

FIVE PAPYRI ON FOURTH CENTURY MONEY AND PRICES¹

A number of the crucial witnesses to the monetary history of the fourth century are unavailable though described, only partially published, or ill-edited. The five documents presented here all are of critical interest for one point or another. We edit or re-edit them in the interest of amplifying the record for this difficult subject.

1. Oil and Meat Prices, ca. 334: *SPP* XX 93 *SB*-16.12824

The presentation of this text by Wessely obscures its usefulness, and a number of his readings are incorrect. We read the text as follows:

- ε/ λυδικτιλωνος σιτου (αρτάβας) γ· κριθης (αρτάβας) α γ//·
 ε (αρτάβας) §/ γ/·
 ναύλου θαλασλων και αργυρικων τζ [τ]λων (τάλαντα) γ§/·
 γλ(νονται) δημοσ σι(του) γ§/ γ*·
 ναύλου σιτου δημοως (τάλαντον) α§/· ναύλου κριθης δημοως
 (δραχμάς) *Γ·
- 4 κρέως δημοως λλ(τρας) α §' γ* , (τάλαντον) α (δραχμάς) *Β·
 έλαιου (εξέστας) γ* (δραχμάς) *Δ, γλ(νεται) δημοσ
 (τάλαντα) ζ (δραχμάς) *Γ·
- ς// λυδικτιλωνος σιτου δημοως (αρτάβας) [γ]· κριθης (αρτάβας)
 α ο)· ε (αρτάβας) α η)·
 αργυρικων τριδλων και ναύλου θαλασλων (τάλαντα) γ§/· ναύλου
 σιτου ελ(ς) *ΑλεΞ(άνδρειαν)
 (τάλαντον) α§/· ναύλου κριθης δημοως (δραχμάς) *Δ· κοέως
 δημοως λλ(τρας) γ ο), (τάλαντα) β *Γ·
- 8 έλαιου δημοως (τάλαντον) α (δραχμάς) *Βυ, γλ(νονται) δημοσ
 σιτου (αρτάβαι) δ η, γλ(νεται) δημοσ αργυρ(λου) (τάλαντα)
 θ *Γ·

1 We are grateful to Dr. H. Harrauer for photographs and his own observations on the Vienna papyri included in this article and to Dr. H. Loebenstein for permission to publish the full text of *SB* III 7034; to Mr. T. S. Pattie for permission to publish the verso of *P. Lond.* III 1259 and for the photographs of the papyrus; and to Dr. Dia Abu Ghazi for permission to publish *P. Cair. Inv.* 10571, which is only described by Grenfell and Hunt in *P. Cair.*

ζ/ ἑνδικτιῶνος σίτου ὁμοίως (ἀρτάβας) γ· κριθῆς ὁμοίως (ἀρτάβας) α ο)·

ε (ἀρτάβας) α η'· ναύλου θαλασίων καὶ ἀργυρικῶν τάλων (τάλαντα) γ δ/·

ναύλ[ο]υ σίτου εἰς/ ἄλεξ(ἀνδρείαν) (τάλαντον) α (δραχμάς) ἄΓ· ναύλ[ο]υ κριθῆς ὁμοίως (δραχμάς) ἄΔ·

12 κρέως ὁμοίως λλ(τρας) β θ, (τάλαντον) α (δραχμάς) ἄΕ· ἔλαιου (τάλαντον) α ζ'·

γλ(νονται) δημοῦ σίτου (ἀρτάβαι) δ η, γλ(νεται) δημοῦ ἀργυρο[ο]υ (τάλαντα) θ.

η// ἑνδικτιῶνος σίτου (ἀρτάβας) γ ζ' γ' κ̄ο· [κ]ριθῆς ὁμοίως (ἀρτάβας) α γ'·

ε (ἀρτάβας) []· ναύλου θαλασίων καὶ ἀργυρικῶν τάλων (τάλαντα) []

16 ν[αύλου σίτ]ου εἰς/ ἄλεξ(ἀνδρείαν) (τάλαντον) α (δρ.) ἄΓσ· γ[αύ]λου κριθῆ[ς] ὁμοίως]

(τάλαντον) α (δραχμάς) ἄΒ[· κρέω]ς λλ(τρας) γ ο), τι(μῆς) (τάλαντα) γ (δραχμάς) ἄΔφ, ἐ[λαί]ου [δ]μ[ο]ίω[ς] []

1,5,9,14 ἑνδικτιῶνος pap. 2,6,10,15 θαλασίων
6,10,15 τάλων 8 α after first talents sign corrected from β; θ after 2nd talents sign corrected.

The information given by this text may best be set out in tabular form (the line numbers are given in parentheses).

TAX	INDICTION			
	5 (331/2)	6 (332/3)	7 (333/4)	8 (334/5)
σίτος (art.)	3 (1)	[3] (5)	3 (9)	3 21/24 (14)
κριθή (art.)	1 1/3 (1)	1 2/3 (5)	1 2/3 (9)	1 1/3 (14)
ε (art.)	5/6 (1)	1 1/8 (5)	1 1/8 (10)	[] (15)
Total σίτος	3 5/6 (2)	4 1/8 (8)	4 1/8 (13)	[] (18)
ναύλον θαλασίων καὶ ἀργυρικῶν τάλων	3 1/2 T. (2)	3 1/2 (6)	3 1/2 (10)	[] (15)
ναύλον σίτου	1 1/2 T. (3)	1 1/2 (6-7)	1 1/2 (11)	1 T. 3200 dr. (16)
ναύλον κριθῆς	3000 dr. (3)	4000 (7)	4000 (11)	1 T. [] dr. (17)
κρέας	1 5/6 lbs.: 1 T. 2000 dr.	3 2/3 lbs.: 2 T. 3000	2 3/4 lbs.: 1 T. 5200(12)	3 2/3 lbs.: 3 T. 4500 (17)
ἔλαιον	1/3 sext.: 4000 dr. (4)	1 T. 2400 (8)	1 T. [3000](12)	[] (17)
Total money	7 T. 3000 dr. (4)	9 T. 3000 (8)	9 T. (13)	[] ([18])

The account takes two parts within each indiction year, one in grain and one in money. The first two payments, wheat and barley, pose no problems. We cannot deduce the rates, since we do not know the land area involved (not large, evidently). The ratio of wheat to barley is not constant (9:5 in ind. 6 and 7, 2.9:1 in ind. 8). Additionally, we do not know what ϵ refers to. Its ratio to wheat is also not constant. Johnson and West (*Byzantine Egypt* 161, 162 n. 40, 234 n. 20, 241 n. 5) suggest ϵ (πιβολή). In the fourth century, ἐπινέμησης might be a better resolution (cf. *P. Cair. Isid.* 11), although there is no indication that ϵ is an abbreviation at all. Another possibility is that this figure represents a conversion of barley into a supposed equivalent number of artabas of wheat. This hypothesis would explain the fact that the artabas of barley are never counted in the total; but it encounters the difficulty that the barley would seem to be overvalued in this case compared to normal 1:2 or 3:5 ratios. We do not know what the letter would stand for in this case. A ratio of 9:5 is not too far from that of 1.85:1 between wheat and barley on public land at Karanis in *P. Cair. Isid.* 11, but as it seems that regional variation in the distribution of the total grain taxes was common (cf. *ZPE* 37 [1980] 263-64), it is difficult to draw any conclusions.

The rates of the other taxes are somewhat more calculable. The $\nu\alpha\upsilon\lambda\omicron\nu$ θαλασσίων πλοίων καὶ ἀργυρικῶν τίτλων seems to be 7,000 dr./art., that for $\nu\alpha\upsilon\lambda\omicron\nu$ σίτου εἰς Ἀλεξάνδρειαν 3,000 dr. per art. of wheat (a bit less in ind. 8), 2,400 dr. per art. for barley (higher in ind. 8, apparently). The meat and oil levies vary still more but seem moderate enough.

The interest for the monetary history of Egypt of this text lies in the $\alpha\delta\alpha\epsilon\rho\alpha\tau\iota\omicron$ figures for meat and for oil, especially the former. For indictions 5 through 8, we get equivalents for meat of 4,364, 4,091, 4,073, and 6,136 dr./lb. These prices are wholly incompatible with any 8th indiction except 334/5, but fit that date (for a retrospective account) quite well. The same is true for the oil price of 2 T./sextarius. The total of about 9 T. for all of these money taxes (in the 6th and 7th indictions), at a time when gold was about 7,000 T./lb. or 97 T./solidus, indicates a total value of about 2.5 carats (to use later terminology; the carat would be worth about 4.05 T.), compared to total grain taxes of 4 1/8 art., which would normally be worth 12 carats or so. That would represent a low level of money taxes proportionate to grain.

It should be pointed out that in line 8 the scribe ignores the 400 dr. in the figure for oil when computing the total. The

figure for oil in line 12 is also essentially lost, but it cannot have been 2,000, to judge by the scanty remains, which are not compatible with 'Bω, but which would accommodate 'Γ well enough; in this case, the total in line 13 would again ignore the 200 from the meat figure in line 12.

2. Gold and Wine Prices, *σα* 330-337: *3.8.6.12825*
P. Vindob. Inv. G 25840 = PER NN 37

This papyrus was published by Wessely in his "Ein Altersindizium im Philogelos," *SBWien* 149.5 (1905) 23-24.² Since this text was not included in the *Sammelbuch* or any other volume of papyri, and since the text is capable of some improvement, it seems to us worthwhile printing a revised text here. The text is of interest for our subject mainly for its prices for the solidus (verso 7) indicating gold at 7,200 T./lb., and wine at 2 T./sex-tarius (verso 11). These are consistent with a date in the period 330-337.³

Recto

Column i

]...
] (ταλ.) ε
] ~~(ταλ.)~~ υξ
4] (ταλ.) ρν
] (ταλ.) *vacat*
]ς (ταλ.) νς (δρ.) υ
]ιμου (ταλ.) λη (δρ.) 'Αυ
8]ορίας (ταλ.) μγ (δρ.) 'Γσ
]ζου (ταλ.) ρ
] (ταλ.) τβ (δρ.) ψ
] (ταλ.) [.. (δρ.)] ψ

Column ii

12 'Ανουβῆ ἀρχιυπηρ(έτηρ) (ταλ.) κδ
Κορνηλίω ἐλευργῆ (ταλ.) ρλ
'Ισιδώρω 'Ερμαίου πλεψ (ταλ.) ιζ (δρ.) 'Δ
'Ανυσίω πραιπ(οσίτω) εἰπ(όντος ?) 'Αδελφίου (ταλ.) ρθ

² Wessely omitted the indication "NN" before the inventory number 37; the form "PER 37" is therefore incorrect. The NN inventory is discussed by Harrauer and Worp in *P. Rain. Cent.*, pp. 64-66.

³ For the prices here, and for the general interpretation of the papyri published in this article, see Bagnall's *Currency and Inflation in the Fourth Century* (BASP Suppl., forthcoming).

- 16 Παλλαδίῳ καὶ Συναισίῳ (ταλ.) ρ
 *Ὁρίωνι ἀπὸ πραί (ποσίτων ?) (ταλ.) λ ΕΒ
 (2nd hand)
 βρ(έουλον) τειρώνων γ' πάγου
 *Ιστ[ι]δῶρου τείρ(ων)
 20 Traces

Verso

- λήμ(ματος) (ταλ.) * [] α
 *λόγ(ος) ἀλλ(ου) λήμ(ματος) προχ... [] (ταλ.) ρ
 λόγ(ος) ἀλλης προχρείας
 4 ὑπ(έρ) ἀργυ(ρι)κ(ῶν) π<ρ>ιμιπίλου (ταλ.) σνβ
 καὶ ἐπικεφαλείων
 ὑπηρετή ὁμοί(ως) (ταλ.) β (δρ.) *Δ/
 ὑπ(έρ) τι(μῆς) ὀλοκοττίνου (ταλ.) ρ
 8 ὑπ(έρ) τι(μῆς) μέλιτος (ταλ.) λ'
 ὑπ(έρ) ἀναλ(ώματος) ἐν τῷ πάγῳ (ταλ.) δ
 ὁμ[ο]ί(ως) ἐς ἀναλώματα τῆ [] *ιζ/
 Σενοδβεως ὑπ(έρ) τι(μῆς) οἴνου Ἐ(εστῶν) ρ (ταλ.) σ
 12 μίσθου δυνων β τῷ δικαιοδότη (ταλ.) κδ
 ὑπ(έρ) προ<πομ>ποῦ τεχνιτῶν (ταλ.) σπα (δρ.) *Δ
 Traces of two more lines

Recto 12 ἀρχιῦπηρ pap. 13 ἐλαιουργῷ 16. Συναισίῳ
 19 *Ισίδωρος Verso 7 ὀλοκοττίνου pap.

Recto

14 We cannot explain πλεψ, but we cannot find any other acceptable reading of the letters.

15 We cannot offer a parallel for εἰπ(όντος) in such a context, but we cannot find either another reading or a better resolution. It is possible that Anysios is the son of Theophanes (see *P. Vindob. Worp* 3), and Adelphios the well-known figure of the Hermopolitan archives (cf. *P. Charite*, introd.), but we cannot be certain.

17 The reading *πραί* is anything but certain; but we cannot devise a better one.

Verso

2 This line was added in a now very faded ink between lines 1 and 3 as a separate heading of some sort.

4 For primipilon, cf. Carrié in *Actes XV Congrès* IV 156-76, and see *Cd'E* 50 (1976) 148-49.

7 See Bagnall, *Currency and Inflation*, Chapter 5.

11 Senoabis was in the third pagus of the Hermopolite Nome; see Drew-Bear, *Le nome Hermopolite* (Missoula 1979) 243, and add *P. Charite* 26 (= *SPP* XX 89). For the price of wine, see Bagnall, *Currency and Inflation*, Chapter 9, Section M.

12-13 Cf. Lallemand, *L'administration civile* 145-46; *P. Michael*. 31.2.

14 The insertion of three letters is extreme, but we cannot find another remedy. For such escorts, cf. *SPP* XX 84 verso i.4 etc.

3. The Follis: P. Cair. Inv. 10571 5 B. 18. 12826

This papyrus, described by Grenfell and Hunt in *P. Cair.*, contains a list of payments in folleis and denarii. The consular date to 18.iv.340 is preserved, but there is a trace of ink above line 1 which is evidently part of a descending stroke from a higher line. The text as it stands does not provide a purpose, originator, or destination for the account, and these must have stood in the missing lines above.

As the line-notes show, all of the villages (except one unknown one) are demonstrably Hermopolitan, and all of those for which the information is known were part of the 15th pagus, in the north of the nome. The logical recipient of such a report was the *praepositus pagi*, and the *praepositus* of the 15th pagus in 340 was Aur. Asklepiades (cf. *BGU* I 21), from whose archives so many of our fourth-century Hermopolitan texts come. We therefore suppose that this papyrus comes from the same dossier.

The use of the follis here, as an accounting unit evidently equivalent to 12,500 denarii, is of great interest in corroboration of information from *P. Panop. Beatty* four decades before; for its interpretation, see Bagnall, *Currency and Inflation*, Chapter 2.

[ὕπατος Σεπτ]ιμίου Ἀκινδόνου τοῦ λαμπροτάτου]

[ἐπάρχου τοῦ ἐεροῦ πραιτωρίου καὶ Ποπουλωνίου]

[Προκοῦλου τοῦ λαμπροτάτου] φαρμοῦθι κγ· ἐστὶ δέ·

- 4 [κώμαρχοι κώμης Πρήκτεως φόλλ(εις) οβ (δηνῶν) /... [
- [] χρυσίου κώμης Ψύχεως φόλλ(εις) ιθ (δην.) /βθ
- [σιτολόγ(οι) κώμης Νάχη φόλλ(εις) κη (δην.) /ζσ

- [σ]ιτολόγ(οι) κώμης Ἀδμήνων φάλλ(εις) λγ (δην.) /Zφ
- 8 [σ]ιτολόγ(οι) Τιβεριού φάλλ(εις) θ (δην.) /Z.
- []σιτολόγ(οι) Ἴσιου φάλλ(εις) γ (δην.) /Hφ
- [σ]ιτολόγ(οι) Κορκοβίλων φάλλ(εις) ιγ (δην.) /Cφ

1-3 We cannot be certain that the line division was exactly as given here.

4 Prektis: see M. Drew-Bear, *Le nome Hermopolite* (Am. Stud. Pap. 21, Missoula 1979) 222-23; add *SPP* XX 75 ii.5, where Πρ[ή]κτεως is to be read. It was in the 15th pagus.

5 Psychis: see Drew-Bear, 330-31 (linked to the 15th pagus).

6 Nache: Drew-Bear, 179-80; add *P. Charite* 2.7. It was in the 15th pagus.

7 Admenthon: Drew-Bear, 53; it was in the north of the nome near Tehneh and Psychis (line 5 above), thus probably in the area of the 15th pagus.

8 Tiberiou: not in Drew-Bear, but cf. *SB* XIV 11594 and note to *ZPE* 22 (1976) 105.7. It is adjacent to Prektis in this list and in *SPP* XX 75 ii.9, cf. above, note on line 4.

9 Isieon: Drew-Bear, 135, lists an Ision, but that place is in the south of the nome and is probably not identical with this.

10 Krokodilon: not in Drew-Bear, but see *P. Herm. Landl.* F 747; *BASP* 13 (1976) 35 on *SPP* XX 75 ii.16 (adjacent in the list to Senomoros, a 15th pagus village); cf. now *ZPE* 53 (1984) 261-62.

4. Chlamydes and Other Objects: *P. Lond.* III 1259 58.16, 12

Accounts stand on both sides of this papyrus. That on the recto was published in extenso, omitting the badly mutilated upper part. That on the verso was represented only by a three-line sample; it is also fairly well preserved in part (the upper part: the papyrus was inverted from the position when the recto was used), but its significance was not altogether clear to the editors. Since the verso is of interest for the collection of the vestis militaris, it is edited here as far as possible, and the text of the recto needs correction in many places, which are listed below.

The verso is headed "first pagus, schedule of chlamydes for the 16th indiction." The 16th (or 1st) indiction could not be earlier than 327/8, and we may confidently exclude that year, on the basis of *PSI* IV 309, where a price per chlamys for adaeratio of *chlamydes* only a quarter of that given here is used in just this

year (see Bagnall in *StudPap* 21 [1982] 87-91). On the other hand, the meat prices in the recto must belong to the 330's and probably the earlier part of that decade (see Bagnall, *Currency and Inflation*, Chapter 9, Section O). It seems, therefore, that the 16th indiction of the verso must be 342/3 and the recto must date to about 330.

The entries on the verso all follow the same pattern. Under the general heading are subheadings by village names (Hermopolite as far as can be told); the actual entries give a name, a fraction of a chlamys, and a figure in talents and drachmas. These follow the general rule that $1/48$ chlamys is worth 5000 dr., or 1 chlamys = 40 talents. A couple of slight variations are noted in the line-notes. The editors found the fractions of a chlamys "curious," but of course we can see now that they reflect simply the application of tax schedules such as that in *P. Oxy.* XVI 1905, where one chlamys is assessed on 243 arouras. If that rate were applied in this papyrus, the rate would amount to 240,000 dr. divided by 243, or 988 dr./aroura. Perhaps in 342/3 the rate was 1 chlamys to 240 arouras, or an even 1,000 dr. per aroura. At contemporary prices, the tax in money would amount to a trifle: the value of one artaba of wheat on an estate of 156 arouras.

VERSO

Column 4	α πάγου βρο(έουλον) χλαμύδων ις// ζυ[δικ(τ)ονος]				
	Σεννονβώ				
4	λοιπ() [(δρ.)] 'Ε	/ κλ(ηρονόμοι) Στεφάνου Παήσιος	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)
		/ Μώρος Μουσητός	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)
		/ 'Ιέραξ Βήκιος	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)
		/ Σιλβανός Πα.Χ...Σ	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)
		/ 'Ατρήξ Πετρίσιος	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)
8	/ Μουσηξ .[.....].α	/ 'Αποχρά.[.....].οος	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)
	/ Βήκις .[.]		κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)

Traces of 6 more lines

5 'Ιέραξ παρ.

Column 17

17 Κελαμιντης

	Πεκύσις 'Ατρήτος	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)
20	κλ(ηρονόμοι) 'Ατριανού δι(δ) γεωρ(γ)ών	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)
	κλ(ηρονόμοι) 'Επιμάχου δι(δ) γεωρ(γ)ών	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)
	(γ)ίνεται δι(ου) κλ(αμύδος) ζυ γ(γ)εται	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)

Πηγή

24	Κολλούθου Περβήτος	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)
	κλ(ηρονόμοι) [] του προφ(ήτου)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)
	Πιν[ουτ(ω)ν 'Επιφου	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)
	Κ.λ. [] Traces	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)	κλ(αμύδος) κλ(αμύδος)

27-33 Traces of 7 more lines. Line 27 seems to be indented and may therefore be the total of lines 23-26

19 read 'Αβριανού 23 read Κολλούθος

Col. 11111

34 -- σα β -- Σιλβανού χλ(αμύδος) κο μη γς (ταλ.) β (δρ.) 'Εχ
 Κοπρίας Σιλβανού χλ(αμύδος) ιο μη [(ταλ.)] δ (δρ.) 'Α
 36 ...ως Σιλβανού χλ(αμύδος) γ μη γς [(ταλ.)] ι δ < (δρ.) > 'Γ[φ]
 'Ιβόις Κολλούθου και Σόις
 άδειφός χλ(αμύδος) γς' [(δρ.)] 'Βφ
 40 δι(ά) γεωργού 'Απολιναρίως χλ(αμύδος) μη γς (ταλ.) [α (δρ.) 'Αφ]
 Πεκύσις .[...].του χλ(αμύδος) ε μη γς (ταλ.) ζ (δρ.) 'Εφ
 γ(ίνεται) δ[μο] χλ(αμύδος) λ σ ιο μη γς (γίνεται) (ταλ.) λ α [(δρ.) 'Αχ]

42-50 Traces of 9 more lines. Line 42 was probably a geographical name.

Columns iv and v are very mutilated and no text is given here.

37 Σόις ex χλ()

- 1 For 16th indictions, see *CSBE* 34 n. 10.
 2 For Sennombo, see Drew-Bear, 243-44.
 3 The marginal note is written in a much smaller hand.
 4 There may possibly be a sigma (= 200) after the character for 1,000, but the arithmetic would not indicate that it is needed.
 9 The amount given is 100 dr. higher than is needed; see also lines 23 and 34 for this phenomenon.
 10 The number may be $\eta[\zeta]$ or $\eta[\]$.
 17 We do not find this toponym elsewhere.
 22 We do not find this toponym elsewhere. We have considered other readings, but they have also proved unknown.
 23 See note to line 9.
 24 The prophet might be $[\text{Κορωνη}][\text{ου}]$, cf. *P. Herm. Landl.*, index; but this is very uncertain. One could also restore $\chi\lambda(\alpha\mu\acute{\alpha}\delta\omicron\varsigma) \gamma [\iota\omicron(\text{ταλ.}) \iota]\zeta(\delta\rho.) \Delta$.
 34 See note to line 9.
 37 The traces before Ibois may have been an overwritten $\kappa\lambda$.

Recto: Corrections

<i>Editio princeps</i>	<i>Correct reading</i>
1 $[\bar{\alpha} \omicron]\psi\alpha\rho\iota\delta\iota\bar{\omega} \bar{\zeta}$ $\zeta/\alpha[\]<$	$\text{πα}\bar{\upsilon}[\nu\iota \bar{\alpha} \delta\acute{\omicron}]\psi\alpha\rho\iota\delta\iota\omega(\nu) .[.]^{\bar{\omega}}$ (ταλ.) $\alpha [(\delta\rho.)]$. ($\sigma?$)
4 $\bar{\delta} \epsilon\iota\sigma'$ απο πατρο[ζ]	$\delta^{\bar{\omega}}$ εις κλεοπάτρα
7 $\bar{\epsilon} \kappa[\alpha\iota]$	$\tau\iota\mu(\eta\zeta)$
10 $< \iota$ —	(δρ.) $'B^{\bar{\omega}}$
11 $\bar{\kappa} \epsilon\iota\zeta \tau\omicron \Sigma\alpha\rho\alpha[\text{πειον} ?]\epsilon\kappa'$ $\bar{\zeta} \epsilon\kappa \zeta/\beta <[\ \zeta/\iota]\eta<\bar{\beta}$	$\kappa' \epsilon\iota\zeta \tau\omicron \Sigma\alpha\rho\alpha[\epsilon\iota\omicron\nu]$ $\acute{\alpha}[\lambda]\acute{\epsilon}\kappa(\text{τορες}) \zeta \acute{\epsilon}\kappa$ (ταλ.) $\beta(\delta\rho.) \Delta[\]$ (ταλ.) $\iota\eta(\delta\rho.) 'B$
13 $\mu\epsilon\gamma\alpha\lambda\alpha \delta\omicron\gamma\alpha \epsilon\pi\tau\alpha$ (Not recorded)	$\mu\epsilon\tau\acute{\alpha} \tau\acute{\alpha} \delta\omicron\delta\theta\acute{\epsilon}\nu\tau\alpha$ $\phi\alpha\rho\mu\omicron\upsilon\theta\iota \iota\zeta//$ (in margin)
15 $\bar{\kappa}\alpha, \omicron\iota[\kappa]\iota\acute{\alpha}\gamma$	$\kappa\alpha', \omicron\iota\kappa[\acute{\alpha}]\gamma$
16 $\bar{\kappa}\bar{\beta} \eta\rho\iota\omega\nu\iota \alpha\upsilon\lambda\eta\tau\eta \omicron\rho\nu\epsilon\alpha \bar{\iota}\gamma$	$\kappa\bar{\beta}', \eta\rho\iota\omega\nu\iota \alpha\upsilon\lambda\eta\tau\eta\eta \omicron\rho\nu\epsilon\alpha \bar{\iota}\gamma$
19 ..	($\tau\alpha\lambda.$) $\zeta(\delta\rho.) 'E[\chi]$ (cf. line 35)
20 $<\bar{\beta}$	(δρ.) $'B\upsilon$
23 $\zeta/\beta \beta,\upsilon$	(ταλ.) $\beta/\beta\upsilon$
25 $\bar{\delta}$	$\delta^{\bar{\omega}}$
26 $\epsilon\upsilon$	$'E^{\bar{\omega}}$ corr. fr. $'\Delta^{\bar{\omega}}$
34 $\bar{\beta}$	$\beta^{\bar{\omega}}$
38 $\kappa\upsilon\lambda\iota\delta\iota\omicron\nu/\bar{\alpha}$	$\kappa\upsilon\lambda\iota\delta\iota\omicron\nu/ (= \kappa\omicron\iota\lambda\iota\delta\iota\omicron\nu) \alpha^{\bar{\omega}}$

In line 14, it should be noted that the phrasing, ἀπὸ τιμῆς ὄλων(κοτίνου), seems to indicate that the amount recorded (11 T.) is part of the value of a holokottinon, not its entirety; it therefore cannot be used as an indication of the value of gold at the time of writing. West and Johnson (*Currency*, 161) accepted the text's usefulness for the price of gold but considered the reading doubtful; the reverse is true. The price which would result (792 T./lb.) seems unlikely ever to have been the current one, for reasons explained in Bagnall, *Currency*, Chapter 4.

The fourth-century SB I 1941 also mentions κωλίδιον in the context of porcine foodstuffs. Preisigke, following Grenfell and Hunt, listed this text under κωλίδιον, but the London papyrus under κωλίδιον. It is clear that some item related to the pig's intestines is intended, and that κωλίδιον is thus correct.

5. SB III 7034 = P. Vindob. G 14015⁴ = 5.B.16.11829

This papyrus is a list of names with amounts, prefaced by a brief receipt for χρυσὸς βουρδώνων. Each amount mentioned is a combination of an amount in gold--a fraction of a gram in each case--and an amount in talents. Only a very partial transcript (lines 1-7) was published originally by A. Segrè in *Circolazione monetaria e prezzi nel mondo antico* (1916 [1922]) and reproduced in *Sammelbuch*. Segrè indicates (p. 65) that the transcript was by Wessely. This section led him, both here and in his later work *Metrologia e circolazione monetaria degli antichi* (Bologna 1928) to the conclusion that the solidus was worth 3,840 T. in this text, and from this he drew conclusions about the date of the papyrus. West and Johnson (*Currency in Roman Egypt* [Princeton 1944] 162) follow Segrè in dating the papyrus to ca A.D. 350 on this basis, and R. Rémondon (*Cd'E* 32 [1957] 146) seems on the same basis to place the text in the 350's. All of these scholars thus used a value for gold of 276,480 T./lb.

The arithmetic is unassailable. If $5/192$ gr. = 25 T., then 1 gr. = $25 \times \frac{192}{5}$ and 1 lb. is the value of a gram $\times 288 = 276,480$ T. But the text given below provides several other combinations of gold and talents, as follows.

4 In the old inventory the papyrus is E 1015, thus presumably from the Hermopolite Nome, cf. Harrauer and Worp (cf. n. 2), p. 63.

<u>Line</u>	<u>Gold</u>	<u>Talents</u>	<u>Supposed Value of Lb. Gold</u>
5	5/48 gr.	100	276,480
6	5/192	25	276,480
7	5/192	25	276,480
9	5/96	205	1,133,568
16	3/48	7	32,256
17	3/48	100	460,800

Even if line 16 is removed from consideration as insecurely read, it is immediately apparent that three or four different ratios over such an enormous range do not provide a secure basis for estimating the value of gold.

What then is the situation? It is difficult to imagine that the figure in talents is given in talents because it is smaller in value than the smallest fraction of a gram used, 1/192 gr.; for then if 205 talents (line 9) were less than 1/192 gr. in value, 1 lb. of gold would be worth more than 11,335,680 T., a situation which never occurred in the fourth century. On the other hand, one must be skeptical that an ancient tax collector could have weighed so small an amount as 1/192 gram, which is 1/32 of a carat, or less than 6 milligrams.⁵ The most likely solution to this riddle, we think, is suggested by the archive of Papnouthis and Dorotheos recently published in *P. Oxy.* XLVIII: the tax collector paid a sum--in gold, in this case--to the authorities, and collected it from the actual taxpayers in ordinary copper currency, which he used to buy the gold coins which the government demanded. The receipts he issued would be in this sense not quite truthful, for the taxpayer would not have paid a fraction of a gram of gold but so many talents or denarii equal, we may imagine, to somewhat more than the value of the gold in question.

Under such a system, the present papyrus could be interpreted either as a record of the actual amount paid in talents, next to the assessment--in which case a gold value should be deductible--or as a list of assessments and (for example) the amount over the value of the assessment actually collected. The former would make better sense and make the papyrus more useful:⁶ but the

⁵ Cf. *Kleine Pauly* s.v. *siliqua*: the keration is the "equivalent" of a carob pod.

⁶ The other instances of fractions of a gram which are known to us are compatible with such an explanation: see e.g. *P. Panop.* 19 passim, *P. Lond.* III 966 (p. 58), *P. Lips.* 13.13 (monthly interest of 1/3 gr. [= 1 sol. per year!]), *P. Lips.* 87, *P. Rył.* IV 616 ii, *SB* III 6086.

considerations adduced above seem to us decisive against such an interpretation. At all events, we consider that the use of this papyrus for the history of gold prices in the fourth century is at present impossible.

- Ν[ε]μεσίλλα Ἀρχηβί[ου] δέδωκεν
 ὑπὲρ λόγου βου[ρο]δώνων
 γράμματα τεσσερακοσκτόν, (γίνεται) γρ. μη.
- 4 Ἄριων σεσημῶμαι.
vacat 2 cm.
 κ[λ](ηρονόμοι) [.]...αρτ...ερμ.[...] γρ. $\frac{\text{ιβ}}{\text{μη}}$ (τάλ.) ρ
 Νε[μ]εσίλλα Ἀρχη[βί]ου γρ. $\frac{\text{μη}}{\text{ροβ}}$ (τάλ.) κε
 Ἄποχορᾶς Ἄρου γρ. $\frac{\text{μη}}{\text{ροβ}}$ (τάλ.) κε
 8 Ἐρμῆνο[ς] ..ιωνου γρ. $\frac{\text{μ[η] ..}}{\text{..}}$ (τάλ.) ιζ
 Διοδώρα Καστώρος γρ. $\frac{\text{[ρ.] κδ ρς}}{\text{..}}$ (τάλ.) σε
 ...σι.α... traces (τάλ.) ιη
 traces [(τάλ.)] ρη
- 12 κλ(ηρονόμοι) Φίβιος traces
 Πα...ς traces
 Σιλβα[νοῦ] Ἐ
 Μέλας Διοσκόρου γρ. --- (τάλ.) οδ
- 16 Σιλβανός Ἀνουβί[ων]ος γρ. $\frac{\text{κδ}}{\text{μη}}$ (τάλ.) ζ
ος Ἐρμαπόλλωνος γρ. $\frac{\text{κδ}}{\text{μη}}$ (τάλ.) ρ
 Μέλας Χούιτος γρ. $\frac{\text{κδ}}{\text{μη}}$ (τάλ.) .
 Πικύλις Διάκων γρ. $\frac{\text{ιβ}}{\text{ρς}}$ (τάλ.) .

2 There may be some traces at the end of this line, but we cannot be sure if they are really ink.

3 For the form of the fraction, see H. C. Youtie in *ZPE* 38 (1980) 284.

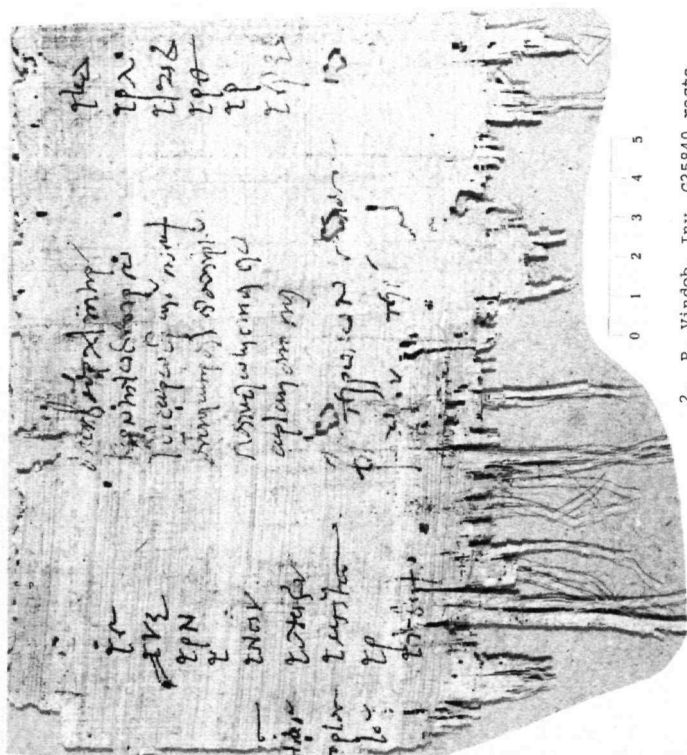
4 There is a flourish after the signature.

10 Possibly Παῖσις Τα--.

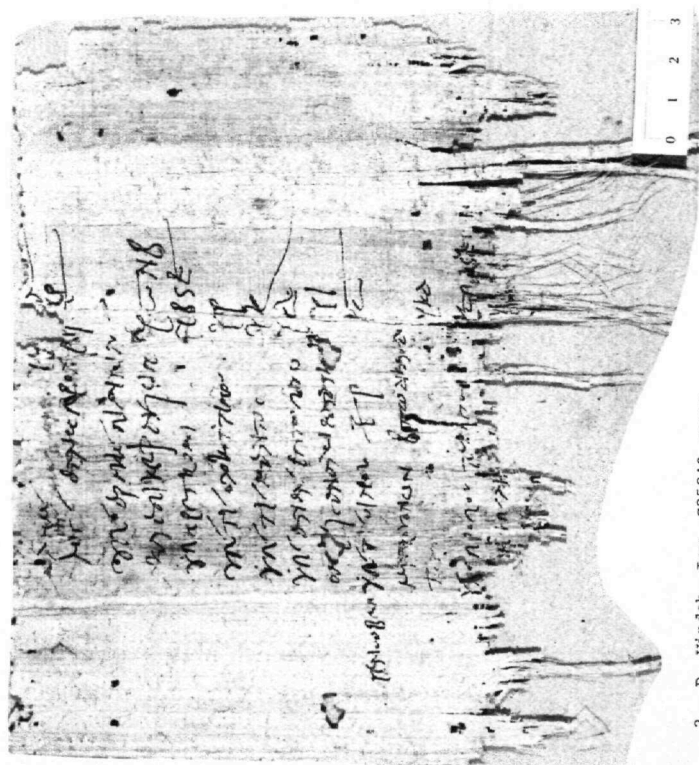
16 There may be traces after the zeta.

Hieroglyphic text on a fragment of papyrus, likely from the Ebers papyrus. The text is arranged in approximately 15 horizontal lines. The script is cursive and densely packed. A small rectangular box containing the number "307" is located on the right side of the fragment, approximately halfway down. At the bottom right of the fragment, there is a larger, empty rectangular box.

0 1 2 3 4 5 6 7 8 9 10



2. P. Vindob. Inv. G25840 recto



2. P. Windob. Inv. G25840 verso



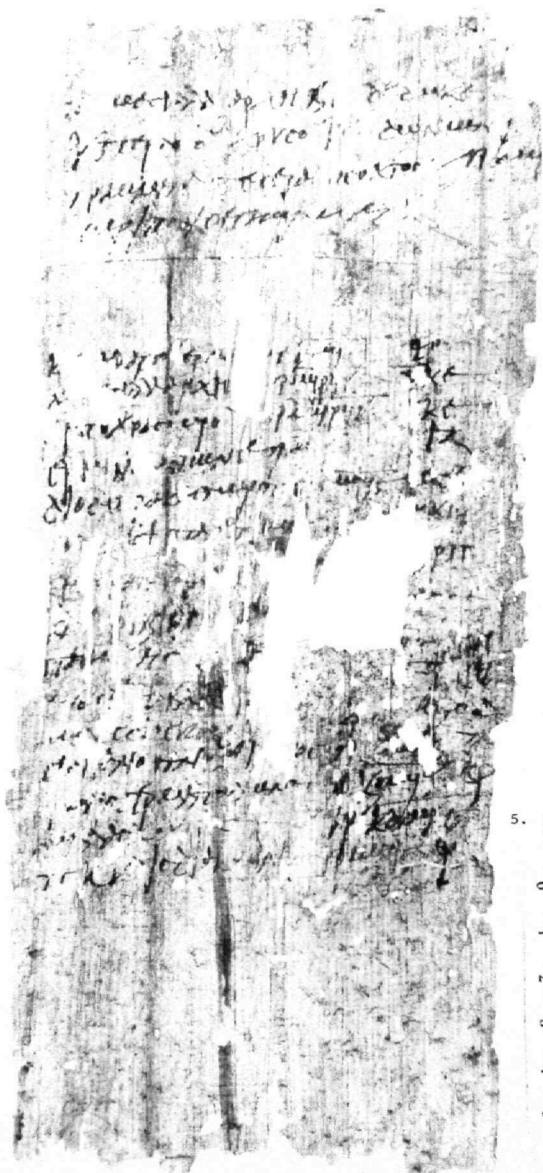
Fragment of a papyrus scroll with several lines of ancient Greek text. The text is written in a cursive hand and is partially obscured by a large, irregular hole in the center. The visible fragments of text include:

...
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Fragment of a papyrus scroll with a few lines of ancient Greek text. The text is written in a cursive hand and is partially obscured by a large, irregular hole in the center. The visible fragments of text include:

...
 ...
 ...
 ...

3. P. Cair. Inv. 10571



5. P. Vindob. Inv. G
14015 = SB III 7034

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