Medical Recipes for All Occasions: A *receptarium* from Tebtunis? (P.CtYBR inv. 1443)

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This article presents the full edition of P.CtYBR inv. 1443, a *receptarium* dated to the late 1st–early 2nd century CE and housed today in the Beinecke Rare Book and Manuscript Library, the second column of which was partly published in 2007 by Ann Ellis Hanson.[1] The papyrus (*fig.* 1) was purchased by M. Rostovtzeff in Paris in 1931 from M. Nahman, who probably acquired it in Abutig.[2] Hanson discusses the attractive hypothesis that the papyrus may have originated from Tebtunis,[3] a locality renowned for its medical tradition and which has yielded numerous medical texts.[4]

[1] A. E. Hanson, "Recipes for Female Complaints and Other Ailments: P.CtYBR inv. 1443, col. i," *Pap.Congr.* XXIV (Helsinki 2007) 427–433 (in the title of the article read "col. ii" instead of "col. i"). The new edition of the papyrus presented here is based on a digital image kindly provided by the Beinecke Rare Book and Manuscript Library; online image https://findit.library.yale.edu/catalog/digcoll:2758294 (last accessed 8 Dec. 2021).

[2] See Hanson, *Pap.Congr.* 427–428.

[3] Hanson, *Pap.Congr.* 427–430.

[4] See A. E. Hanson, "Greek Medical Papyri from the Fayum Village of Tebtunis: Patient Involvement in a Local Health-Care System?" in P. van der Eijk (ed.), *Hippocrates in Context* (Leiden 2005) 387–402; P. van Minnen, "Boorish or Bookish? Literature in Egyptian Villages in the Fayum in the Graeco-Roman Period," *JJP* 28 (1998) 155–180; I. Andorlini, "Old and New Greek Papyri from Tebtynis in the Bancroft Library of Berkeley: Work in Progress," in S. Lippert et al. (eds.), *Graeco-Roman Fayum. Texts and Archaeology* (Wiesbaden 2008) 1–13; K. Ryholt, "The Illustrated Herbal from

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Figure 1: P.CtYBR inv. 1443 *recto*
Images published courtesy of the Yale Papyrus Collection, Beinecke Rare Book and Manuscript Library

Tebtunis: New Fragments and Archaeological Context," *ZPE* 187 (2013) 233–238; A. Jacob, "Demotic Pharmacology: An Overview of the Demotic Medical Manuscripts in the Papyrus Carlsberg Collection," in N. Reggiani et al. (eds.), *Parlare la medicina: fra lingue e culture, nello spazio e nel tempo* (Milan 2018) 52–79; K. Ryholt, "Libraries from Late Period and Graeco-Roman Egypt, *c.*800 BCE–250 CE," in K. Ryholt et al. (eds.), *Libraries before Alexandria: Ancient Near Eastern Traditions* (Oxford 2019) 393–400.

The papyrus preserves parts of three columns of a roll written along the fibers; the verso is blank. Two *kolleseis* run respectively 1 cm from the left edge and 6 cm from the right edge. Of the first column, only scarce remains of line endings are preserved; the second column is partly preserved with extensive damage especially in the middle; the third column is the better preserved and has 29 lines. The papyrus is marred by several holes and the ink is abraded in many places (see for example the middle of ii.3–4 or the left half of iii.23–29).

The labels attached to the frame distinguish four fragments. The two major pieces, labeled fr. 1 and 4, connect through a very small strip of papyrus. From the digital image it was not possible to ascertain whether the two pieces are actually continuous or just touching at that point. Colleagues at the Beinecke Rare Book and Manuscript Library kindly checked the original and communicated to me that the two pieces are continuous, joined through that very tiny portion of papyrus. Fr. 2 contains the lower half of col. ii, as confirmed by the continuity of the script, but its exact placement in relation to fr. 1 remains uncertain (see commentary on ii.20). The position of fr. 3, which had remained uncertain in the *editio princeps*,[5] can now be determined on the basis of the content: it bears the endings of ii.24–28. Furthermore, a close examination of fr. 3 reveals that it is itself actually divided into two fragments (fr. 3a and, below it, fr. 3b) and that their current position (*fig.* 2) should be changed (*fig.* 3).

Fr. 3b, which is now positioned below fr. 3a, bears the endings of ii.26–28: this is particularly evident in line 27, where the word γένηται is split between the two fragments. The alignment of the fibers across the two fragments corroborates the new arrangement.

[5] Note that Hanson (430) labels the fragments A (= fr. 1), B (= fr. 2), and C (= fr. 4). Fr. 3 is referred to as "one smaller one as yet unplaced."

Figure 2: current state

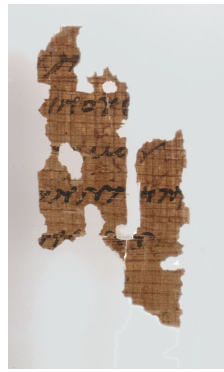

Figure 3: Photoshop reconstruction of the correct arrangement

P.CtYBR inv. 1443 shows at least four or maybe five hands at work, whereas Hanson (431) identified only two. The remains of col. i show an upright, practiced handwriting (Hand 1). Two recipes in ii.1–12 are written in a rather clumsy and irregular script (Hand 2). Another hand wrote at least one recipe in ii.13–23 in a clear, neat script, written with finer strokes and with wider interlinear spaces (Hand 3). Seven recipes between ii.24 and iii.27 are written in a sloping, regular handwriting, which can be ascribed to a professional scribe (Hand 4). Finally, the last two lines of col. iii are written in an unpracticed script resembling Hand 2: however, as this handwriting is even clumsier and slightly larger than that of Hand 2, it cannot be excluded that this is a further, distinct Hand 5.

The script of Hand 2 (ii.1–12 and maybe iii.28–29) bears a strong resemblance to the writing of *SB* XXVIII 17134 (late 1st–early 2nd cent. CE), a *receptarium* deriving from the Tebtunis temple library.[6] The similarity of the hands of the two papyri

[6] See I. Andorlini, "Un ricettario da Tebtynis: parti inedite di PSI 1180," in I. Andorlini (ed.), *Testi medici su papiro* (Florence 2004) 81–84, and Ryholt, *ZPE* 187 (2013) 235 n.18.

had already been observed by Ann Hanson (428). The two handwritings have many graphic features in common, such as the *alpha* with angular 'belly', especially at the beginning of a line (cf. ii.10 ἄλλο and ii.12 ἀρσενικοῦ with *SB* XXVIII 17134.B.iii.1 ἄφαιρε; otherwise executed in this papyrus with a rounded 'belly'), the similar execution of letters such as *beta* (with a flat bottom, cf. ii.11 λεοτριβήσας with *SB* XXVIII 17134.B.iii.12 βαπτιτα), *theta* (pointed on top, cf. ii.10 ἀρκευθίδων with *SB* XXVIII 17134.A.iii.3 κανθαρίδ(ων)), *mu* (cf. ii.5 μετά with *SB* XXVIII 17134.B.iii.4 μέλαν), *xi* (cf. ii.7 μῖξον with *SB* XXVIII 17134.B.ii.1 ὄξι), *phi* (cf. ii.4 φελι with *SB* XXVIII 17134.B.iii.5 ὀφθαλμ(ούς)), and the similar abbreviations with suspension of *mu* and *kappa* (ii.2 ἐκκε[̣]καρτισμ(ένης) and 11 γυναικ(είου) with *SB* XXVIII 17134.B.iii.7 στίμ(εος) and B.ii.6 (ὀστρακ(ίτιδος)), so that it can even be hypothesized that they may have been written by the same person. If this is the case, it would have important implications, since it would strongly link P.CtYBR inv. 1443 to a text belonging to the Tebtunis temple library and provide thus a possible context for its production and use (see below).

The dating of P.CtYBR inv. 1443 to the end of the 1st–early 2nd century, proposed by Hanson (431) and based especially on the comparison with *SB* XXVIII 17134, is corroborated by the following parallels for Hand 4: *P.Fay*. 91 (99 CE),[7] *P.Tebt.Wall* 12 (101 CE),[8] and *P.Mich.* III 196 (122 CE).[9] Additionally, a *terminus post quem* for the date is provided by the quotation of two recipes ascribed to Archigenes of Apamea, whose activity is dated between the late 1st and early 2nd centuries CE.[10]

[7] http://ipap.csad.ox.ac.uk/4DLink4/4DACTION/IPAPwebquery?vPub... (accessed 8 Dec. 2021).

[8] https://dpg.lib.berkeley.edu/webdb/apis/apis2?apisid=141&ite... (accessed 8 Dec. 2021).

[9] http://quod.lib.umich.edu/a/apis/x-1322... (accessed 8 Dec. 2021).

[10] On Archigenes see O. Lewis, "Archigenes of Apamea's Treatment of

The *receptarium* displays the common layout of pharmacological collections, with *paragraphoi* dividing the recipes.[11] Additionally, Hand 4 marks the beginning of each recipe by setting the first line in *ekthesis* (iii.11, 20, 25). In iii.4–5 at line end, Hand 4 uses, in addition to the *paragraphos,* a division line.[12]

The *receptarium* collects recipes for disparate ailments, which have been recorded apparently without a uniform organizing criterion: col. ii and iii describe two vaginal pessaries (ii.1–9 and 10–12), a quite fragmentary remedy "for severe abdominal pain and every kind of pain" (ii.13–23), a poultice for another female ailment (ii.24–31), two plasters perhaps for bruises (iii.1–4, 5–10), a plaster for the stomach (iii.11–16), three remedies against dandruff (iii.17–19, 20–24, 25–27), two of which can be identified with two recipes ascribed to Archigenes, and an anti-

Mental Diseases," in C. Thumiger et al. (eds.), *Mental Illness in Ancient Medicine. From Celsus to Paul of Aegina* (Leiden 2018) 143–175 (with further bibliography).

[11] Examples of *receptaria* include *SB* VIII 9860 (3rd cent. BCE), *P.Ryl.* III 531 (3rd–2nd cent. BCE), *PSI Congr.XXI* 3 *verso* (1st cent. BCE), *P.Oxy.* VIII 1088 (1st cent. CE), *P.Oxy.* LXXX 5240 (1st cent. CE), *SB* XXVIII 17134 (late 1st–early 2nd cent. CE), *P.Oxy.* LXXIV 4975 (2nd cent. CE), *P.Strasb.* inv. G 90 + *P.Ryl.* I 29 (2nd cent. CE), *P.Oxy*. LXXX 5243 (2nd–3rd cent. CE), and *Gr.Med.Pap*. II 5 (2nd–3rd cent. CE).

[12] On this sign see A. Ricciardetto, "La ponctuation dans les papyrus grecs de médecine," *Eruditio Antiqua* 11 (2019) 131–132. On the layout of pharmacological collections see I. Andorlini, "Il 'gergo' grafico ed espressivo della ricettazione medica antica," in A. Marcone (ed.), *Medicina e società nel mondo antico* (Florence 2006) 142–167. On Greek medical recipes and *receptaria* see M.-H. Marganne, "Étiquettes de medicaments, listes de drogues, prescriptions et réceptaires dans l'Égypte gréco-romaine et byzantine," in F. Collard et al. (eds.), *Pharmacopoles et apothicaires. Les "pharmaciens" de l'Antiquité au Grand Siècle* (Paris 2006) 59–73; N. Reggiani, "Prescrizioni mediche e supporti materiali nell'Antichità," in *Parlare la medicina* 128–144, and "Transmission of Recipes and *receptaria* in Greek Medical Writings on Papyrus," in R. Berardi et al. (eds.), *On the Track of the Books. Scribes, Libraries and Textual Transmission* (Berlin 2019) 167–188.

hemorrhaging powder (iii.28–29). Apart from the two remedies identifiable with Archigenes' recipes, the other prescriptions are not attested elsewhere.

The recipes use common ingredients, such as fruits and herbs, wine and vinegar, as well as minerals and metals frequently employed in the ancient *pharmacopoeia* (natron, vitriol, chalk, black pigment) and a few more precious and rare substances such as the *opopanax*-resin and the finer "Greek" variety of natron. Some of the products were quite readily available in Egypt, such as πήγανον "rue" (probably mentioned in ii.24–25) and ῥάφανος / ῥαφάνινον ἔλαιον "radish / radish oil," which occur in four recipes (ii.25, iii.2, 5, 11). Radish oil in particular was extensively used in Roman Egypt.[13] A few of the ingredients also have a connection with a medico-magical sphere: one of the vaginal pessaries prescribes the use of breast milk of a woman nursing a male child (ii.11–12), a symbolic ingredient originating in Egyptian medicine;[14] another gynecological recipe employs ἀρτεμισία (ii.29), a plant frequently attested in recipes for female ailments as well as in magical texts and rituals.

As already noted by Hanson (431), P.CtYBR inv. 1443 employs a precise medical technical vocabulary to designate medical devices (κροκύς "strip of wool" for internal applications, ii.8, 12; κλυστήρ "clyster," iii.27) or different kinds of medicament (ἀτμίς "moist vapor" or "poultice," ii.31; μάλαγμα, a kind of plaster, iii.7; κηρωτή "cerate," iii.10; ξερόν "dry medicament," iii.28) as well as technical verbs such as πρόσθες ("apply in an orifice," for the pessaries) and ἐπίθες ("apply," for external, topical preparations). For most remedies, preparation and/or use are described in detail (see for example iii.7–10

[13] See P. Mayerson, "Radish Oil: A Phenomenon in Roman Egypt," *BASP* 38 (2001) 109–117.

[14] See commentary on ii.11–12.

with commentary).

The recipes probably derive from different sources, some of them closer to medico-magical traditions (such as the pessary made of juniper berries and breast milk, ii.10–12), others originating from properly medical sources. This is the case of the two recipes against dandruff, which can be identified with two remedies quoted by Galen (*De comp.med.sec.loc.* XII 462.2–5 Kühn) and ascribed to the physician Archigenes. It is interesting to note that P.CtYBR inv. 1443 attests a wording different from Galen's quotation and, especially in the second recipe, preserves more details (see commentary on iii.20–24). Since the *receptarium* is more or less contemporary with Archigenes' activity, it could reflect a version of his recipes closer to the original than Galen's (if not the original version itself).[15]

It looks as though several persons, belonging perhaps to the same milieu or community and acquainted with medical technical language, recorded, on the papyrus roll to which P.CtYBR inv. 1443 once belonged, different recipes, which were perhaps available to them at that moment, writing them down from scratch or copying them from other sources. The collection may have served as a handy manual of pharmacological remedies for several circumstances. Thus the hypothesis discussed by Hanson (427–430) is attractive, that the *receptarium* may originate from the medical milieu of Tebtunis and its temple library.

The relevance of Tebtunis as a center of medical activity has become evident through the discovery of several papyri belonging probably to the library of the main temple of the city, dedicated to the local crocodile god Soknebtunis. The Tebtunis

[15] On the extreme variability of pharmacological collections, due to voluntary or involuntary modifications, see L. M. V. Totelin, "Galen's Use of Multiple Manuscript Copies in his Pharmacological Treatises," in L. Taub et al. (eds.), *Authorial Voices in Greco-Roman Technical Writing* (Trier 2009) 81–92.

temple library was brought to light gradually between 1899 and the 1930s during licit and illicit excavations. A significant number of manuscripts were excavated in March 1931 by the Italian mission directed by Carlo Anti. The papyri were found in two adjoining cellars in a building located inside the temple enclosure wall, probably deposited there under now unknown circumstances. Other fragments were found in the rubbish dump just outside the temple enclosure wall, where they had been dumped at some moment. The library includes cultic, scientific (mostly divinatory and medical), and narrative texts mostly in Demotic and Hieratic with a few literary and documentary Greek papyri.[16] Among the medical papyri, there are numerous fragments of *receptaria* dating from the 1st–2nd centuries CE, which are housed today in several collections around the world. The majority of them are written in Demotic[17] with a few items in Greek, most notably the collections of recipes *SB* XXVIII 17134 and *P.Tebt.* II 273 (re-edited by A. E. Hanson as *Gr.Med.Pap.* II 5).[18] Medicine represented an important activity of the priests, who probably also offered medical

[16] The archeological context and the content of the Tebtunis temple library are discussed by Ryholt, in *Libraries before Alexandria* 393–400.

[17] The majority of the Demotic medical fragments are part of the Papyrus Carlsberg Collection housed at the University of Copenhagen, see Jacob, in *Parlare la medicina* 52–79, and F. Hoffmann, "Neue ägyptische medizinische Texte in Kopenhagen und Berlin. Einige Notizen," in K.-D. Fischer (ed.), *30 Jahre Arbeitskreis Alte Medizin in Mainz. Beiträge der Tagung 2010. Choix de contributions présentées pour le trentième anniversaire du résau de recherche Alte Medizin* (Namur 2013) 17–21.

[18] *SB* XXVIII 17134 belongs to Carlo Anti's find and can thus be assigned to the temple library (for bibliographical references see n.6 above). *P.Tebt.* II 273 probably belonged to the holdings of the library as well: it was unearthed outside the temple enclosure wall during Grenfell and Hunt's mission in 1899/1900, in an area where other remains of the temple library were found, see Ryholt, *ZPE* 187 (2013) 237–238.

services to the public for a fee.[19]

Ann Hanson (427–428 with n.3) observes that the purchase to which P.CtYBR inv. 1443 belonged included a number of papyri which can be shown to derive from Tebtunis. The batch was acquired for the Beinecke Library in September 1931, seven months after Carlo Anti's discovery. Anti's find comprised also *SB* XXVIII 17134, the Greek *receptarium* whose script is quite similar to (if not identical with) Hand 2 of P.CtYBR inv. 1443 (see above). The two collections of recipes have also medical aspects in common, such as the use of a precise medical vocabulary with terms rarely attested,[20] the presence of elements derived from Egyptian medicine,[21] and the shared interest in recording recipes for the care of skin and hair. This might be a further point of contact between P.CtYBR inv. 1443 and the medical texts of the Tebtunis temple library. Dermatological and cosmetic remedies are in fact particularly well represented among the Demotic medical papyri from Tebtunis: several sources attest that conditions affecting skin and hair were to be avoided by the priests, since they could constitute grounds for exclusion from priestly service.[22]

It would thus be fascinating to imagine that the *receptarium* preserved on P.CtYBR inv. 1443 might have been compiled by the same bilingual priests or scribes who produced the Demotic and Greek medical texts from Tebtunis.[23] The lack of a definite

[19] Cf. Ryholt, in *Libraries before Alexandria* 399.

[20] For example κροκύς "strip of wool," employed both in P.CtYBR inv. 1443.ii.8 and 12 and *SB* XXVIII 17134.L.5; σακία ii.6; ἀτμίς, ii.31; for rare medical terms used in *SB* XXVIII 17134 see Andorlini, in *Testi medici su papiro* 91.

[21] Thus the use of breast milk of a woman nursing a male child in ii.11–12 and the use of a clyster in iii.27.

[22] See Jacob, in *Parlare la medicina* 65–70, with further bibliography.

[23] Cf. Hanson 428, and Jacob, in *Parlare la medicina* 57.

archeological context for the papyrus, however, deprives us of an important element to corroborate this hypothesis. Nevertheless, following Ann Hanson, P.CtYBR inv. 1443 can at least tentatively join the other Greek medical papyri from Tebtunis.

P.CtYBR inv. 1443 late 1st–early 2nd cent. CE
Fr. 1+4: 23 × 21.3 cm Tebtunis ?
Fr. 2: 9.5 × 7.8 cm
Fr. 3a: 3.1 × 1.4 cm
Fr. 3b: 2.6 × 1.1 cm

Text

Col. i

Frr. 1 + 2

1]..
2].δο
3].
4].
5]
6]παλ̣ιν
7]
8]μιας
9].ι....
10]
11]ς καὶ
12]
13].ς (δραχμὰς) η
14]
15]ψ̣..α
16].α
17]...
18]
19]

– – – – – – – – – – – – – – – – – –

(gap: ca. 6–7 lines missing)

– – – – – – – – – – – – – – – – – –

]
]
]
]
]
]

– – – – – – – – – – – – – – – – – –

Col. ii

Fr. 1

(*Hand 2*) πρ[ὸς κ]ακο . . . . ευ . μενας γυν[αῖκας]
σταφίδος ἐκκε[ ]καρτισμ(ένης) (δραχμὰς) δ, μ[±7]
κυμίνου φρυκτοῦ (τριώβολον), πεπέρε[ως ±4].
πυ .[. .] . . . φελι . ου (ἡμιοβόλιον) α . α . . [±4].
λεοτριβήσας μετὰ στέατος χηνίου,
λαβὼν σακία βρέξον ὕδατος ἀπ[ο]πιάσας
καὶ ὀλίγῳ ἐκ τοῦ ὕδατος μῖξον τοῖς
προγεγραμμένοις καὶ εἰς κρο[κ]ύδα
βαλὼν πρόσθες.

ἄλλο· ἀρκευθίδων μικρῶν . υ . α
λεοτριβήσας μετὰ γάλακτ[ο]ς γυναικ(είου)
ἀρσενικοῦ εἰς κροκύδα πρόσθες.

(*Hand 3*) πρὸς δῆγμα κοιλίας καὶ πάντ(α) πόνον
λε[. .] . [±7]ειβων τὴν κ[οι]λίαν
επ[±10]κοσμων β . [±5] .
μ . [±10] . παν . . γ[±4]ιαν
κ . [±10] . ν δῆγμα κο[ιλί]α[ς] τοῦ φ-
[±12] . πταμεβ . [. .]η α . . ν
[ ] . [

– – – – – – – – – – – – – – – – – –

Frr. 2 + 3

[±4]αρσ . [±20]
[±4] . . σ . . . . [±15]
[±4] . . . τος . [±15]

23 [±4]λλαξον [±15]
[——]
24 (*Hand 4*) [±4] γμον γυναικὸς πη [±3]υ α [±5]
25 χλωροῦ δεσμίδιον μετὰ ῥα[φαν]ίνου ἐ[λαίου]
26 [ ] ὀποῦ πάνακος (δραχμὰς) η [ ] [ ] ὁμοῦ
27 καὶ ὑλίσας ἔψησον ἕως α[ ]ον γένηται
28 καὶ κατάχρισον. ἐὰν δὲ θέλ[ῃς ±2]ν [ ]σας
29 ν γενέσθαι ἀρτεμισία[- ±9]
30 βάλε εἰς χάλκωμα [±10]
31 τῇ ἀτμίδι καταπεπλασμέ[±10]

1 κ]ακοπραγουμένας *ed. pr.* 2 ἐκκε[ ]καρτισ̣ *pap.*, *l.* ἐκγιγαρτισμένης : ἐκκεικαρτισ(μένης) *ed. pr.* μ[ετά] *ed. pr.* < (*vel* ʃ) = (δραχμαί) 3 ϝ = (τριώβολον) : (δρ.) α *ed. pr.* 4 πυ [ ] φελι ου ∕ = (ἡμιοβόλιον) : ο [ ]τι ὠφελίμου (δρ.?) *ed. pr.*] :]ς *ed. pr.* 5 *l.* λειοτριβήσας *l.* χηνείου 6 *l.* σακκία ἀπ[ο]πιάσας : ἀλ[υ]πιάδος *ed. pr.* κ 10 υ α : μῆλα *ed. pr.* 11 *l.* λειοτριβήσας γάλακτος *ed. pr.* γυναι *pap.* 12 *l.* ἀρρενικοῦ 14 λε[ιότατα ἀνατ]ρείβων τὴν [ ]λίαν *ed. pr.* 15 κα]κοσμων *ed. pr.* 16 μ[ ]ν πάνυ ὑγ[ρ]ιας *ed. pr.* 17 κ[ ] *ed. pr.* του α *ed. pr.* 18] ακεβ [ ] μασ *ed. pr.* 26 ʃ (*corr. ex* < ?) = (δραχμαί)

Col. iii

1 [±7]δρομη αἵματος πεπαλαιωμ[έν-]
2 π[ῥί]ζας ῥαφάνων ἀγρικῶν συνκ [±3]
3 [ἐπι]μελῶς καὶ καρδάμου σπέρ[μα]
4 [κ]αὶ νίτρον Ἑλληνικόν.

——— ———

5 [βοή]θημα ῥαφανίνου ἐλαίου καὶ κ[±5]
6 [ ] ου καὶ νίτρον Ἑλληνικόν [±5]
7 [δρι]μυτάτου τρίψας μαλάγματο[ς ±5]
8 ἐπίθες ἐπὶ ἡμέρας γ̄ καὶ λύσα[ς ±4]
9 [ἐπ]ίθες πρόσφατον ἐπὶ ἄλλας ἡμ[έρας γ̄]
10 καὶ λούσας κατάπλασον κηρωτ[ῇ.]

———

11 πρὸς στομαχικοὺς· ῥίζας ῥα[φάνων]
12 ἀγρικῶν συ[γ]κόψας ἐπιμελ[ῶς]
13 [±4–5] [ ] [ ] μεθ’ ὕδα[τος]
14 [±4–5] καὶ ἠθήσας εἰς καινὴν [κύθραν]

15 [±4–5]̣ ησεν μαλακῷ̣ πυρὶ μέχ[ρις ἂν]
16 [γλοι]ω̣̂δες γένηται, [ἐ]πί̣θες.

17 [πρὸς πί]τυ̣ρα ἐν κεφαλῇ̣· τρυγὸς [οἴνου]
18 [±4–5]υ̣, κ̣ισήλεως, νίτ̣[ρο]υ̣, ἑκάστο[υ ἴσον]
19 [±4–5]̣ . . . ο̣ς ἐξαλει[ ]̣ πί̣τυρα.

20 ἄ̣[λλο·] τούτῳ χρῆσαι καὶ πίτυρα· ὄξ̣[±5]
21 ο[ἴ]̣νου μέλανος αὐ̣[σ]τηροῦ κο(τύλας) γ, ἀ̣[φροῦ]
22 νίτρου (δραχμὰς) δ, χαλκάνθου (δραχμὰς) η, ἐψ̣ [±5]
23 [ ]̣ . . η λ̣[ει]φθῇ̣ καὶ τ̣ δ̣ε ζμῶ ἕω[ς τε-]
24 τράκι̣[ς] τοῦ μηνός.

25 ἄ̣λ̣λο· θε[ί]ου̣ λείου (δραχμὰς) ιδ̣ . . . . ε̣ν̣ ανε̣ [±5]
26 τ̣ὴν κεφαλὴν εἰς δὲ τὴν κ̣ . . . . [±5]
27 κλυστ̣ῆ̣ρι ἐκλούσα<ς>. ποιεῖ δὲ ἐψη[±5]
σ̣ . . [ ]
28 (*Hand 2? or Hand 5?*) [ξ]ηρὸν̣ [ἴ]σχαιμον· γύψου̣ . . [±5]
29 με[λ]α̣ντηρίας (δραχμὰς) δ σ̣ . . [±5]

18 *l.* κισήρεως 23 *l.* σμῶ 22, 25, 29 ʒ = (δραχμαί)

Translation (col. ii and iii only)

Col. ii

(*Hand 2*) For women (being unwell?): having ground fine with goose fat four drachmas of pitted raisin, … three obols of roasted cumin, … of pepper, a half obol of …, having taken some small bags soak (them) in water, then, having squeezed (them), mix a little of the water with the aforementioned (ingredients) and, having set them on a strip of wool, apply.

Another one: having emulsified the juice(?) of small juniper berries with milk of a woman (nursing) a male, (having set it) on a strip of wool, apply.

(*Hand 3*) Against severe pain of the abdomen and every kind of pain: … massaging(?) the abdomen … severe pain of the abdomen …

(*Hand 4*) (Against …) of the woman: a small bundle of fresh wild rue(?) with radish oil … eight drachmas of *opopanax*, … together and, having filtered, boil until it becomes (completely soft? *or* odorless?)

and smear. If you wish that … becomes …, … artemisia … put in a copper vessel … with the moist vapor (*or* the poultice) plastered over(?) …

Col. iii

(Against suffusion?) of blood of long-standing (*or* of old blood) … : chop up (*or* having chopped up) carefully roots of wild radish and seed of field-rue and Greek natron. Having blended the remedy made of radish oil and … and Greek natron and the strongest (vinegar?), apply (as a?) *malagma* for three days, then, having washed (it) out, apply (it) again, fresh, for another three days, then, having washed thoroughly, plaster over with a cerate.

Against (pain) of the stomach: having chopped up carefully roots of wild radish … (having pounded?) with water … and having strained in a new (earthen pot) … (and having boiled? *or* boil?) on a weak flame until it becomes glutinous, apply.

Against dandruff on the head: sediment of wine …, pumice stone, natron, of each (the same quantity) … remove(?) the dandruff.

Another one: use this also (against) dandruff. Three *kotylai* (of vinegar or?) of bitter red wine, four drachmas of *aphronitron*, eight drachmas of blue vitriol, boil(?) (until?) … remains and cleanse with this(?) (*or* cleanse these?) up to four times a month.

Another one: fourteen drachmas of ground sulfur … the head to the abdomen (?) … having cleansed thoroughly with a clyster. It works boiled (?) …

(*Hand 2? or Hand 5?*) Powder to stanch blood: of chalk … of black tincture four drachmas …

Commentary

Col. ii

1–12: Two recipes for vaginal pessaries: both describe the composition of medicaments which have to be set on a strip of wool (κροκύς), then inserted (πρόσθες).

1: Hanson reads πρ[ὸς κ]ακοπραγουμένας γυν[αῖκας]. The readings πρ[ός and γυν[αῖκας] are plausible and point to a therapeutic indication for a medicament for women suffering from some kind of pain. The deciphering of the participle, however, is challenging: the sequence -πραγου- cannot be confirmed. The letter following κ]ακο- could be an *upsilon* (cf. κυμίνου ii.3) or a *rho* (cf. βρέξον ii.6) and is followed by perhaps

two letters: the first resembles a *sigma* squeezed in between, and the second has a circular form with traces of ink in the middle of it, suggesting *theta*. The subsequent letters seem to be ευ: between these and -μενας there is a small stroke (an *iota*? a very narrow *omicron*? or the left side of a *sigma*?). Tentative readings include κ]ακουσθευσμενας or κ]ακουσθευομενας, neither of which is attested, but which could probably be erroneous forms of κακόω. Searches in the TLG for the sequences κακορ- / κακουρ- or ακορ- / ακουρ- did not yield results suitable to the context. Given the frequency of irregular forms in this section of the text, one could assume that here too there is an erroneous form for a verb beginning with κακο- with the general meaning of "doing poorly" (as translated by Hanson), "being unwell," "suffering."

2 σταφίδος ἐκκε[ ]καρτισμ(ένης): pitted raisin, cf. for its use in medical recipes I. Andorlini, "Ricette mediche nei papiri: note d'interpretazione e analisi di ingredienti (σμύρνα, καδμεία, ψιμύθιον)," *AttFir* 46, N.S. 32 (1981) 59, comm. to lines 2–3, and D. Leith, *P.Oxy.* LXXIV 4975, comm. to fr. 1.1. A description of σταφίς is given by Pliny *HN* 23.17.

3 κυμίνου φρυκτοῦ: cumin is fairly well attested in medical recipes, but there are only three occurrences of "roasted cumin" in the medical writers, none of them in a recipe specifically against female ailments (Ael. Prom. *Dyn.* 35.12, Paul. Aeg. 4.57.6, *Hipp.Cantabr.* 33.5).

4: The deciphering of this line is problematic. The sequence πυ- at the beginning is followed by a vertical trace. This sequence could be the beginning of a term, but it could also be the mid-part of a word that began at the end of the previous line. In the middle of the line Hanson reads]τι ὠφελίμου:]τι is plausible; alternative readings are] π or] γι. The reading ὠφελίμου "useful" is difficult but I do not have a better reading to offer: the letter transcribed as *omega* is a rounded one with additional strokes in the middle, which look like a scribal correction (the scribe corrected a mistaken letter by overwriting it with another letter). It could be an *omicron* or an *omega*, or a

combination of two letters (such as -υρ-). The sequence -φελι- can be read (but also -φεν- is possible), but the letter after this does not resemble the typical form of *mu* in this text, as it is rather flat and looks like a *gamma*. Readings like -φελιγ- or -φενγ- (for -φεγγ-) do not lead to words suitable to the context, where we would expect the name of an ingredient in the genitive. A term ὀφελῖ occurs in *SB* XXVIII 17134.A.ii.40, where it is tentatively interpreted as ὠφελίμου and referred to the preceding ingredient, the θεῖον ἄπυρον (maybe as an addition or an alternative to it): *SB* XXVIII 17134.A.ii.39–40 θείου ἀπύρου ʒ β, ὀφελιμ( ) β "of native sulfur two drachmas, of the useful one two drachmas" (see Andorlini's commentary in *Testi medici su papiro* 111–112, comm. to A.ii.39–42).

6 σακία (*l.* σακκία): the term σακκίον is rarely attested in the medical writers. It refers probably to small warming bags filled with warmed millet (κέγχρος) or a therapeutic salt (ἅλας) and applied to an aching body part (cf. Gal. *In Hipp. De off.med. comm.* XVIIIb 920.10–13 K. and Diosc. *Mat.med.* 5.109.3). P.CtYBR inv. 1443, however, describes a different use: the small bags should be soaked in water (ii.6 βρέξον ὕδατος), then squeezed (ii.6 ἀπ[ο]πιάσας); a small quantity of the water that has been strained through the σακία should then be mixed into the other ingredients of the recipe (ii.7–8). As suggested in Hanson's commentary (433 on line 6), these σακία could be intended "for straining the liquid, as the verbs σακίζω and σακεύω in later medical writers suggest": the small bags were filled with some therapeutic substance that was believed to release its therapeutic properties into the water filtered through.

βρέξον ὕδατος: "soak in water," cf. for example *SB* XXVIII 17139 *recto* line 10 βρέ<χ>εις οἴνῳ, or, governing a genitive, *PGM* XXXVI.327–328 καὶ λαβὼν σπέρμα ὑοσκυέμου βρέξον αὐτὸ γάλακτος ἱππίου.

ἀπ[ο]πιάσας: Hanson reads here ἀλ[υ]πιάδος (the plant *Globularia alypum,* according to LSJ). However, the letter read as *delta* is open at the bottom and resembles rather the final *sigma* of the

term, and it is followed by an *alpha*, not *omicron*. For ἀποπίασας cf. Ps.-Gal. *De rem.parab.* XIV 515.9, 560.12, 568.5 K.

8 εἰς κρο[κ]ύ̣δ̣α: a κροκύς is, as explained by Hanson (431), "a strip of wool on which a medicament is set for application." It is usually employed as a suppository, for example against hemorrhoids, cf. Aët. 3.161, or as a vaginal pessary or tampon, cf. Orib. *Syn.* 9.50.2. The terms κροκυδ[and πεσσάρια occur together in a fragment of the Tebtunis *receptarium SB* XXVIII 17134 (fr. L.5 and 8). On pessaries and tampons see D. Goltz, *Studien zur altorientalischen und griechischen Heilkunde* (Wiesbaden 1974) 226–230.

9: πρόσθες: "apply in an orifice," cf. Hanson 431 and Goltz, *Studien* 227–228.

ἀρκευθίδων μικρῶν: "small juniper berries," cf. Hanson 433, comm. to line 10. These fruits were employed in ancient medicine for their purifying properties, cf. Gal. *De alim.fac.* VI 590.5 ff. K.

υ̣ α: one would expect here a term related to the juniper berries such as σαρκός "fruit pulp" (cf. Gal. *De antid.* XIV 155.13 K.), καρπός "fruit" (cf. Diosc. *Mat.med.* 5.36.2) or χυλός "juice" (cf. Gal. *De comp.med.sec.loc.* XIII 169.15–16 K.). Hanson transcribes μ̣ῆ̣λα, for which cf. Ps.-Gal. *De succed.* XIX 733.15 K. The traces of the first letter could conform to a *mu*, although they look rather like the extremities of a *chi*. The second letter is not an *eta* but an *upsilon*. The diagonal trace of the third letter could belong to a *lambda*. This would lead to readings like μ̣υ̣λ̣α (which yields no sense) or χ̣υ̣λ̣α, which could be an erroneous form for χυλόν "juice." In that case, the following verb λειοτριβήσας, which usually means "to triturate," could be intended as "emulsify": cf. for the use of λειοτριβέω with liquids (esp. juice) Ps.-Gal. *De rem.parab.* XIV 459.13–14 K. ἄλλο. ῥαφάνου χυλὸν λειοτριβήσας δι' ὀξυμέλιτος δὸς ἐπὶ ἡμέρας γ and Ael. Prom. *Dyn.* 92.4 χυλὸν στρύχνου μέλανος λειοτριβήσας καὶ διηθήσας δι' ὀθονίου.

11–12 μετὰ γάλακτ[ο]ς γυναικ(είου) | ἀρσενικοῦ: translated by

Hanson (433) as "milk of a woman (nursing) a male." The medical use of breast milk, often with the specification that it should come from "a woman who has borne a male child" (κουροτρόφος), is a practice derived from Egyptian medicine and is especially recommended in treating female ailments, see J. Laskaris, "Nursing Mothers in Greek and Roman Medicine," *AJA* 112 (2008) 459–464. In Hippocratic recipes, breast milk is one of the ingredients of vaginal pessaries (Laskaris 460).

13 πρὸς δῆγμα κοιλίας: πρὸς δηγμὸν κοιλίας would have been more appropriate, since in the ancient medical literature δῆγμα means "bite or sting of an animal," while δηγμός is usually used to indicate a severe (stinging) pain in the body. The term κοιλία is employed for the gastro-intestinal tract as well as for the thorax, cf. I. Andorlini and R. W. Daniel, *P.ÄkNo.* 1, comm. to iii.13–14.

πάντ(α): Hanson (433, comm. to line 13) notes that traces of a raised *tau* are visible with a microscope.

14]ειβων τὴν κ̣[οι]λίαν: perhaps ἀνατρ]είβων (as proposed by Hanson), "massaging the abdomen" (for this use of ἀνατρίβω cf. Gal. *De san.tuenda* VI 48.4 K. [= *CMG* V.4.2 23.9–10] ἀνατρίβειν δὲ χρὴ τὸ σῶμα τῶν βρεφῶν ἐλαίῳ).

18]̣ π̣ταμεβ̣[̣]η: the first trace could belong to an *epsilon*. A tentative reading could be, for example, the adjective λ]επτά, which would be followed by the sequence μεβ-. However, no Greek term beginning with μεβ- is attested: the sequence could be divided into με β-, which would imply either that the 'author' of this medical writing is saying something about himself, which is uncommon in *receptaria*, or that the scribe wrote με for μή, which would be followed by a subjunctive, e.g. βο̣[ύλ]ῃ.

α ̣ ̣ν: it looks like αλ̣α̣ν-, for which I do not have a satisfying explanation.

20]αρσ ̣: this sequence is preserved on the first line of fr. 2. Since at the moment it is not possible to reconstruct the exact wording of these lines or to fully understand their content, it is also not possible to locate with certainty the sequences of letters

preserved at the top of fr. 2 in relation to what is missing of the final lines of fr. 1. This sequence can be aligned with ii.17 (in this case, a supplement for the first word of the line could be κά̣[θ]αρσι̣[) or with one of the subsequent lines, or it could be independent of them.

23]λ̣λαξον: probably the verb ἀλλάσσω or one of its compounds (ἀπαλλάσσω, μεταλλάσσω, and the like). The imperative ἀπάλλαξον is frequently used in the magical papyri, especially in protective charms, in the meaning "to deliver someone from something" (e.g. from fever, *Suppl.Mag.* I 9.8 12.5).

24 [±4] . .γμον γυναικός: it would be tempting to restore πρὸς δηγμὸν γυναικός "against severe pain of a woman." The first of the two traces preceding -γμον, however, is a curved one extending above the line, which does not fit *delta* or *eta*: it could be the upper extremity of *psi* or *phi*. In this case, a candidate could be ψυγμός, a term indicating generally a cold fit, or a chill, or a stiffness of a body part.[24] The trace could equally be something else: it could belong to some supralinear writing or, less likely since it is curved, to the *paragraphos* expected between lines 23 and 24.

24–25 π̣η̣ .[±3]υ̣ … δεσμίδιον: perhaps πηγ[ανο]υ ἀγ[ρικοῦ] χ̣λ̣ωροῦ δεσμίδιον "a small bundle of fresh wild rue" (note however that the small vertical trace preceding χ̣λ̣ωροῦ would remain unexplained, unless it belongs to the ending of ἀγρικοῦ or to a καί interposed between the two adjectives). ἀγρικὸν πήγανον is attested in a letter concerning agricultural matters, *P.Oxy*. XIV 1675.4. On the adjective ἀγρικός see the commentary on iii.2. On πήγανον ἄγριον see Gal. *De simpl.med.temp. ac fac.* XII 100.16–101.8 K. and Diosc. *Mat.med.* 3.45. πήγανον is quite well attested in the medical papyri: *P.Coll.Youtie* I 4.7, *SB* VIII 9860.ii.14, *P.Scholl* 13.b.B.24, *P.Oxy.* LXXIV 4975 fr.

[24] See A. Maravela's entry in the database *Medicalia Online*: http://www.papirologia.unipr.it/CPGM/medicalia/vocab/index.php?tema=169&/y (accessed 8 Dec. 2021).

1.5, *Gr.Med.Pap.* II 5.vii.13, *MPER* N.S. XIII 4.5, *P.Oxy.* LXXX 5243.iii.15.

26 ὀ̣ποῦ πάνακος: this ingredient is usually written as one word, ὀ̣ποπάναξ, rarely as two, as for example Gal. *De comp. med.sec.loc.* XIII 72.18 K. or Orib. *Coll.med.* 8.47.7. *Opopanax* is a gum resin used in ancient medicine for its stimulating and tonic properties: see A. E. Hanson, *Gr.Med.Pap.* II 5, comm. to iv.16, and I. Andorlini, *PSI Congr. XVII* 19, comm. to line 3.

. .[. . . .]. [.] ὀ̣μοῦ: the adverb ὀ̣μοῦ is usually accompanied, in medical recipes, by the participle or the imperative of verbs such as λεαίνω, μείγνυμι, τρίβω, or κόπτω (cf. Gal. *De comp.med. sec.loc.* XII 628.17, 640.2–3, 836.7, 880.16 K.). We can assume a similar construction here too, with a participle preceding ὀ̣μοῦ. The two traces before the larger lacuna are a rounded one, perhaps *omicron*, followed by a stroke extending below the line, which could belong to the tail of a *xi* (cf. iii.19 ἐξαλει[). A tentative restoration could be ὄ̣ξ̣[ει μίξ]α̣[ς] ὀ̣μοῦ "having mixed together with vinegar" (for ὄξει or σὺν ὄξει μίξας see e.g. Gal. *De comp.med.sec.loc.* XII 555.5 K. and Ps.-Gal. *De rem.parab.* XIV 575.6 K.).

27 ἕψησον ἕως α[. . . .]ον γένηται: candidates for the restoration could be the adjectives ἀμόλυντος "completely soft"[25] or ἄνοσμος "odorless": cf. Gal. *De comp.med. per gen.* XIII 440.15–16 K. ἕψε ἕως ἀμόλυντον γένηται "boil until it becomes completely soft" and 743.1 K. ἕψε ἕως ἂν ἄνοσμος γένηται "boil until it becomes odorless." The two adjectives are also suggested as two possible alternatives to restore a similar expression in *Gr.Med.Pap.* I 11.a.3–4, a papyrus containing medical prescriptions for plasters.

28–30 ἐὰν δὲ θέλ̣[ῃς … χάλκωμα: the sense of this instruction could be, that, if one wishes the poultice to become of a certain

[25] I adopt here the translation chosen by I. Johnson, *Galen. On the Constitution of the Art of Medicine, The Art of medicine, A Method of Medicine to Glaucon* (Cambridge [Mass.] 2016) 540 line 12 with 541 n.42.

kind or form, one should add artemisia plant to a copper vessel (further instructions are lost in the second half of line 30). The ending]σ̣α̣ς of the word at the end of line 28 suggests a participle, which I cannot identify. The word at the beginning of line 29 with the ending -ν could be an adjective (perhaps λείαν, "smooth"?): however, it remains uncertain where the noun to which this adjective refers would be.

29 ἀρτεμισία̣[-: the plant called ἀρτεμισία is credited by Dioscorides, Pliny, and Galen with beneficial properties for female ailments, especially against uterine inflammation (Diosc. *Mat.med.* 3.113, Plin. *HN* 35.73–74, Gal. *De simpl.med.temp. ac fac.* XI 839.17–840.5 K.). The term was used interchangeably to indicate several plants, belonging probably to the group of the wormwood plants. An ἀρτεμισία plant is frequently mentioned in magical texts as a component of inks or used (for example burned) to perform rituals. On the difficulty of distinguishing the plants called ἀρτεμισία in the ancient sources and on the use of this plant in magical texts cf. L. R. LiDonnici, "Single-Stemmed Wormwood, Pinecones and Myrrh: Expense and Availability of Recipe Ingredients in the *Greek Magical Papyri*," *Kernos* 14 (2001) 83–89.

30 εἰς χάλκωμα: the term χάλκωμα indicates generally an instrument or a vessel made of bronze or copper, cf. I. Bonati, *Il lessico dei vasi e dei contenitori greci nei papiri* (Berlin 2016) 205 with n.33. After χάλκωμα there could be an adjective, for example ἔγκοιλος "concave, hollow" (cf. Diosc. *Mat.med.* 1.68.7), or the mention of an ingredient which should be mixed with the contents of the χάλκωμα and which could be introduced by μετά, for example μετὰ ἐλαίου (cf. Ps.-Gal. *De rem.parab.* XIV 468.15 K.) or μετὰ μέλιτος (Diosc. *Simpl.* 1.40.4).

31 τῇ ἀτμίδι: in medical texts ἀτμίς is the moist vapor emanating from the boiling of substances, used for therapeutic purposes, cf. Gal. *De comp.med.sec.loc.* XII 621.10 K., Diosc. *Mat. med.* 2.45. It can also be used in the sense of "poultice," cf. Gal. *De comp.med. per gen.* XIII 879.1 K. The term is otherwise

attested on papyrus only in *BKT* III p.19–21 (P.Berol. 9095 *recto*), line 13.

Col. iii

1–2]δρομη … | π[: probably the indication of the therapeutic use of a new recipe. The interpretation of line 1 and of the *pi* at the beginning of 2 is problematic. At the beginning of 1 we would expect a construction with πρός "against" and an ailment in the accusative, as in other recipes in this papyrus (e.g. iii.11 πρὸς στομ̣α̣χ̣ικούς).]δρομη, however, is a nominative or a dative (perhaps introduced by ἐπί? But this construction is unusual for the introduction of recipes), unless we assume that the scribe forgot the final *nu* of the accusative (cf. the forgotten *sigma* in iii.27 ἐκλούσα<ς>).

]δρομη αἵματος could be supplemented as ἐπι]δρομὴ αἵματος "flow of blood" (usually to an atrophied body part, e.g. Gal. *In Hipp. De off.med.comm.* XVIIIb 899.4 K.), as συν]δρομὴ αἵματος "blood condition" (e.g. [Arist.] *Pr.* 889b.30 ἀλλ' αἵματος συνδρομὴ τὸ ἐρύθημά ἐστι), or as ὑπο]δρομὴ αἵματος "suffusion of blood." The latter is, in my opinion, the most fitting of these three options. In a passage ascribed to Archigenes and quoted by Oribasius (*Coll.med.* 46.23), the ὑποδρομὴ αἵματος is described as an internal bleeding, which is particularly visible on the skull and on the fingernails, in which the old blood turns a yellowish color. Another passage of Oribasius (*Syn.* 7.14.4) includes the ὑποδρομὴ αἵματος on the fingernails caused by a blow (ἡ κατὰ τοὺς ὄνυχας ὑποδρομὴ τοῦ αἵματος ἐκ πληγῆς γινομένη) in the "group" of the ἐκχυμώματα "ecchymosis, bruises."

The following participle πεπαλαιωμ̣[έν- is found in medical texts especially in connection with ἕλκος, in the meaning "long-standing wounds." Interesting is, for example, a Hippocratic passage which stresses the importance of making blood flow away from long-standing wounds (Hipp. *De ulc.* 2.3–4 καὶ ἀπὸ τῶν πεπαλαιωμένων ἑλκέων ξυμφέρει αἷμα ποιέειν ἀπορρέειν πυκνά, see also the commentary by Galen in *Meth.med.* X 274.3ff. K.). The term ἕλκος, however, cannot be supplied in

P.CtYBR inv. 1443: the space at the end of line 1 suffices only for the restoration of the ending of πεπαλαιωμ̣[έν-, and the first word of the following line begins with *pi*. An alternative could be πληγή "blow, stroke": the entire expression could thus be reconstructed as ὑπο]δρομὴ αἵματος πεπαλαιωμ̣[ένης] | π[ληγῆς "suffusion of blood from an old stroke" and could be interpreted as the description of a long-standing bruise. The problem here, however, is that the space available after the *pi* in line 2 is too small for the restoration of πληγῆς. Alternatively, πεπαλαιωμ̣[έν- could be applied to the blood as ὑπο]δρομὴ αἵματος πεπαλαιωμ̣[ένου], "suffusion of old blood," which would also describe a bruise. In the latter case, however, the *pi* would remain unexplained. The interpretation of this *pi* is in fact quite dubious. It stands alone, as if in *ekthesis*, which would thus imply that the first two lines of the new recipe are written in *ekthesis*, whereas usually only the first line of a new recipe is in *ekthesis*.

It would be easier to explain the *pi* if fr. 1+4 were not a continuous piece, as discussed in the introduction, but two independent fragments. In that case, a natural explanation for a free-standing *pi* in a *receptarium* would be a πρός introducing the therapeutic purpose of a new recipe, written in *ekthesis*. Fr. 4 could, for instance, be moved downwards in order to align its first line with the *pi*, thus obtaining π[ρὸς ὑ]ποδρομὴ<ν> αἵματος πεπαλαιωμ̣[ένου]. This arrangement would solve many problems discussed above, but it does not seem to be the case here.

2 ῥί]ζ̣α̣ς ῥ̣αφάνων ἀγρικῶν: for description and medical properties of wild radish see Plin. *HN* 19.80–82 and Diosc. *Mat.med.* 2.112.

The extremely rare adjective ἀγρικός is attested in the papyri only in *P.Oxy.* XIV 1675.4 τὸ ἀγρικὸν πήγανον "field-rue," where it is regarded by the editor as a variant for ἀγροικός. LSJ explain it as a variant of ἄγριος.

2–3 συνκ̣[±3 | ἐπι]μελῶς: supplements that fit here are the imperatives σύνκ[οπτε or σύνκ[οψον or the participle συνκ[όψας | ἐπι]μελῶς (*l.* σύγκ-): an analogous expression is found at the beginning of the recipe for the stomach in iii.11–12 (ῥίζας

ῥα̣[φάνων] | ἀ̣γ̣ρικῶ̣ν συ̣[γ]κόψας ἐπιμελ̣[ῶς). Although supplying a form of συγκόπτω is quite plausible, there remains one small obstacle to resolve: after the *kappa*, on the bottom of the writing line, there is a small diagonal stroke. Does this still belong to the *kappa* as a ligature sign with the following letter? Or could it be an abbreviation stroke for σύνκ(οπτε) / συνκ(όψας), although this abbreviation is not found elsewhere in this text? Or does it belong to the following letter, which, therefore, would not be an *omicron*?

4 νίτρον Ἑλληνικόν: natron is widely used in medical recipes. The specification Ἑλληνικόν, "Greek natron," is otherwise attested in the papyri only in *PUG* II 62.11 and *P.Oxy.* LXXIV 4976.6–7. The "Greek" variety of natron was considered of higher quality and hence more effective as a therapeutic remedy, cf. D. Leith, *P.Oxy.* LXXIV 4976, comm. to lines 6–7.

5–10: At first glance, it appears as if the recipe bears the title [βοή]θ̣ημα ῥαφανίνου ἐλαίου "remedy made of radish oil." A closer look at the syntax, however, reveals that the [βοή]θ̣ημα, made of radish oil and of one or two other ingredients lost between iii.5–6, is not the title but one of the ingredients of the recipe: it should be blended with the Greek natron and with another ingredient that has been lost at the end of iii.6 (perhaps vinegar, see below). The recipe lacks an indication of therapeutic use, but it could be the same as the previous remedy.

6]̣ . . . ̣ου: the *upsilon* is preceded by a small trace, which could belong to an *omicron* with a flat top, cf. e.g. the second *omicron* of στομ̣α̣χικούς in iii.11 and συ̣[γ]κόψας in iii.12. Preceding the ending -ο̣υ are traces of three letters: the rounded top of a letter, followed perhaps by an *alpha* and a *sigma*. Perhaps π]ρ̣ά̣σ̣ου "leek"?

6–7: The lost ingredient at the end of iii.6 is qualified at the beginning of the following line as [δρι]μυ̣τ̣άτου. Of this adjective, the ending -άτου is clearly visible. The *mu*, although faded, can also be recognized. The ink of *upsilon* and *tau* is quite rubbed: the *upsilon*, instead of having the 'forked' form com-

mon in this text, has probably been traced like the *upsilon* of λύσα̣[ς in iii.8. The adjective δριμύς is applied very frequently to ὄξος "vinegar": many recipes prescribe the grinding and mixing of the ingredients with strong (or the strongest) vinegar (δι' ὄξους / μετ' ὄξους δριμυτάτου): δι' ὄξους could be supplied at the end of iii.6. For vinegar as an ingredient for plasters, *malagmata*, and other remedies for external application cf. the recipes in Gal. *De comp.med.sec.loc.* XIII 248.8–249.3 K.

7–10: These lines provide a precise description of the method of application of the poultice. μαλάγματο̣[ς ±5] | ἐπί̣θε̣ς could be supplied as μαλάγματο̣[ς τρόπον] | ἐπί̣θε̣ς "apply as a *malagma*," cf. Aët. 16.10.56 μαλάγματος τρόπον ἐπιθήσομεν and Orib. *Coll.med.* 15.3.1 μαλάγματός τε τρόπον ἐπιτιθέμεναι. On the μάλαγμα, a plaster with emollient properties, see I. Andorlini, "P.Grenf. I 52: Note farmacologiche," *BASP* 18 (1981) 16–25. Andorlini notes that it was often prescribed to leave the *malagma* on for several days, then to wash it out and apply it again: this procedure is described in these lines of P.CtYBR inv. 1443. The plaster should be left on the affected body part for three days (iii.8 ἐπί̣θε̣ς ἐπὶ ἡμέρας γ), then washed out (iii.8 λύσα̣[ς), then applied again for a further three days (iii.9 [ἐπ]ίθε̣ς πρόσφατον ἐπὶ ἄλλας ἡμ[έρας γ]) and finally, after the body part has been washed thoroughly (iii.10 κ̣αὶ λούσας), a cerate should be applied (iii.10 κατάπλασον κηρωτ[ῇ̣). The cerate was a plaster made of wax with cooling and emollient properties, used in particular on inflamed parts, cf. M. Hirt, *P.Oxy.* LXXX 5246, comm. to line 4. On ἐπὶ ἡμέρας cf. M. Zellmann-Rohrer, "New Greek Medical Recipes," *ArchPF* 65 (2019) 49, comm. to line 3.

8–9 A likely supplement is λύσα̣[ς πάλιν] | ἐπί̣θε̣ς, cf. Gal. *De comp.med.sec.loc.* XII 557.1–2 K. and Orib. *Ecl.* 77.4.

11 πρὸς στομ̣αχ̣ικούς: several recipes for plasters for the stomach are collected by Galen in *De comp.med.sec.loc.* XIII 178.11 ff. K.; cf. also Andorlini, *BASP* 18 (1981) 19 with n.51, on the ἐπιθέματα, a category of plasters probably for the digestive tract. A recipe of a plaster for the stomach is also

preserved in *SB* XXVIII 17138.

13: In this line only scanty traces of letters are visible: usually μεθ' ὕδα[τος is governed by a verb such as τρίψας (e.g. Gal. *De comp.med.sec.loc.* XII 484.12 K.). This or an analogous verb could be supplied in line 13.

14]̣ καὶ ἠθ̣ήσας: vertical trace at the beginning of the line.

εἰ̣ς καινὴν̣ [κύθραν]: the κύθρα was an earthenware pot employed for the storage or the cooking of food, see Bonati, *Il lessico* 197–229. The alternative spelling χύτρα, more common in the literary sources, was the prevalent form in the papyri until the first century CE, when it was supplanted by κύθρα (Bonati 215–216).

The instruction to boil a medical preparation in a brand-new earthenware pot is well attested in the medical texts: the pot should be brand-new or have been carefully cleaned in order to avoid contamination with other substances and preserve unaltered the properties of the mixture (Bonati, *Il lessico* 224).

15 [±4–5]̣ ησεν μαλακῷ̣ πυρί: we would expect here a participle or an imperative, for both of which an ending -ησεν is unsuitable. μαλακῷ πυρί is usually governed by ἕψω "boil" (e.g. Gal. *De comp.med.sec.loc.* XIII 182.4 K. ἕψε μαλακῷ̣ πυρί, Orib. *Syn.* 3.21.2. ἑψήσας πυρὶ μαλακῷ̣). The papyrus surface just before -ησεν is abraded (the upper layer with horizontal fibers is missing), but two traces can be seen, a vertical line above the line, where the surface is better preserved, and a faint, horizontal line to the right of the abrasion: these traces are compatible with *psi*. A reading]ψησεν could be compatible with a form of the verb ἕψω or of one of its compounds. There are the following possibilities:

(1) a participle, [καὶ ἑ]ψήσ<ας> ἐν μαλακῷ̣ πυρί: the recipe would be constructed with a series of participles, describing the steps for the preparation of the compound, and closed by an imperative with the indication to apply it (τρίψας(?) … καὶ ἠθ̣ήσας … καὶ ἑ]ψήσ<ας> … [ἐ]π̣ίθες "having pounded(?) … and having strained … and having boiled … apply" (ἐν μαλακῷ̣ πυρί,

however, is very rarely attested).
(2) an imperative, ἔ]ψησεν (*l.* ἔψησον, or a compound) μαλακῷ πυρί, cf. ii.27 ὑλίσας ἔψησον ἕως: in this case, between the imperatives ἔψησον and [ἐ]πίθες there would be an asyndeton ("boil on a weak flame until it becomes glutinous. Apply.")

15–16 μέχ[ρις ἂν | γλοι]ῶδες γένηται: on the use of γλοιός / γλοιώδης to indicate the desired consistency of a mixture see L. C. Youtie, "A Medical Prescription for an Eye-Salve (P.Princ. III 155 R)," *ZPE* 23 (1976) 127–128, comm. to line 10.

17–19 first recipe against dandruff: cf. Archigenes *ap.* Gal. *De comp.med.sec.loc.* XII 462.4–5 K. ἢ τρυγὶ οἴνου Ῥοδίου ἢ κισσήρει καὶ νίτρῳ, ἴσοις μετὰ θέρμων σμῆχε and Aët. 6.66 ἢ νίτρῳ καὶ κισσήρει καὶ τρυγὶ οἴνου ἴσοις μετὰ θέρμου σμῆχε.

17–18 τρυγὸς [οἴνου | ±4–5]υ̣: the lacuna at the beginning of iii.18 can be supplied either with [Ῥοδίο]υ̣, the kind of wine required by Archigenes' recipe, or with [θέρμο]υ̣ "lupine," another ingredient of the recipe which would be otherwise missing (note however that both Galen's and Aëtius' versions preserve μετὰ θέρμων / μετὰ θέρμου). According to Dioscorides, wine sediments have caustic, detergent, and drying properties, and, if applied on hair overnight, they bleach it (*Mat.med.* 5.114). Sediments of Italic wine are required in a medical recipe preserved in *P.Coll.Youtie* I 4, whose therapeutic purpose remains unclear.

18 κ̣ι̣σ̣ήλεως (*l.* κ̣ι̣σ̣ήρεως): pumice stone, cf. *P.Berl.Möller* 13 *verso* ii.11, *SB* XXVIII 17134.ii.36 and iii.8, *O.Bodl.* II 2186, and *SB* XIV 12142. On its cleansing properties cf. Gal. *De simpl.med.temp. ac fac.* XII 221.17–222.14 K.

ἑκάστο[υ ἴσον]: the expression ἑκάστου ἴσον is quite well attested (cf. Hipp. *De mul.affect.* 84.19, Diosc. *Simpl.* 1.60.1, Gal. *De comp.med.sec.loc.* XII 409.8 K.) and fits well in the available space.

19: perhaps ἐξάλει[φ]ε̣ πίτυρα "remove the dandruff"? The preceding] ̣ ̣ ̣ος remains unclear to me (perhaps [μετὰ τ]ρ̣υ̣γ̣ός?). An alternative could be an ending -ως for an adverb

(for a similar form of *omega* composed of two small closed circles cf. iii.3 [ἐπι]μ̣ελῶς). This observation is absent in Galen's quotation.

20–24 second recipe against dandruff: cf. Archigenes *ap.* Gal. *De comp.med.sec.loc.* XII 462.2–3 K. ἢ νίτρου ἀφρὸν καὶ χάλκανθον, ἴσα μετ' οἴνου χρῶ τρὶς ἢ τετράκις τοῦ μηνός, Ps.-Gal. *De rem.parab.* XIV 323.5–6 K. ἄλλο. ἀφρόνιτρον καὶ χάλκανθον ἴσα λειώσας μετ' οἴνου χρῶ, and Aët. 6.66 ἢ νίτρου ἀφροῦ καὶ χαλκάνθης ἴσα μετ' οἴνου χρῶ, τρὶς ἢ τετράκις τοῦ μηνὸς τοῦτο ἐνεργεῖ.

Compared to Archigenes' prescription, the recipe of P.CtYBR inv. 1443 (a) probably gives vinegar as an alternative ingredient to the wine (see commentary on iii.20 ὄξ̣[), whereas Archigenes' recipe does not, (b) further qualifies the wine as μέλανος ἀυ[σ]τηροῦ, (c) specifies the quantities required for each ingredient: in particular, for χάλκανθον and ἀφρὸς νίτρου four and eight drachmas respectively are required, whereas Archigenes' recipe prescribes using the same amount (ἴσα), and (d) specifies for how long the compound should be boiled (iii.22–23).

20: probably τούτῳ χρῆσαι καὶ <πρὸς> πίτυρα "use this also against dandruff."

ὄξ̣[: a likely supplement is ὄξ̣[ους ἢ] | ο[ἴ]ν̣ου "of vinegar or wine." Vinegar recurs in two other recipes of Archigenes against dandruff: Gal. *De comp.med.sec.loc.* XII 461.12 and 16 K. Vinegar and wine are used alternatively in several recipes, e.g. Gal. *De comp.med. per gen.* XIII 817.9–13 K., *De antid.* XIV 187.4 K., or Ps.-Gal. *De rem.parab.* XIV 407.10 K.

21–22 ἀ̣[φροῦ] | νίτρου: probably sodium carbonate, cf. I. Andorlini, *PSI Congr.XXI* 3, comm. to ii.3.

22 χαλκάνθου: Dioscorides credits the χάλκανθον, "blue vitriol, copper sulfate," with astringent and cleansing properties (*Mat.med.* 5.98). See A. E. Hanson, *Gr.Med.Pap.* II 5, comm. to iii.22 with further references.

ἐψ̣[±5]: ἔψη[σον, ἐψή[σας, or ἔψε̣[.

22–23 [̣] . . η̣ λ̣[ει]φθῇ̣: cf. Archigenes *ap.* Gal. *De comp.med.*

sec.loc. XII 462.1 K. ἑψήσας μέχρι τὸ δέκατον λειφθῇ "having boiled until one tenth is left"; cf. also Gal. *De comp.med.sec.loc.* XII 444.17 K. ἑψήσας μέχρι τὸ τρίτον λειφθῇ, XII 659.10–11 K. ἑψήσας ἐν χαλκῷ ἀγγείῳ, ἕως λειφθῇ τὰ δύο μέρη, XIII 236.2–3 K. ἕψε μέχρι τὸ ἥμισυ λειφθῇ. This expression, which clarifies how long the compound should be cooked, is frequently found in medical prescriptions. At the beginning of iii.23 we would expect ἕως or μέχρι and an amount (for example ἥμισυ, τὸ τρίτον, or a numeral), but the interpretation of the traces is made difficult by the damage to the surface: the letter before λ̣[ει]φθῇ is probably an *eta*, preceded by a vertical and by, perhaps, an *epsilon*. Perhaps μ̣έ̣ρῃ "parts"? In this case a reconstruction could be ἕψε̣ [ἕως τὰ *numeral*] | μ̣έ̣ρῃ λ̣[ει]φθῇ.

23–24: Archigenes' recipe closes with the indication χρῶ τρὶς ἢ τετράκις τοῦ μηνός "use three or four times a month." The instruction given in P.CtYBR inv. 1443 is partly different: at the end of iii.23, where one would expect χρῶ τρὶς ἢ, there is instead the following sequence (diplomatic transcription): Τ ΔΕΖΜΩΕΩ[, which I interpret as τ̣οδε (or τ̣αδε) ζμῶ ἕω[ς. ζμῶ is the imperative of σμάω "wipe, cleanse," with the well-attested interchange of *sigma* with *zeta*;[26] cf. σμῆμα "soap," written in the papyri ζμῆμα (e.g. *SB* XXVIII 17134.I.3, *P.Ryl.* II 230.8, *SB* XVI 12375 *verso* i.2). Interestingly, a search in the TLG yields only four attestations of this verb in the imperative in Galen, all of them in recipes against dandruff ascribed to Archigenes (*De comp.med.sec.loc.* XII 461.15 and 16, 462.1 and 6 K.; cf. Aët. 6.66). τ̣οδε could be interpreted as τῷδε "cleanse with this" (referring to the remedy); the letter read as *omicron*, however, could also be the loop of an *alpha*, which would lead to the reading τ̣άδε "cleanse these" (referring to the πίτυρα). To sum up, the instruction given in iii.23–24 could be interpreted as: καὶ τ̣οδε (*l.* τῷδε) *or* τ̣άδε ζμῶ ἕω[ς τε-]|τράκι̣[ς] τοῦ μηνός "and

[26] F. T. Gignac, *A Grammar of the Greek Papyri of the Roman and Byzantine Periods* I (Milan 1976) 121–122.

cleanse with this (*or* cleanse these) up to four times a month."

25–27 third recipe against dandruff: a complete understanding of this recipe is hindered by the damage at the end of iii.25. It consists of at least 14 drachmas of ground sulfur, a substance with purifying properties: it remains unclear whether the sulfur should be administered by means of the clyster mentioned in iii.27 or should be used externally, as a topical application on the head.

A plausible restoration for the end of iii.26 could be εἰς δὲ τὴν κοιλί[αν: the recipe would thus prescribe washing thoroughly (iii.27 ἐκλούσα<ς>) with a clyster injected via the digestive tract. The object of "wash thoroughly" could be the head (iii.26 τὴν κεφαλήν), although this remains uncertain, since τὴν κεφαλήν could also be the object of a verb lost at the end of iii.25. The deciphering of the traces at the end of iii.25 remains challenging: here one would expect either an ingredient or a verb (for example, prescribing application of the sulfur on the head). . . . . εν could be a participle, such as καυθέν "burnt" (referred to an ingredient?). The following sequence ανε [might belong to a verb.

Since according to Galen dandruff is caused by a noxious body juice (*De comp.med.sec.loc.* XII 459.6–20 K.), a purging of the body through a clyster could be a way to restore the balance of the juices.

25 θε[ί]ου λείου: "ground sulfur;" θεῖον is usually accompanied by the adjective ἄπυρος ("native sulfur," cf. *P.Coll.Youtie* I 4.7). For θεῖον λεῖον cf. Gal. *De comp.med.sec.loc.* XII 664.7 and 680.5 K. and Aët. VIII 77. Sulfur was credited with dispersing, warming, and purifying properties, cf. Diosc. *Mat.med.* 5.107.

27 κλυστῆρι: the κλυστήρ was an injection of a therapeutic substance administered into an orifice with an instrument bearing the same name. It was commonly used via the rectum to purge and cleanse the bowels and, thus, to evacuate and purify

the body.[27] It was also employed to introduce medical substances into the internal organs, such as the womb (Gal. *Meth.med.* X 328.10–12 K.). The invention of the clyster was ascribed to the Egyptians (Ps.-Gal. *Medicus.Introd.* XIV 675.6–16 K.), who, according to Herodotus (2.77.2–3), made frequent use of this treatment to preserve their health. The clyster is in fact the most commonly attested method of administration of drugs in the Demotic *receptaria* from Tebtunis, see Jacob, in *Parlare la medicina* 65. Two Ptolemaic papyri attest the existence of an ἰατροκλύστης, a physician specialized in the use of clysters (*P.Hib.* II 268 and *UPZ* I 148).[28]

ποίει δὲ ἑψη[±5]: an indication about the efficacy of the medicine. ἑψη[±5] could be a form of ἕψω (e.g. ποίει δὲ ἑψη[θέν "it works boiled") or of ἕψημα "boiled substance."

28 [ξ]ηρὸν [ἴ]σχαιμον: remedies called ἴσχαιμα "stanching blood" are well attested in the medical literature. According to Galen, the physician Asclepiades described several ἴσχαιμα remedies among his recipes for ξηρά "desiccating powders" (*De comp.med.per gen.* XIII 843.16–17 and 844.4–7 K.). On ξηρὰ ἴσχαιμα see also Orib. *Coll.med.* 35.14.4 and Paul. Aeg. 6.60.3. *P.Oxy.* VIII 1088.i.19–20 offers a papyrological attestation for a ἴσχαιμον consisting only of pounded rock-alum. On the ξηρά remedies cf. A. Maravela, *Gr.Med.Pap.* II 7, p.117–118, comm. to line 1. The recipe of iii.28–29 is not attested elsewhere.

γύψου̣: the term is followed probably by the drachma symbol and a quantity. Above it, there is writing, quite abraded and difficult to read: the third and fourth letters might be αν. Galen

[27] On evacuating remedies see I. Andorlini, "Riflessi e applicazioni della terapia ippocratica nella testimonianza dei papiri," in I. Garofal et al. [eds.], *Aspetti della terapia nel Corpus Hippocraticum* [Florence 1999] 436–438.

[28] On this specialized doctor see P. Lang, *Medicine and Society in Ptolemaic Egypt* (Leiden 2013) 205–206, and R. Mairs, "*Aigyptia grammata*: Linguistic and Medical Training in Graeco-Roman Egypt," in *Parlare la medicina* 4–5. On *UPZ* I 148 see A. Ricciardetto, "Nouvelles données sur un papyrus relative au bilinguisme gréco-égyptien," *PapLup* 29 (2020) 95–125.

describes the medical properties of chalk and notes that it is quite suitable to prepare anti-hemorrhaging remedies (*De simpl. med.temp. ac fac.* XII 213.13–14 K. διὸ καὶ τοῖς πρὸς αἱμορραγίαν ἁρμόττουσι φαρμάκοις ξηροῖς μίγνυται χρησίμως). Oribasius too includes chalk among the substances used to prepare ἴσχαιμα (*Coll.med.* 10.22). For ἴσχαιμα remedies containing chalk see Gal. *De comp.med.sec.loc.* XII 695.10–14 K. and *De comp.med. per gen.* XIII 858.9–12 K. Chalk is also attested in a recipe against warts in *P.Paramone* 3.i.6 and in a recipe, probably for a plaster, in *P.Stras*. VIII 744.11.

29 με[λ]ανηρίας: the μελανηρία "black tincture, pigment" appears in several topical remedies and was credited with astringent properties (Gal. *De simpl.med.temp. ac fac.* XII 226.4–6 K.; for a description see Diosc. *Mat.med.* 5.101). It occurs in a recipe for an ἴσχαιμον remedy for those bleeding from the bite of an animal in Philumenus *De venen.anim.eor.remed.* 8.1. In the papyri it occurs in a recipe against λέπρα "leprosy" (*SB* XXVIII 17134.A.ii.12) and in two lists of drugs (*CPR* VII 32.ii.9, *P.Oxy.* XXXI 2567.16).[29]

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