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The Geology and Papyrology of Hermopolis and Antinoopolis

Egypt; geoarchaeology; Nile; papyrology.

The relationship between the two neighbouring and important towns in Middle Egypt of Hermopolis and Antinoopolis (N27°47', E30°48') is evident in a number of papyri excavated in Egypt. Both claim to have been founded, albeit at different times, on the river Nile but only Antinoopolis is on the Nile today. Our geo-papyrological collaboration aims to explore the landscapes and documents that bear on the changing relationship between the two cities.

The large collection of documents that bear on the puzzling relationship between the two cities of Hermopolis and Antinoopolis generally come from the main papyrusyielding areas of Oxyrhynchus and the Fayum and several other quite distant locations. The texts that refer to both cities however mostly originated from one of the two, predominantly Hermopolis. The documents include land deeds, real-estate contracts, tax registers, declarations for un-inundated land, official and private correspondence, petitions, estate accounts, receipts, slave sales, as well as documents with specific reference to shipping, such as freight contracts, transport of sailors dockets, receipts for ship cargos, grain transport etc.

While both cities have foundation myths that involve being founded on a river, only Antinoopolis is currently on a river-bank. Archaeologically the history of Hermopolis can be traced back to the Old Kingdom and parts of structures dating from the Middle and New Kingdoms (Ramesses II) still survive today, although early excavation reports mention finds that date back to the First Dynasty.¹ Note, however, that movable objects may have been brought into an important site, blurring the foundation date in the same way that Old Kingdom columns were re-used at Karnak, although there is no evidence for buildings at the location at that date. Later in 130 AD Antinoopolis (about 5km east of Hermopolis) was founded on the Nile by Hadrian at the point where, tradition has it, Antinoos, his lover, was drowned. Whilst Antinoopolis is currently on the Nile, the Hermopolis myth seems little more than a myth unless either an additional channel of the Nile once existed at Hermopolis or one of the two remaining channels of the Nile, the Bahr Yusuf in the west and the Nile itself in the East, have migrated. In this work we set out to determine whether the Hermopolis foundation myth is fanciful or whether changes in the Nile can account for the apparent discrepancy.

Nile migration is common in Egypt and Bunbury et al.,² from their borehole evidence at Karnak, showed that the Nile appeared to have moved during the 2000 years of construction of the temples as well as since completion of the first pylon. Hillier et al.³ also showed that the Nile has continued to move around the floodplain but could not re-cross the site of Karnak since, being more resistant to erosion than the rest of the

¹ Roeder 1959/69, 75. For detailed reports of later excavations see Spencer 1993; Spencer 1989; Bailey 1991.

² Bunbury, Graham, and Hunter 2008.

³ Hillier, Bunbury, and Graham 2007.



Fig. 1 | A map to show the main geographical features of the Nile floodplain in the Hermopolis-Antinoopolis area, Egypt. Field-set (hod) boundaries are shown with fine dashed lines, the rivers and canals with solid lines and the pattern of dry rivers in the desert (wadis) with heavy dotted lines. Hatched areas indicate modern settlements.

floodplain, silts provided a barrier to migration. Typical rates determined by Lutley⁴ from her work further north in the Memphite floodplain suggested that Nile migration rates can reach a maximum of 9km/millennium but in general the mean rate of migration for sites across Egypt is closer to 2km/millennium.

Using these methods and observations of the Nile at other sites we can determine the most likely type of landscape change in the Hermopolis—Antinoopolis area. The sites of Hermopolis and Antinoopolis (Fig. 1) are set in a part of the floodplain that is around 15km wide and there are two channels of the Nile in the area; the minor channel, the Bahr Yusuf, to the west and the main channel of the Nile to the east. Texts from Oxyrhynchus⁵ demonstrate that there has been little movement of the Bahr Yusuf at that location and, in addition to this, the large number of sites on the Bahr Yusuf and its sinuosity both suggest meandering around a relatively consistent course. The main Nile channel on the other hand shows evidence in the field boundaries (fine dashed lines on Fig. 1) for migration away from Hermopolis and towards Antinoopolis. Upstream of Antinoopolis itself as it is located where the river is touching the desert edge. The geometry of migration is thus consistent with migration of the main channel from the Hermopolis site eastwards to Antinoopolis.

To test this hypothesis numerically we can take a date of 2100 BCE for the oldest buildings at Hermopolis, for that when it was founded on an island, and 130 CE for Antinoopolis, and thus allow 2230 years for the migration of the river over the intervening distance of around 5km giving a rate of 2.2km/millennium. Since this rate of migration falls close to mean migration rates, it is reasonable to suppose that this was the same branch within which Hermopolis was founded on an island and that it subsequently moved to the location at which Antinoopolis was founded. It is interesting to note that, although the Nile migrated normally until 130 CE, it has not migrated away from Antinoopolis since this time, which is suggestive of an anchoring of the river by the Roman town by a mixture of revetment of the banks and reduction in the erosive power of the Nile by removal of water for irrigation.

While revetment may have impeded the movement of the watercourse around the town, it would not have inhibited movements either upstream or downstream of the protected area. It is possible that the cultivable land available to Antinoites when the city

5 Parsons 2007.

⁴ Bunbury and Lutley 2008.

was founded might have been a bit more plentiful than it would appear today since a paucity of arable land would be a major weakness of a new city site. Hence geographical observations inform an interpretation of various documents. For instance in a letter regarding the transportation of sailors (CPR V 10), the Stategus of Hermopolis requires sailors to be recruited and then escorted by soldiers to the harbour at Antinoopolis. The inference here is that there is a significant harbour at Antinoopolis but that the shipping is being managed from Hermopolis. Although the two communities were not set up as a twin town it seems that Hermopolis is using the Antinoite harbour for its large shipping.

Although Hermopolis was initially the administrative centre, they were later given equal status under Diocletian's reforms in the late third century. Moreover, land exchange documents seem to suggest that the majority of fourth century transactions were of land passing from the Hermopolite population to the Antinoopolite one. An increase in the number of transactions of land being transferred from Antinoopolite oversight to Hermopolite oversight is not common until the sixth century. Since geographically there seems to have been very little land associated with the Antinoopolite foundation and that this land was likely to be decreasing in area as the river continued to migrate (upstream and downstream) towards the desert edge, we understand the documents as reflecting the need of Antinoopolites to acquire land from the Hermopolites. Subsequent migration probably reversed away from the desert edge and thus made the exact opposite beneficial.

In conclusion, integrating the palimpsest of the Nile valley floor and the information that it reveals about the Nile migration in the area with the extensive documentary evidence from the papyri shows that the two sites have evolved in tandem but that their relationship was mediated by movements of the Nile. It is also reasonable that Hermopolis was founded on the Nile as it claimed but that, by the time Antinoopolis was founded, the Nile had moved to the east of the Valley.

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