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## Do We Take the Donkey or Do We Take the Boat?

Case Studies in Water Levels and Transportation in and around the Fayoum Oasis in the Graeco-Roman Period

**Abstract:** One of the main fields of interest of the person being celebrated in this volume are the flood measures and water levels of the river Nile in the Pharaonic period and beyond. The article tries to add new information about water levels in the area of the Graeco-Roman Fayoum, using papyrological and archaeological evidence.

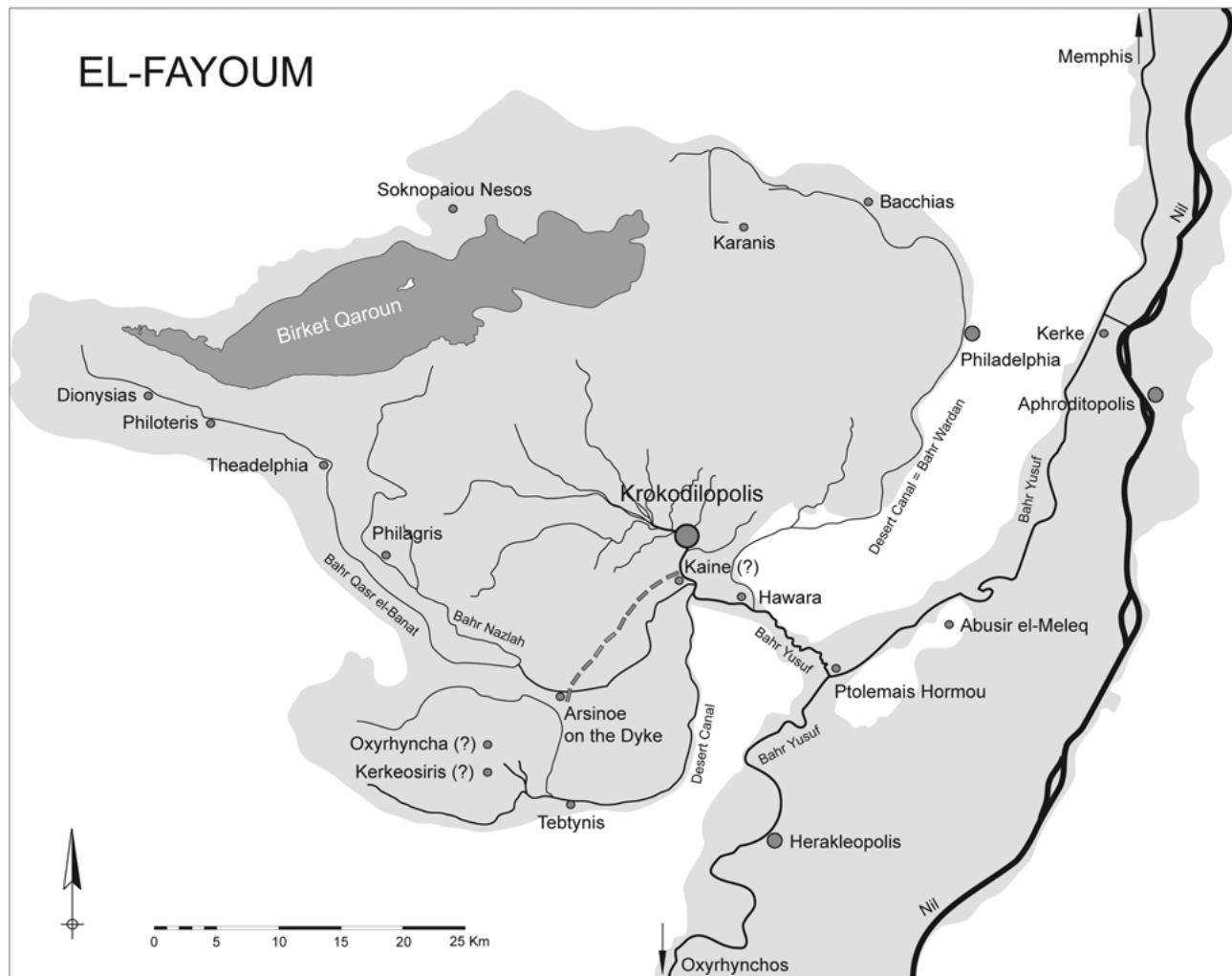


Fig. 1: Map of Fayum.

In the third/fourth century AD a certain Petosiris invites a woman called Serenia to a religious festival.<sup>1</sup> He writes: “Greeting, my lady Serenia, from Petosiris. Make every effort, dear lady, to come out on the 20th, the birthday festival of the god, and let me know whether you are *coming by boat or by donkey*, in order that we may send it for you. Take care not to forget, dear lady. I pray for your lasting health.”

The papyrus does not come from the Fayoum, but was found in Oxyrhynchus, upstream on the Bahr Yusuf, south of the Fayoum. And unfortunately, we do not know where exactly Petosiris lived, or what festival he was about to celebrate (the month could be crucial for the choice of transportation),<sup>2</sup> nor do we know where Serenia had her home, or how many km she had to travel. One of the two most likely resided in Oxyrhynchus on the Bahr Yusuf. Obviously, Serenias attendance was of some importance for Petosiris; boat or donkey, the writer of the invitation is ready to offer either of the two. For which mode of transportation may Serenia have decided? And what may have been the reason? Most likely not the cost which she did not have to pay. Pace? Social standing? Habit? Seasonal circumstances?

Both the landscapes of the Fayoum oasis and the broader Nile valley (as around Oxyrhynchus) are characterised by dense networks of canals which not only carried water to the people living along their banks and served for the irrigation of the fields, but were also (more than today) used as waterways for the transportation of goods and people, as long as they were broad and deep enough. In the Fayoum, the villages created by the first Ptolemaic kings in the 3rd century BC lined up along the newly dug canals. These canals connected the villages, and roads run parallel as they do today: the canals were the direct and shortest links, and therefore the most natural path whether by boat or by donkey (Fig. 1 and Fig. 2).

Boat or donkey? Evidence how the canals were used, and why they may have been avoided at certain times, comes from the texts written on papyrus, from landscape surveys in the Fayoum, and from the excavation in the ancient village of Philoteris. New insights lead to new considerations about the influence of water levels on the means of transportation in the canals around the Fayoum and within the oasis.

The following is a hopefully colourful bouquet of little observations. They show the limitations of the written evidence if considered in isolation, and bid for a wider approach in dealing with the papyrological texts.

The direct connection to the Nile by the side branch of the river, the Bahr Yusuf, made the Nile flood felt in the Fayoum as in the Nile valley. How much the timing and levels of the flood varied over the years in Egypt, is visible in the lists that S. Seidlmayer has compiled for Aswan and Memphis. The most complete and telling information comes from Aswan at the end of the 19th century. There, the maximum of the flood was reached on average on 4 September (earliest attested for 19 August, latest for 1 October), while the minimum was reached on average on 1 June (earliest attested for 5 May, latest for 22 June).<sup>3</sup> This variability makes it difficult to expect more precise dates for the Fayoum, since the time within which the flood would have developed downstream from Aswan must also have varied to some degree. Nilometres must have existed in the Fayoum, but only one supposedly identified as such is known and has been destroyed.<sup>4</sup>

Nevertheless, there are some indicators for the water levels in the Fayoum. In the Roman period, we have some information about the *minima* by the certificates which were issued for the cleaning work in the canals of the oasis (see below No. C. 4.). The *maxima* can be deducted from the employment of ships and boats in certain parts of the oasis for the transportation of goods and people.

The overwhelming majority of texts from the Graeco-Roman period relating to transportation are about moving goods, not people, and in particular about the transportation of taxes which had to be paid in kind, mostly in grain. The topic has been thoroughly investigated *inter alia* by Rostowzeff (1906, the classic), Wilcken (Chrest. Wilck. 1912; Chapt. X), Thompson in an overview (1983), and more recently Adams (2007). The main result of these investigations seems not to be questioned: transport of grain from the fields to the granaries in the villages, and from there to the

<sup>1</sup> P. Oxy. I 112; Χαίροις, κυρία μου Κερηγία [-ca.? -] | π(αρὰ) Πετοσείριος. | πᾶν ποίησον, κυρία, ἔξελθεῖ[ν τῇ] | κ τοῖς γενεθλίοις τοῦ θεοῦ, καὶ | διήλωσόν μοι εἰ πλούτῳ ἔξέρχ[ει] | ἢ ὄντω, ἵνα πεμφθῇ σοι. ἀλλ' ὅρα [μὴ] | ὀμελήσῃ, κυρία. ἐρρῶθε[ά] σε] | εὔχομαι [πο]λλοῖς [χρόνοις]. Translation from Sel. Pap. I 176 page 403.

<sup>2</sup> In particular in the Roman period, γενέθλια, birthday celebrations for gods and also local deities were popular; cf. Perpillou-Thomas 1991, 29–58.

<sup>3</sup> Seidlmayer 2001, 17.

<sup>4</sup> Römer 2018.



**Fig. 2:** Main canal in the area of Theadelphia; before the bridge at one of the modern weirs.

nearest harbour, was most of the time land transportation carried out by donkeys and (in particular in the Roman period) camels;<sup>5</sup> in the harbours Nile barges were moored to receive the loads and take them downstream to Alexandria. But how far could Nile barges venture into the Fayoum and when?

The stable patterns of land or water transportation organized by the state for its taxes were certainly dependent on the time of the harvest as well as on the water levels of the Nile that reached down into the most remote corners of the Fayoum.

As the Fayoum was connected to the Nile by the Bahr Yusuf on the one hand, but remote from the Nile valley on the other, the logistics for the transportation of tax grain were more complicated here than in any other part of Egypt. In the Nile valley, pack animals would have to tread rarely more than 5 km to reach the waterway that was – usually all year around – navigable. In contrast, the villages in the far west, east, and north of the oasis were more than 50 km distant from the Bahr Yusuf where it enters the Fayoum. The distance between the village granaries and the harbour on the Bahr Yusuf – whether Ptolemais Hormou or any other harbour on the extension of the Bahr Yusuf towards the nome capital – was usually (but perhaps not always) covered by donkeys. The canals within the oasis were not suitable to carry at least larger boats – nor are they in modern times.<sup>6</sup> The only attestation for a ship with some capacity, a *képkoupoc* which loaded more than 2000 artabas (c. 50 tons) of wheat that supposedly arrived at Philagris in the Themistou Meris, has to be abandoned (see below No. C. 2.).

<sup>5</sup> Adams 2007, 49–52.

<sup>6</sup> Nowadays, weirs are installed in these canals to guarantee the regular flow; whether and at which points they existed in antiquity, is not clear; cf. Römer 2019, 9–10 with Photo 1.13 on page 22.

## A Approaching the Oasis

As most of the traffic in the Nile Valley was by water, the Fayoum, being connected to the Nile by the Bahr Yusuf, could be reached by boat by those who came from the North as well as those who came from the South. For people coming from the west, there were paths through the desert from the oases of the Western Sahara, and there were paths from the northern part of the Fayoum towards Memphis and viceversa. In the Roman period donkeys and camels laden with goods passed through the gates of villages on the fringe of the oasis, namely (from west to north-east) Dionysias, Soknopaiou Nesos, Karanis, Bacchias, and Philadelphia, where customs dues had to be paid for their loads.<sup>7</sup> The paths they were trotting along most likely existed also in the Ptolemaic period.

At all times, the main gateway to the Fayoum from the Nile Valley was the Bahr Yusuf. It split from the Nile in the area of Assiout and ran by the *metropoleis* of Hermopolis, Oxyrhynchus und Herakleopolis. In Lahun, in Graeco-Roman times Ptolemais Hormou, boatmen chose, whether to go on to the North and follow the extension of the Bahr Yusuf in that direction, passing by Dahshour and up to Memphis, or whether to go to the Fayoum. The extension of the Bahr Yusuf into the Fayoum would lead them after c. 12 km to the capital of the nome, called Arsinoe or Krokokodilopolis. The junction at Lahun = Ptolemais Hormou was a bustling place with facilities for loading and unloading ships, transshipping goods from smaller to larger boats or vice versa,<sup>8</sup> with dockyards and storagehouses. The tax grain from the whole Fayoum was collected here before being shipped to Alexandria. The dynastic name underlines the importance of this place from the Ptolemaic period onwards (“The Ptolemais of the Harbour”; Fig. 3).

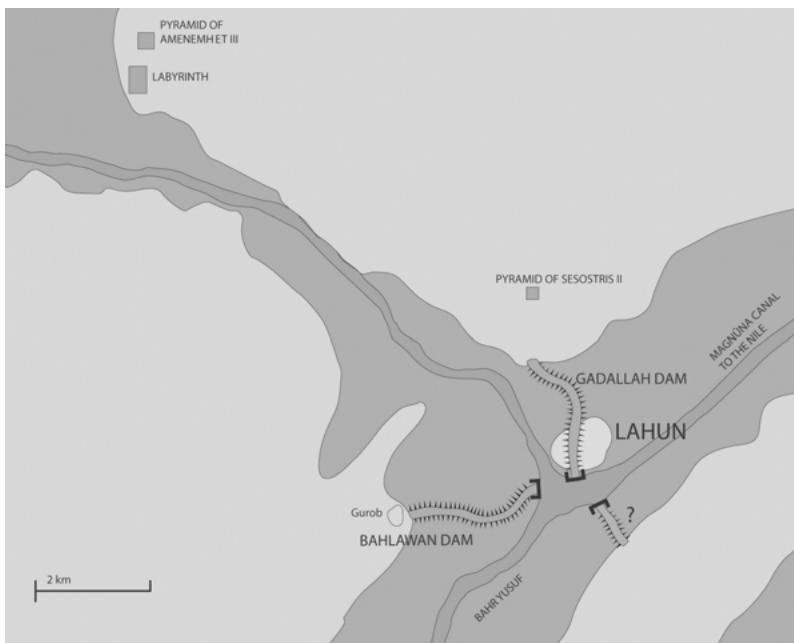


Fig. 3: The area around Lahun (Ptolemais Hormou) with the Bahr Yusuf running from the south, extending into the Fayoum to the west, and further on to the north.

The extension of the Bahr Yusuf to the north is perhaps the main innovation of the MK Pharaoh Amenemhet III, who succeeded in creating more fertile grounds in the oasis.<sup>9</sup> The yearly flood of the river Nile (and its sidebranch Bahr Yusuf) could be controlled by this overflow, which brought excess water back to the river Nile, diverting it from flowing into the depression of the Fayoum.

<sup>7</sup> Vandorpe 2015.

<sup>8</sup> Such an activity is attested in a Vienna papyrus from the Roman period; see Römer 2010.

<sup>9</sup> Römer 2017, 175–177.

Four texts from the Ptolemaic period may illustrate the busy traffic on the Bahr Yusuf and its extension to the north, which varied in intensity at different times of the year; they lead us into the affairs of the state, as well as into private business.

Most of the ships encountered on the Bahr Yusuf, according to the papyrological evidence from the Ptolemaic period, were *κέρκουροι* ("Kerkouroi"), large Nile barges with capacities up to 450 tons.<sup>10</sup> These ships were equipped with oars and sails, and were supposedly also suitable for movements on sea.<sup>11</sup> *κέρκουροι* are not attested in the Roman period.<sup>12</sup> The other type of ship operating on the Bahr Yusuf and carrying tax grain was the much smaller *προσαγωγής* ("Prosagogis") with capacity up to 50 tons.<sup>13</sup>

**1.** January 28, 222 BC a Nile barge (*κέρκουρος*) of 10.000 artabas = c. 252 tons capacity has been pulled upstream on the Bahr Yusuf to the harbour of Ptolemais Hormou, after it had lost its yardarm (*κεραία*) in a storm on the Nile near the city of Aphroditopolis, some 30 km north of Ptolemais Hormou.<sup>14</sup> Damaged like this, the ship was unable to cruise upstream, and its original destination, the Thebaid, was never reached; there, the captain had been ordered to load tax grain to carry back to Alexandria. The captain, Libys by name, writes to the king to be allowed instead to load the equivalent measure of wheat in the Arsinoite nome, since the original destination would not be reached anymore "because the ship is large and the water retreating".<sup>15</sup> From the Greek word ἔλκοντες "pulling" (l. 6) we can not tell how the ship was brought to Ptolemais Hormou, whether it was hauled by animals or towed by another ship.<sup>16</sup> Lybis considers his 252 ton barge "a large one", and he is obviously convinced that the repair needed can be executed in Ptolemais Hormou, but the main reason to seek help there is likely the fact that sufficient grain to be loaded could be found in the Fayoum, rather than anywhere else in the whole of Egypt. Lybis' remark about the "retreating water – at the end of January !" – has made Dorothy J. Thompson to suspect that this is an excuse and that Lybis never wanted to go upstream to the Thebaid.<sup>17</sup> It is true, however, as it seems that from February onwards the retreat of the water was felt, at least on the Bahr Yusuf, from where Libys writes, and the draught of his ship may have been larger than to allow for a smooth sailing on the side branch of the Nile (see the following No. 2.). Nevertheless, it remains astonishing that the ship which was equipped with oars was not able to go up the Bahr Yusuf and had to be pulled; this speaks for a still reasonable current that could not be mastered by the oarsmen alone in January.

**2.** A detailed granary account from the same harbour of Ptolemais Hormou dated to 171 BC gives exact information about the grain barges leaving the harbour carrying tax grain to Alexandria (P. Tebt. III 856). The months appearing in the list range from Mesore (September) to Tybi (February), then the papyrus breaks off. Since the provenance of the grain is also mentioned, and all villages featuring in the list are located in the Herakleidou Meris alone, we may assume that the overall quantity of grain shipped from the entire Fayoum in those months was much higher, likely many times higher. The majority of the ships are *κέρκουροι* with capacities of 5000 to 18000 artabas = 125 to 450 tons; there are also two of the smaller *προσαγωγήδες* mentioned.

<sup>10</sup> The word is of Assyrian origin; Casson 1971, 163; calculated measures are "metric" tons for the Ptolemaic period; cf. Vinson 1998, 175; Mayerson 1998.

<sup>11</sup> Casson 1971, 163–166; Arnaud 2020, 110–113 and *passim*.

<sup>12</sup> The only seeming attestations are doubtful: SB IX 9149 from 4th century, Karanis; the word *κέρκουρίτης* remains in use (P. Laur. II 35, 6; AD 257; Theadelphia; P. Gron 6, 3; 5th century; provenance unknown).

<sup>13</sup> Not in Casson 1971; Arnaud 2020, 117–118.

<sup>14</sup> P. Enteux. 27 = Chrest. Wilck. 442. Ancient Aphroditopolis, modern Atfih, is on the eastern bank of Nile. There existed a connecting waterway between the Nile and the Bahr Yusuf at the harbour of Kerke, some 30 km north of Ptolemais Hormou; via this connection Libys' ship must have been dragged upstream.

<sup>15</sup> ll. 15–16 παρὰ τὸ μέγα εἶναι τὸ πλοῖον καὶ τοῦ ὕδατος ἀναχωροῦντος μηδὲ κενὸν τὸ πλοῖον δύνασθαι κατακομισθῆναι εἰς τὴν πόλιν.

<sup>16</sup> For hauling whether by men or animals see next note.

<sup>17</sup> Thompson 2012, 753–754 (my article owes a lot to hers); most recently Reinard 2020, with the report on the reconstruction of an ancient river boat and its haulage along the Mosel in Germany. In my view, neither the reconstructed boat, nor the condition of the German river are comparable to the *κέρκουρος* and the canals in and along the Fayoum. Reinard denies that the *κέρκουρος* was oared (Casson's fundamental book is not cited!), and he does not seem to have any idea about the Egyptian landscape. That trees were planted along the canals to strengthen the embankments is well known from several papyri from the Ptolemaic and the Roman periods; see Parássoglou 1976; the trees would have made haulage nearly impossible, whether men or animals were employed.

The list shows increasing numbers from September to November, and decreasing numbers from December to February:

In September only 1 barge leaves the harbour with grain from the Herakleidou Meris; in October and November: 3; in December: 14; in January: 3; in February: 5. Perhaps the most important information the list provides is that large ships of 400 to 450 tons are registered only for the month of December, when we also have the highest number of ships leaving. The numbers follow the expected water levels in the Nile and its side branches from the time of the peak of the flood in September at Aswan to levels ideal for shipping in December, to the beginning of low levels in January and February. In December the Bahr Yusuf had enough water to carry boats with a larger draught than in any other month.

**3.** There existed no real alternative to the naval activities on the Bahr Yusuf for the interest of the state, i.e. the transportation of taxes in kind. Chrest. Wilck. 166 from after 2 December 228 BC proves that donkeys for the transport of tax grain were considered a replacement for ships in a case where there were no ships available. However, the animals were more expensive by 5 drachmas per 100 artabas (2.5 tons) than the boats to be employed. Unfortunately, we do not know where exactly the unavailable ships were stranded; the papyrus text, a draft addressed to a high official, the *epimeletes* of the Arsinoite, asks for the release of two shipwrights who were arrested in Herakleopolis (for a reason not mentioned in the letter). The case is made that only these two could repair the ships. Again, we are in the most appropriate time, the month of December, to bring the tax grain down the Bahr Yusuf, its extension to the north and further on to the Nile and Alexandria.

**4.** Ptolemais Hormou was not the only place for the loading of tax grain from the Fayoum. The harbour Kerke, north of Ptolemais Hormou on the Bahr Yusuf, was clearly also used for shipping from the villages in the north-eastern part of the oasis. P. Tebt. III 1, 823 is the receipt of a ship's captain who acknowledges having received in Kerke 5556 artabas (= c. 130 tons) of barley to take to the royal storehouse in Alexandria. The text is dated to 8 December 185 BC.<sup>18</sup>

**5.** We witness a more private enterprise with a small boat in October/November 151 or 140 BC – this is a vignette to Nos. 1–4. The commander of the fortress in Herakleopolis on the Bahr Yusuf, Dioskourides, is concerned about his father who sojourns for whatever reason in Memphis and is without money and without his (military?) cloak. He writes to him (P. Diosk. 17): “When we heard that you are in Memphis, we put Komanos the groom on board the boat (ἄφρακτος = a small boat not decked) with your monthly salary and your cloak.” In the most natural manner Komanos is set on the trail to Memphis, where he just had to float down the Bahr Yusuf and its extension to the North. The water would stand at an ideal level for smooth sailing, and we picture him gliding comfortably by the dock yards of Ptolemais Hormou (at the end, Komanos did not have to depart, because the father returned to Herakleopolis very soon).

The connection to the Bahr Yusuf and its extension to the north explains also why Herakleopolis used the northern part of the desert elevation between the Bahr and the Nile as a cemetery; there is considerable evidence of this use. The modern name of that area is Abusir el-Melek, a cemetery, where large quantities of administrative material from Herakleopolis were found in mummy cartonnage. Mummies were easily sent down by light boats from Herakleopolis to arrive at their destined cemetery. Such light boats could go down there most likely all year around.

## B Entering the Oasis

At Ptolemais Hormou, below the MK pyramid of Lahun, the traveller arriving from the south or the north may have decided to enter the Fayoum oasis by steering due west and passing the gap between Lahun in the north and Gurob in the south. This was a well marked gateway already in the time of the MK. Nowadays, the Bahr Yusuf is accompanied here by a modern side canal which most likely did not exist in antiquity. The Bahr Yusuf went straight towards the capital of Arsinoe, ran through its territory and then split up into several branches which continued to transport

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<sup>18</sup> For another possible harbour on the Bahr Yusuf farther to the south, see below No. B. 2.

its waters to all parts of the Fayoum.<sup>19</sup> Before reaching the capital several main canals branched off the Bahr Yusuf, the so-called Desert Canals bringing water to extreme ends of the oasis in the north-east and the north west (for these see further below).

1. Traffic on the part of the Bahr Yusuf between Ptolemais Hormou and Krokodilopolis is illustrated by P. Petr. III 107,<sup>20</sup> a list of boats going up and down on a regular basis between the two localities, in September/October 226 BC; they transported goods and people. Again, we are in the high water season. Two types of ships are mentioned: προσαγωγίδες (see above A. 2.) and πλοῖα (“boats”), some owned by the King, but to a larger degree owned privately. Both types of ships carry goods as taxes in kind, wine, fish, pulses, etc. but predominantly passengers. Certain boats carried only people, others had both cargo and people on board.

If this list shows a fair picture of traffic, boats were certainly an important part of the infrastructure in that part of the Fayoum for people and goods. Interesting is the fact that all ship captains on this part of the Bahr Yusuf have Egyptian names, whereas captains carrying the grain taxes from Ptolemais Hormou to the north and Alexandria all have Greek names, in the 3rd century BC!

Around the city of Krokodilopolis, and perhaps at the mouths of the canals branching off the Bahr Yusuf before the capital, there were several harbours, in which ships were loaded with tax grain.

2. The best attested of these is the harbour Καινή “The New One” (TM Geo 950); “New Harbour” cannot be meant, because ὄρμος is masculine, perhaps “New City”, Καινή Πόλις, was understood. Kaine features prominently in an archive of loading-orders and ship captain’s receipts from the middle of the 2nd century BC (P. Erasm. II; 23 texts) and in a few other texts.<sup>21</sup> The P. Erasm. II are dated to Pauni, Epeiph, and Mesore, i.e. to the second half of June till September/October, just after the harvest; other texts stem from January (PUG III 125; SB XIV 12169), May (SB XXVIII 16867), July (P. Heid. VI 369) and September (SB XXVIII 16868). Ships mentioned are *kerkouroi* and *prosagogides*, the largest being a *kerkouros* with 11.000 artabas of grain loading capacity (= c. 250 tons). That ship (P. Heid. VI 369) leaves Kaine in late July, when the flood was probably already felt but altogether the ships landing at and leaving Kaine were much smaller than the *kerkouroi* leaving Ptolemais Hormou between September and January (see above A.2). Most of the grain put on board here comes from the village of Oxyrhyncha (TM Geo 1523)<sup>22</sup> located in the Polemonos Meris, the south-western part of the Fayoum. One load originates from Anoubias (TM Geo 186) in the Themistou Meris, the north-western part of the oasis. Villages mentioned together with Anoubias in other texts suggest a location in the southern part of that district.

There has been some debate as to where Kaine was located; it is usually believed to be a harbour on the Bahr Yusuf after it has entered the Fayoum; this would mean that *kerkouroi* were able to go upstream at least up to there.<sup>23</sup> In TM W. Clarysse has argued for a location of Kaine close to the capital Krokodilopolis, because of the unusual lack of an indication of the Meris to which Kaine belonged.<sup>24</sup> Ph. Verdult, the editor of the archive of P. Erasm. II,<sup>25</sup> put Kaine farther south of the capital, not far away from where the two main canals of the Polemonos Meris join the Bahr; these are the Desert Canal of the Polemonos Meris running around its southern fringe, and passing by Tebtynis, and the Bahr Nazlah, which runs through the middle of the Meris, and then from Arsine on the Dyke to the north and into the Themistou Meris. To locate the harbour at the mouth of these canals makes sense, if we consider the possible importance of water transport of grain from the villages down to the harbour. However, if we stay with the idea that the grain transport had to take place just after the harvest in May/June, when the canals were carrying the lowest water levels possible, it makes more sense to locate Kaine at the end of the main road leading from the Polemonos and Themistou Merides near the capital. That road ran on the dam which functioned also as the border

19 Römer 2019, Photos 1.17 and 18 on pages 23–24.

20 Hauben 1971; Clarysse/Hauben 1976.

21 More attestations are collected in P. Narm. 2006, 44, note 17.

22 For further information on village officials etc. see Clarysse 2008.

23 In P. Erasm. II, 14 texts mention *kerkouroi*; they receive their loads in the harbour between June 19, and October 25, but most were present in the harbour in the months of July, August and September, and thus earlier than what we see going on in the harbour of Ptolemais Hormou, where November–January were the most busy months.

24 Trismegistos, Geo 950; (accessed on 1. 10. 2020).

25 P. Erasm. II, map on page 7.

between the merides, and ended most likely in the south-western part of Krokodilopolis, as the road on the ancient dam ends today in the southern outskirts of Medinet el-Fayoum.<sup>26</sup>

Paul Heilporn has argued against the location of the harbour of Kaine on the Bahr Yusuf within the oasis; he identifies the place with a village named Kaine on the Bahr Yusuf in the area of Heracleopolis, and thus on the same stream as Ptolemais Hormou, only c. 15 km to the south. Heilporn's main argument is the existence of a toll station at Kaine, as we would expect this to be in a place where a desert path leaves the Fayoum (see above p. 36). However, this would be the only toll station in the Nile valley, from where no paths led into the desert. Since all the ships attested leaving from Kaine are smaller than the ones leaving from Ptolemais Hormou, it seems more reasonable to see that harbour on the Bahr Yusuf within the Fayoum; the argument may be weakened by the lack of any loading receipts from November and December, when the largest boats left Ptolemais Hormou, but this is probably a coincidence. Perhaps the decisive argument against Kaine being in the Herakleopolites is the lack of indication of this nome in any of the loading receipts.

## C The Traffic Inside the Fayoum Oasis

Before and after the capital Krokodilopolis (and after Kaine), the Bahr Yusuf spread into larger and smaller canals in all directions; the canals branching off before the capital and circling around the fringe of the oasis (the Desert Canals) were certainly the largest and deepest (see above p. 38–39). Part C. of this survey shows that it is difficult to reach a coherent view of the situation; some highlights can be proposed (Fig. 4).



Fig. 4: One of the smaller canals around Theadelphia.

1. There is only one text which seems to show that κέρκουροι, the typical Nile barges of the Ptolemaic period which moved steadily up and down the Bahr Yusuf outside and inside the Fayoum (see above), were also busy beyond the Bahr Yusuf, and beyond the Desert Canals. Such a ship supposedly sailed up to Philagris in the Themistou Meris and was loaded in its harbour with grain tax from that village. SB XXII 15281 is a typical receipt of a ship's captain who acknowledges to have loaded 2772 artabas = c. 65 tons of wheat on his κέρκουροι in the harbour of Philagris – as it seems – at a date in late December (high water season) towards the end of the 3rd century BC.

Philagris was located on the Bahr Nazlah in the western part of the Fayoum, most likely where the modern village of Hamouli stands. To reach Philagris/Hamouli by boat it was necessary to sail up the Bahr Nazlah and turn to the north at Arsinoe on the Dyke/on the Lock to continue for c. 17 km on that canal. The κέρκουροι mentioned in SB XXII 15281 with its 65 ton load is not big in comparison with the ships leaving Ptolemais Hormou on the Bahr Yusuf, but it is the only attestation so far for this type of ship inside the oasis. This arouses suspicion, and indeed, the new reading of that text does not confirm the appearance of a κέρκουροι at Philagris. The text belongs to an archive of persons responsible for a granary somewhere in the Themistou Meris, but the grain is not loaded in the “harbour of Philagris”; it is only the provenance of the grain load which is registered for tax reasons.<sup>27</sup> Therefore, no harbour for large ships in Philagris!

2. For the transportation of tax grain, i.e. larger quantities of grain, we may expect that navigable canals were necessary. Indeed, P. Tebt. 703, 70 – 83 from around 210 BC, instructions of the finance minister to a subordinate in the Fayoum, states that the transportation of the grain should take place now: “Take care that the corn in the nomes, with the exception of that expended on the spot for seed and of that which cannot be transported by water, be brought down.” The phrasing ὅπως ... κατάγηται in l. 74 “be brought down” refers to the *terminus technicus* of the καταγωγή, the bringing down to Alexandria of the tax amounts due. In P. Tebt. III 703 transport by animals is obviously meant, and this is already part of the καταγωγή. This scenario is however intended only “for grain that cannot be transported by water”; transportation by water was, indeed, an alternative. On the other hand, in SB XVI16531, a Ptolemaic king (no date preserved) orders that donkeys, mules, horses, and camels be produced for bringing down (κατάγειν) the tax grain from village stores to the harbours, “from the most distant places”.<sup>28</sup>

3. An example of a village which is “not situated upon the great river nor other navigable stream”, is Kerkeosiris in the Polemonos Meris. Here “the corn collected is conveyed to the royal granary in the village, ...; the corn is thence transported by beasts of burden”, P. Tebt. 92 from the late 2nd century BC. ll. 8–9 σῖτος παράγεται εἰς τὸν ἐν τῇ κώμῃ βασιλικὸν θησαυρὸν, ll. 12 -13 καὶ ἐντεῦθεν κατάγεται δι' ὑποζυγίων. The transport by donkeys is part of the καταγωγή.

The location of the village concerned here, Kerkeosiris, is not certain. The Barrington Atlas of the Ancient World and the Trismegistos map of the Fayoum put it on a peninsula in the middle of the lake that (at certain times) existed in the Garaq Basin. By navigable canals either the Desert Canal around the southern fringe of the oasis or the upper run of the Bahr Nazlah can be meant, both of which would be distant from the village, whether it was located on that peninsula or not.<sup>29</sup>

4. What were navigable canals, διώρυγες πλωταί? There are only 15 texts in which canals are denominated as πλωταί, navigable. Most of the attestations belong to the corpus of the so-called penthemeros certificates (five-day certificates), receipts for individuals who had worked for 5 days in the cleaning process of canals and dykes which took place every year before the flood. The season for these cleanings was May–September – when the water was low, as expected –, with a strong majority of attestations<sup>30</sup> coming from June, but July and August are also mentioned

<sup>27</sup> The text was first published in Anal. Papy. 6 (1994, 127–130) with a good b/w photo. It was not clear then that this captain's receipt is part of an archive of *sitologoi* (tax collectors) probably of the village of Magais in the Themistou Meris (ArchID 67). The archive consists of 7 texts, all housed in the Papyrus Collection of MacQuarie University at Sidney, and is not published, but cf. Cook 1994, with a description of the texts; in the light of what is known from this description, and from the dates of the ship's owner in SB XXII 15281, the text must be dated to 23. 12. 209 BC, has (ἔτους) ἰδ Αθύρια in l. 1, παρὰ Διαγόρου in l. 7, and ἐκ τῶν | περὶ Φιλαγρίδα τόπων in ll. 9–11; cf. PUG III 115 from 226 BC; the reading εἰς τὸν περὶ Φιλαγρίδα ὅρμον is in my view impossible, there is no harbour mentioned here.

<sup>28</sup> Gagos 2001, 533–537.

<sup>29</sup> In my view the location on a peninsula of a village for which rich fields are attested is problematic.

<sup>30</sup> There are more than 220 of such certificates published so far; most recently Claytor 2018.

quite often; there are also some certificates dated to the months October–November, even December. This raises suspicion, as to whether all the certificates were issued and signed directly after completion of the work, since we would expect high waters in autumn, when cleaning would be difficult if not impossible. A further problem arising from these attestations is that it is not clear whether the villages mentioned refer to the canal in the area of that village, or whether they refer to the (in cases perhaps distant) home of the man working in the canal and receiving his certificate. So these certificates cannot be used for evidence where “navigable canals” were running, nor when exactly a “navigable canal” was cleaned (at low or very low waters).

5. Who used the landing place that the team of the DAIK investigated in Philoteris? Philoteris in the Themistou Meris in the north-western Fayoum was one of the villages founded by Ptolemy II in the first half of the 3rd century BC. It is connected to the Bahr Yusuf (and therefore the Nile) by a canal that branches off the Bahr Nazlah, without any doubt the main canal in this area. At the village of Philoteris, the side arm of the Bahr Nazlah running by the village (Canal I) was 7–8 m wide and at least 2.30 m deep.<sup>31</sup> It ran by the village between the inhabited zone in the south, and the gymnasium in the north (Fig. 5).



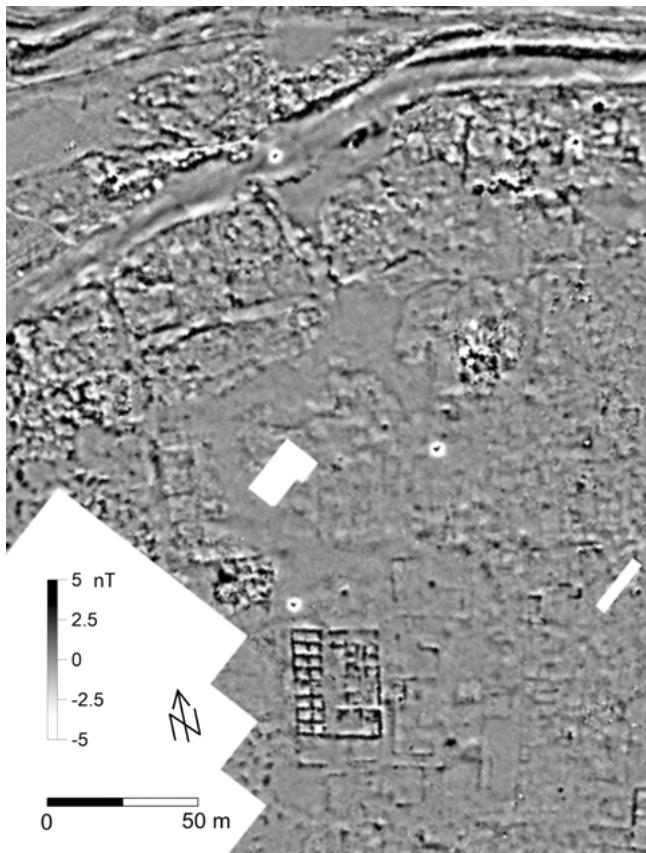
Fig. 5: The main canal at Philoteris, now in the desert west of the ancient village.

After 5 km, the canal reached Dionysias, the last larger village in the chain of Ptolemaic settlements here. In Philoteris, at the point, where a bridge connects the village with the huge area of the gymnasium and its race track, the canal forms a bay with a sandy beach. Who boarded and loaded here? The geomagnetic map (Fig. 6) shows that this landing place was connected by a street with one of the granaries in the village. That street winds south towards the main temple of the village, bends to the west and around the temple area (blank on the geomagnetic map), and reaches the granary after c. 270 metres from where it starts at the landing.

1. Is that bay in Philoteris a κοιλιάς as the one we hear of in SB I 4308, a tax declaration from the Ptolemaic period? ... [διώρυγα] πλωτὴν ὥστε νῦν ἐν τῇ ὅπ' ἀπήλιώτου μερίδι [τῆς] κοιλιάδος cίτον ἐκκομισθῆναι “[... the navigable canal] so that now on the eastern side of the bay (?) wheat can be carried off”. The field is connected to a navigable canal and boats could have been employed to carry off the harvest to the granaries.<sup>32</sup>

<sup>31</sup> Römer 2017, 189.

<sup>32</sup> In P. Lond. III 882.2 from 101 BC, a field is described as bordering a navigable canal on the east; it is not clear from the wording whether this is to the advantage of the piece of land or not.



**Fig. 6:** Detail of the geomagnetic map of Philoteris; main canal in the north of the village, bay and sandy beach, and granary in the south.

2. Transportation of people by donkeys is certainly attested in two contracts, in which performers are hired for religious festivals.<sup>33</sup> I will focus on the second one (Chrest. Wilck. 497), because there the location where the performance will take place is well known.<sup>34</sup> On 6 August AD 237 the head of a religious society in Bacchias in the eastern Fayoum signs a contract with the impresario of dancers and flute players, who most probably reside in the capital. The man from Bacchias hires two female dancers, one of them explicitly ordered by name (Tasais), to perform for 10 days from 13 Phaophi on term of a salary of 26 drachmas per day, food, and ὑπὲρ καταβάσεως καὶ ἀναβάσεως ὄνους γ “and for the way down (to the village) and the return, 3 donkeys”. Why do they not take the boat? Was the water still too low in the August of that year? Bacchias is on the large Wardan Canal that winds around the south-eastern and eastern fringes of the oasis, a Desert Canal. From the capital, the two girls would have had to travel upstream on the Bahr Yusuf for c. 7 km to Hawara, and then turn eastwards into the Wardan Canal. After c. 45 km downstream on that canal, they would have arrived in Bacchias; the return would have required the 45 km upstream on the Wardan Canal. The distance from the capital to Bacchias is c. 30 km as the crow flies. Their path would not have led the dancers as the crow flies, but along canals with many detours to be included.<sup>35</sup> No one is mentioned who would accompany the two female dancers who were obviously not trained in rowing. Looking at all contracts of this kind from the Roman period – there are 14 listed in Perpillou-Thomas – we find no single contract for such

<sup>33</sup> Chrest. Wilck. 495 and 497.

<sup>34</sup> In Chrest. Wilck. 495 the dancers are hired to perform in Nῆcoc “Island”. This island has been identified as Σοκνοπαῖον Nῆcoc in the north of the lake. In my view it is impossible to expect the troupe of dancers to arrive at Soknopaiou Nesos by donkey, taking the detour around the lake via Karanis from the capital. If this text is not a hint to the dam which may have existed over the lake and leading to Soknopaiou Nesos, the village of Nῆcoc “Island” in Chrest. Wilck. 495 should be identified with Ἰερὰ Nῆcoc in the Herakleidou Meris. For the possible dam over the lake see Römer 2019, 329 with note 39.

<sup>35</sup> I myself have balanced on tubes over canals, when the path unexpectedly ended at a waterstream blocking the way into the desired direction.

artists in which transportation by boat is offered, even when men are in the troupe.<sup>36</sup> Do these arrangements show, what a miserable business it was to be a dancer for whom the cheapest way of transportation was good enough? No extra oarsman had to be hired, riding the donkeys was certainly less comfortable than being rowed up and down the canals, but most likely cheaper.

Altogether, farmers in the Fayoum will have decided afresh for every harvest, whether it was more convenient to take the grain by donkey or by boat to the nearest granary or the nearest harbour. For their decision, the amount to be carried was as crucial as the distance to the harbour, and the water levels in the canals. Soon after the harvest, the canals were not inviting for a trip by boat. The transportation of people will have depended on the season, their social status and how soon they wanted to reach their destination. With its numerous canals the Fayoum had a dense net of traffic ways. We may envision rows of donkeys trotting along the canals, while light boats were floating smoothly at their sides, or being rowed painfully according to the current of the water.

## Bibliography

Papyrus editions are cited according to the *Checklist of Papyrus Editions*, accessible at <https://library.duke.edu/rubenstein/scriptorium/papyrus/texts/clist.html>.

Adams (2007): Colin Adams, *Land Transport in Roman Egypt*, Oxford.

Arnaud (2020): Pascal Arnaud, “La batellerie de fret nilotique d’après la documentation papyrologique”. In: Patrice Pomey (ed.), *La batellerie égyptienne. Archéologie, histoire, ethnographie*, Alexandria, 99–50.

Casson (1971): Lionel Casson, *Ships and Seamanship in the Ancient World*, London.

Clarysse (2008): Willy Clarysse, “Graeco-Roman Oxyrhyncha. A village in the Arsinoite Nome”. In: Sandra Lippert and Maren Schentuleit (eds.), *Graeco-Roman Fayum. Texts and Archaeology*, Wiesbaden, 55–73.

Clarysse/Hauben (1976): Willy Clarysse and Hans Hauben, “New remarks on the Skippers in P. Petr. III 107”. In: *Archiv für Papyrusforschung* 24/25, 85–90.

Claytor (2018): William Graham Claytor, “The Penthemeros Certificates from the Papers of a Weaving Family”. In: *Zeitschrift für Papyrologie und Epigraphik* 206, 179–182.

Cook (1994): Rosalie Cook, “An Archive of Ptolemaic Shipping Documents in the Macquarie Collection”. In: Adam Bülow-Jacobsen (ed.), *Proceedings of the 20th International Congress of Papyrologists, Copenhagen, 23–29 August 1992*, Copenhagen, 223–228.

Gagos (2001): Traianos Gagos, “The University of Michigan Papyrus Collection”. In: Isabella Andorlini et al. (eds.), *Atti del XXII Congresso Internazionale di Papirologia I*, Firenze, 511–537.

Hauben (1971): Hans Hauben, “Quelques considérations au sujet de papyrus P. Petr. III 107”. In: *Ancient Society* 2, 21–32.

Mayerson (1998): Philip Mayerson, “The Sack (CAKKOC) is the Artaba Writ Large”. In: *Zeitschrift für Papyrologie und Epigraphik* 122, 189–194.

Parássoglou (1976): George M. Parássoglou, “On Idios Logos and Fallen Trees”. In: *Archiv für Papyrusforschung* 24/25, 91–99.

Perpillou-Thomas (1991): Francoise Perpillou-Thomas, *Fêtes d’Égypte ptolémaïque et romaine d’après la documentation papyrologique grecque* (Studia Hellenistica 31), Leuven.

Poll (1996): Ivo Jeroen Poll, “Ladefähigkeit und Größe der Nilschiffe”. In: *Archiv für Papyrusforschung* 42, 127–138.

Reinard (2020): Patrick Reinard, “... treidelten wir das Schiff mit Mühe in den Hafen des Arsinoites’ – Überlegungen zu den Akteuren der Binnenschifffahrt und zu Quantifizierungsmöglichkeiten”. In: *Digital Classics Online* 6.1, 80–119.

Römer (2010): Cornelia Eva Römer, “Brief über das Umladen in einem Hafen”. In: Hermann Knuf, Christian Leitz and Daniel von Recklinghausen (eds.), *Honi soit qui mal y pense. Studien zum pharaonischen, griechisch-römischen und spätantiken Ägypten zu Ehren von Heinz-Josef Thissen* (Orientalia Lovaniensia Analecta 194), Leuven, Paris and Walpole, MA, 607–608 mit Tafel 110.

Römer (2017): Cornelia Eva Römer, “The Nile in the Fayum”. In: Harco Willems and Jan Michael Dahms (eds.), *The Nile. Natural and Cultural Landscape in Egypt*, Bielefeld, 171–192.

Römer (2018): Cornelia Eva Römer, “A Nilometer at Theadelphia? Location, and Possible Meaning of a ‘Well’”. In: Paola Davoli and Natascia Pellè (eds.), *Πολυμάθεια. Studi classici offerti a Mario Capasso*, Napoli, 385–394.

Römer (2019): Cornelia Eva Römer, *The Fayum Survey Project. The Themistou Meris, Vol. A. The Archaeological and Papyrological Survey*, Leuven.

Rostowzeff (1906): Michail Rostowzeff (sic), “Kornerhebung und -transport im griechisch-römischen Ägypten”. In: *Archiv für Papyrusforschung* 3, 201–224.

<sup>36</sup> These contracts come from the Fayoum, the Oxyrhynchites, and Hermopolis, and are dated to the 1st to 3rd centuries AD; cf. Perpillou-Thomas 1991, 275; see also the list of these and similar texts in Tedeschi 2002.

Seidlmaier (2001): Stephan Seidlmaier, *Historische und moderne Nilstände. Untersuchungen zu den Pegelablesungen des Nils von der Frühzeit bis in die Gegenwart*, Berlin.

Tedeschi (2002): Gennaro Tedeschi, "Lo spettacolo in età ellenistica e tardo antica nella documentazione epigrafica e papirologica". In: Mario Capasso (ed.), *Dal restauro die materiali allo studio die testi. Aspetti della ricerca papirologica* (Papyrologica Lupiensia 11), Galatina (Lecce), 89–187.

Thompson (1983): Dorothy Joan Thompson, "Nile grain transport under the Ptolemies". In: Peter Garnsey, Keith Hopkins and Carl Whittaker (eds.), *Trade in the Ancient Economy*, London, 64–75.

Thompson (2012): Dorothy Joan Thompson, "P. Enteux. 27 and the Nile transport of grain under the Ptolemies". In: Paul Schubert (ed.), *Actes du 26<sup>e</sup> Congrès International de Papyrologie, Genève, 16–21 août 2010* (Recherches et Rencontres 30), Genève, 751–754.

Uebel (1980): Fritz Uebel, "Zu den Daten in P. Petr. III 107". In: *Archiv für Papyrusforschung* 27, 63–65.

Vandorpe (2015): Katalijn Vandorpe, "Roman Egypt and the organisation of customs duties". In: Peter Kritzinger, Frank Schleicher and Timo Stickler (eds.), *Studien zum römischen Zollwesen*, Duisburg, 89–111.

Vinson (1998): Steve Vinson, *The Nile Boatman at Work* (Münchener ägyptologische Studien 48), Mainz.

Wilcken (1912): Ulrich Wilcken, *Grundzüge und Chrestomatie der Papyruskunde, Band I und II*, Stuttgart (reprint Hildesheim 1963).

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