food resource amount was maintained well below the carrying capacity of the Fayum in a natural state, inflows of migrants from outside the Fayum must have sooner or later upset this balance, and Fayum inhabitants would have had to increase the carrying capacity of their habitat by producing food. This would be the reason why Fayum inhabitants did not give up farming and herding in spite of the supposed difficulties in taking care of domesticates in the Fayum environment, as described in Chapter 4. Their efforts did not result in the complete replacement of traditional hunting and fishing by farming and herding, and probably as a result of this, farming and herding in the Fayum Neolithic look as if they retained a minor position for such a long time.

9.4. Conclusion

In conclusion, the beginning of farming and herding in the Fayum can be considered as a consequence of human population increase during the Early Holocene climatic optimum and the subsequent population dispersal and aggregation during severe desiccation events in the 7th - 6th millennia cal.BC across the southern Levant, Negev, Sinai and northeastern Africa. The beginning of farming and herding would not have been motivated by socioeconomic competition between ambitious individuals through using surplus food, but by a purely economic need for increasing yields in order to improve the imbalance between human population size and available food resources in a circumscribed lacustrine environment, which may have been caused by population inflows from outside the Fayum. A role played by individuals in adopting and intensifying farming and herding may not be ignored, but should not be overestimated. The development of farming and herding in the Fayum were realised by many generations of hardworking people at the conjuncture of rare climatic events and unprecedented population increases in the Early-Middle Holocene.