

be made. The Aetolians considered all four cities equally theirs, almost as a bloc, and were not about to lend any credibility to Flamininus' dividing them up and disposing of them differently. So they continued to demand the three cities the Romans denied them. And they grew yet more embittered.⁶⁹

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69. I intend to discuss in greater detail the conflict between Flamininus and the Aetolians in another paper.

PLINY THE ELDER AND STANDARDIZED ROLL HEIGHTS IN THE MANUFACTURE OF PAPYRUS

In his famous account of papyrus and its manufacture, Pliny the Elder discusses in detail, if not always with lucidity, the grades of papyrus: for each grade he gives the names, the relative quality, and the width of the individual sheets that are joined to make up a roll (*HN* 13.74–78). Surprising, at least to modern commentators, is Pliny's failure to mention the height of the roll.

The problem has attracted a variety of solutions, none entirely satisfactory. N. Lewis supposes an omission in Pliny's source; to that E. G. Turner apparently assents, adding that Pliny demonstrates his lack of first-hand acquaintance with the process; H. Leclercq hypothesizes an absolute ratio between width and height, making explicit mention of the height unnecessary; I. H. M. Hendriks similarly proposes that in giving the widths Pliny implicitly says something about the heights since the sheets were square; most recently, A. Bülow-Jacobsen writes that *latitudo* in 13.78 refers not to the width but to the height of the roll.¹ The latter three theories can be rejected on the basis of surviving papyri. Evaluating the lists of examples in Kenyon's handbook, we find that the width of a sheet taken as a percentage of height ranges from 32% to 97%,² and therewith we may put Leclercq and Hendriks to one side. Bülow-Jacobsen's theory also fails the test of the evidence to hand. The higher range of *latitudo* specified by Pliny translates to 24.05 cm. for the *optimi* (the Augustan, Livian, and probably also Claudian grades) and 20.35 cm for the hieratic grade. These higher grades are presumably the ones usually selected for literary rolls. Were *latitudo* the height, we should be hard pressed to explain why literary rolls commonly extend to a height of 30 cm. or more. Taking Kenyon's list of examples once again, we find that only three are so short as the

1. N. Lewis, *Papyrus in Classical Antiquity* (Oxford, 1974), p. 56, where Turner's views (from a letter to Lewis) will also be found; H. Leclercq, "Papyrus" in *Dictionnaire d'archéologie chrétienne et de liturgie*, vol. 13.1 (Paris, 1937), col. 1374 (whose views are rejected by Lewis, *Papyrus*, p. 56, n. 31); I. H. M. Hendriks, "Pliny, *Naturalis Historia* XIII, 74–82 and the Manufacture of Papyrus," *ZPE* 37 (1980): 130; A. Bülow-Jacobsen, "'Magna in latitudine earum differentia' (Pliny, *NH* XIII, 78)," *ZPE* 60 (1985): 273–74, who is cited with approval by N. Lewis, *Papyrus in Classical Antiquity: A Supplement*, *Papyrologia Bruxellensia*, vol. 23 (Brussels, 1989), pp. 26–27.

2. F. G. Kenyon, *Books and Readers in Ancient Greece and Rome*² (Oxford, 1951), pp. 50–51.

high range of Pliny's specifications.³ Indeed, one can generally assert of Greek literary papyri that a height of 20–24 cm. is less usual, whereas a taller roll, perhaps 25–32 cm., will be the rule.⁴ For the width of sheets in Greek literary rolls, a range of 20–24 cm. is however exactly normal.⁵ We conclude then that *latitudo* refers, as we should expect, to the width of the sheet, and that the height of the roll is not mentioned. Two possibilities seem to be left: (1) Pliny uses a faulty source (thus Lewis and Turner). But this simply shifts the problem back one generation, for why then did the source not mention the height? (2) Pliny misuses his source, and neglects an important detail. This is of course possible, but since the detail is so obvious, it must be held a solution of last resort.

It has long been known, however, that extant papyri do not in fact exhibit uniformity of height. Kenyon's handbook, once again, gave adequate examples more than half a century ago, and newer finds serve only to reinforce the conclusion that heights, while often within a broad normative range, vary considerably.⁶ To this evidence I will add something from my own recent researches. In an investigation of scribes from Oxyrhynchus known to have written more than one literary roll, I have come upon two relevant facts: (1) A scribe tends, naturally enough, to write on papyrus of the same or similar surface quality on front and back, and often the papyrus quality is strikingly similar between rolls;⁷ (2) A scribe, unless the rolls constitute a set (as the plays of Aeschylus, or the books of Thucydides), seems to write on rolls of quite different heights.⁸ The state of preservation does not allow

3. Kenyon, *Books*, pp. 50–51. A translation of Kenyon's examples into centimeters will be found in Appendix 1 below.

4. In Appendix 3 I list seventy examples from Oxyrhynchus which appear to fall within the range of 25–32 cm.; the number of probable examples below 25 cm. is small. Quite contrary to this point is the conclusion of Cavallo, who finds a "standard" of 19–24 cm. for the height of rolls from the library discovered at Herculaneum: G. Cavallo, *Libri Scritti Scribi a Ercolano* (Naples, 1983), pp. 14–16. I have concentrated on literary papyri because they are the subject of my own research, and are also the bulk of examples in Kenyon. By Kenyon's account, the height of documents frequently exceeds these numbers. See Kenyon, *Books*, pp. 51.

5. For examples in Kenyon, see Appendix 1 below; for Oxyrhynchus examples, see Appendix 2. Some variation in widths (as *P.Oxy.* 223 and 1017: see Appendix 2) I take to be natural to hand manufacture; the widths in Pliny I would suppose target or average measurements in any case. Some additional examples will be found in E. G. Turner, *The Typology of the Early Codex* (Philadelphia, 1977), pp. 47–48; Turner unfortunately says nothing of the papyrus quality, but note that the non-literary specimens there tend, as we should expect, to a smaller width.

6. See Appendixes 1 and 3; and Lewis, *Papyrus*, p. 56 (who is overly exuberant however in his statement that considerable variation in roll height is witnessed by "thousands of surviving specimens"; in fact, relatively few papyri preserve the upper and lower margins intact).

7. Among cases where more than one roll is written by the same scribe, the following have papyrus that appears of similar quality on front and back: *P.Oxy.* 844, 1246; *P.Oxy.* 2373, 2404; *P.Oxy.* 1092, 2297, 3213, 3676, 3710; *P.Oxy.* 1809, 2076, 2288; *P.Oxy.* 231, 1619; *P.Oxy.* 2321, 2693; *P.Oxy.* 1364, 2077, 2452, 2889, 3215, 3683; *P.Oxy.* 1806, 3325; *P.Oxy.* 2100 (from three books of Thucydides, representing at least two rolls). A special case is the matching set of Aeschylean rolls represented by *P.Oxy.* 2178, 2179, 2159–64, 2245–55, and *PSI* 1208–10, whose papyrus is very similar, but whose scribe writes the Babrius fragment published under *P.Oxy.* 1249 on a different quality of papyrus. I find only one other example where the papyrus quality does not match: *P.Oxy.* 3436, 3437, which might otherwise be thought from a single roll, given the exact correspondence in format and the shortness of the Demosthenic speeches contained therein.

8. A different roll height is assured for at least two of the three rolls written by the scribe of *P.Oxy.* 1092, 3676, 3710. *P.Oxy.* 1092 had a column height of 16.5 cm., with a total roll height apparently about 23 cm.; *P.Oxy.* 3710 had a column height of at least 23 cm., which with margins would yield a roll height considerably taller; *P.Oxy.* 3676 was in between, with a column height of about 19 cm. Margins are not complete for our other examples, but a strong difference in column height will at least suggest a corresponding difference in roll height. Thus the scribe of *P.Oxy.* 3325 and 1806, whose column heights calculate to 14.8 cm. and

certainty, of course, but this evidence suggests that scribes wrote on rolls of the same grade but of varying heights.

Now the question arises: why, given the evidence of extant papyri, do top-notch scholars like Lewis and Turner insist that standards for grades of papyrus must have included the height? The answer is not far to seek. The standards, according to Pliny, were explicit about the width of the sheets: the highest grades were to have a width of 13 digits, the next 11, and so forth down to the lowest grade, which was less than 6 (13.78). Surely it seems unlikely that standards would be so exacting about the width of the sheets and say nothing about their height. When the sheets are joined together to form a roll, after all, the width becomes unobvious, whereas the height remains a prominent feature.

In my view, the key to the problem lies in the context of Pliny's remarks. Pliny's account, a curious mixture of the specification of grades and the details of manufacture, focuses on the quality of the papyrus. The best papyrus comes from the middle of the plant (*principatus medio*).⁹ using that as his starting point, Pliny moves in 13.74–76 from the best grades to the worst, naming each, and relating in a general way the quality of the grade to the part of the plant from which it derives. As grades are dependent on the materials of manufacture, Pliny will naturally pause in 13.77 to give a brief account of how papyrus is made. In 13.78 Pliny turns back to the specification of grades, and here it is that we find our list of the standard width of sheet for each grade. To this list, Pliny strangely concludes, *praeterea spectantur in chartis tenuitas, densitas, candor, levor* ("besides that, one looks for thinness, denseness, whiteness, and smoothness in the sheets"). The train of thought is, to say the least, very odd! It is as though Pliny said: fine paper is made largely from rags, newsprint from reused paper pulp; (brief description of how paper is made); rag paper standardly comes in sheets 8.5 inches wide, newsprint in widths of 27.5 inches; and moreover, one looks at the color and texture in assessing the quality of the paper. What could be more out of place than the physical measurements here?

The quality of the papyrus, as I have said, is the focus of Pliny's account. If physical dimensions *per se* were important to the grades, we should expect some mention of the height, to be sure; but we should not expect the conjunction of physical measurements and qualities of papyrus surface as though the topic were one and the same. I would argue that the width of sheets and the quality of the papyrus surface are in fact very much the same topic. The width of sheets is specified simply because the frequency of joins has an obvious impact upon the quality of the surface. The more joins, the more imperfections to the surface.¹⁰ Thus the higher grades have wider sheets and fewer joins, and the lower grades have narrower sheets and more joins. Pliny's conclusion to 13.78 then follows naturally. Besides

19.4 cm.; and the scribe of *P.Oxy.* 3215, 2077, and 1364, whose column heights respectively measure 12.3 cm., at least 15 cm., and 17 cm. According to the editor of *P.Oxy.* 1182, the scribe of *P.Oxy.* 1182 and 1093 also wrote these rolls on papyrus of differing height.

9. The exact meaning of *medio* remains a subject of dispute, as does the accuracy of Pliny's statements about the relation between the part of the plant used and the papyrus quality. For recent work, see discussion and references in Lewis, *Supplement*, pp. 19–21.

10. The frequency of joins will also have its consequence for the durability, perhaps also the rollability, of the roll. Damage in extant examples well attests that the area around the join is particularly fragile.

the widths, which have an obvious impact on our judgment of the surface quality, one must also consider the thinness, denseness, whiteness, and smoothness.

We should take Pliny at his word when he states that one uses vertical strips "as tall as one can" for the back of the sheet (13.77 *schida adlinitur longitudine papyri quae potuit esse*). Buyers could count on the grades to indicate the quality of the papyrus; but the height, though of possible real interest to the buyer, would be a consideration quite outside of the grading itself.

APPENDIX: WIDTH AND HEIGHT OF EXTANT PAPYRUS SHEETS

1. Width by height. Kenyon, *Books*, pp. 50–51, offers a list of measurements. Translated into centimeters, Kenyon's examples may be tabulated as follows for width by height:

BM inv. 271	(<i>Odyssey</i> 3, early 1 A.D.)	22.85 × 33.0
Berlin inv. 9782	(Comm. on <i>Theaetetus</i> , 2 A.D.)	25.4 × 31.75
BM inv. 108+115	(Hyperides, 2 A.D.)	25.4 × 30.5
BM inv. 132	(Isocrates, <i>De Pace</i> , 1–2 A.D.)	19.7–22.2 × 27.9
Bodl. A 1(P)	(<i>Iliad</i> 2, 2 A.D.)	26.7 × 27.6
BM inv. 742	(<i>Iliad</i> 2, 2 A.D.)	21.6 × 27.3
BM inv. 733	(Bacchylides, 1–2 A.D.)	20.3–22.9 × 24.8
BM inv. 128	(<i>Iliad</i> 23 and 24, 1 A.D.)	12.7–15.2 × 24.8
BM inv. 134	(Hyperides, <i>In Phil.</i> , 2–1 B.C.)	19.0 × 23.5
BM inv. 268	(Tax register)	12.7 × 39.4

These measurements may be somewhat approximate: cf. e.g., the report of 27.0 cm. for the height of the Hawara *Iliad* (Bodl. A 1[P]) in E. G. Turner, *Greek Manuscripts of the Ancient World*² (London, 1987; revised by P. J. Parsons), p. 38.

2. Width. Among literary papyri from Oxyrhynchus, I cull from my notes the following sheet widths (in centimeters):

<i>P.Oxy.</i> 26	23.7
<i>P.Oxy.</i> 223	23.1, 21.2, 21.9, 21.8, 21.3, 22.5, 24.1
<i>P.Oxy.</i> 1017	17.3, but elsewhere at least 21.5
<i>P.Oxy.</i> 2101	23.1
<i>P.Oxy.</i> 2102	22.5

For several other more fragmentary Oxyrhynchus papyri, one may assert that the width of the sheets exceeds (or nearly so) 20 cm., and that none of them much exceed 25 cm. Thus *P.Oxy.* 20 (>21.2), 844 (>25.3), 1250 (>21.0), 3437 (>20.7), 3442 (>19.5), 3443 (>22.1), 3663 (>21.5), 3721 (>24.0). All of the *P.Oxy.* examples here are dated to the second or third century of the common era, and all appear to have good or very good surface quality.

3. Height. Among the extant works from Oxyrhynchus, I note the following examples where margins appear intact; in only three cases (*P.Oxy.* 1806, 2181, and 3663) does the column height depend on calculation. (In the list, those marked with an asterisk have at least one margin which is doubtfully full; those marked with two asterisks are more doubtful yet. Many of these will be therefore somewhat understated as to the overall height. The two examples marked with a crux are written on the back of a reused piece of papyrus, and show signs of being cut down from their original height.)

<i>P.Oxy.</i> 844	31.75* cm.	<i>P.Oxy.</i> 223	25.5–26.0† cm.
<i>P.Oxy.</i> 445	30.4* cm.	<i>P.Oxy.</i> 2101	25.4 cm.
<i>P.Oxy.</i> 1806	28.4** cm.	<i>P.Oxy.</i> 2102	25.2 cm.
<i>P.Oxy.</i> 2181	28.3** cm.	<i>P.Oxy.</i> 3663	25.1** cm.
<i>P.Oxy.</i> 1017	28.2** cm.	<i>P.Oxy.</i> 1250	24.4** cm.
<i>P.Oxy.</i> 2100	28.0* cm.	<i>P.Oxy.</i> 1092	22.9** cm.
<i>P.Oxy.</i> 20	27.9* cm.	<i>P.Oxy.</i> 2223	22.8* cm.
<i>P.Oxy.</i> 230	27.8** cm.	<i>P.Oxy.</i> 3444	21.1* cm.
<i>P.Oxy.</i> 3437	27.3* cm.	<i>P.Oxy.</i> 21	19.8** cm.
<i>P.Oxy.</i> 1183	27.15* cm.	<i>P.Oxy.</i> 2335	17.9*† cm.

There are moreover a great many *Oxyrhynchus papyri* from extant works of which we can assert, by measurement or calculation, and with the assumption of only the minimal margin, that the height exceeded 26 centimeters. A conservative tally will include at least the following: *P.Oxy.* 16+696, 23, 26, 27, 227, 228, 230, 232, 233, 454+*PSI* 119, 462, 463, 703, 1017, 1019+2948, 1376, 1619, 1805+3687, 1810, 1819, 2090, 2091, 2095, 2096, 2097, 2098, 2099, 2181, 2224, 2225, 2333, 2546, 2639+*PSI* 1191, 2641, 2695, 2699, 2700, 3154, 3155, 3220, 3223, 3322, 3323, 3326, 3372, 3373, 3375, 3376, 3382, 3383, 3436, 3440, 3442, 3443, 3447, 3451, 3667, 3675, 3719, 3721. Only four of these can be shown to exceed 32 cm. (1376, 2641, 3155, 3447, for which the maximum demonstrable height is about 35 cm.).

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MYRRHA'S SECOND TABOO, OVID *METAMORPHOSES* 10.467–68

forsitan aetatis quoque nomine "filia" dixit,
dixit et illa "pater," sceleri ne nomina desint.

The *frisson* of these lines depends on a sense of multiple transgressions. The verbal transgression of Myrrha and her father calling each other by their family names in bed underscores the sexual transgression of their incest. Cinyras' ignorance of the inappropriateness of both his actions and his language increases the horror. But the utterance of these family names violates a further taboo—at least if we can trust a report in Servius Danielis.

Myrrha's opportunity to sleep with her father comes about because her mother is celebrating ritual abstinence from sex in honor of Ceres (10.431–36):

festae piae Cereris celebrabant annua matres
illa, quibus nivea velatae corpora veste
primitias frugum dant spicea sarta suarum
perque novem noctes venerem tactusque viriles
in vetitis numerant: turba Cenchreis in illa
regis adest coniunx arcanaque sacra frequentat.

In quite a different context Servius Danielis mentions a strange taboo observed at Rome during a celebration of Ceres: "et Romae cum Cereri sacra fiunt, observatur ne quis patrem aut filiam nominet, quod fructus matrimonii per liberos constet" (*ad*