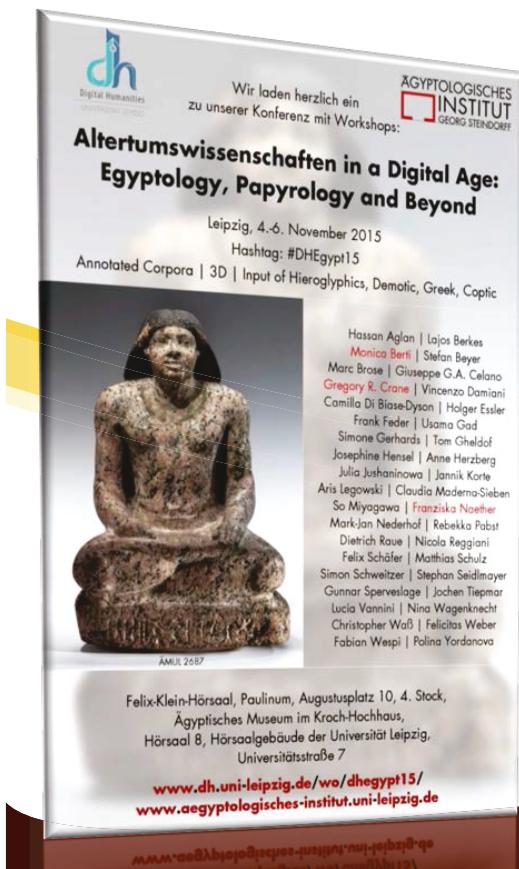


[the Corpus of Greek Medical Papyri and Digital Papyrology: new perspectives from an ongoing project]



[Nicola Reggiani]

Digitising medical papyri

The digital encoding of medical papyri raises special problems, due to their particular nature of technical/professional («paraliterary») texts.



N. Reggiani

A Corpus of Literary Papyri Online: the Pilot Project of the Medical Texts via SoSOL

“Antike Lebenswelten Althistorische und papyrologische Studien”, hrsgg. R. Lafer und K. Strobel, Berlin-New York, De Gruyter, 2015, 341-352.

Existing platforms and new needs

The Papyrological Editor:
designed for documentary papyri

- A selected set of TEI/EpiDoc features translated into Leiden+ markup
- Metadata from the HGV (later also Trismegistos)



- Encoding paratextual features (diacriticals, punctuation, marginalia, layout, etc.)
- Metadata from the LDAB
- Further philological issues (variants etc.)



The Digital Corpus of
Literary Papyri project

Existing platforms and new needs

Papyri.info

home | nicola.reggiani | sign out

Browse: DDbDP HGV APIS TM Number or Search: Data Bibliography

p.oxy.78.5164 = HGV P.Oxy. 78 5164 = Trismegistos [170048](#)

<< Previous record Next record >>

metadata HGV data TM data text transcription [open in editor](#)

Canonical URI: <http://papyri.info/ddbdp/p.oxy;78;5164>

HGV: P.Oxy. 78 5164 [\[source\]](#) [\[xml\]](#)

Title Receipt for Delivery of Oil
Publications P.Oxy. 78 5164 [\[More in series P.Oxy.\]](#) [\[More in series P.Oxy., vol. 78\]](#)

Support/Dimensions Papyrus
Origin Oxyrhynchos [\[More from Oxyrhynchos\]](#)
Provenance Oxyrhynchos
Material Papyrus
Date 31. Jan. 25 v.Chr. (Monat und Jahr unsicher) [\[More from the period between 25 BCE and 24 BCE\]](#)

Date 29. Juli 25 v.Chr. (Monat und Jahr unsicher) [\[More from the period between 25 BCE and 24 BCE\]](#)

Commentary Alternativdatierung: 29. Juli 25 v.Chr.

Subjects Quittung; Asklepiades alias Apion gegenüber Patoiphis; Empfang der fälligen Lieferung von 2 metretai Öl der Färberdistel (Saflor)

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Papyri.info

Editor not available.

Trismegistos [99548](#) = [LDAB 10735](#)

881 - 909 - Found: Middle Egypt (U, Egypt); written: Middle Egypt (U, Egypt)

metadata text Canonical URI:
 DCLP data transcription

DCLP/LDAB Data [\[xml\]](#)

Principal Edition	P. Lond. Copt. 514
Fragments	London, British Library Or 4718 (4)
Support/Dimensions	papyrus
Date	881 - 909 [More from the period between 881 CE and 909 CE]
Origin	Found: Middle Egypt (U, Egypt); written: Middle Egypt (U, Egypt) [More from Found: Middle Egypt (U, Egypt); written: Middle Egypt (U, Egypt)]
Form and Layout	papyrus sheet (columns: 1)
Genre	liturgic; list; prayer
Culture	religion
Religion	christian
Print Illustrations	P. Lond. Copt., pl. 6a
Availability	The source data for this page does not contain any information concerning its copyright, license, or availability. It should be considered "all rights reserved" until proven otherwise.

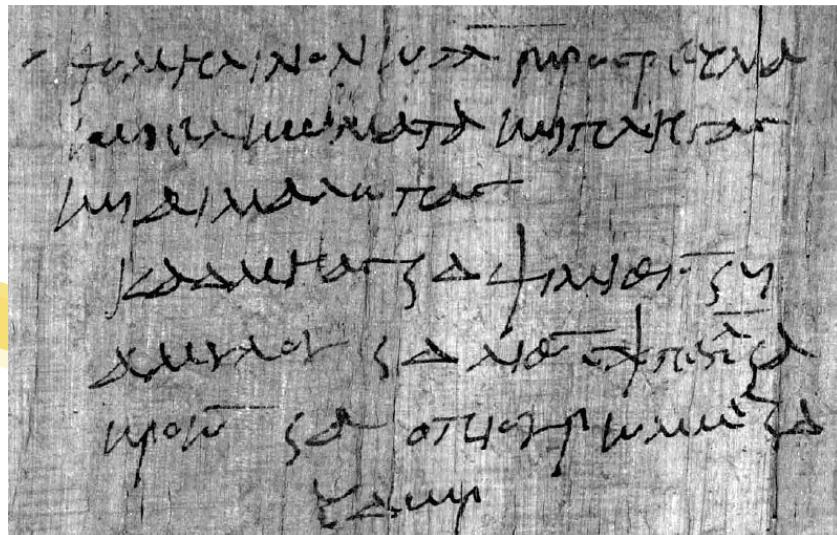
Multi-layer linguistic annotation

A basic part-of-speech annotation (treebanking) allows extensive **lexical, phraseological (formulaic)** and **syntactic analyses** on the textual corpus, and might lead to pinpoint **styles and writing strategies** specific of medical texts, or to find **influences and interpolations** of various types.

Problems: how to integrate in Papyri.info?
how to annotate broken tokens (non-supplied words,
words with multiple alternatives)?

Multi-layer linguistic annotation

P.Oxy. VIII 1088, i, 1-5, *recipe*
from *receptarium*, I cent. AD ex.



- τὸ μήλινον κολλ(ύριον)· πρὸς ρεῦμα
καὶ ἐλκόματα καὶ πληγὰς
καὶ αἷμάλωπας·
καδμήας § δ ψιμιθίο(υ) § η
5 ὀμύλου § δ λίθ(ου) σχι(στοῦ) πεπλ(υμέ-
νου) § α
κρόκο(υ) § α ὄπιον / κόμμε(ως) § δ
ῦδωρ.

Yellow-coloured salve: for discharges, wounds, bruises, and weals: calamine
4 drs., white lead 8 drs., starch 4 drs., purified schist 1 dr., saffron 1 dr.,
opium 3 obols, gum 4 drs., water.

Layer name

original

Layer type

original

Source title

o.claud.2.408

Source URL

[http://papyri.info
/ddbdp
/o.claud.2,408
/source](http://papyri.info/ddbdp/o.claud.2,408/source)

Edit view

1 Ασκαλαφωνᾶς Ἀλεξᾶ 2 τι τῷ ἀδελφῷ

χαίρειν 3 δέξαι δέξε

παρὰ Οὐεσπασια 4 νοῦ τοῦ

ταβελλαρίου ταβελαρίου 5

ἀειουτώρειν καὶ ξυρά 6 φιον ἐν καὶ

ομιλίον ζμειλειν 7 ἐν καὶ ἐὰν λάβῃς ἀν

8 τίγραψόν μοι 9 ἀσπασε

Σιγίλην Σιγίλεν καὶ 10

Ὄρνιθιον Ὅρνιτιν

Text view

Ασκαλαφωνᾶς Ἀλεξᾶτι τῷ ἀδελφῷ χαίρειν· δέξε παρὰ Οὐεσπασιανοῦ τοῦ ταβελαρίου ἀειουτώρειν καὶ ξυρά SU ἐν καὶ ζμειλειν SU καὶ ἐὰν λάβῃς ἀν SU αψόν μοι· ἄS Uε Σιγίλειν καὶ Ὅρνιτιν· ἀσπάζετε ὑμᾶς Σαβίνος καὶ Βαρνεῖς καὶ Οὐενιστιανός· ἐάν τι χρείαν ἔχης γράψων μοι· ἐρρωσω.

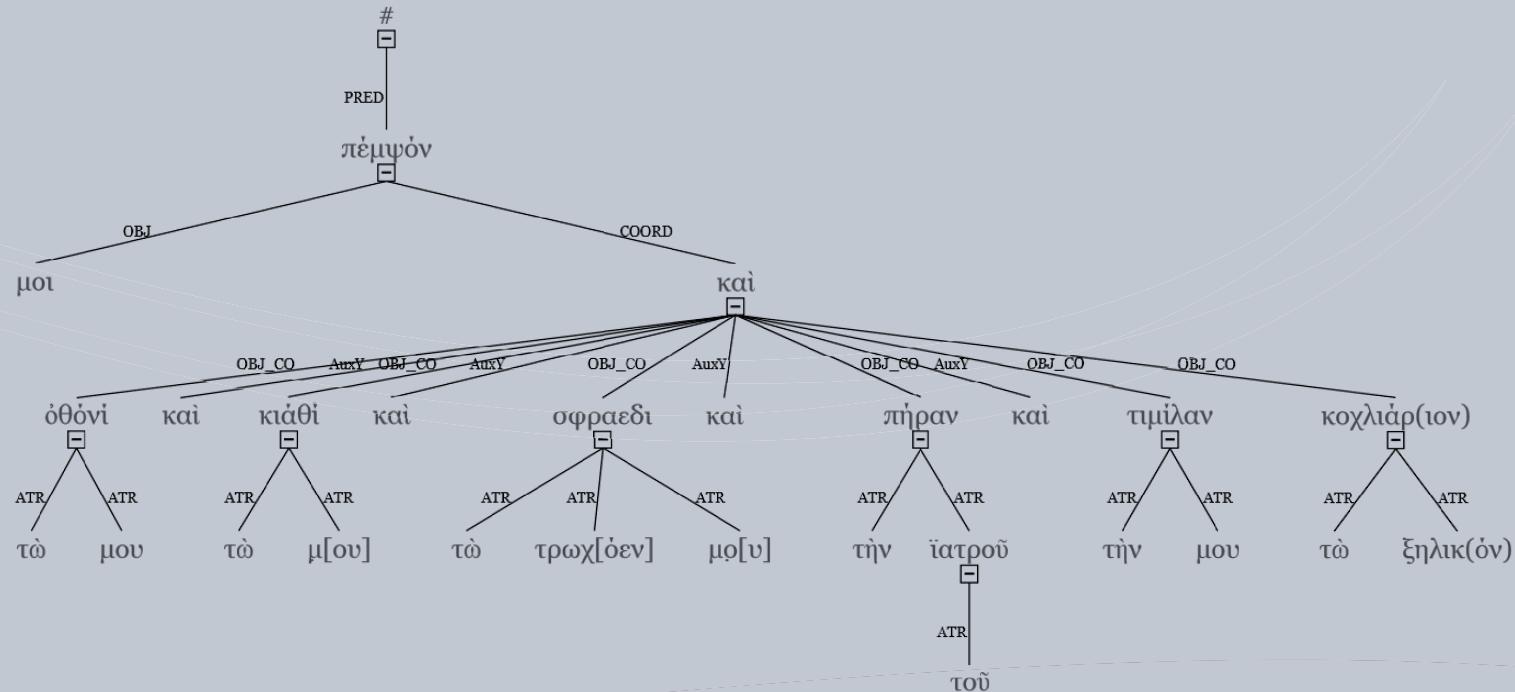
XML view

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-model href="http://www.stoa.org/epidoc/schema/8.16/tei-epic.xsd" type="application/xml"?>
<TEI xmlns="http://www.tei-c.org/ns/1.0"
      n="0020;2;408"
      xml:id="o.claud.2.408">
```

Multi-layer linguistic annotation

Sample treebanking of GMP II 10

πέμψόν μοι τώ όθόνι μου καὶ τώ κιάθι μ[ου] καὶ τώ τρωχ[όεν] σφραεδι μο[υ] καὶ τὴν πήραν τοῦ Ἱατροῦ καὶ τὴν τιμίλαν μου καὶ τώ κοχλιάρ(ιον) ξηλικ(όν)



Annotation of linguistic variants

Morphological, syntactic, lexical, phonological,
orthographic «regularisations»
currently available in the PE as «corrections»

† πέμψον μου(¹)
τω(²) οθονι(³) μου
καὶ τω(⁴) κιαθ(⁵) μ[ου]
καὶ τω(⁶) τρωχ[όνεν]
5 σφραεδι(⁷) μο[υ]
καὶ τὴν πήραν
τοῦ ι(⁸)ατρού(⁹) καὶ τὴν
πιμιλαν(¹⁰) μου
καὶ τω(¹¹) κωχλιαρ(ιον)(¹²)
10 ξηλικ(όν)⁽¹³⁾

Apparatus

- ^ 1. I. μοι
- ^ 2. I. τὸ
- ^ 2. I. θόθονιόν
- ^ 3. I. τὸ
- ^ 3. I. κυάθιόν
- ^ 4. I. τὸ
- ^ 5. I. σφραγίδιόν
- ^ 7. corr. ex ι. ιατρο(ū) : ιατρο papyrus
- ^ 8. I. σμιλήν
- ^ 9. I. τὸ
- ^ 9. I. κοχλιάρ(ιον), corr. ex ιχιωχλιαρ(ιον)
- ^ 10. I. ξυλικ(όν)

```
<lb n="1" xml:id="lb1"/><g type="stauros"/> πέμψον <choice><reg>μοι</reg></choice>
<lb n="2" xml:id="lb2"/><choice><reg>τὸ</reg><orig>τω</orig></choice>
<lb n="3" xml:id="lb3"/>καὶ <choice><reg>τὸ</reg><orig>τω</orig></choice>
<lb n="4"/>καὶ <choice><reg>τὸ</reg><orig>τω</orig></choice> τρωχ<sub>ς</sub>
<lb n="5" xml:id="lb5"/><choice><reg>σφραγίδιόν</reg><orig>σφραεδί</orig>
<lb n="6"/>καὶ τὴν πήραν
<lb n="7" xml:id="lb7"/>τοῦ <sub>ς</sub><add place="inline"><hi rend="diaeresis">
<lb n="8" xml:id="lb8"/><choice><reg>σμιλήν</reg><orig>πιμιλαν</orig>
<lb n="9" xml:id="lb9"/>καὶ <choice><reg>τὸ</reg><orig>τω</orig></choice>
<lb n="10" xml:id="lb10"/><choice><reg><expan>ξυλικ</ex>ον</ex></exp
</sub></add></hi></sub></choice>
```

The Trismegistos database
of text irregularities

[<http://www.trismegistos.org/textirregularities>]

M. Depauw, J. Stolk, *Linguistic Variation in Greek Papyri: Towards a New Tool for Quantitative Study*, GRBS 55 (2015), 196-220

The SEMATIA project (M. Vierros)

[<http://sematia.hum.helsinki.fi>]



TEXT IRREGULARITIES

[Search](#)

Search result

» 51 text irregularities found:

Irregular form	Corrected form	Error type	Frequency	Publication	Passage	Date
μεσω*	1. μέσος	ω instead of ος	51	PSI 9 1022	B.18.	BC 106 May 7
φακω*	corr. ex ουκω, 1. φακός	ω instead of ος	51	P. Tebt. 2 316 col. 2	2.18.	AD 99 Dec 10
φακω*	corr. ex ουκω, 1. φακός	ω instead of ος	51	P. Tebt. 2 316 col. 3	2.18.	AD 99 Dec 11
φακω*	corr. ex ουκω, 1. φακός	ω instead of ος	51	P. Tebt. 2 316 col. 4	2.18.	AD 99 Dec 11
μεταξ[α]ντω*	1. μεταξάντο(ζ)	ω instead of ος	51	SB 18 13766	2.32.	AD 100 - 299
Ούαλεριω*	1. Ούαλεριος	ω instead of ος	51	BGU 1 344	2.3.	AD 100 - 299
πράγματω*	1. πράγματος	ω instead of ος	51	O. Did. 380	concave.11.	AD 110 - 115 about b
Σαβεινω*	1. Σαβείνος	ω instead of ος	51	O. Claud. 3 454	1.	AD 137 about
Ἀντωνίω*	1. Αντώνιος	ω instead of ος	51	O. Claud. 2 381	1.	AD 150 - 199
Ζευτλω*	1. Ζεῦτλος	ω instead of ος	51	O. Narm. Gr. 1 27	2.	AD 150 - 225

M. Depauw, J. Stolk, *Linguistic Variation in Greek Papyri: Towards a New Tool for Quantitative Study*, GRBS 55 (2015), 196-220

Lemmatisation and the technical terms

Annotating lemmas might allow an extensive interconnection with lexical repositories like the Medicalia Online lexicon. The PN used to provide a basic «lexical tool» with simple explanations of technical terms.

BGU I 4

¹ An Severus Iustus, den *centurio*,

² von Aurelius Abûs, dem Ve
in Pêlusion, gab ich einem ge
Freund, Gegenstände im We
Aufbewahrung.⁹ Ich wurde i
ihm wegen dieser Dinge eine
Entlassung, machte er mir keine Abrechnung.¹⁰ Inermitsuchte ich, wobei
ich als Zeugen Syriôn, Sohn des Is[î]dôros, aus K[aran]is habe, der (mir)
zustimmte, darum, [daß sie Dir vorgeführt werden ---]

BL I, S. 17. ἑκατοντάρχης /
ἑκατόνταρχος – centurio.
Kommandant einer centuria, einer
ca. 80 Mann starken Infanterie-
Einheit.

leistete, Herr,
meraden und
ar
und als ich mit
ch unser beider

A very tentative example of annotation of a medical papyrus: GMP II 10.

ID = Identifier; **T** = Tokenization; **PoS** = Part of Speech; **H** = Syntactic head; **R** = Syntactic relation [**H + R + ID** = Syntactical annotation]; **N** = Normalization; **E** = Kinds of errors [VE = vowel exchange; BD = broken diminutive; ML = missing letter; EC = error corrected; CE = consonant exchange]; **L** = Lemmatization; **TT** = Technical terms; **A** = Abbreviations; **M** = (Dia)critical marks and punctuation [The other levels of annotation do not apply to this instance. Note that PoS and syntactical taggings are simplified for reason of space]. I am very grateful to Dr. Giuseppe G.A. Celano for his essential help in the grammatical/linguistic annotation.

Transtextuality and the fragments

The papyrus fragment is a sort of «**accidental quotation**» the transtextual network of which is included between a «hypertext» (the original document) and a «hypotext» (the actual scrap).

From this viewpoint it is possible to think of the digital edition as a **multitext**, in which the textual variants (even unattested in the manuscript tradition) are not to be subordinated to a «normal» version, but parts of a dynamic network.

M. Berti, *Citazioni e dinamiche testuali. L'intertestualità e la storiografia greca frammentaria*, in *Tradizione e trasmissione degli storici greci frammentari II. Atti del Terzo Workshop Internazionale (Roma 2011)*, c. V. Costa, 2012, 439-458.

M. Berti, *Fragmentary Texts and Digital Libraries*, in *Philology in the Age of Corpus and Computational Linguistics*, eds. G. Crane, A. Lüdeling, M. Berti, CHS Publication, forthcoming.

M. Berti, M. Romanello, A. Babeu, G. Crane, *Collecting Fragmentary Authors in a Digital Library*, in *Proceedings of the 2009 Joint International Conference on Digital Libraries (Austin, TX)*, New York 2009, 259-262.

M. Berti, M. Romanello, F. Boschetti, A. Babeu, G. Crane, *Rethinking Critical Editions of Fragmentary Texts by Ontologies*, in *Proceedings of 13th International Conference on Electronic Publishing: Rethinking Electronic Publishing: Innovation in Communication Paradigms and Technologies (Milan)*, Milano 2009, 155-174.

P.Aberd. 124 = GMP I 2, Hp. *De fracturis*, II cent. AD

column i

- 1 [-ca.? - ἐπὶ τῷ μεγέ]θε[ι] (*)
 [ἢ τὸ τοῦ βραχίονο]ς καὶ δι-
 [καίνην φύσιν μο]ῦνον ἔχο[v]
 [καὶ ταύτην περιφ]ερέα· τὸ δὲ
 5 [βραχίονος ἄρθρον] (*) μέγα τε
 [καὶ βαθμίδας πλε]ῖονας ἔχον.
 [πρὸς δὲ τούτοις τὰ] μὲν τῆς
 [κνήμης ὀστέα παραπ]λήσια μῆ-
 [κος ἔστι καὶ σμικρό]γ τι(*) οὐκ
 10 [ἄξιον λόγου τὸ] ἔξω ὀστέον ύ-
 [περέχει οὐδενὸ]ς μεγάλου κω-
 [-ca.? -] . οὐ(*) πέφυκεν
 [ό ἔξω τένων ὁ π]αρὰ τὴν ἴγνυ-
 [ην· τὰ δὲ τοῦ π]ήχεως(*) ὀστέα
 15 [ἀνισά ἔστι, καὶ] τὸ βραχύτερον(*)
 [παχύτερον συχ]νῶ, τὸ δὲ λεπτό -

column ii

- [τερον -ca.? -]
 vac.ca.55 lines
 [-ca.? - προσ-]
 βάλλο[ντα ὠθεῖν, τῇ δ' ἐτέρῃ]
 ἀγνωθε[ιν -ca.? -] (*)

Variant reading

Text divergent from codd.

Dialect: koine

Apparatus

- △ i.1. Hp. Fract. 37 (3.540.16 L); ἐπὶ μεγέθε Withington, LCL
 △ i.4-5. τὸ δὲ τοῦ βραχίονος ἄρθρον μέγα codd., GalLemm. (613.7 K), edd.; τοῦ om. M (Paris. 2247) ap. Littré, e^t pap. spat. rat.
 △ i.9. ἔστιν Kühl., σμικρόν τε Withington, LCL
 △ i.11-12. or κώ|[λυμα ἔον, ἀφ' ὁκ]οίου, or κώ|[λυμα ἔον, ἀπ' ἔκει]ου GMP 1,1, [-ca.? -] ιου prev. ed.: κώλυμα ἔον, ἀφ' οὐ πέφυκεν codd., GalLemm. (618.12 K), edd.; GalComm. (619.5-6 K οὐδενὸς μεγάλου κωλύματος)
 △ i.14. πήχεος codd., edd. (Ionic Greek); -χεως pap. (Koine Greek)
 △ i.15. ἔστιν L, Kühl., Withington, LCL
 △ ii.56-58. Hp. Fract. 39 (3.546.6-7 L)

The digital edition

Though existing in the PE, the tools for creating introductions and commentaries are poorly used for the currently extant digitised papyri. Their regular use for the medical papyri might be a step towards true digital editions of unpublished texts.

<http://www.papirologia.unipr.it/ERC>