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Establishing a Neolithic farming life in Egypt: A view from the lithic study at Fayum Neolithic sites

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ABSTRACT

Questions about when and how the diffusion of Southwest Asian domesticates to Egypt took place cannot be answered as long as one relies on archaeobotanical and zooarchaeological data alone, because this incident is not merely the move of domesticated cereals and animals but also the cultural transmission of the know-how of cereal cultivating and livestock keeping. Lithic evidence suggests that the know-how of shrub clearing and cereal harvesting by using particular types of stone tools was transmitted to Egypt from the southern Levant in the early-middle 6th millennium BC. On the other hand, lithic evidence also suggests that people in Egypt had to protect farmland and livestock from local predators by developing new weapons, with which no comparable weapons are known in the Levant. From a viewpoint of lithic study, it can be argued that the beginning and development of cereal cultivating and livestock keeping in Egypt were definitely the construction of an ecological niche suitable for Southwest Asian domesticates by means of lithic technology.

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1. Introduction

The Southwest Asian domesticates as staple food resources that diffused to Egypt in prehistory are taurine cattle, pig, goat and sheep, as well as emmer wheat and barley. No one doubts that archaeobotanical and zooarchaeological studies on the chronological and geographical distributions of the domesticated cereals and animals across Southwest Asia and North Africa play an important role in answering questions as to when and how Southwest Asian domesticates diffused to Egypt. However, considering that this incident is not merely the move of the Southwest Asian domesticates but also the cultural transmission of the know-how of cereal cultivating and livestock keeping, human efforts in the successful beginning and development of new subsistence activities in a new environment have to be highlighted. Especially at many archaeological sites in Egypt where the preservation of botanical and faunal remains is not good and human skeletal remains are lacking, one has to rely on more durable material remains which suggest the presence of domesticates. This article will firstly review several topics regarding the diffusion of Southwest Asian domesticates to Egypt and their adaptation in Egypt, and secondly deal with the

lithic evidence for the diffusion of Southwest Asian domesticates to Egypt with a particular focus on the Fayum where the best data are available, and lastly discuss how vital roles stone tools played in the development of cereal cultivating and livestock keeping in Egypt.

2. Diffusion of Southwest Asian domesticates to Egypt: availability, background and circumstances

When the timing and routes of the diffusion of Southwest Asian domesticates to Egypt are considered, it is essential to focus on three topics: availability, background and circumstances (Fig. 1). Availability refers to which domesticates and which routes were available to those who took domesticates to Egypt or those who received them in Egypt. Background refers to the physical and social preconditions for the diffusion of Southwest Asian domesticates to Egypt. Circumstances refer to fluctuating situations which pushed or pulled Southwest Asian domesticates to Egypt.

2.1. Availability

As for availability, two simple things should be stressed. Firstly, cereal cultivating and livestock keeping must have been well

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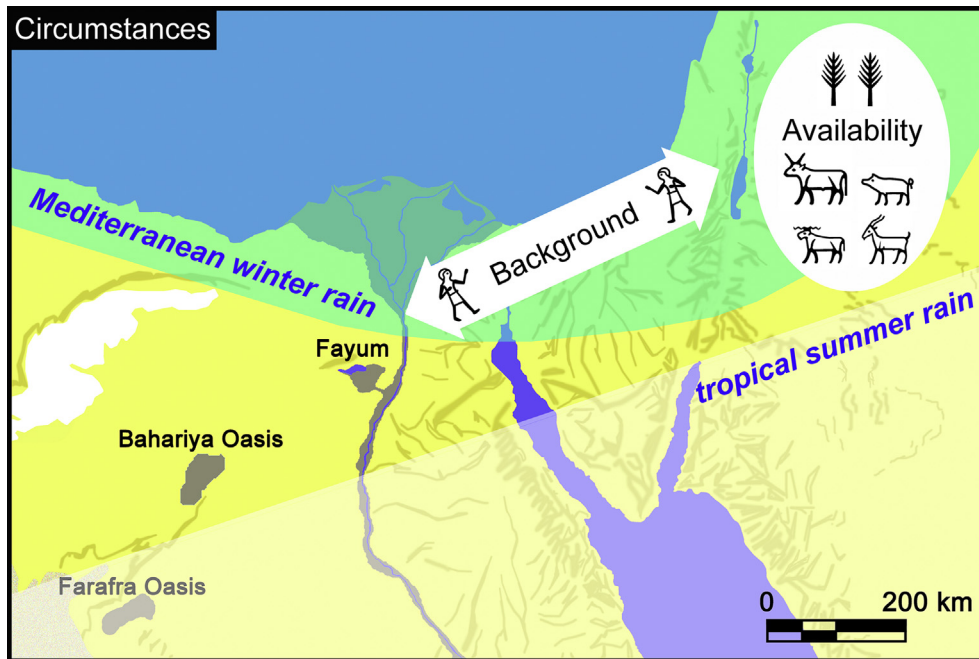


Fig. 1. ABC regarding the diffusion of Southwest Asian domesticates to Egypt.

developed in their place of origin in the Fertile Crescent before they started to diffuse elsewhere, and must also have been well established in the southern Levant before they started to diffuse to Egypt. The diffusion of Southwest Asian domesticates across the sea to Cyprus already started in the Early Pre-Pottery Neolithic B, but not all domesticates diffused there at the same time, as indicated by the late arrival of domesticated sheep there in the Middle Pre-Pottery Neolithic B (Vigne et al., 2011). Domesticated sheep came to a few sites in the southern Levant from the northern Levant no earlier than the Middle Pre-Pottery Neolithic B in the middle 8th millennium BC, but it was in the subsequent Late Pre-Pottery Neolithic B and Pre-Pottery Neolithic C that domesticated sheep slowly spread to different parts of the southern Levant while becoming equal in number to goats (Conolly et al., 2011; Martin and Edwards, 2013). Therefore, it is unlikely that domesticated sheep spread to Egypt earlier than the Pre-Pottery Neolithic C, regardless of whether on land or by sea. Moreover, among the so-called founder crops and lost crops of Southwest Asia in the Neolithic, rye and einkorn wheat, which are known to be adapted to a cooler and wetter climate in the northern part of the Fertile Crescent, did not become common in the southern Levant, while the most common domesticated cereals in the southern Levant were emmer wheat and barley, which are known to be relatively tolerant to droughts (Weiss and Zohary, 2011; Abbo et al., 2013; Asouti and Fuller, 2013). As natural selection and human selection of cereals already took place to a certain extent in the southern Levant, it seems no wonder that emmer wheat and barley became common in Neolithic Egypt (cf. Cappers, 2013).

Secondly, safe and easy routes for diffusion are important, and it must be noted that such routes were not always available in the past (Shirai, 2010: 26). In the early Holocene, the eastern Mediterranean Sea current was clockwise, and seafaring from the Mediterranean coast of the Levant to the Nile Delta would have been easy. In addition, the Mediterranean Sea level was much lower in the early Holocene, and this means that the eastern

Mediterranean coastline was wider and easier to walk on. In the middle Holocene, however, the Mediterranean Sea level rose up, and Pre-Pottery Neolithic sites along the Mediterranean coast of the Levant were submerged, and dune formation became more active along the Mediterranean coast of Sinai. These changes would have made the overland move between the southern Levant and Egypt more difficult than before.

2.2. Background

As for background, occasional or frequent moves of people across the ethnic or sociocultural boundary between the southern Levant and Egypt are essential not only for the diffusion of Southwest Asian domesticated cereals and animals but also for the cultural transmission of the know-how of cereal cultivating and livestock keeping. Regardless of how mobile or sedentary a group of people are, they never go aimlessly to an unknown place without obtaining any information in advance. Initial monitoring trips by scouts are followed by more advanced ways of contacts between people in different places, like information/goods exchange, marriage and family visit. Through these contacts, people in the southern Levant would have gained information about the natural environment of Egypt including arable land and pasture in advance of migration, whereas people in Egypt would have gained information about the costs and benefits of cereal cultivating and livestock keeping in advance of introduction.

Genetic research has suggested that there were certainly inflows of human haplogroups of Levantine origin, along with lactose-tolerant gene, to North Africa probably around the 7th millennium BC, though these immigrants never replaced the local population in North Africa but remained minority there (Smith, 2013). Therefore, even though migrant farmer-herders may have brought Southwest Asian domesticates and the know-how of cereal cultivating and livestock keeping to somewhere in Egypt in the first

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