The Nile Waters, the Sun, and Capricorn: A Greek Prose Fragment in Ann Arbor

Timothy Renner

<table>
<thead>
<tr>
<th>P. Mich. inv. 1599</th>
<th>Plate I</th>
<th>12.5 cm (width) x 9.3 cm (height)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First cent. BCE or first cent. CE</td>
<td>Provenance Unknown</td>
<td></td>
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</tbody>
</table>

P. Mich. inv. 1599, of unknown provenance, was acquired by the University of Michigan through purchase. On the recto side the papyrus preserves most of the writing of 10 lines of Greek prose from the lower part of a column (Column II), including a substantial margin below, as well as small bits of text from the preceding and following columns (I and III). The passage represented by Column II includes a discussion about (1) the sky and the waters of the Nile flood and (2) storytelling (μυθολογεῖν) concerning the constellation Aigokeros, or Capricorn. Although little can be read from them (see Col. II, l. 9, note), the remains of Columns I and III appear to belong to the same text as Column II. We may thus envision a composition or extract of at least some length. The back of the piece contains only a few traces.

The writing is in a fairly rapid but awkward book hand. Some letters, such as omicron and nu – but note also the enormous alpha in line 4 – fluctuate greatly in size, and often they are distorted or ungracefully formed. An individual character may vary considerably in shape. The writer had trouble maintaining the evenness of the lines and the spacing between them. Right column edges are irregular, with inter-columnar intervals of 1.0–1.3 cm. where they are measurable. There is a substantial lower margin of 2.4 cm. The inventory dates the hand to the second or third century CE. However, its general ambience would seem to be a couple of centuries earlier, especially in view of such letter forms as kappa, mu, and nu, the latter with its "add-on" horizontal at the top right. I would compare features of P. Oxy. XXIV 2399 = Turner, GMAW² no. 55 (middle first cent. BCE, assigned), P. Oxy. XII 1453 (30/29 BCE), and P. Oxy. II 216 = Roberts, GLH no. 10a (first half of first cent. CE) and would suggest that our papyrus dates to, at the latest, the first century CE.² There are no punctuation or other diacritical marks; a space in Column II, line 6 marks the break between two sentences. Someone, probably the writer of the text, took care to insert an omitted rho in 8 (an unusual kind of omission; see comm.) above the line. A couple of common itacistic misspellings remain uncorrected.

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¹ The papyrus forms part of a group deriving from the dealer Nahman and inventoried by H.I. Bell and C.T. Lamacraft in 1924 before distribution to purchasing institutions. See <http://www.lib.umich.edu/pap/exhibits/MPC/Reports/1924/1924_report_bell.html>.

² See also P. Ryl. IV 586 = P. Oxy. IV 802 = Roberts no. 8a (99 BCE).
Transcription 1: Diplomatic Transcription

<table>
<thead>
<tr>
<th>Col. I</th>
<th>Col. II</th>
<th>Col. III</th>
</tr>
</thead>
<tbody>
<tr>
<td>]...</td>
<td>μιδηνδηκατοιαστηνεξε</td>
<td>... [</td>
</tr>
<tr>
<td>], παν 4</td>
<td>κινωνισαιουστουνυιελον</td>
<td>[</td>
</tr>
<tr>
<td>], σ</td>
<td>κατηναιγηπουνουρευ. [1–2?]</td>
<td>[</td>
</tr>
<tr>
<td>4 ].. α</td>
<td>τοσκαταφοραν οθενκα . [1–2?] 4 I.,[</td>
<td>-- -- --</td>
</tr>
<tr>
<td>]., [..], [..], τουαγερκαργυιανυιελον</td>
<td>Εξ [</td>
<td></td>
</tr>
<tr>
<td>], [..], 8</td>
<td>νε ᾳγιαναιιισαμενωιμυθο</td>
<td>[4–5 ], ιπνοθεουνουνει</td>
</tr>
<tr>
<td>-- -- --</td>
<td>[..], σχημαμηπηιλλοισμε margo</td>
<td></td>
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Transcription 2: Partially Restored Transcript of Col. II


... [Col. II, 6–10] whence, hinting also at the action of Aigokeros (i.e. Capricorn) that takes place, they tell the story that this god, having changed his form or appearance...

Col. I, 2. ] παν: Πάν, παν, or παν[τ–? See discussion below.

Col. II, 2. οὐρανοῦ: In alpha there are extra strokes of ink; perhaps the writer made the letter once, then rewrote it, with a slightly different orientation, over the first attempt.

ἀνακ[ο]μιδην: Of the kappa, the upper diagonal and part of the serif at the lower left survive; this letter and the now-missing omicron extended somewhat into the margin. It may be that the lower arc of a possible rounded letter faintly visible at the appropriate interval in the margin, but appearing (at least
presently) at a height midway between lines 1–2, is the omicron in question; I have not indicated this character in the printed text above.

3 For the writing of a single rho where the doubled letter is called for, see Gignac, Gram. I, 156.

5 ρεψμ[α]τος: Serif from lower left of μυ.

6 The punctuation space is about two letter widths.

8 The inserted letter looks similar to the hand of the main text. For the relatively few examples of rho omitted before a stop in documentary papyri, see Mayser, Gram. I.1, 160; Gignac, Gram. I, 108.

The Greek of Column II, lines 1–6 raises problems, and indeed the copy before us may contain one or more omissions or displacements of words. In lines 1–3, where the earlier part of the sentence is lost, we are presented with "... the recovery (ἀνακομιδὴν) of the waters from the sky" as object of a verb or preposition. Then, in a new main clause, introduced by δὴ, a subject referring to a flowing downward (κατάρρη<π>οια) is followed by what appears to be a phrase stretching from 3–6 and serving apparently as a direct object (τὴν ἔκκενων ... τοῦ ρεψμ[α]τος καταφοράνυ). Within this phrase is embedded a clause introduced by a dative plural relative pronoun. The word ἕκκενων, the antecedent of this pronoun, must refer to the waters mentioned earlier, in line 2. The relative clause has no expressed verb; its subject is αὐτὸς and "the Nile and Egypt" appear to be the direct objects. If we supply verbs (whether wrongly omitted or to be understood from earlier in the text) for both the main and the relative clauses in 3–6, we may understand the sense of 1–6 as follows: "... (someone/something – identical with αὐτὸς in 4 – brings about) the recovery of the waters from the sky; indeed the downward flow (produces) the current of the river from those (waters) by which he/it (floods/acts upon) the Nile and Egypt."

The summertime inundation of the Nile, so unusual at a time when other rivers of the ancient world ebbed or dried up, exercised a special fascination for numerous Greek and Latin writers, poets and philosophers as well as geographers and historians from the Presocratics to the Second Sophistic, and beyond. Herodotus, in his well-known discussion (2.24–26), after rejecting other causes for the Nile flood put forward in his day – the slowing of the river's current by the etesian winds, a yearly inflow of water into the Nile from the Ocean stream, or melting snowfalls in Ethiopia – proposes that it results from the winter sun's drawing water to itself during its southerly progression, thereby reducing the flow of the river, which then, during the summer months, with the Sun now further away in the north, returns to its natural high water levels, producing what seems to us a flood. This might suggest that the agent (αὐτός) presented in lines 4–5 of the papyrus as acting upon, presumably by flooding, Egypt and the Nile is in fact the sun. Herodotus, however, whose solution is based on the interruption of the normal volume of water during the winter, says that the water drawn up by the sun is later dispersed by the winds. The Michigan text implies a slightly different explanation involving a seasonal cycling of waters from the earth to the sky and then back again: the retrieval (ἀνακομιδῆ) of the water from the sky would result in it being available once again to the Nile during the season of flooding. The annual ἀνακομιδῆ takes the form of a flowing downward, a κατάρρησις, the details of which are not specified.

3 For Herodotus' explanation in the context of the meteorological thought of his day, cf. A.B. Lloyd, Herodotus Book II (Leiden 1976) 104ff. A. Rehm's article "Nilschwelle," RE XVII (1937) 574–590 cites all of the ancient passages from the Greek and Latin manuscript tradition which discuss different theories about the inundation. For analysis of these sources see especially D. Bonneau, La cru du Nil, divinité égyptienne (Paris 1964) 135–218.
There is indeed another ancient author, contemporary with or even slightly earlier than Herodotus (who must have been familiar with his ideas), whose approach appears to be closer to that of the papyrus. This is Diogenes of Apollonia (DK 64), reputed to have been a contemporary of Anaxagoras and possibly Aristophanes' model for "Professor Socrates" in the Clouds. The author of a Peri Phuseos, Diogenes, as reported by the Scholia to Apollonius of Rhodes 4.269, thought that the water of the sea is "snatched up" (ἀρτπάξεθαί) by the sun and then "carried down" (καταφέρεθαί) to the Nile; he also maintained that the Nile "is filled in the summer because the sun directs to it the moisture from the earth " (ἐῖς τοῦτον τὰς ἀπὸ γῆς ικμάδας τρέπειν). In their totality, Diogenes' beliefs about the transfer of moisture between earth and sky and between different locations on earth appear to have been even more complicated than this, but there is in his explanation an extensive involvement of the sun in the movement of water from the sun to the river – enough to suggest something like the ἀνακομιδή from the sky mentioned in the Michigan papyrus. Thus, the manner in which the downward, or summertime, part of the cycling is presented in the papyrus would seem to go back in some way to the kind of scenario that one finds in his work.

Even if our author is not referring to Diogenes specifically, the explanation in the papyrus suggests the type of speculation about natural phenomena that we associate with late Archaic and Classical thinkers. So far, we might be dealing with the work of a geographer or a historian – a passage comparable, let us say, to Strabo's lengthy treatment of different explanations for the flooding of the Nile or to that in P.Oxy LXV 4458, a third century CE papyrus recently attributed to Posidonius, where theories of causation by previous authorities including Herodotus are reviewed.

In the latter part of Column II of the papyrus, however, where the Greek is more transparent, the discussion shifts to astral myth. Lines 8ff., beginning with μῦθο[[λογο]]οιν, concerning the change of form of Aigokeros, refer to a well attested type of narrative which provides an explanation for the animal forms or associations of Egyptian gods: The Olympian deities, in order to escape from the monstrous Typhon, transformed themselves into various creatures and fled to Egypt. In many versions of the account Pan, who was among the gods' most active and most resourceful supporters during these events, was then rewarded (in some cases together with his goat mother, who had nursed Zeus) with a place among the stars, becoming the zodiacal constellation Aigokeros, or Capricorn. Perhaps partially infused with

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4 Seneca Nat.Quaest. 4.2.28 adds additional details about Diogenes' views concerning various sources of moisture on land and sea from which the sun draws: Diogenes Apolloniates ait: Sol humorem ad se rapit; hunc adsiccata tellus ex mari ducit, tum ex ceteris aquis. Fieri autem non potest, ut alia sicca sit tellus, alia abundet; sunt enim perforata omnia et invicem pervia, et sicca ab humidis sumunt. Alioquin, nisi aliquid terra acciperet, exaruisset. Ergo undique sol trahit, sed ex his quae premit maxime; haec meridiana sunt. For a fuller treatment of the intricacies of Diogenes' views, see Bonneau, op.cit. (above, n. 3) 180–182. Cf. more generally G.S. Kirk and J.E. Raven, The Presocratic Philosophers (Cambridge 1964) 427. Bonneau, op.cit. (above, n. 3) 191–193 collects information about authors whose explanations for the inundation involve the sun but who, she believes, are building on Herodotus' account – in some cases perhaps incorporating native Egyptian traditions centering on this all-important heavenly body.

elements of the Seth-Osiris conflict from Egyptian tradition, this story of the gods’ flight to Egypt and metamorphosis is first attested in Hellenistic poetry about transformation, as is evidenced by the prose epitome of Eratosthenes’ *Katasterismoi* (1.27; specifics about Pan included) and by the summary of Nicander’s *Heteroioumena* cited by Antoninus Liberalis 28 (specific details regarding Pan not given). Additional versions, varying somewhat in detail and emphasis, are found over the next several centuries in many other authors including Diodorus, Hyginus, Ovid, and Plutarch. How can we relate what our author says on this topic to his discussion of the Nile? Perhaps he is turning to the story of how Aigokeros came to be in the heavens because he is seeking to find scientific or philosophical truth in it. Especially in view of the connecting ὑδατος in line 6, the word ἐνεργεία must refer to the means by which the constellation or sign brings about (or helps bring about) the cycling of water from the heavens to the Nile, and vice versa, as he has just been discussing. Probably the key is the fact that Aigokeros/Capricorn is a sign that begins with the winter solstice on December 22, a time at which the Nile, the first indications of whose summer inundation are associated with the summer solstice, is furthest from being at flood stage. Indeed one would expect the drawing upward of the water by the sun, after the manner of Herodotus and Diogenes, to be in full operation at this midwinter time. Astral references of this kind have some currency in the early Empire: Pliny the Elder (*NH* 5.9), after referring to the summer signs Cancer and Leo as those in which the Sun is situated during the inundation, alludes to how its midwinter presence in Capricorn – together with its movement toward the south, as in Herodotus – produces a depletion of the stream of the Nile. Lucan, too (*BC* 210–218), stresses Cancer and Capricorn as denoting the key points in the Nile’s "year." We could imagine that in the lost part of the Michigan text, prior to the discussion of the return of the waters to the river in the summer beginning in Column II, line 2, our author made mention of their being drawn upward during the opposite, or midwinter, season, and that he first mentioned Aigokeros and/or Pan there. It is possible that the letters παυ at the end of Column I, line 2 are the name of the god. Perhaps, then, this discussion involving him began much earlier, or else the author had other reasons to introduce him previously.

If the fragment is from a primarily geographical composition, it would join a relatively small number of published papyrus fragments of Greek geography (a dozen maximum, and some of these may not be from primarily geographical works). I do not know of a parallel instance to the explanation involving astral myth in ancient geographical or historical texts. It seems noteworthy to find such a passage in the same discussion as what appears to be a natural philosophical, or "scientific," explanation for the rise of the Nile. If we were able to read the entire passage of which the Michigan text is a part, it might turn out that the author mentions those who tell stories (8–9 μυθο[λογου]ς) like that about Pan in order to

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7 For Leo see also Plut. *Quaest.Conv.* 4.671C. For the summer solstice as coinciding with wintertime in the southern hemisphere and helping produce the rains there which cause the Nile to flood, see [Plut.] *Plac.Phil.* 4.1 = Eudoxus Fr. 288 Lasserre.

8 In MP these papyrus texts are included under the larger rubric "Histoire et géographie." While geographical works appear rarely among the papyri, it is interesting that the principal surviving passage of the most recent new geographical papyrus to be published, *P.Oxy.* LXV 4458 (above, n. 5) in fact contains a discussion of the problem of the Nile inundation.
patronize or show contempt for them. Nevertheless, I alluded above to the fondness on the part of writers of the Hellenistic and Roman Imperial periods for astral myths such as that concerning Pan and Capricorn. I think that what we see in the discussion of Capricorn’s effect on the Nile in the Michigan papyrus could be reflective of a trend in the works of these times. Even after, following the empirically based pronouncements of Aristotle, Agatharchides of Cnidus, and Strabo, resulting from growing knowledge of the lands to the south of Egypt in the late fourth century and early Ptolemaic period, the rains of Ethiopia had increasingly come to be recognized as causing the inundation, many writers continued to treat the great questions about the Nile – its sources and the reason for its rising and falling – in such a way as to stress the unknowable, the mythic, and/or the divine.9

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P. Mich. inv. 1599

Plate I