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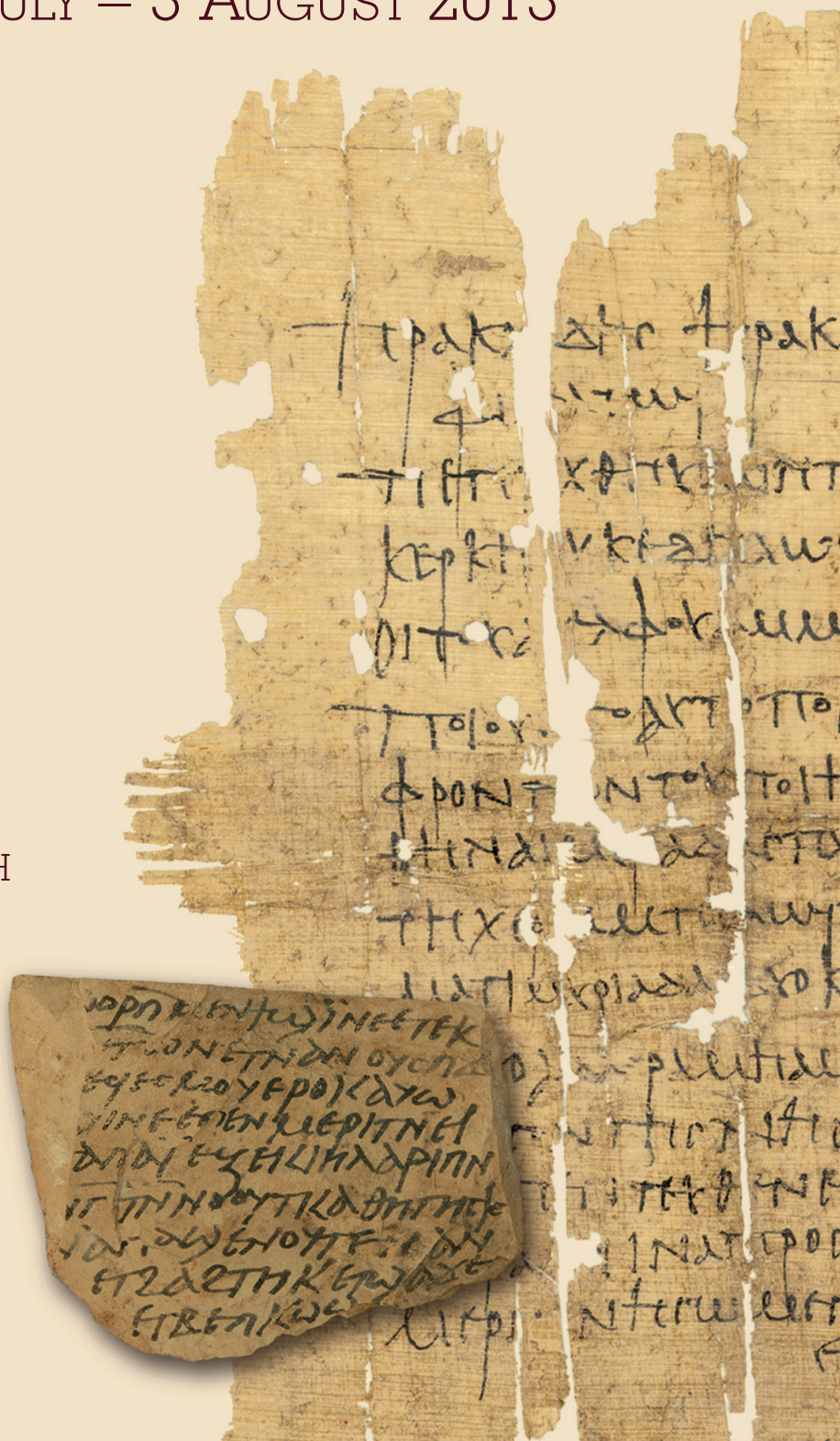
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Nicola Reggiani

**DATA PROCESSING AND STATE MANAGEMENT
IN LATE PTOLEMAIC AND ROMAN EGYPT:
THE PROJECT ‘SYNOPSIS’
AND THE ARCHIVE OF MENCHES**

GENERAL INTRODUCTION TO THE PROJECT.

RUNNING A STATE IS BASED on collecting, processing and safekeeping information on its population and territory.¹ Such operations are conducted by a range of officials whose cooperation is indispensable for the effective performance of these tasks. Usually, cooperation runs vertically: a lower instance collects the information on site, forwarding it to a higher office for check or decision-making. Still, the higher instance would expect to receive information from more than one lower instance. This implies that, for the sake of a quick and effective deployment of the data, one of the key tasks for the lower instances would be to record them in a new handy format that could be feasibly applied by their superiors.

¹ The present paper is issued within the framework of the project ‘Synopsis: Data Processing and State Management in Roman Egypt (30 BCE – 300 CE)’ conducted by Andrea JÖRDENS (Universität Heidelberg) and Uri YIFTACH-FIRANKO (Tel-Aviv University) under a grant of the German-Israeli Foundation for Scientific Research and Development (G-38-111.4/2011).

In a large state such as Ptolemaic, and later Roman Egypt, information was sent between offices at the same level as well as to higher and higher intermediate instances up to the central administration, creating a wide network in which the main task was to process the more detailed data into summary synoptical reports containing just the most fundamental information on people, land, taxes.

The question of the circulation of information has already been studied in some recent works,² which however have focused on the downwards process, from Rome and/or Alexandria to officials on site. The process in the opposite direction has been treated primarily in the editions of reports and related material, and in studies dealing with documentary genres or officials involved in this process.³ Still, an exhaustive study of this phenomenon has never been undertaken.

This is the object of the project ‘Synopsis: Data Processing and State Management in Late Ptolemaic and Roman Egypt (150 BCE – 300 CE)’, launched in January 2013 and conducted by Andrea Jördens of the University of Heidelberg and Uri Yiftach-Firanko of the Tel-Aviv University under the auspices of the German Israeli Foundation. Focusing mainly on reports relating to land, population, and tax collection, we aim at studying the described process of creation of synopses as concerns the sources of the collected information, the bureaus in which the accounts were drafted, the offi-

² Silvia STRASSI, ‘Problemi relativi alla diffusione delle disposizioni amministrative nell’Egitto romano’, *Zeitschrift für Papyrologie und Epigraphik* 96 (1993), pp. 89–107; Silvia STRASSI, ‘Problemi relativi alla diffusione delle disposizioni amministrative nell’Egitto romano: il ruolo degli hyperetai e le formule di trasmissione dei documenti’, *PapCongr.* XX, pp. 504–507; J. D. THOMAS, ‘Communication between the prefect of Egypt, the procurators and the nome officials’, [in:] W. ECK (ed.), *Lokale Autonomie und römische Ordnungsmacht in den kaiserzeitlichen Provinzen vom 1. bis 3. Jahrhundert*, Munich 1999, pp. 181–195; R. HAENSCH, ‘Le rôle des officiales de l’administration provinciale dans le processus de décision’, *Cahiers du Centre G. Glotz* 11 (2000), pp. 259–276.

³ J. OATES, *The Ptolemaic Basilikos Grammateus* [= *BASP Supplement* 8], Atlanta, Ga. 1995; T. KRUSE, *Der königliche Schreiber und die Gauverwaltung. Untersuchungen zur Verwaltungsgeschichte Ägyptens in der Zeit von Augustus bis Philippus Arabs (30 v.Chr. – 245 n.Chr.)*, I–II [= *APF Beiheft* 11], Munich – Leipzig 2002; Charikleia ARMONI, *Studien zur Verwaltung des Ptolemäischen Ägypten: Das Amt des Basilikos Grammateus* [= *Papyrologica Coloniensia* 36], Paderborn – Munich – Vienna – Zürich 2012.

cials involved in both sending and receiving data.⁴ Our study also underlines the methods of categorization deployed in the reports, the level of standardization in the accounts, taking into consideration the purpose of each. We also consider the specific formal features of synoptic reports as a documentary genre, with specific regards to the layout of the text, the object of the account, and places and times of composition. We expect that such research will shed new light on the mechanisms created by the state for processing data in the aforementioned fields, on the ways in which the different involved instances cooperated, and on the different means introduced by the state to secure the smooth operation of the data processing procedure.

In the first stage of our research we surveyed all the edited texts in order to create a comprehensive list of all synoptic accounts related to the aforesaid fields, registered in a databank connected to HGV⁵ together with the metadata relevant for our study. The databank now includes every piece of papyrus that *may* be considered as a report, from a very short lists of commodities to extremely long texts of reports, stemming from the Ptolemaic, Roman and Byzantine periods, for a total of more than nine thousand items. The groups of documents we are going to focus on is, however, much smaller: our current task is to study ‘only’ the reports issued by state officials in the late Ptolemaic and Roman period (*kōmogrammateis*, *sitologoi*, *praktōres*, etc.), as well as, to the available extent, those issued by the central administration of the *nomos*.

We are now performing specific test-studies on this core of texts, searching for key-terms (technical words or phrases which are likely to be identifiers of the documents we are interested in) which we collect in a glossary, while analyzing the structural and formal features of certain categories of reports in order to point out their peculiarities and their position within the operation of data processing. I will now present some *specimina* of this.

⁴ Cf. U. YIFTACH-FIRANKO, ‘P. Col. inv. 33r and the processing of data in early Roman Egypt’, [in:] R. AST, Hélène CUVIGNY, T. M. HICKEY & Julia LOUGOVAYA (eds), *Papyrological Texts in Honor of Roger S. Bagnall* [= *American Studies in Papyrology* 53], Durham, N.C. 2012, pp. 349–353.

⁵ I would like to take the occasion to thank James COWEY and Carmen LANZ for having provided technical help in many issues.

THE MENCHES TEST CASE

A good starting point will be the well-known archive of Menches, *kōmogrammateus* of Kerkeosiris roughly between 119 and 100 BC. The extent of the archive, together with its focus on the office-tasks of the village scribe, in particular land administration,⁶ turn it into an ideal test case for the analysis of the composition, structure and contents of land surveys in the late Ptolemaic age, and the study of the process of collecting and processing relevant data at the village level, the lowest one in the administrative pyramid, with references to the higher instances too.⁷ In particular, collecting data about land property and usage was the main task of the *kōmogrammateus*, closely scrutinized by the office of the *basilikos grammateus*, and Menches' papers are the main source for this.⁸

Before Ptolemaic times, Egypt had already had a long tradition of land division, distribution and control, due to the strong reliance of its economy on Nile's floods and conditions:⁹ this explains the great abundance

⁶ 'Menches' main task as village scribe was to account for the Crown revenues in kind from his village lands' (A. M. F. W. VERHOOGT, *Menches, Komogrammateus of Kerkeosiris. The Doings and Dealings of a Village Scribe in the Late Ptolemaic Period (120-110 BC)* [= *Papyrologica Lugduno-Batava* 29], Leiden – New York – Cologne 1998, p. 109). In general, on Menches: VERHOOGT, *Menches* (see above), *passim*; on the archive itself: P. W. PESTMAN, 'The official archive of the village scribes of Kerkeosiris. Notes on the so-called archive of Menches', [in:] *Festschrift zum 100-jährigen Bestehen der Papyrussammlung der Österreichischen Nationalbibliothek, Papyrus Erzherzog Rainer (P. Rainer Cent.)*, Vienna 1983, pp. 127-134, and also the data collected by Trismegistos Archive, <<http://www.trismegistos.org/archive/140>>.

⁷ We are well aware of Menches' relationships with his colleagues and superiors: see VERHOOGT, *Menches* (cit. n. 6), pp. 70-105.

⁸ Dorothy J. CRAWFORD, *Kerkeosiris. An Egyptian Village in the Ptolemaic Period*, Cambridge 1971, p. 29; Lucia CRISCUOLO, 'Ricerche sul *Komogrammateus* nell'Egitto tolemaico', *Aegyptus* 58 (1978), pp. 3-101, at pp. 53-54; VERHOOGT, *Menches* (cit. n. 6), pp. 107 ff.; also J. G. MANNING, *Land and Power in Ptolemaic Egypt. The Structure of Land Tenure*, Cambridge 2003, pp. 150-151. 'La funzione essenziale espletata dallo scriba nella κώμη consisteva dunque nella compilazione di una serie di atti che contribuivano, alla fine, al completo controllo della situazione agricola di ogni villaggio, e quindi della principale voce della sua economia. I dati così ottenuti venivano elaborati ed utilizzati negli uffici del nomo, dal basilicogrammateo' (CRISCUOLO, 'Ricerche' [see above], p. 58). On the role of the royal scribe in the land surveys under the Ptolemies, see CRAWFORD, *Kerkeosiris* (see above), pp. 28-30, and ARMONI, *Studien zur Verwaltung* (cit. n. 3), pp. 172 ff.

and complexity of the extant documents coming from the Fayum, which itself is ‘un conquête des Ptolémée sur l’eau’,¹⁰ as well as why the lots of land were not numbered in a stable way,¹¹ which required frequent, periodical surveys and controls. Since pharaonic times, land surveys¹² were conducted in order to collect information with a primary fiscal purpose,¹³ resulting in cadasters, registers, reports.¹⁴ In their conquest of the Fayum, the Ptolemies held on to this tradition, meticulously collecting information on: (a) fiscal/administrative land categories (*kômē syn peristasei*, *hypologos aphoron*, *paradeisoi*, *nomai ektos misthōseōs*, *hiera*, *klerouchikē*, *basilikē*, along with any applicable subcategories);¹⁵ (b) ownership/tenancy of the plots; (c) extension of the plots; (d) agricultural state of the land, including the current state with relation to the Nile’s flood and the types and

⁹ A. DÉLÉAGE, ‘Les cadastres antiques jusqu’à Dioclétien’, *Études de Papyrologie* 2 (1934), pp. 73–228, at pp. 82–84; CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 5–9; MANNING, *Land and Power* (cit. n. 8), pp. 146–147.

¹⁰ DÉLÉAGE, ‘Les cadastres’ (cit. n. 9), p. 89; cf. Dorothy J. THOMPSON, ‘New and old in the Ptolemaic Fayyum’, [in:] A. K. BOWMAN & E. ROGAN (eds), *Agriculture in Egypt. From Pharaonic to Modern Times* [= *Proceedings of the British Academy* 96], Oxford 1999, pp. 123–138.

¹¹ DÉLÉAGE, ‘Les cadastres’ (cit. n. 9), pp. 99–100.

¹² The best extant example is the wide hieratic ‘Wilbour Papyrus’, dated to the fourth year of Ramses V (ca. 1150 BC) and edited by A. H. GARDINER, *The Wilbour Papyrus*, I–III, Oxford 1948 (+ vol. IV, ed. R. FAULKNER, 1952); cf. Sally L. D. KATARY, ‘Wilbour Papyrus’, [in:] R. S. BAGNALL, K. BRODERSEN, C. B. CHAMPION, A. ERSKINE & Sabine R. HUEBNER (eds), *The Blackwell Encyclopedia of Ancient History*, XII, Chichester 2013, pp. 7104–7106. This document ‘was possibly an archival copy of a field survey of assessment (*ḥt*) ordered by the State Chief Taxing Master who managed temple finance’ (*ibidem*, p. 7105), and is organized in regular columns, with one entry per line, in an immediately readable layout which looks like a forerunner of the later, Ptolemaic surveys (see below).

¹³ Cf. CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 36–37; and, more theoretically, to establish ‘the state’s authority over land as well as private interests in that land’ (MANNING, *Land and Power* [cit. n. 8], p. 146). Cadastration is defined as the ‘recensement des biens fonciers par l’état’ by DÉLÉAGE, ‘Les cadastres’ (cit. n. 9), p. 63.

¹⁴ For general and theoretical remarks on land cadastration, see G. LARSSON, *Land Registration and Cadastral Systems. Tools for Land Information and Management*, New York 1991, pp. 9 ff.

¹⁵ See *P. Tebt.* I, *Appendix*, pp. 538–580, and *P. Tebt.* IV, *Introduction*, pp. 2 ff.; also CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 53 ff. It is worth noting that the articulation of the different administrative land categories in the Fayum might not be representative of the whole Egypt: cf. A. MONSON, ‘Land tenure and taxation from Ptolemaic to Roman Egypt’, *Tyche* 25 (2010), pp. 55–71, at p. 58.

amounts of crops sown. All of these pieces of information concurred to determine the amount of rent due to the state and were directed to two main purposes: (1) taxation,¹⁶ and (2) basis and check for the *diagraphē tou sporou*, the annual crop schedule.¹⁷

Different stages of survey were conducted on the land and were the main (though, likely, not the only¹⁸) source of information for the resulting documentation. Two types of survey, called *euthymetria* ('exact measurement') and *geōmetria* ('land measurement'), seem to have been conducted regularly. The former was a geographical/topographical survey, conducted by special officers called *geōmetrai*,¹⁹ after the recession of the Nile: as borders had been erased or heavily damaged by the flood, the purpose was to establish and fix them again, while measuring the exact length/extension of each plot through the procedure known as *schoinismos* (see below).²⁰ The latter used to take place in direct connection with the sowing: it was meant to detect and register the quality of the land with regard to the degree of inundation,²¹ the type of crops sown (or to be sown), and, in the case of the royal land, the rent due to the state. This survey too was likely conducted by the *geōmetrai*, as part of a group of local officials mentioned in some documents. Two more types of survey were irregularly conducted at need. One, the so-called *anametrēsis* ('re-

¹⁶ Cf. CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 36–38.

¹⁷ Cf. Hélène CUVIGNY, *L'arpentage par espèces dans l'Égypte ptolémaïque d'après les papyrus grecs* [= *Papyrologica Bruxellensia* 20], Brussels 1985, pp. 115–116; on the *diagraphē sporou*, see P. VIDAL-NAQUET, *Le Bordereau d'ensemencement dans l'Égypte ptolémaïque* [= *Papyrologica Bruxellensia* 5], Brussels 1967; CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 25–26; MANNING, *Land and Power* (cit. n. 8), p. 153.

¹⁸ Among these other sources we can recall the declarations of persons and property (*apographai*): cf. CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 19–20.

¹⁹ Cf. H. KUPISZEWSKI, 'Surveyorship in the law of Greco-Roman Egypt', *Journal of Juristic Papyrology* 6 (1952), pp. 257–268, at pp. 257–259; CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 30–31.

²⁰ For some interesting representations of this procedure, from tombs of Pharaonic times, see, e.g., Suzanne BERGER, 'A note on some scenes of land-measurement', *Journal of Egyptian Archaeology* 20 (1934), pp. 54–56.

²¹ A thorough distinction of regularly inundated (for one season: *bebregmenē*), uninundated, i.e. dry (for one year: *abrochos*; for many years: *chersos*), and over-inundated lands (for one year: *embrochos*; covered by waters for many years: *limnē*) was applied.

measurement²²), was reserved to lands that had not been measured before, at least not in recent times (supposedly, the procedure was similar to the *euthymetria*, and conducted by the same functionaries). Finally, the *episkepseis* were special surveys conducted by the *geōmetrai* upon specific instructions of higher instances, in order to check a certain quality of the land (its dimensions, productivity, legal position) in comparison to that reported after earlier surveys or in existing registers.²³

The direct paperwork resulting from such surveys is generally lost;²⁴ what we have are registers and reports issued within the office of the

²² The change in the suffix (from *-metria* to *-metrēsis*) could be a linguistic mark of the passage from a regular to an irregular task.

²³ Cf. CUVIGNY, *L'arpentage* (cit. n. 17), pp. 122–124.

²⁴ It consists of the quick annotation of the data collected ‘on ground’ by the collecting officers in preliminary or raw lists, or drafts. For the land surveys, they might be identified with the *byblia* mentioned in *P. Tebt.* I 61b, col. VIII, l. 216 (the reference could likely be to papyrus sheets used or reused for the annotations). I think that the best example of such very basic stage of the reporting process can be seen in *P. Tebt.* IV 1112 (115/4 BC), a very raw list of plots of land arranged by administrative land categories, the general heading of which, (ὧν) μετρεῖν, makes clear reference to the actual performance of the survey by the *geōmetrai*. The structure is arranged on indented lines, and each new indentation corresponds to a different piece of information, like the following *specimen* (col. I): . . . (ὧν) μετρεῖν [general heading] | κληροῦ(χων). (εἰκοσιαρούρων) Χο(μήνιος) [first indentation: land category] | Κεφαλαῖς Πετεκούχου ιθ [second indentation: land owner and total extension] | [(πυρῶν)] θ κ(ριθῆι) ε φαρή(λων) ε [third indentation, first line: crops] | [γεω(ργός)] Ϝρρος Νεοπτολ(έμου) [third indentation, second line: cultivator]. Such tree structure is not regularly followed (in l. 9 the first crop is entered in the ‘second indentation’, and in l. 19 the cultivator is entered in the same line as the crops) but the three-line grouping is constantly followed (except in ll. 15–16). The main deviation, in l. 17, where the owner’s name is on the same line as the land category, is likely due to the facts that (a) he was the only representative of that category, and (b) an extra piece of information is provided in the following line. As to the registered data, the structure recalls that of *kata phyllon* surveys (see below), and many words are abbreviated, even proper names, as if the recipient was already aware of them. The purpose of such report was providing the *kōmogrammateus*’ office with the basic information coming from land survey, in particular about crops: there is no attempt to calculate the plots’ areas (as happens, on the contrary, in *SB* XX 14973, see below), and the structure of the draft is in compliance with its purpose. Indeed at the end of the second column it is appended a draft of an official communication mentioning a ‘previous report’: likely it is a new *episkepsis* conducted after a request by the *basilikos grammateus*, and the subsequent report is intended to communicate (to the *kōmogrammateus*?) any changes occurred after the previous survey (either *euthymetria* or *geōmetria*, see below):]εν δια τοῦ προτέρου | προσαγγ]έλματος εξων . |] εὔρησθαι ἑπακάσθαι ἑκ τῆς | [ὑπό το]ῦ βα(σιλικοῦ)

kōmogrammateus, either for internal or external use, on account of these as well as of the other sources. We know several different types of documents related to the land administration,²⁵ showing a varying degree of detail, since the higher instances in the administrative hierarchy needed less information than the lower ones [see Fig. 1]. Basically, the data the upper levels needed to know were only: (a) administrative categories of land and population, for fiscal purposes; (b) current state of the land (if sown or not, and why); (c) the amount of rents in kind, for the royal land. Thus data had to be selected and arranged, also graphically, in order to comply with the specific purposes of each type of report: and it is among the objects of our project to analyze the structure of each type of document in order to understand which kinds of information were passed to the higher offices, and how and why, and from which types of sources they were taken. As a specimen of this task, what follows is a very provisional attempt to identify few main categories of land registers or reports, on the ground of the structural arrangement of the set of information selected to compose the document itself.

ANALYTICAL DOCUMENTS.

Documents arranged by geographical/topographical coordinates

The report category to be discussed first is that called *euthymetria*, the main concern of which seems to have been the annual statement of the exact (*euthys*) position and extension of the plots (the very starting point of every land census),²⁶ in this relying directly upon the data coming from the aforementioned, homonymous survey (possibly supplemented with

γρ(αμματέως) γεγενημένης | ἐπισκ[έ]ψεως εὐρηθέντος |]. κβ τοῦ Ἐπεὶφ μη(νός) | ἐ]πισκέψεως
διὰ τοῦ αὐτοῦ | ἐν] ὑπολό(γωι) ἀναφερόμενον. See also *P. Tébṭ*. IV 1124 (115 BC or later, a list of holders of royal land), if not part of a larger register; 1125 (116/5 BC), the results of a survey on improperly occupied land conducted by a *topogrammateus* (τὰ ἐ[γνως]||μένα ἐξ ἐπισκέψεως, ll. 1–2) attached to a report issued by Menches himself likely to some higher official; *P. L. Bat.* XXIX 2 (Kerkeosiris, 114 BC), a preliminary report on crops.

²⁵ Cf. CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 9 ff.

²⁶ DÉLÉAGE, 'Les cadastres' (cit. n. 9), p. 77.

Type of information (POSSIBLE SOURCE)	Level of detail (data about the size of land always apply)												DESTINATION (Internal / External use)
	Geographical information (EUTHYMETRIA)			EPISKEPSEIS	Anagraphical information (REGISTERS?)		Agricultural information (GEOMETRIA)			Administrative information (REGISTERS?)			
	Perichoma (geographical subdivision)	Geographical orientation	Measures of the sides of the plot	Reference to later surveys	Mention of cultivators	Land owners or contractors	Crops specification	Current state of the land	Rent (only for royal land)	Physical category of land	Administrative category of land	Administrative category of population	
Report (specimina)													
EUTHYMETRIA (topographical cadaster)	Y	Y	(Y)	(Y)	(Y)	Y	(Y)		Y	Y	Y	Y	I
APOLOGISMOS TOU EDAPHOUS (general register)				Y	Y	Y	Y		Y	Y	Y	Y	I
ANAGRAPHOMENON PAN EDAPHOS (general summary)									Y	Y	Y	Y	I/E
KATA PHYLLON GEOMETRIA – royal land (crop register)				Y	Y	Y	Y	Y	Y	Y	Y	Y	I/E
KATA PHYLLON GEOMETRIA – other lands (crop register)				Y	Y	Y	Y	Y		Y	Y	Y	I/E
KAT'ANDRA KAI PHYLLON (crop register arranged by people)	(Y)	(Y)				Y	Y		Y		(Y)		E
KATA PHYLLON EPIKEPHALAIΟΥ (summary report on crops)								Y	Y				E
(report on <i>hypologos</i> land - P.Tebt. 1127)	Y	Y						Y		Y	Y		E
APOLOGISMOS HYPOLOGΟΥ (general register of <i>hypologos</i> land)								Y	Y	Y	Y	Y	E

Fig. 1. Types of land surveys and their level of details

information coming from other *kōmogrammateus'* files). Such reports (P. Tebt. I 84r, 84v, 85; IV 1116–1121) are indeed organized by geographical coordinates, and the pieces of information that are always to be found in them are the geographical directions of the survey, the main land categories (*hiera*, *basilikē*, *klerouchikē*, *hypologos* along with infrastructures such

as canals or roads²⁷), the names of the owners/contractors, and the extension of the plots. The *euthymetria*i can thus be defined as *topographical registers*,²⁸ and this is reflected by the ancient terminology, since they are titled *kat'andra kata perichōma*, that is 'according to the topographical sections' (*perichomata*, 'basins') in which the fields around Kerkeosiris were divided,²⁹ the order of which on the paper depended on the actual route followed during the survey.

The main interest seems therefore to be devoted to the collection of information related to the geographical position of the plots. Apart from the *hypologos* land, which is specified as usual with regard to the actual state (if salted, uninundated, and so on), there is no explicit mention to *esparmenē* (sown land) or to the current state of the cultivated land, as in the *kata phyllon* reports that we are going to analyze. Royal land bears a special position (in the structure of the document, it is always mentioned after the name of the owner/contractor, unlike all the other types of land; it is also called, sometimes, *sporos tout court*³⁰) and it is often referred to with the only mention of the rent rate,³¹ but no graphical device is applied to distinguish it in any way.

The layout of the documents is almost regular, and resembles that of more ancient documents like the Wilbour Papyrus (see above) very much: the introduction is separated from the body of the text with a *paragraphos*, and each topographical unit fills one line, with an indented continuation

²⁷ Cf. VERHOOGT, *Menches* (cit. n. 6), pp. 107 ff.

²⁸ M. ROSTOWZEW, 'Kornerhebung und -transport im griechisch-römischen Ägypten', *Archiv für Papyrusforschung* 3/2 (1906), pp. 201–224, at p. 202; DÉLÉAGE, 'Les cadastres' (cit. n. 9), pp. 90 ff.; CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 10–14; CRISCUOLO, 'Ricerche' (cit. n. 8), p. 55.

²⁹ DÉLÉAGE, 'Les cadastres' (cit. n. 9), pp. 92–93; for Kerkeosiris, also CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 110–112. Such divisions are attested also, e.g., at Magdola, where they were called *guai*.

³⁰ Cf. CRAWFORD, *Kerkeosiris* (cit. n. 8), p. 11; on royal land at Kerkeosiris, *ibidem*, pp. 103–105; *P. Tebt.* IV, *Introduction*, pp. 2–10; VERHOOGT, *Menches* (cit. n. 6), pp. 111 ff. On the very specific tenure pattern of the royal land in Ptolemaic Fayum, see A. MONSON, 'Royal land in Ptolemaic Egypt: A demographic model', *Journal of the Economic and Social History of the Orient* 50 (2007), pp. 363–397.

³¹ On this feature, cf. CUVIGNY, *L'arpentage* (cit. n. 17), pp. 89 and 118.

in the following line(s) if needed; figures are more or less regularly set up on the right of each column. Check marks are sometimes drawn at the beginning of the lines (as in *P. Tebt.* I 84b, or in *P. Tebt.* IV 1117b and 1117c), which suggests a later re-use of the register as a basis for the compilation of other documents. I doubt that these could be the *kata phyllon geōmetriai*, as has been suggested,³² since the graphical layout of *euthymetria* seems to be devoted to highlight the actual topographical disposition of the lands and their extension, rather than the administrative and personal information which, on the contrary (as we will see below), prevail in details in the *geōmetriai*, which must therefore have been compiled after a new survey on the land (in Tybi-Mechair³³). I would rather suggest that the data taken from the *euthymetria* flowed into the *kata sphragida* reports, which I will mention later.

Euthymetria are not ‘straightforward’³⁴ documents: sometimes they give more detailed information about geographical directions, while featuring also the dimensions of each side of the plots (*P. Tebt.* IV 1122–1123), according to a basic graphical scheme used to calculate their areas.³⁵ In these cases a second different procedure, called *schoinismos*,³⁶ was employed, and that the latter was not the same thing as the *euthymetria* itself is proved by *P. Tebt.* I 12, a draft letter in which they are mentioned separately (ll. 6–7: τῆς εὐθυμετρίας τῆς κώμης καὶ | [τοῦ] χοινομοῦ)).³⁷ One may wonder whether such documents are to be considered as the actual reports sent by the *geōmetrai* to the office of the *kōmogrammateus*

³² D. RATHBONE, D. J. THOMPSON & A. VERHOOGT, ‘A reconstructed land survey from Kerkeosiris’, [in:] AST, CUVIGNY, HICKEY & LOUGOVAYA, *Papyrological Texts in Honor of Roger S. Bagnall* (cit. n. 4), pp. 243–265, at p. 245.

³³ RATHBONE, THOMPSON & VERHOOGT, ‘A reconstructed land survey’ (cit. n. 32), p. 245.

³⁴ CRAWFORD, *Kerkeosiris* (cit. n. 8), p. 10.

³⁵ Cf. DÉLÉAGE, ‘Les cadastres’ (cit. n. 9), pp. 95–99; CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 11–13; Danielle BONNEAU, *Le fisc et le Nil. Incidences des irrégularités de la crue du Nil sur la fiscalité foncière dans l’Égypte grecque et romaine*, Paris 1972, pp. 86–88.

³⁶ Cf. CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 35–36.

³⁷ The same passage shows that *euthymetria* does not mean just ‘l’état de sections mis à jour par cette révision’, i.e. the *geōmetria* or *episkepsis*, as DÉLÉAGE, ‘Les cadastres’ (cit. n. 9), p. 92, wrote, but one of the actual measurements taken on the ground.

(see the beginning of *P. Tebt.* I 81³⁸), but it is hard to say whether different documents reflect different stages of elaboration. Usually *euthymetriaî* ‘with measures’ are more detailed also in recording the geographical directions: one possibility is that those ‘without measures’ were summaries of the former, maybe to be used as a basis for further, later *episkepseis*.

Anyway, such documents were most likely intended to be kept at the village level, as a sort of land register or cadaster, used as a ground for every further land survey, inquiry or description. They can be defined as ‘analytical’, that is descriptive, with no (or very few) calculations of totals or remainders, which, on the contrary, are plentiful in the documentary categories we are going to analyze below. Their status of working papers³⁹ is shown not only by the presence of the check-marks, but also by the updates likely added after later *episkepseis*⁴⁰ (as the abbreviation ἐπι(), e.g., in *P. Tebt.* IV 1120, col. II, l. 12, seems to suggest). Blank spaces might have been left intentionally in order to add such new information (the same happens in the *kata phyllon geōmetriaî*). It is in particular worth citing *P. Tebt.* I 85, which is explicitly titled *gegenēmēnē euthymetria*, being likely a copy of the data from a ‘previous’ survey.

The general appearance is that of a document redacted just after the Nile flood, in the month of Thoth, in order to fix the actual state of the plots of land, their borders and extentions.⁴¹ Yet it is surprising that in

³⁸ Cf. CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 28 and 30–32; Danielle BONNEAU, *Le régime administratif de l'eau du Nil dans l'Égypte grecque, romaine et byzantine*, Leiden 1993, pp. 142 ff. In fact we have some documents which may well be examples of the very early drafts in the transmission of the data from *euthymetriaî*: SB XX 14973, from 2nd century BC Arsinoites, is for example a *kat'andra* list of calculations of land plots of various farmers, written on both the recto and the verso, already interpreted as a likely draft by the editors (E. M. BRUINS, W. H. M. LIESKER & P. J. SIJPESTEIJN, ‘A Ptolemaic papyrus from the Michigan collection’, *Zeitschrift für Papyrologie und Epigraphik* 74 [1988], pp. 23–28; at pp. 26–28 a useful ‘excurs on the method of calculating areas of quadrilaterals’).

³⁹ Cf. RATHBONE, THOMPSON & VERHOOGT, ‘A reconstructed land survey’ (cit. n. 32), p. 244.

⁴⁰ Cf. CRISCUOLO, ‘Ricerche’ (cit. n. 8), p. 56; CUVIGNY, *Larpentage* (cit. n. 17), pp. 88–89.

⁴¹ Cf. CRISCUOLO, ‘Ricerche’ (cit. n. 8), p. 57; CUVIGNY, *Larpentage* (cit. n. 17), p. 89; VERHOOGT, *Menches* (cit. n. 6), pp. 133 and 142–143; on timing, see CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 24–28. ‘Le cadastre topographique ne se composerait pas ainsi d’une pièce fixe mise à jour par des rapports annuels, mais seulement de la série des rapports annuels, dont

some of these documents⁴² crops are registered systematically, together with (in less instances) the cultivators' names – a practice which seems to be better related (as it is) to the season of the harvest, and therefore to the *kata phyllon geōmetriai*;⁴³ and in fact there is at least one *kata phyllon geōmetria* with side dimensions and area calculations for each plot unusually recorded (*P. Tebt.* III.2 1003, not from Menches' archive⁴⁴), which shows a meaningful overlapping between the two types of reports which are assumed to be typical of 'primary reports' of the *kata phyllon* survey, the *geōmetria* ('that is copies of the cadastral survey for that year with crop details added, covering all types of land'⁴⁵), but might have been just topographical 'guides' to this second survey as well (as we will see very soon, the *kata phyllon geōmetriai* contain much more data than the *euthymetriai*).

But, before turning to the second category of land reports, a further issue to be taken in account is that of the possible local differences in the administrative practice.⁴⁶ As Joseph Manning has recently stated, '[i]t is true that the *dioikētēs* in Alexandria was involved in the process in establishing general guidelines, but the issuance of the crop reports was entirely a local matter, and the institution itself is another example of the decentralized rather than the centralized nature of the Ptolemaic bureaucracy'.⁴⁷ However, if we compare *euthymetriai* belonging to the same archive but coming from different places (*P. Tebt.* III.2 831 from Ibion Argaiou; *P. Tebt.*

chaque pièce prendrait pour base celle de l'année précédente et la mettrait à jour' (DÉLÉAGE, 'Les cadastres' [cit. n. 9], p. 95).

⁴² Not only, 'par exception' as stated by CUVIGNY, *Larpentage* (cit. n. 17), p. 89, *P. Tebt.* I 87: we have also *P. Tebt.* IV 1117a and 1119 + 830 from Oxyrhyncha.

⁴³ Cf. BONNEAU, *Le fisc et le Nil* (cit. n. 35), pp. 88–89.

⁴⁴ Cf. CUVIGNY, *Larpentage* (cit. n. 17), pp. 47–50.

⁴⁵ RATHBONE, THOMPSON & VERHOOGT, 'A reconstructed land survey' (cit. n. 32), p. 245. See DÉLÉAGE, 'Les cadastres' (cit. n. 9), pp. 93–94, on the differences between *P. Tebt.* I 84 and 85: 'Le P.Teb. 84, établi exactement sur le même plan que le P.Teb. 85, est probablement un projet, un relevé tout prêt à recevoir les résultats de la révision, et le P.Teb. 85 est un relevé analogue, mais où les résultats de la révision ont été portés'. On different documents redacted at different agricultural stages, see also *ibidem*, p. 95.

⁴⁶ Cf. CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 9–10.

⁴⁷ MANNING, *Land and Power* (cit. n. 8), p. 154; cf. also CRAWFORD, *Kerkeosiris* (cit. n. 8), p. 9.

I 87 from Berenikis Thesmophorou; *P. Tebt.* III.2 830 from Oxyrhyncha)⁴⁸ we can note that, apart from some minor differences due to the type of report and also to the documentary practice, the selection and the representation of the collected data is actually the same, with the only possible exception of *P. Tebt.* I 86, coming from the capital of the *nomos*, Arsinoe, which is however too fragmentary to provide decisive proofs.

SYNTHETICAL DOCUMENTS.

Documents arranged by administrative land categories

Another group of reports is that organized by administrative land categories, which seems to represent the second stage of the reporting process, since (1) in the *euthymetria*i the arrangement by administrative category is given as second, and (2) the documents belonging to this group rely mostly upon the data coming from the second regular survey, the above mentioned *geōmetria*. Indeed, the most representative type of this group was called *kata phyllon geōmetria* (*P. Tebt.* I 62–65; IV 1108–1111, 1113–1115), where *kata phyllon* ('by crops'), in spite of not being the main organizing criterion, means a deeper attention devoted to the agricultural use of land: not only to crops (which, as said before, already appeared in some *euthymetria*i), but also to general statements about the current state of lands (if cultivated, abandoned, uninundated, etc.), which were missing in the previous stage of documentation, and which would be the basis for further, specific reports on particular categories of land (*hypologos*, *esparmenē*, etc.: see below). In the *geōmetria*i there is also a further in-depth attention at the level of administrative land categories: for instance, the sacred land is divided between first-rank and second-rank temples,⁴⁹ and more precise information (chronological, legal) is given for each popula-

⁴⁸ The reasons for which such documents came to Menches' archive from other places are described by VERHOOGT, *Menches* (cit. n. 6), pp. 29–31 (reuse of scrap paper in the office of the *kōmogrammateus*).

⁴⁹ 'A classification perhaps based on the amount of land held' (CRAWFORD, *Kerkeosiris* [cit. n. 8], p. 87).

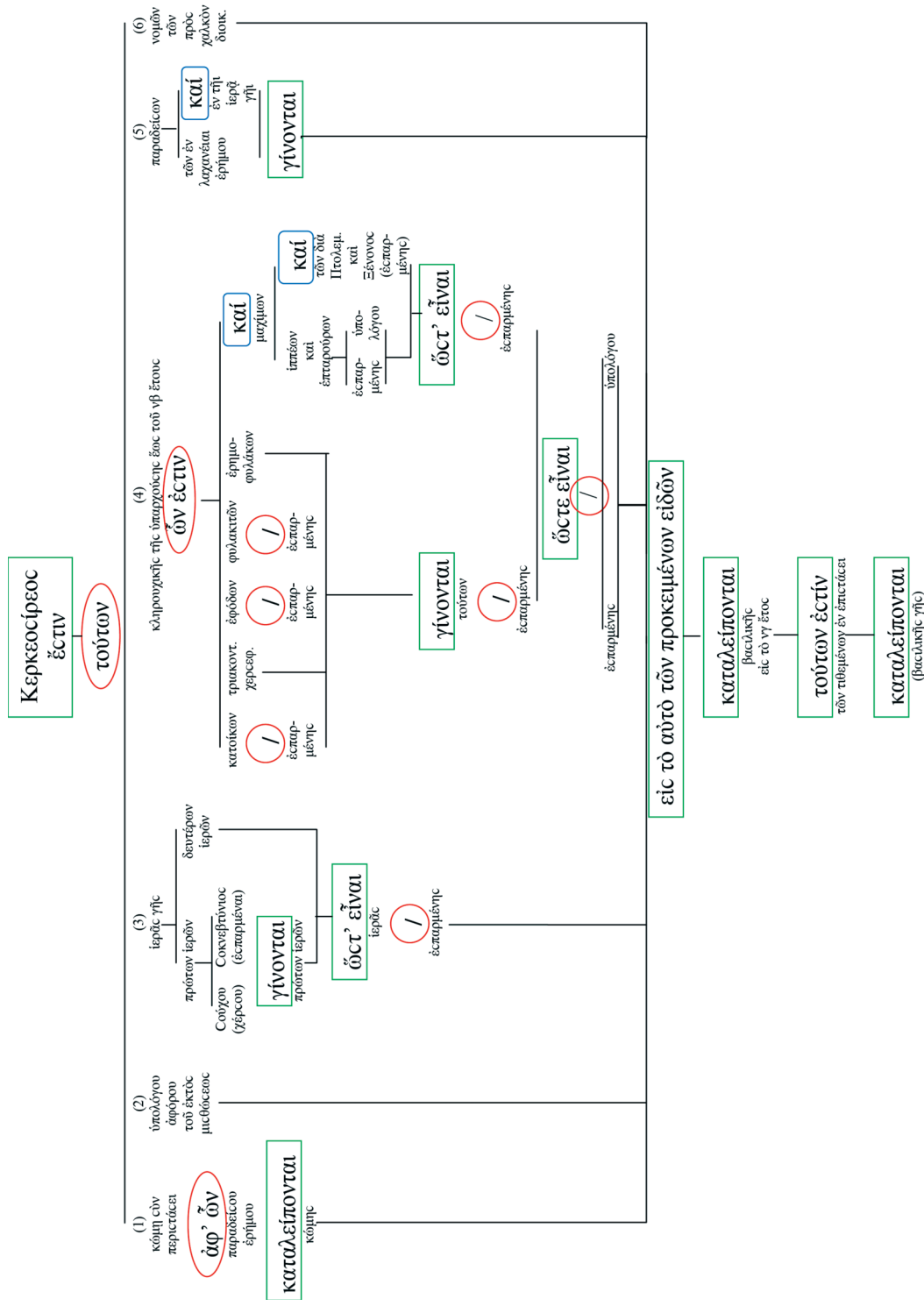
tion category. Such data are connected in some way to the *apologismos tou edaphous* (*P. Tebt.* I 61; the name is attested also in *P. Tebt.* I 30, l. 25), a general, very detailed register of the usage of all the land categories, also organized by administrative land categories. It seems to have been based on the second regular survey as well, but it is hard to state if it came before or after the *kata phyllon geōmetriai*.

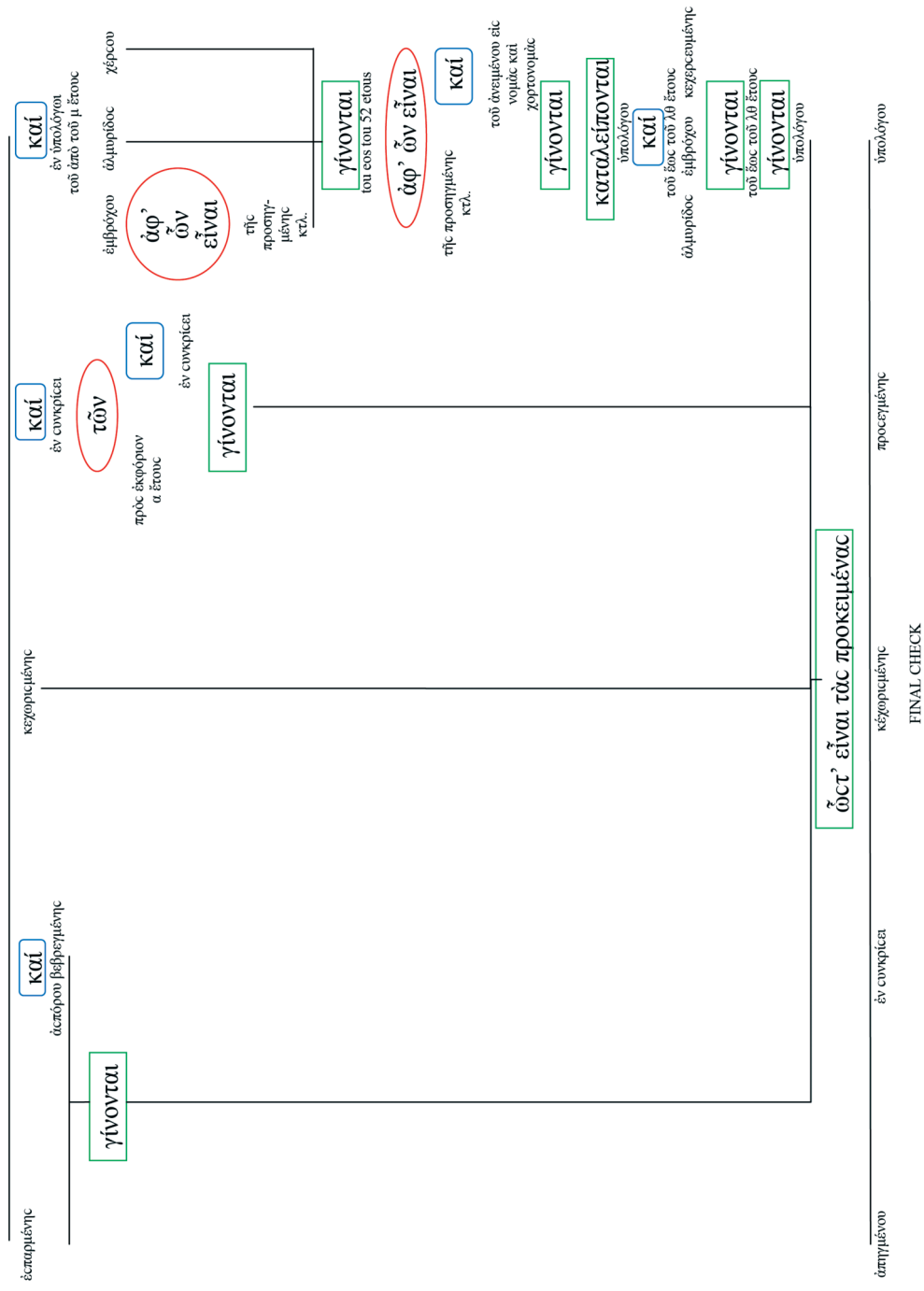
Another interesting data set flowed into this type of reports, and from here to other ones, is that about royal land, very important as to the collection of rents (see above). The difference between this and the other types of land was already stressed in the *euthymetria*, by means of the devices we have remarked above, but now we have even two different types of *kata phyllon* documents: one for the *basilikē gē* and one for the other categories of land,⁵⁰ while in the summary *anagraphomenon pan edaphos* (*P. Tebt.* I 60) the amount of royal land is given as a ‘remainder’ (*kataleipontai*) subtracted from the whole village land.

As regards the structure of the data recorded, these reports can be defined as ‘synthetical’, which means that they merged various data arranging them in a logical synthesis, providing a complex network of ‘logical connectors’, i.e. syntactical ‘markers’ of totals, remainders and partial accounts (*bōn*, *aph’ bōn*, *ginontai*...) as well as of sub-categories of population or land. The graphical layout of the document, while resembling that of the *euthymetria* in the grouping of the items, consequently aims at highlighting those ‘markers’; totals are also provided, usually in bigger characters, separated from the rest of the line [see Fig. 2]. All of this is almost completely lacking in the *euthymetria* (see above).

As I said before, these – together with the *euthymetria* discussed above – are the reports coming from the two regular survey operations: the results of the ‘irregular’ surveys would have been just added as later annotations. *Kata phyllon geōmetriai*, in particular (and not only those from Kerkeosiris: see, e.g., *P. Tebt.* I 80–83, from late-second-century BC Mag-

⁵⁰ This suggests a ‘horizontal’ distinction in the administrative tasks within the same village. For instance, an official like a *sitologos* would have needed separated detailed reports about *basilikē gē* only, since he was concerned with the collection of the rents in kind brought by the *basilikoi geōrgoi*.





dola), seem to have been composed in two steps: (1) the general data about land usage and estate categories, taken from both current surveys and previous registers; (2) the updated information about actual extension of plots and cultivation details (crops), probably after the *episkeps(e)is*. This is much clearer from those documents, such as *P. Tebt.* I 82 (already noted by its editors) and 62, where such pieces of information were added at a later stage, filling spaces previously left blank. This includes also the references to *geōmetria* and *episkepsis*, and can explain why in some documents they appear, and somewhere else not. This can also lead us to think that such type of documents (or, at least, copies of them) was intended to be kept at the village offices, where they could have been updated when needed. This, again, seems to have been a systematic, routine, way of working: blank spaces were intentionally left between lines in order to perform it.⁵¹

SUMMARY REPORTS.

Documents arranged by persons, special summaries, accounts

At a later stage of production of reports, we find data organized in other different ways, according to different administrative purposes: the structure *kat'andra* ('by persons'), which is the secondary arrangement in the reports we saw just before, is for example the key to the fiscal usage of data, in that each person is registered as a tax-paying unit, depending on the type of land allotted. Such files would flow into the viritim registers of rents such as the *kat'andra tōn opheilomenōn* (*P. Tebt.* I 93–96). On the other hand, summary reports (*epi kephalaïou*⁵²) and other kinds of 'communications' (*proselasmata* like *P. Tebt.* I 71, see below) usually provided

⁵¹ A different type of annotation is the marginal insertion of further results of *episkepseis*, likely meant to be occasional updates of the information. This may be for example the case of *P. Tebt.* I 84a, where ἐπισκεψέως occurs just twice (ll. 206 and 216) at the end of two plots in an *euthymetria* (and it is the only occurrence of such word with this meaning in Menches' papers).

⁵² For the form *epi kephalaïou* instead of *epikephalaïou* as a single word meaning 'summary list', see *P. Tebt.* IV 1129, note to l. 3 (after W. CRÖNERT, review of *P. Tebt.* I, *Wochenschrift für Klassische Philologie* 17 [1903], pp. 450–460, at pp. 456–457).

very resumed information about specific land categories – mostly, but not only, *hypologos* (*P. Tebt.* I 74, *apologismos hypologou*; IV 1127) and *esparmenē* (*P. Tebt.* I 66, see below) – or specific crops, sometimes were organized *kat'andra* (*P. Tebt.* IV 1103–1104, 1126, 1128) or also *kata sphragida* ('by parcels', a scheme surely derived from the *euthymetria kata perichōma*), and were used as a basis for the more general 'regional' reports issued by the higher instances of the *nomos*.⁵³ It is the case, for example, recorded by *P. Thomas* 2, an order of the *stratēgos* to the *basilikos grammateus* concerning the measurement and assignment of new plots of land. There can also be some 'hybrid' documents such as the *apologismos* (?) *kata sphragida tou epi tēs kata phyllon geōmetrias hypologou* (*P. Tebt.* III.2 826, from Berenikis Thesmophorou), which is a report on a special category of land (*hypologos*, i.e. unproductive) to which a topographical survey of the parcels is attached, surely extracted from some cadaster of the *euthymetria*-type.

I would like to end with the case of the *kata phyllon epi kephalaïou*, which is particularly interesting since it has survived to us in four comparable documents, very similar to each other in structure. This type of report – clearly based on the *kata phyllon geōmetriai* dealing with *basilikē gē* (see above) – was issued in order to send detailed information (to some higher authority such as the nomarch, the *oikonomos* or the *basilikos grammateus* himself) about the sown (*esparmenē*) royal land and its yearly produce, along with the rent in kind (*ekphorion*⁵⁴), expressed in *pyrou artabai*, and the classification of the rent by types of crops (*genismos*⁵⁵).

These documents are interesting not only for the information about agricultural production in Kerkeosiris,⁵⁶ but also – when compared – because they can shed light on the routine process of composition of such

⁵³ Some references to these general reports produced at the *nomos* level (like *P. Petr.* III 75, 235 BC, not from the Menches archive) can be found in *P. Tebt.* I 61b, col. II, l. 37, and *P. Tebt.* I 72, col. XXII, l. 448.

⁵⁴ On this term, which could be referred also to the harvest tax on private land, see MONSON, 'Land tenure' (cit. n. 15), pp. 62–63.

⁵⁵ On the procedure of *genismos*, cf. *P. Tebt.* I 67, n. 5, and CUVIGNY, *L'arpentage* (cit. n. 17), p. 90. On the rent rates, see also MONSON, 'Land tenure' (cit. n. 15), pp. 63–64.

⁵⁶ As, in general, almost all the land surveys and the related documents of the archive: see, e.g., CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 112–121.

reports: same kinds of given information, same sections, same sequence, showing a strongly routine habit which is highlighted even more by the mistakes, or the omissions, that often occur.⁵⁷ The second part of the document, detailing the data of the actual sowing, parallels a section of the large land register *P. Tebt.* I 61a, showing a strong formulaic, cross-referential pattern among different types of documents. Particularly noteworthy is also the large blank space left in *P. Tebt.* I 69 after the introductory formula, likely for the insertion of any possible further information as in *P. Tebt.* I 68, ll. 5–19 (in this case, data about the *genismos*). The author of such reports (likely Menches himself) was well aware of a standard type to be followed, either having kept it in mind or just copying the sequence from previous papers. The abundance of ‘logical connectors’ is absolutely typical of the synthetical reports described above, while the interest in the usage of the seeds provided by the authorities (likely connected to the *diagraphē sporou*: see above) clarifies the efforts made in the preceding, larger reports to recognize the exact actual state of the lands.

Moreover, the first section of these reports, containing a summary calculation of the produce of the previous year, exactly parallels the beginning of another type of documents, the so-called *prodialogismos sitikos epi kephalaïou* (*P. Tebt.* I 89, 160; IV 1129,⁵⁸ 1130), a yearly account of rentals in kind certainly redacted upon the registers of the *sitologoi* (explicitly mentioned in *P. Tebt.* 89), the fiscal purpose of which is clearly shown by the fact that in two cases it was followed by a list of cultivators.⁵⁹ The same formula appears also in a ‘report on irrigated and sown land’ (*prosangelma tēs bebreghmenēs kai esparmenēs*: *P. Tebt.* I 71): it clearly derives from a common archetype, and the changes in the structure are very interesting to investigate in order to understand the dynamics of report issuing in Menches’ office, also

⁵⁷ In general, for errors and inconsistencies deriving from the process of composition of the documents, cf. CRAWFORD, *Kerkeosiris* (cit. n. 8), pp. 20–24.

⁵⁸ In fact, *P. Tebt.* IV 1129 is a different case, since it was issued by the scribe of the cultivators (*grammateus geōrgōn*) and not by the *kōmogrammateus*. The structure is however almost the same, which is again a good hint for a highly standardized routine practice.

⁵⁹ The *prodialogismos* was ‘a preliminary account of payments in corn, preparatory to the *διαλογισμός*, or final balancing or audit (cf. Rev. Laws xvi–xviii)’ (*P. Tebt.* I 89, *Introduction*, p. 399).

because we possess three documents referred to the same year (the *prodialogismos* *P. Tebt.* IV 1130, dated to the third year; the *kata phyllon epi kephalaïou* *P. Tebt.* I 69 and the *prosangelma* *P. Tebt.* I 71, both dated to the fourth year but with summary of the produce of the previous third year).

The most puzzling instance is the change in verbal tense: while in the *prodialogismoï* it is used the imperfect ἦσαν though referring to the current year, in the *kata phyllon epi kephalaïou* the present ἐκὶν occurs with reference to the previous year. The ‘correct’ usage is likely shown by the *prosangelma*, in which ἦσαν refers to the previous year, and in the *prodialogismos* *P. Tebt.* I 160 *descriptum*, of which I present the complete transcription and edition in the Appendix, thanks to the kind permission of the Center for the Tebtunis Papyri (University of California-Berkeley), and in which the present ἐκὶν is clearly readable with reference to the sown lands of the current year. It is always difficult to state exactly what is an ‘error’,⁶⁰ and the use of the present with ‘perfective’ and ‘historic’ meaning is not unknown to the documentary papyri, but what appears odd is the use of the imperfect with a present value, since in these cases it can not have any ‘iterative’ or ‘continual’ meaning, nor it is conceivable an influence of the epistolary style,⁶¹ since we are dealing with official reports and the temporal meaning of the clause was evident. The uncertainty between the two forms makes its most effective appearance in a draft of *kata phyllon epi kephalaïou* dated very early in the archive (*P. Tebt.* I 66, February-March 120 BC), where the scribe first wrote the present form [ἐκπα]ρμέναι ἐκὶν ἐν τῶι μθ (ἔτει), then corrected ἐν τῶι into the imperfect ἦσαν and wrote again ἐν τῶι, leaving – likely due to carelessness – both of the verbal forms.⁶² In this case it is clear that the scribe perceived

⁶⁰ See, e.g., B. G. MANDILARAS, *The Verb in the Greek Non-Literary Papyri*, Athens 1973, pp. 57–58 on some pitfalls concerning the ‘confusion of tenses’ in Greek papyri.

⁶¹ Cf. MANDILARAS, *The Verb* (cit. n. 60), pp. 99–101 (perfective present, with special reference to *eimi*); pp. 108–109 (historic present); p. 131 (iterative and continual imperfect); p. 136 (epistolary imperfect, particularly common in Ptolemaic letters; its use was due to the perspective assumed by the writer, who ‘looks at his letter as the recipient will’).

⁶² The editors print [ἐκπα]ρμέναι ἐκὶν {ἦς[α]ν} ἐν τῶι μθ (ἔτει), giving the impression that the scribe deleted the imperfect form, but in the note *ad loc.* they explain ‘ἦσαν corr. from ἐν τ[ω]ι’ – such correction is indeed clearly readable on the papyrus itself.

	Summary preliminary grain reports			
P.Tebt.	89	1129	1130	160
<i>Date, office, place</i>	ἔ[του]ς δ, παρὰ Μεγχείους κωμογραμματοῦ Κ[ερ]κεοσίρεως.	ἔτους μζ, παρὰ Θέω[νος] γραμμ[α(τέως)] γεωρ(γών) Κερκεοσίρεως.	[ἔτους γ, παρὰ Μεγχείους κωμογρ]αμματοῦς [Κερκεοσίρεως.	[ἔτους ε π]αρὰ Μεγχείους κωμογραμματοῦς [Κερκεοσίρε]ως
<i>Title</i>	προδιαλογισμὸς σιτικὸς ἐπὶ κεφαλαίου τοῦ αὐτοῦ (ἔτους),	π[ροδι]αλογ[ισμ]ῷ [ὸς] σιτικὸς ἐπὶ κεφαλαίου [τοῦ αὐ]τοῦ ἔτ[ο]υς,	προδιαλογισμὸς σι]τικὸς ἐπὶ κεφα[λαίου] [τοῦ αὐτοῦ (ἔτους),	προδιαλογισμ[ὸς] σιτικὸς [ἐπὶ κεφα]λαίου τοῦ αὐ(τοῦ) ἔτους
<i>Further specifications</i>	ὑποκειμένων τῶν ἐγδιωκμένων ἕως Μεσορῆ λ.	ὑποκειμένων τῶν [ἐγδι]ωκμένων ἕως Ἐπειφ ι	ὑποκειμένων τῶν] ἐγδιωκμένων [ἕως -ca.?-]	ὑποκειμ(ένων) τῶ[ν] [ἐγδιωκ]μένων ἕως [month day]
<i>Sown lands</i>	[ἐσπαρ]μέναι ἦ[σαν]	ἐσπαρμέναι ἦσαν	[ἐσπαρμέναι ἦσαν	[ἐσπαρμέναι] εἰς ἰν
<i>Year</i>	ἐν τῷ αὐτῷ (ἔτει)	ἐν [τ]ῷ[ι] αὐτῷ (ἔτει)	ἐν τῷ αὐτῷ (ἔτει)	ἐν τῷ αὐτῷ (ἔτει)
<i>Additions</i>	σὺν νομ[α]ῖς		σὺν νομαῖς	σὺν το[ῖς] [- c. 7-10 -]οῖς προσηγμένοις
<i>Land total</i>	γῆς (ἄρουραι) Ασγ ζ δ΄	γῆς (ἄρουραι) Ασγ ζ δ΄	[γῆς (ἄρουραι) Αργ ζ δ΄,	[γῆς (ἄρουραι)] ΑΣΞα ζ ε΄
<i>Rent</i>	ὧν ἐκφ(όριον) Δχξζ γ΄ ιβ΄,	ὧν ἐκφ(όριον) (πυροῦ) Δωνη σ	ὧν ἐκφ(όριον) (πυρου) Δχξε γ΄ ιβ΄	
<i>Additions</i>	καὶ προσγεί(νονται) τῶν ἐπὶ τοῦ διοικητοῦ (ἀρτάβαι) ζ ζ,	καὶ τοῦ Ἀμφικλείους κ[λήρο]υ κδ (ἄρουραι) ξ καὶ διάφορος μισ(θώσεως) (πυροῦ) ξ /		
<i>General total (land + additions)</i>	ὥστ' εἶναι (ἀρούρας) Ασγ ζ δ΄ (ἀρτάβας) Δχοε γ΄ ιβ΄,	(γίνονται) (ἄρουραι) ρκβ[ζ ζ δ΄ (ἀρτάβαι)] Δωνη σ	[-ca.?-] (ἀρτάβαι(?)) Γυκς	(ἀρτάβαι) Δψμε ζ[
<i>Genismos ex hypothēkēs</i>	ὧν	ὧν		[ὧν
<i>Details</i>	(πυροῦ) Αχγν ζ, κ(ριθῆς) αἰ (πυροῦ) Βωοζ δ΄, ὀλ(ύρας) αἰ (πυροῦ) ρζ δ΄, χα(λκοῦ) λθ γ΄ ιβ΄.	χα[λκοῦ] ὧν σῖ(τος) λθ γ΄ ιβ΄	[-ca.?-] γ΄ ιβ΄	(πυροῦ) Α]ψλα d [κρι(θῆς) αἰ (πυροῦ)] Β[ωπ?] ὀλ(ύρας) αἰ (πυροῦ) ρδ[χαλκοῦ ὧν σῖ(τος) λθ γ΄ ιβ΄

Fig. 3a. The formulaic structure of the summary land reports

Summary reports on the crops				Reports on sown (and irrigated) land	
67	68	69	70	66	71
[ἔτους νγ.] παρὰ Μεγχείους κω[μο]γ[ραμματέως Κερκεο][σίρεω]ς.	[ἔτους νδ, παρὰ Μεγχείους κω[μ]ο[γ]ραμματέως [Κερκεοσίρεω]ς.	ἔτους δ, παρὰ Μεγχείους κωμογραμματέως Κερκεοσίρεως.	ἔτους ζ, παρὰ Μεγχείους κωμογρ[αμματέως] Κερκεοσίρεως.	[Κερ]κεοσίρεως .	ἔτους δ, παρὰ Μεγχείους κω(μο)γρ[αμματέω]ς [Κερκ]εοσί(ρεω)ς]
κατὰ φύλλον ἐπὶ κε[φαλαίου τοῦ αὐτοῦ (ἔτους).] _____	κατὰ φύλλον ἐπὶ κεφ[αλαίου τοῦ αὐ(τοῦ) (ἔτους).	κατὰ φύλλον ἐπὶ κεφαλαίου τοῦ αὐτοῦ (ἔτους)	κατὰ φύλλον ἐπὶ κεφαλαίου τοῦ αὐτοῦ (ἔτους). _____		προσάγγελα τῆς βεβρεγμένης καὶ ἐσπαρμένη(ς)
		σπόρου.			ἕως Φαῶφι κ.
[ἐσπαρμέναι εἰσὶν	[ἐσπαρμέναι εἰσὶν	ἐσπαρμέναι εἰσὶν	ἐσπαρμέναι εἰσὶν	[ἐσπα]ρμέναι εἰσὶν {ἦσ[α]ν}	ἐσπαρμέναι ἦσαν
ἐν] τῷ νβ (ἔτει)	ἐν τῷ νγ] (ἔτει)	ἐν τῷ γ (ἔτει)	ἐν τῷ \ς/ [Traces] (ἔτει)	ἐν τῷ μθ (ἔτει)	ἐν τῷ γ (ἔτει)
σὺν [νομ]αῖ[ς]		σὺν νομαῖς			
[γῆς] (ἄρουνται) Ἀρλθ δ΄	[γῆς (ἄρουνται) Ἀρκβ δ΄	γῆς (ἄρουνται) Ἀργγ ζ δ΄,	γῆς (ἄρουνται) Ἀσξγ ις΄	(ἄρουνται) Ἀσλ ζ δ΄	γῆς (ἄρουνται) Ἀργγ ζ δ΄
ὧν ἐκφό(ριον) Δχμβ ιβ΄,	ὧν ἐκφό]ρι[ο]ν δι[με]η γ΄,	ὧν ἐκφό(ριον) εἰς (πυροῦ) Δχξε γ΄ ιβ΄.	ὧν ἐκφόριον μς\νγ ιβ΄/, [οη ιβ΄]		ὧν ἐκφό(ριον) Δχξε [γ΄ ιβ΄,]
				(ἄρτάβαι) Εοα γ΄,	
[ὧν γεν]ισμὸς ἐγ με[ν] τῆς ὑποθή(κης)	[ὧν γενισμὸς ἐκ με[ν] τῆς ὑποθήκης]		ὧν γενισμὸς ἐγ με[ν] τῆς ὑποθή(κης)		
[(πυροῦ)] Αχμβ α, κρι(θή)ς αἰ (πυροῦ) Βωοζ δ΄, ὀλύ(ρας) [αἰ (πυροῦ) ρα ζ δ΄, χαλκοῦ λθ γ΄ ιβ΄,	[πυροῦ] -ca.?-κρι(θή)ς αἰ (πυροῦ) -ca.?-ὀλ(ύρας) αἰ (πυροῦ) ρζ ζ δ΄, [χαλκοῦ ὧν σῖ(τος) λθ γ΄ ιβ΄,		(πυροῦ) Αχξγ α\λη α/ [Traces] , [κ]ριθής αἰ (πυροῦ(?)) σπζζ[ζ] δ΄, ὀλύ(ρας) αἰ (πυροῦ) ρζ ζ δ΄, χα(λκοῦ) κ (δραχμ) (ἄρτάβαι(?)) λθ γ΄ ιβ΄,		

<i>Genismos ek tou sporou</i>	ἐγ δὲ τοῦ σπόρου			ἐγ δὲ τοῦ σπόρου
<i>Details</i>	(πυροῦ) Γψοδ γ', κριθῆς) φνς ζ γ' αἱ (πυροῦ) τλδ ς', χα(λκοῦ) λθ γ' ιβ', (hand 2) \φακοῦ φ./			(πυροῦ) Γψ[μικ(θώσεως) πυ(ροῦ?) υἱδ ὦν . ξθ[κρι(θῆς) χ αἱ (πυροῦ?) [ὀλ(ύρας) αἱ (πυροῦ) χα(λκοῦ) (δραχμαῖ) ὦν cῖ(τος) [
<i>Mention of sitologoi and their collections</i>	(hand 1) εἰς ἃς μεμετρήσθαι ἐν αὐτῇ Ἀμμωνίῳ καὶ Ἡρακλείδῃ τοῖς σιτολογοῦσι τὸ περὶ αὐτὴν οἱ καὶ ἀντιγραφομενοί· _____	εἰς ταύτας μεμετρήσθαι]οι	[cf. με(τρηθεῖσαι) Παχὼν α ἕως κ, further on]] . μεμετρη(σθαι?)
<i>Pharmouth i</i>	Φαρμοῦθι	Φαρμοῦθι		Φα[ρμοῦθι]
<i>1-10</i>	ἀπὸ α ἕως ι	α ἕως ι		[ἀπὸ α ἕ]ως ι
<i>Details</i>	μισ(θώσεως) (πυροῦ) σβ ζ, κρι(θῆς) φγ ζ δ',	(πυροῦ)] ψνβ δ' κρι(θῆς) σπ	[-ca.?-] . ια ζ κρι(θῆς) τ [-ca.?-] (τρι)χ(οινίκου) κ 15 [-ca.?- κ]ράσ(τεως) δ ω [-ca.?-]ν φα(κοῦ) [-ca.?-] ----- (further details, also for other taxes)	(πυροῦ) τ κ[ρι(θῆς?)
<i>11-20</i>	καὶ ἀπὸ ια ἕως κ	καὶ ἀπὸ ια ἕως [κ]		
<i>Details</i>	μισ(θώσεως) (πυροῦ) ψδ ζ, κρι(θῆς) νγ,	(πυροῦ) κζ δ' κρι(θῆς) μζ γ'		
<i>21-30</i>	καὶ ἀπὸ κα ἕως λ	ἀπὸ κα ἕ[ως λ]		
<i>Details</i>	μισ(θώσεως) (πυροῦ) [η . .] ωε ζ,	(πυροῦ) νε		
<i>Total of the month</i>	(γίνονται) τοῦ μη(νός) μισ(θώσεως) (πυροῦ) Αψιβ ζ, κρι(θῆς) φνς ζ δ'.	(γίνονται) τοῦ μηνός (πυροῦ) ωκδ ζ κρι(θῆς) τκζ γ'		(γίνονται) τοῦ μη(νός) (πυροῦ) [
The same scheme applies for Pachon, Pauni, Epeiph, Mesore				Papyrus breaks off
Data about collected payments for other taxes				
List of names				

Fig. 3b. The formulaic structure of the summary land reports cont'd.
The data refer to the first four papyri (*P. Tebt.* 89, 1129, 1130, 160); in the others,
different types of data are recorded at this point

that, referring to the previous year, the most correct form should have been the imperfect.

The interdependence between the two types of documents is clear [see Fig. 3], and since the *kata phyllon epi kephalaiou* and the *prosangelma tēs bebreghmenēs* were written with reference to the previous year, the *prodiagogismos* must have come first. Yet all of them must derive from a yearly detailed register on land usage such as the *anagraphomenon pan edaphos* (P. Tebt. I 60), which exhibited the distinction between royal and other kinds of land, and the total amount of productive land (distinguishing between sown and unsown but irrigated anyway) was recorded for a quick reference, and likely taken from the more extensive *kata phyllon geōmetriai*. As it is apparent, relationships and interrelations between all these documents are complex and difficult, and very often one feels as if some tiles are missing – and surely they are: yet it is possible to appreciate, and to further investigate, the administrative dynamics lying behind this bulk of papers.

APPENDIX

P. Tebt. I 160 descriptum: preliminary grain report in summary

P. Tebt. I 160
(berkeley.apis.597)

26.5 × 12.5 cm

113/2 BC
Kerkeosiris

The papyrus, containing parts of the first column of a summary preliminary grain report, consists of three fragments of light brown colour, coming from crocodile mummy number 9 in tomb b of the crocodile cemetery of Tebtunis.⁶³ It is written on the recto along the fibers; the verso is blank. Fragment 1 (13.9 × 6.8 cm) bears the top left part of the document, with an upper margin of 3.5 cm and a lacuna of about 7–10 letters at the beginning of the lines. It joins fragment 2 (14 × 3.4 cm) on the first line, where the word *κωμογραμμά[τέως]* can be restored almost completely, while on the other lines a vertical break runs between the two fragments.

⁶³ On the discovery and the features of the papyri coming from the crocodile mummies of Tebtunis, with particular focus on the Menches archive, see VERHOOGT, *Menches* (cit. n. 6), pp. 1–21.

The end of the lines is lost too. Fragment 3 (12.6 × 6.7 cm), mostly preserving the beginning of the lines, can be attached to the bottom left corner of fragment 1, being its direct continuation [Fig. 4]. A fourth, very tiny fragment, containing traces of one letter only, is of uncertain collocation. The late Ptolemaic handwriting is not very accurate, sometimes very cursive, and is consistent with many other documents from the same archive.

- [ἐτους ε π] ἀρὰ Μεγχείους κωμογραμμα[τέως]
 [Κερκεοσίρε]ως προδιαλογισμ[ὸς] κιτικὸς]
 [ἐπὶ κεφα]λαίου τοῦ αὐ(τοῦ) ἔτους ὑποκειμ(ένων) τῷ[ν]
 4 [ἐγδιωκη]μένων ἕως
 [month day]
 [ἐσπαρμέναι] εἰς τὸν ἐν τῷ αὐτῷ (ἔτει) εὖν το[ῖς]
 [— ca. 7—10 —]οῖς προσηγμένοις
 8 [γῆς (ἄρουραι)] Α'Σ'Ξα Ζς'' (ἀρτάβαι) Δ'ψμε Ζ[
 [ὦν (πυροῦ) Α']ψλα δ [κρι(θῆς) αἰ (πυροῦ)] Β'[ωπ?] ὀλ(ύρας) αἰ (πυροῦ) ρδ[
 χαλκοῦ ὦν εἰ(τος) λ[θ γ' ιβ'
 ἐγ δὲ τοῦ εὐπόρου (πυροῦ) Γ'ψ[
 12 μιζ(θώσεως) πυ(ροῦ?) υἰδ ὦν . ξθ[
 κρι(θῆς) χ αἰ (πυροῦ?) [ὀλ(ύρας) αἰ (πυροῦ)
 χα(λκοῦ) (δραχμαὶ) ὦν εἰ(τος) [
] . μεμετρῆ(σθαι?) Φα[ρμουθι]
 16 [ἀπὸ α ἔ]ως ι (πυροῦ) τ κ[ρι(θῆς?)
 (γίνονται) τοῦ μην(ός) (πυροῦ) [
 . . [

11 l. ἐκ

Year 5, from Menches, village scribe of Kerkeosiris.

Preliminary grain report in summary for the same year, with amounts collected up to and including [day month] appended.

In the same year are sown 1,261 $\frac{1}{2}$ $\frac{1}{4}$ arouras of (royal) land, (with a rental

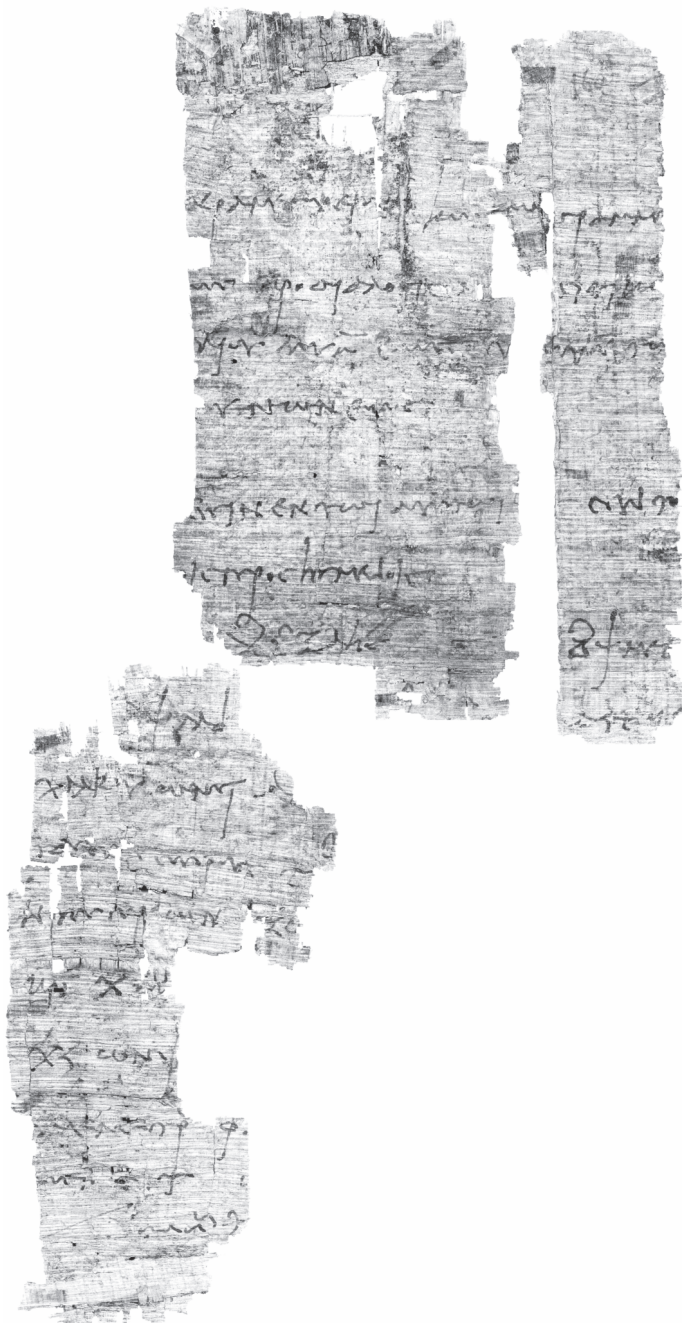


Fig. 4. *P. Tebt.* I 160 (courtesy of the Center for the Tebtunis Papyri, University of California, Berkeley)

of) 4,745 $\frac{1}{2}$ [...] artabas (of wheat), of which (the supposed classification is): wheat 1,731 $\frac{1}{4}$ [...]; barley equivalent in wheat 2,880 [...] (??), olyra equivalent in wheat 94 [...]; copper equivalent in grain 39 $\frac{1}{3}$ $\frac{1}{12}$; and is to be actually collected: wheat 3,7[...]; barley equivalent in wheat 600; [olyra equivalent in wheat...]; copper drachmas equivalent in grain [...].

Towards paying these, there were measured in Pharmouthi:

from the 1st to the 10th: wheat 300; barley (?) [...].

Total for the month: wheat [...].

1. The year, as well as the exact date at l. 5, is lost in the lacuna, but the papyrus has been dated to the 113/2 BC (5th year of Ptolemy IX Soter II) by Verhoogt, *Menches* (cit. n. 6), p. 195 (= *BL* XI, p. 277).

5–6. The interlinear space between these two lines appears larger than the other ones. This feature seems to occur also in the other *prodiologismoi* (at least in *P. Tebt.* I 89 and IV 1130; IV 1129 *non vidi*), but all of them lacks the left side, and therefore it is impossible to know if it was just a blank space dividing the introductory formula from the rest of the text, or if there was a *paragraphos* traced with the same purpose.

6. On the use of the present tense, see the discussion above.

6–7. Some parallel texts have *ὦν νομαῖς* ‘along with the pastures’ as an attachment to the account of *esparmenē* (*P. Tebt.* I 89, l. 5; in *P. Tebt.* IV 1130, l. 5, it is supplied in lacuna; among the *kata phyllon epi kephalaïou*, *P. Tebt.* I 67, l. 3, and 69, l. 4; for the special position of the pastures in the account of the rent for the royal land, see *P. Tebt.* I, *Appendix*, p. 542), but here such reading is impossible. Usually *prosēgmenai* were the additions made to the arable lands (see, e.g., *P. Tebt.* I 68, ll. 8–19), because of the difference between theoretical (expected) and practical (actual) calculations; in this case, the term is referred to something lost in the lacuna, but it should likely bear more or less the same meaning (cf. *P. Tebt.* I 89, ll. 7–8: καὶ προσγεῖνονται τῶν ἐπὶ τοῦ διοικητοῦ (ἀρτάβαι) ζ λ, | ὥστ’ εἶναι (ἀρούρας) Αγ λ δ’ (ἀρτάβας) Δχοε γ’ ιβ’).

8. In the parallel documents, the rent amount is always introduced by the standard formula *ὦν ἐκφ(όριον)* (*P. Tebt.* I 89, l. 6; IV 1129, l. 7, with *(πυροῦ)*; 1130, l. 6, supplied in lacuna; the same also in the *kata phyllon epi kephalaïou*: *P. Tebt.* I 67, l. 4; 68, l. 4, not abbreviated; 69, l. 5, with *εἰς (πυροῦ)*; 70, l. 4, not abbreviated). The introduction with *(ἀρτάβαι)* appears further in such documents, after some other special categories of land are added to the previous total (*P. Tebt.* I 89, l. 8; IV 1129, l. 10; 1130, l. 7): here, probably, the scribe wrote the final total immediately, in the absence of any further addition.

9–14. These are the figures for the so-called *genismos*, the ‘classification’ of the rents in kind (see *P. Tebt.* I 67, l. 5, with note). They are divided as usual between the *genismos ex hypothēkēs*, which refers to the hypothetical estimate made the year before (here in ll. 9–10), and the *genismos ek tou sporou* (here in ll. 11–14), referred to the actual collection (see *P. Tebt.* I 89, ll. 8–11, with note). The amounts, expressed as usual in wheat, barley, *olyra*, and copper, all converted in artabas of grain, are consistent with the other parallel documents, and the strong difference between the two series is not surprising, since the former was very ‘virtual’ (see again *P. Tebt.* I 67, note to l. 5). The proposed supplements are based on the extant figures, which are quite similar to those provided by *P. Tebt.* I 89, l. 9; what is going on with the fractional values is, of course, impossible to state.

On the meaning of *olyra*, see P. Mayerson, ‘Three Pharaonic crops in Ptolemaic Egypt: ὄλυρα (emmer wheat) and maslins of κριθόπυρον and ὀλυρόκριθον’, *Zeitschrift für Papyrologie und Epigraphik* 141 (2002), pp. 210–213, at pp. 210–211.

12. The content of this line is not very clear, nor it founds comparisons in the parallel texts. The context is that of the *genismos ek tou sporou* (see above), starting at l. 11 with the amount of wheat and continuing at ll. 13–14 with the amounts of barley and copper. The possible mention of the *misthōsis* would be consistent with the following section (see below), and see *P. Tebt.* IV 1129, l. 9: καὶ διάφορος μισθώσεως (πυροῦ) ξ /, referring to the difference between the rentals theoretically assigned (*ex hypothēkēs*) and those practically attainable (*ek tou sporou*).

For the reading μισθώσεως and not μισθού as previously interpreted in *P. Tebt.* I 89, ll. 14 ff., see *P. Tebt.* IV 1095, note to ll. 8–10 (= *BL* VII, p. 270).

15. Something like εἰς ᾧ]ς μεμετρῆ(σ)θαι, as in *P. Tebt.* I 89, l. 11, is expected here. This is the introduction to the following section, recording the exactions of the *sitikē misthōsis* (as was also called the *ekphorion*, the rent due on the royal land: see *P. Tebt.* IV, *Introduction*, pp. 2–3) every ten days, with reference to the work of the *sitologoi* (explicitly mentioned in *P. Tebt.* I 89), who clearly were required to send the *kōmogrammateus* a report concerning the collected rents (see above). *P. Tebt.* IV 1129, l. 12, has εἰς ταύτ[ας μεμετρῆσθαι.

16. The reading of the last letter is uncertain, but after the amount in wheat always comes barley.

16–17. In *P. Tebt.* I 89, ll. 14–16, each recorded amount is preceded by the abbreviation μισθώσεως, which however is missing in *P. Tebt.* IV 1129, ll. 13–16, just as in our text.

17. The total is certainly that of the first month of the rental collection, Pharmouthi (cf. *P. Tebt.* IV, *Introduction*, p. 9). However, there seems to be too much little space to have accommodated the records of the entire month: the data from the 11th to the 20th and from the 21st to the 30th, which we would expect after the first item, are unlikely to have been compressed in just one line. We

might tentatively think of a sort of draft, or at least a provisional document, not intended to be sent out of the office of the *kōmogrammateus* and therefore not redacted so carefully, or the scribe just forgot to transcribe the data from some other register or report.

18. A further line, of which are perhaps visible very few traces of ink, is completely covered by a papyrus strip, probably coming from the cartonnage.

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