

# Greek Palimpsest Papyri: Some Open Questions<sup>1</sup>

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It is well known that papyri were massively re-used in antiquity, most commonly by writing on the back of a roll or a sheet or by using the free space on the recto, but few people are also aware of the existence of palimpsests among papyri. Palimpsest papyri have indeed received little scholarly attention. The major manuals of papyrology, like those of Mitteis and Wilcken, Montevicchi, Turner, Rupprecht or Gallo, devote but a few lines to this question, and the only lengthier treatments (though not more than one or two pages) are those of Roberts and Skeat<sup>2</sup>. This lack of attention probably explains why the issue is still subjected to many open questions, some of which will be addressed in the following pages.

The first question is actually: **what is a palimpsest papyrus?** The obvious definition is that it is a papyrus from which the previous text has been erased in order to receive a new text above. But before calling a papyrus a palimpsest, one should be able to identify clear traces of the previous text, at least some letters or, better, a few words. This is important, because there are several examples of papyri which have been called palimpsests by the editors, but where the traces below the text turned out to be either accidental blots of ink or off-set marks from another papyrus, especially in mummy cartonnage. This is the case, for instance, of the famous Sorbonne papyrus of Menander's *Sikyonians* (LDAB 2738), which is one of the most frequently mentioned examples of papyrus palimpsests, whereas Prof. Blanchard has now been able to demonstrate that the traces come in fact from the facing text in the cartonnage<sup>3</sup>. There are other cases where the name of palimpsest seems questionable, for instance *P.Mich.* VI 390 (LDAB 1978): there has indeed been an attempt to wash off the previous Homer text (though not a very successful one); however, the new text was not written on top of it, but in the free space next to it. Further examples are known where one side has been washed off, but has not received any new text<sup>4</sup>. Another problematic case is when a text has been written on top of another one, but without any

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<sup>1</sup> This paper is meant as a supplement to my article «Les palimpsestes littéraires grecs sur papyrus», to be published in V. SOMERS (ed.), *Palimpsestes et édition de textes* (Publications de l'Institut Orientaliste de Louvain), Leuven, 2005. It will inevitably - for the sake of clarity - repeat some of the information contained there, but also add further arguments and bibliography as well as updated figures.

<sup>2</sup> C.H. ROBERTS - T.C. SKEAT, *The Birth of the Codex*, London, 1983, p. 16-18; T.C. SKEAT, «Was Papyrus Regarded as 'Cheap' or 'Expensive' in the Ancient World?», *Aegyptus* 75 (1995), p. 80-81.

<sup>3</sup> In the introduction of his forthcoming Budé edition (Collection des Universités de France).

<sup>4</sup> For instance *P.Oxy.* LXII 4347; *CPR* XIII 9, 19, 25 and 26; *CPR* XIV 29; *CPR* X 90.

attempt to wash off the previous text<sup>5</sup>. If one admits that both conditions, the washing-off and the re-writing, have to be fulfilled, then none of the papyri just mentioned is strictly speaking a palimpsest. Cases like these should nevertheless be taken into account, as they constitute interesting testimonia for the practice of washing or re-writing papyri.

But **how** was a papyrus palimpsested? In regard of the very nature of the papyrus, it seems obvious that the palimpsesting could not be achieved by scraping the surface as the term suggests. There is the famous testimonium of *P.Holmiensis*, which describes a rather odd chemical solution that, apparently, could be used to erase the ink from a papyrus<sup>6</sup>:

Αὕτη δὲ καὶ χάρτας γεγραμμένους πάλιν ψᾶ, ὥστε δοκεῖν μηδέποτε γεγράφθαι. Λαβὼν ἀφρόνιτρον τῆξον εἰς ὕδωρ. Εἶτα κατὰ τὸ γεγενῆσαν ἰπτρωμα προσέμβαλε γῆς ἐμπάσα(ς) ὠμῆς μέ(ρος) α' καὶ γῆς κιμωλίας μέ(ρος) α' καὶ γάλα βόϊον, ὡς πάντα μιγέντα γενέσθαι γλοιώδη, καὶ προσμίξας σχίνου χυλοῦ κατάχρισον περῶ. Καὶ ἑάσας ξηραυθῆναι, εἶτα ἀπολέπισον, εὐρήσεις λευκά. Ἐὰν δὲ κατὰ βάθους ἡ κισρᾶ, πάλιν ἐπιρχειε, ἐὰν δὲ εἰς χάρτην, μόνα τὰ γράμματα χρεῖ.

«By the following procedure one likewise makes papyrus sheets, which are written upon, clean again so that they appear as though they never had been written upon. Take and dissolve natron in water. Then put in, when the soda solution has formed, 1 part of raw earth, 1 part of Cimolian earth, and cow's milk in addition so that all of it comes to a glutinous mixture. Then mix in oil of mastic and daub it on with a feather. Let it dry and then scale it off and you will find the pearls white. If dealing with a papyrus sheet, only coat the characters.»

It has indeed been suggested, notably by Ulrich Wilcken<sup>7</sup>, that some kind of salves or ointments may have been used to erase single words from documents, as is suggested by the expression χωρὶς ἀλείφατος καὶ ἐπιγραφῆς (or καθαρὸν ἀπὸ ἀλείφατος καὶ ἐπιγραφῆς) found in a number of documents to attest that they are "free of erasure and additions". But it has recently

<sup>5</sup> For instance *PSI XII 1272, P.Laur. II 42*.

<sup>6</sup> *P.Holm. γ 18-29 = O. LAGERCRANTZ, Papyrus Graecus Holmiensis (P.Holm.). Recepte für Silber, Steine und Purpur*, Uppsala-Leipzig, 1913, p. 6-7 (with German translation and short commentary p. 160-161). The English translation below is taken from E.R. CALEY, «The Stockholm Papyrus. An English Translation with Brief Notes», *Journal of Chemical Education*, vol. 4, no. 8, August 1927, p. 979-1002 [p. 982]. For a French translation, see R. HALLEUX, *Les alchimistes grecs, tome I* (Collection des Universités de France) Paris, 1981, p. 114.

<sup>7</sup> U. WILCKEN, *Grundzüge und Chrestomathie der Papyruskunde*, I, 1, Leipzig, 1912, p. XXXIII. See also V. Gardthausen, *Griechische Palaeographie*, I (2<sup>nd</sup> edition), Leipzig, 1912, p. 105-106.

been argued that this is rather unlikely and that ἀλειφάς probably refers to the removing of the ink with water<sup>8</sup>. The most common way of erasing ink from a papyrus was indeed the use of a sponge (for which there are many ancient testimonia)<sup>9</sup> or the "less orthodox method" (in Raffaella Cribiore's words) of using a wet finger, as found in several school exercises<sup>10</sup> and also famously attested in the case of Alcibiades<sup>11</sup>.

But **how easy** was it actually to remove ink with water? Modern opinions largely diverge on this point, as the following statements show:

Easy:

Gardthausen (1911)<sup>12</sup>: "Beide Arten von Tinten konnten leicht durch Abwaschen gänzlich getilgt werden."

Lewis (1974)<sup>13</sup>: "The ink could easily be washed off."

Easy, but...:

Wattenbach (1875)<sup>14</sup>: "Von Papyrus wusch man die Schrift wohl einfach ab, aber natürlich blieben die Spuren."

Wilcken (1912)<sup>15</sup>: "... konnte die Tinte leicht mit einem Schwamm abgewaschen werden. Doch blieben gewöhnlich einige Überreste stehen."

Thompson (1912)<sup>16</sup>: "Papyrus could be washed (and then, probably, only when the ink was fresh and had not had time to harden), not scraped or rubbed."

Zerdoun Bat-Yehouda (1983)<sup>17</sup>: "les écrits pouvaient être effacés avec une certaine facilité, dans certaines conditions."

Difficult:

Parkinson-Quirke (1995)<sup>18</sup>: "The process of erasure must have involved more than merely water, as papyrus can be soaked without washing out the ink."

<sup>8</sup> A. BÜLOW-JACOBSEN, H. CUVIGNY, K.A. WÖRPER, «Litura: ἀλειφάς, not αλειφαρ, and Other Words for 'Erasure'», *ZPE* 130 (2000), p. 175-182.

<sup>9</sup> Conveniently listed in M. ZERDOUN BAT-YEHOUDA, *Les encres noires au Moyen Âge*, Centre national de la Recherche Scientifique, Paris, 1983 (reprint: CNRS Éditions, Paris, 2003), p. 85-88. See also W. WATTENBACH, *Das Schriftwesen im Mittelalter*, Leipzig, 1875, p. 195-196, and SKEAT (cf. n. 2).

<sup>10</sup> R. CRIBIORE, *Writing, Teachers, and Students in Graeco-Roman Egypt* (American Studies in Papyrology, 36), Atlanta, 1996, p. 95-96.

<sup>11</sup> Cf. Athenaeus, IX, 407C.

<sup>12</sup> GARDTHAUSEN, *Griechische Palaeographie* (cf. n. 7), p. 204.

<sup>13</sup> N. LEWIS, *Papyrus in Classical Antiquity*, Oxford, 1974, p. 130.

<sup>14</sup> WATTENBACH, *Schriftwesen* (cf. n. 9), p. 248.

<sup>15</sup> WILCKEN, *Grundzüge* (cf. n. 7), p. XXXIII.

<sup>16</sup> E.M. THOMPSON, *An Introduction to Greek and Latin Palaeography*, Oxford, 1912, p. 65.

<sup>17</sup> M. ZERDOUN BAT-YEHOUDA, *Encres noires* (cf. n. 9), p. 88 (also p. 74-75 and 85-87).

Very difficult:

Hunger (1961)<sup>19</sup>: "Das Abwaschen bzw. Abwischen der Tinte vom Papyrus ist sehr schwierig."

There have been modern experiments on this, either deliberate or accidental. So in a 1905 article Henri Erman reported that he had tested on two ancient papyri how easy it was to wash off the text and concluded that "sur les deux [papyrus] également l'encre s'enlevait avec une facilité étonnante et sans trace perceptible à l'œil nu. Et cela non seulement à l'eau chaude, mais simplement du bout du doigt mouillé ou encore en grattant avec l'ongle dans le sens des fibres"<sup>20</sup>.

This, however, is contradicted by the experiment related by Ricardo Caminos, from the British Museum, who had to deal with a lump of papyri which had accidentally stuck together<sup>21</sup>: "Sometime in the 1950s I had to cope with a number of papyrus fragments which, having been packed together and immersed in sewer water for about a fortnight in the flooded vault of a London bank, had become a solid lump (...), thoroughly dry when it came into my hands. (...) I placed the whole lump into a bucket of water, and a day later the lump was no more: many fragments were floating on the surface, others in suspension in the middle, and at the bottom there was a sediment of dirt. The fragments were dried between sheets of clean white blotting paper with books on top for weight. When they were dry the ink was as good as new, it had not run in the least, nor had it flaked off. Proper care had been taken not to touch it while the fragments were wet; nevertheless, the fragments had been firmly pressed between the blotters, and when the drying process was over there was not one speck of ink on the blotting paper".

A similar observation has been made about a Nag Hammadi roll which had been immersed in hot water in order to be unrolled and which in the process suffered no damage either to the roll or the writing, as is reported by Theodore Skeat<sup>22</sup>. Besides, immersion in water is a common method used to retrieve papyrus from a mummy cartonnage.

The two preceding experiments, however, are in turn partly contradicted by the incident which occurred a few years ago in the Papyrology Rooms at the Ashmolean Museum, when a number of papyri suffered water damage from the accidental breaking of a pipe. From Dirk Obbink's report

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<sup>18</sup> R. PARKINSON - S. QUIRKE, *Papyrus*, British Museum Press, London, 1995, p. 47.

<sup>19</sup> H. HUNGER (et al.), *Geschichte der Textüberlieferung der antiken und mittelalterlichen Literatur*, vol. I, Zürich, 1961, (repr.: *Die Textüberlieferung der antiken Literatur und der Bibel*, München, 1988), p. 37.

<sup>20</sup> H. ERMAN, «La falsification des actes dans l'Antiquité», in: *Mélanges Nicole*, Genève, 1905, p. 119.

<sup>21</sup> R.A. CAMINOS, «Some comments of the reuse of papyrus», in: M.L. BIERBRIER (ed.), *Papyrus: Structure and Usage* (British Museum Occasional Papers, 60), London, 1986, p. 45-46.

<sup>22</sup> T.C. SKEAT, «Roll Versus Codex - A New Approach», *ZPE* 84 (1990), p. 297.

on the incident (in a private letter), it appears that "the ink did run slightly in some papyri, and faded or blurred slightly in others. Damage was noticeable but not horrendous in many texts, though some remained unchanged and in none did the ink disappear entirely or even become unreadable. But then the papyri were not rubbed when wet, but very carefully damped out by us between sheets of blotting paper".

It would seem obvious to explain the contradictions between these various experiments by the types of ink that were used. It is commonly believed that the "older" type of carbon ink is water-resistant whereas the "later" iron-gall ink is easily washed off. But Henri Erman explicitly says that the results of his experiments were independent of the nature of the ink<sup>23</sup> and Walter Cockle confirms that both types of ink are soluble in water<sup>24</sup>, just as Gardthausen had written that both types of ink could be easily and completely washed off. But then, the Oxford incident shows that water alone did not completely erase the ink. So it may be, as Walter Cockle writes, that "both types of ink will remain reasonably stable (...) provided the surface is not rubbed"<sup>25</sup>. But the whole issue is probably more complex and depends on various factors which do not allow for a single answer. The quality of the ink is certainly an important factor. Monique Zerdoun Bat-Yehouda's general study on inks is very helpful in this respect<sup>26</sup>. Not only were there different types of ink (carbon ink, iron-gall ink, mixed or incomplete inks), but each type of ink was quite obviously produced at various levels of quality. Thus, for instance, the fineness of the lamp black used to produce carbon ink would have determined its resistance on papyrus. Likewise, the acidity (and thus resistance) of iron-gall inks depended on the proportion of their various components. But the quality of the papyrus sheet itself was likely to play an important role as well: coarse papyrus would have been more 'soaking' than a fine piece of polished papyrus. Furthermore, it would certainly have been much easier to wash off the ink (of whatever type) while it was still fresh. Chemical changes may also have altered the quality of the ink over the time (once the text was written) and it may be asked whether modern experiments of washing-off papyri are at all likely to be done under the same conditions as in antiquity. However, as M. Zerdoun Bat-Yehouda admits, much ambiguity remains about this whole issue<sup>27</sup>.

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<sup>23</sup> ERMAN, «La falsification», p. 119-120.

<sup>24</sup> W.E.H. COCKLE, «Restoring and Conserving Papyri», *BICS* 30 (1983), p. 153.

<sup>25</sup> COCKLE, «Restoring and Conserving Papyri», p. 152.

<sup>26</sup> ZERDOUN BAT-YEHOUDA, *Encres noires* (cf. n. 15), esp. p. 13-21 (types of ink and properties), p. 71-76 (Ancient Egypt), p. 77-96 (Graeco-Roman world).

<sup>27</sup> ZERDOUN BAT-YEHOUDA, *Encres noires*, p. 88-90.

The next question, then, is: **how many** palimpsest papyri are there? In the absence of reliable data, opinions on this point are again very contradictory and subjective. Basically, there are two groups: scholars thinking that palimpsest papyri are numerous and others thinking that they are rare.

The "numerous"-group is represented for instance by:

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|---------------------------------------|---|
| Preisigke (1912) <sup>28</sup>        | "Abgewaschene Papyrus sind ausserordentlich zahlreich."   |
| Meyer (1916) <sup>29</sup>            | "...Papyrus-Palimpseste, die sich in den Editionen zahlreich finden..."   |
| Schubart (1949) <sup>30</sup>         | "Unter den Papyri der Ptolemäerzeit finden sich viele..."   |
| Cerny (1977) <sup>31</sup>            | "These frequent palimpsests..." (of the Pharaonic period).  |
| Caminos (1986) <sup>32</sup>          | "From then on (i.e. the close of the Sixth Dynasty), right down to the end of the Ptolemaic period, palimpsest papyri are commonplace."                       |
| Parkinson-Quirke (1995) <sup>33</sup> | "Two out of five of these (i.e. the Gebelein Papyri of the Fourth Dynasty) are palimpsests. Such levels of reuse seem to have been the norm in most periods." |

In the "rare"-group, one finds:

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|----------------------------------|---|
| Thompson (1912) <sup>34</sup>    | "Specimens of rewritten papyri, even in fragments, are rarely met with."                          |
| Hunger (1961) <sup>35</sup>      | "Solche Palimpseste...gab es zwar auch auf Papyrus, wenn gleich viel seltener als auf Pergament." |
| Montevecchi (1973) <sup>36</sup> | "i papiri palinsesti...esistono, ma sono, in proporzione, più rari."                              |
| Lewis (1974) <sup>37</sup>       | "few extant papyri show signs of such reuse."   |

<sup>28</sup> F. PREISIGKE, *Griechische Papyrus der kaiserlichen Universitäts- und Landesbibliothek zu Strassburg*, Bd. I (= *P.Strasb. I*), Leipzig, 1912, p. 102.

<sup>29</sup> P.M. MEYER, *Griechische Texte aus Ägypten*, Berlin, 1916, p. 69 n.1.

<sup>30</sup> W. SCHUBART, art. «Palimpsestus», *RE* 36.2 (1949), col. 123-124.

<sup>31</sup> J. CERNY, *Paper and Books in Ancient Egypt*, Chicago, 1977, p. 23.

<sup>32</sup> CAMINOS, «Some comments» (cf. n. 21), p. 44.

<sup>33</sup> PARKINSON-QUIRKE, *Papyrus* (cf. n. 18), p. 47.

<sup>34</sup> THOMPSON, *Introduction* (cf. n. 16), p. 65.

<sup>35</sup> HUNGER, *Textüberlieferung* (cf. n. 19), p. 37.

<sup>36</sup> O. MONTEVECCHI, *La papirologia*, Torino, 1973, p. 21.

<sup>37</sup> LEWIS, *Papyrus* (cf. n. 13), p. 130.

Hurschmann (2000)<sup>38</sup>

"Im Gegensatz zum Pergament-P(alimpsest) sind gänzlich abgeschabte und dann neu beschriebene Papyri sehr ungewöhnlich."

My own private enquiry revealed that the *communis opinio* among papyrologists today seems to be that palimpsest papyri are not at all numerous. Of course, one has to keep in mind that "numerous" and "rare" are fairly subjective notions. If one takes an estimate of 1 out of 100 (see table below), this would give around 500 palimpsests among documentary papyri, which is not very much in regard of the ca. 50000 published papyri, but which is quite considerable in absolute terms.

Unfortunately, the *Heidelberger Gesamtverzeichnis*, the well-known database of all published documentary papyri, does not help in this regard, as palimpsests are not listed as such in the database, except by accident: only three palimpsests are mentioned there, but at least 60 more cases are known to me in the present state of my investigations, and discussions I had with colleagues confirm that there are many more palimpsests in the various collections<sup>39</sup>.

On the literary side, the situation is much better, since the *LDAB (Leuven Database of Ancient Books)* does mention when a papyrus is a palimpsest. The *LDAB* lists 41 palimpsest papyri<sup>40</sup>, which allows to make the following statistics (on June 23, 2004):

	total number	palimpsests	percentage
papyrus	6912	41	0,59
parchment	2532	391	15,44
ostraca	332	5	1,51
wood	147	4	2,72

The table clearly shows that the practice of palimpsesting - as could be expected - was far more common on parchment than on papyrus: roughly 1 parchment out of 7 is a palimpsest, but only 1 papyrus out of 170 (= approximately 25 times less frequent).

<sup>38</sup> R. HURSCHMANN, art. «Palimpsest», *Der Neue Pauly*, Bd. 9 (2000), col. 188-189.

<sup>39</sup> A more systematic survey has now been started in collaboration with the *Rinascimento Virtuale* project under the direction of Prof. Dieter Harlfinger (Hamburg), of which the results will be published in due course.

<sup>40</sup> Of these 41 palimpsests, four should be removed from the list as being either not palimpsests (*P.Harris* II 168 = *LDAB* 4284 and *P.Lit. Palau Rib.* 4 = *LDAB* 3128) or not papyrus, but parchment (*LDAB* 3466), or as being a double entry (*P.Freib.* 1 = *LDAB* 2729 + 6902). On the other hand, four known cases are not listed as palimpsests in the *LDAB* and should be added (*P.Mich.* VI 390 = *LDAB* 1978; *P.Vindob. inv.* L. 150 = *LDAB* 6053; *P.Mich. inv.* 2754 = *TAPA* 56 (1925), p. 120-129 = *LDAB* 0177; *P.Bad.* IV 58 = *LDAB* 6750). So the actual count is still 41. These figures, however, are bound to change as the *LDAB* updates its information and as my own investigations progress.

Several reasons may explain why the difference between papyrus and parchment is so high. The first is the difference in price: although the actual price of a papyrus roll is still a debated question<sup>41</sup>, it is obvious that parchment was far more expensive than papyrus and thus more likely to be palimpsested.

The difference may also be related to the bibliological format, that is: the difference between the roll (of papyrus) and the codex (of parchment). Whereas a roll could easily be reused simply by turning the roll over and writing on the verso, the codex, being opistograph, necessarily had to be washed before receiving a new text. If this argument is correct, an increase of the number of palimpsests should be noticeable among papyrus codices. Here are the statistics:

	total number	palimpsests	percentage
roll	3281	19	0,58
codex	1114	13	1,17
sheet	701	6	0,86
fragment	691	3	0,44

There is indeed an increase: the percentage has doubled (1 roll out of 172 against 1 codex out of 85), but this is still 12 times less than on parchment. But there is a problem with the statistics here, as from the 6912 papyri listed in the *LDAB*, 1125 (roughly 1/6) do not receive any information about the format. However, it is interesting to note that from the 3rd century AD onwards, all preserved palimpsests except one are codices.

As a further reason to explain why palimpsests are less frequent among papyri, one should not exclude the possibility that they are perhaps simply less easy to identify on papyrus as they are on parchment. If the ink really was easy to wash off from a papyrus, could it not be that some or even many papyrus palimpsests have just not been recognized as such? This seems to have been opinion of Preisigke, who urged papyrologists to examine the papyri more closely in this respect<sup>42</sup>.

But the small number of palimpsest papyri is more likely to be an indication that palimpsesting a papyrus was just not worth the trouble: if the ink was not so easy to remove, then the whole process would have been time-consuming and the results likely to be rather poor, with

<sup>41</sup> For a summary of the debate, see LEWIS, *Papyrus* (cf. n. 13), p. 129-134, and, of course, SKEAT, «Papyrus 'Cheap' or 'Expensive'?» (cf. n. 2).

<sup>42</sup> F. PREISIGKE, *P. Strasb.* I, 26 (p. 102): "Abgewaschene Papyrus sind ausserordentlich zahlreich, viel zahlreicher, als man bisher glaubte; man untersuche die Urkunden daraufhin mit der Lupe".

either traces remaining or, possibly, damage done to the papyrus. This opinion has been expressed by Theodore Skeat and seems to be widely accepted<sup>43</sup>.

The final question(s) of this paper will be: **where and when** were these palimpsest papyri produced? A quick survey does not yield any significant results: they come from all over Egypt and the practice is attested for the whole of the Graeco-Roman period. However, a closer look at the dates, century by century, may be of interest<sup>44</sup>:

	palimpsests	total number	percentage	ratio
BC 3	2	231	0,86	1 / 116
BC 2	6	180	3,33	1 / 30
BC 1	5	327	1,53	1 / 65
AD 1	3	708	0,42	1 / 238
AD 2	6	1973	0,30	1 / 333
AD 3	2,5	1532	0,16	1 / 625
AD 4	2,5	567	0,44	1 / 227
AD 5	4,5	429	1,05	1 / 95
AD 6	4,5	472	0,95	1 / 105
AD 7	2,5	227	1,10	1 / 90
AD 8	2	63	3,17	1 / 31
AD 9	0,5	2	25,00	1 / 4

It is striking that the percentage of palimpsests is significantly higher in the Ptolemaic period than in the Roman period and that it goes up again in the Byzantine period. Drawing conclusions from these figures seems rather dangerous. I am well aware that we are dealing here with very small numbers and, besides, with fairly incomplete or unreliable information, so great caution is necessary. However, these figures may show that there was a difference of quality between the inks used in the Ptolemaic times and those in Roman times, though it would require painstaking chemical analysis to confirm this hypothesis. More plausibly, these figures may be an indication that there was a shortage of papyrus in the Ptolemaic period and/or that papyrus was more expensive in these times. The price of papyrus is still a much debated question and the problem

<sup>43</sup> SKEAT, «Papyrus 'Cheap' or 'Expensive'?», p. 81.

<sup>44</sup> This table is based on the information found in the *LDAB* on June 23, 2004. It corrects the one published in my article «Les palimpsestes littéraires grecs sur papyrus» (cf. n. 1), where I counted palimpsest papyri of which the date overlaps two centuries as half a unit for each century, but omitted to do the same for all other papyri, thus unduly increasing the total number of papyri.

is, here too, that reliable data are scarce. Lewis<sup>45</sup> has provided a comparative table for the price of a papyrus roll and, though clear conclusions from it are not possible, it appears that papyrus was indeed more expensive in Ptolemaic times: the cost was approximately 2-7 day's wages in 3BC, 3-8 days in 2BC, but it goes down to 2.5-4 days in 1AD and even 0.5-3 days in 2-3AD, which means that on average the price was significantly lower in Roman times. Again, these figures as well as those on palimpsests are to be met with great caution, but if both are right, then the higher frequency of palimpsests in the Ptolemaic period is an interesting confirmation of a economic reality.

One further question, i.e. **what kind of texts** are found on palimpsests, will remain untouched here. Theodore Skeat once wrote that "it was not easy to wash writing off so completely that no traces were left behind, and palimpsests therefore were readily identifiable as such and were looked down upon as inferior material, fit only for such things as drafts or scribbling paper"<sup>46</sup>. This may certainly be right in many cases, but on the whole it seems rather questionable<sup>47</sup>. More work is needed, however, before more precise conclusions can be drawn on this and on any of the questions raised by this paper. It is my hope that the work that has now begun in view of setting up a database of all known palimpsest papyri will in due course bring forth some answers to these many open questions.

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<sup>45</sup> LEWIS, *Papyrus* (cf. n. 13), p. 132.

<sup>46</sup> SKEAT, «Papyrus 'Cheap' or 'Expensive'?» (cf. n. 2), p. 81.

<sup>47</sup> More thoughts on this can be found in my article «Les palimpsestes littéraires grecs sur papyrus» (cf. n. 1).