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*Pagination printed by Aldus Manutius**

1. *Introduction*

In general, modern books are composed of an author's text together with selected elements of peritext and paratext such as title page, table of contents, preface, introduction, bibliography, index, pagination, and so on. While each element was produced separately up to the end of the fifteenth century, they linked functionally in one book during the sixteenth century. However, the process of evolution of the modern book has not been totally clarified. The printing techniques such as pagination and the development of pagination are particularly unclear. Some scholars have argued their hypotheses regarding the development of pagination, but none have proven their hypothesis with positive evidence.¹

* The original manuscript of this paper was *The Origin of Pagination: A Contribution of Aldus Manutius* read at the international conference: *The Book in Transition, the East and the West*, held at Keio University, Tokyo, on 9 December 2017. This paper is an enlarged and revised version of that conference paper. This work was supported by JSPS KAKENHI Grant Number JP17K00454. I would like to say many thanks for kind hospitality to Fiammetta Sabba and Alfredo Serrai.

¹ McKerrow 1948, p. 85; Febvre - Martin 1958, p. 159; Smith 1988, p. 69.

The author of this paper statistically analyses the bibliographical data of paginated books printed in the leading publishing centres of the sixteenth century. The data were extracted from bibliographical databases such as the Incunabula Short Title Catalogue (ISTC), *Censimento nazionale delle edizioni italiane del XVI secolo* (EDIT 16), *Verzeichnis der im deutschen Sprachbereich erschienenen Drucke des 16. Jahrhunderts* (VD 16), Universal Short Title Catalogue (USTC), English Short Title Catalogue (ESTC), *Bibliographie des éditions lyonnaises 1473-1600* (LYON 15-16), and GLN 15-16, together with some printed bibliographies.²

The result of the analyses shows that Aldus Manutius of Venice (ca. 1450-1515) was the first printer to publish a paginated book, Niccolò Perotti's *Cornucopiae, sive linguae latinae commentarii*, in July 1499.³ He would go on to print a total of 17 paginated books during his lifetime. This paper focuses on Aldus's paginated books, considers the form and technique of his pagination, and clarifies the various influences that his paginated books had on other contemporary printers.

2. *Aldus Manutius's paginated books*

It is known that scholar printer, Aldus Manutius, was the first printer to publish paginated books. He printed 17 paginated books in Venice between 1499 and 1514 (Table 1). Thirteen of these books were printed in Greek (Table 1: Nos. 2-5, 7-8, and 11-17), and the remaining four were printed in Latin (Table 1: Nos. 1, 6, 9 & 10). Thus, Aldus mainly paginated Greek books, and always printed the page numbers in Arabic numerals.

² Baudrier 1895-1921; Gültlingen 1992-2019; University research library, Los Angeles, Calif. 2001; Pettas 2013; Sebastiani 2018.

³ Saenger 1996, p. 275-276; Vecce 1998, p. 117; Harris 2016, p. 374.

No	Year of publication	Author	Title (language, G: Greek, L: Latin)	Format	Collation	Type of pagination	Reference**
1	July 1499	Perotti, Niccolò	<i>Cornucopiae, siue linguae latinae commentarii</i> (L)	2	[30] f., 642 p., [1] f.	A-I	AP 32; ISTC ip00296000
*	Oct. 1502	Ovidius Naso, Publius	<i>Quae hoc volumine continentur. Ad Marinum Sannutum Epistola qui apud Graecos scripserint Metamorphoseis</i> (L)	8	[268] f.		AP 66; EDIT 16 CNCE 36136
2	June 1503	Lucianus	<i>Que (!) hoc volumine continentur. Luciani Opera</i> (G)	2	[1] f., 571 [i.e. 572] p., [1] f.	B	AP 73 EDIT 16 CNCE 63229
3	March 1504	Iohannes: Philoponus	<i>Ioannis Grammatici In posteriora resolutoria Aristotelis commentaria. Ioannou tou grammatikou</i> (G)	2	295, [1] p., [12] f.	A-III	AP 80; EDIT 16 CNCE 36161
4	Nov. 1504	Demosthenes	<i>Demosthenis Orationes duae & sexaginta</i> (G)	2	[1-3] 4-5 [6-14] f., 320, 286 [i.e. 288] p., [4] f.	A-II	AP 87; EDIT 16 CNCE 16732
5	Oct. 1505	Aesopus	<i>Vita & fabellae Aesopi cum interpretatione Latina</i> (G-L)	2	[8] f., 17-142 p., [34] f., 172 cols.	A-III	AP 93; EDIT 16 CNCE 334
6	Nov. 1508	Plinius Caecilius Secundus, Gaius	<i>C. Plinii Secundi Nouocomensis Epistolarum libri decem</i> (L)	8	[12] f., 525, [1] p., [1] f.	C	AP 100; EDIT 16 CNCE 37420
7	Nov. 1508-21 May 1509	Rhetores Graeci	<i>Rhetores in hoc volumine habentur hi</i> (G)	4	[8] f., 734 p., [1] f.	A-II	AP 99; EDIT 16 CNCE 2146
8	March 1509	Plutarchus	<i>Plutarchi Opuscula. LXXXII. Index moralium omnium</i> (G)	4	[8] f., 1050 p., [1] f.	A-II	AP101; EDIT 16 CNCE 37429
9	after 30 March 1509	Horatius Flaccus, Quintus	<i>Q. Horatii Flacci Poemata</i> (L)	8	[24] f., 310 p., [1] f.	A-III	AP 102; EDIT 16 CNCE 22679

10	April 1509	Sallustius Crispus, Gaius	<i>C. Crispi Sallustii De coniuratione Catilinae. Eiusdem De bello Iugurthino</i> (L)	8	[8] f., 279, [1] p.	A-III	AP 103; EDIT 16 CNCE 37431
11	1512	Chrysoloras, Manuel	<i>Erotemata Chrysolorae</i> (G)	8	296 p.	B	AP 106; EDIT 16 CNCE 12129
12	April-May 1513	Oratores Graeci	<i>Orationes horum rhetorum Aeschinis. Lysiae. Alcidasantis ...</i> (G)	2	197 [i.e. 201], [3] p.; 162 [i.e. 163], [1] p.; 197, [3], 98-167 [i.e. 269], [3] p.	A-II	AP 112; EDIT 16 CNCE 37441
13	Sept. 1513	Plato	<i>Omnia Platonis opera</i> (G)	2	[16] f., 502 p., [1] f., 439, [1] p.	A-II	AP 114; EDIT 16 CNCE 37450
14	[1513]	Demosthenes	<i>Demosthenis Orationes duae & sexaginta</i> (G)	4	[14] f., 320, 286 [i.e. 288] p., [3] f.	A-II	EDIT 16 CNCE 16733
15	Jan. 1513/14	Pindarus	<i>Pindari Olympia, Pythia, Nemea, Isthmia</i> (G)	8	[8] f., 373, [1] p., [1] f.	C	AP 108; EDIT 16 CNCE 37448
16	15 Feb. 1513/14	Alexander Aphrodisias	<i>Alexandri Aphrodisieii In Topica Aristotelis, commentarii</i> (G)	2	[2] 3-281, [1] p., [1] f.	A-III	AP 118; EDIT 16 CNCE 1034
17	Aug. 1514	Athenaeus	<i>Deipnosophistou ten polumathestaten pragmateian nun exesti soi</i> (G)	2	α[2] 3-38, 294 p., [1] f.	A-III	AP 123; EDIT 16 CNCE 3340

Table 1. Paginated books printed by Aldus Manutius

*Index with page numbers and no pagination in the text.

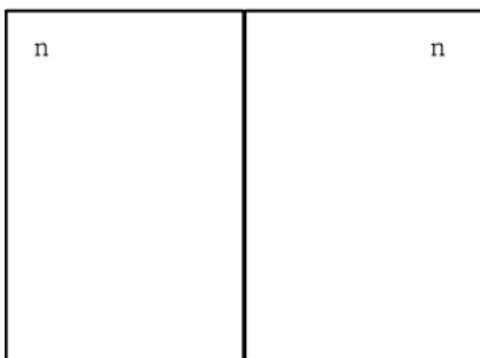
**AP: University research library, Los Angeles, Calif. 2001.

Aldus's 17 paginated books printed can be divided into three types according to the position of the page numbers (Figure 1). The first, Type A comprises books in which the page numbers were printed at the rightmost point of the headline on the recto page and at the leftmost point of the headline on the verso

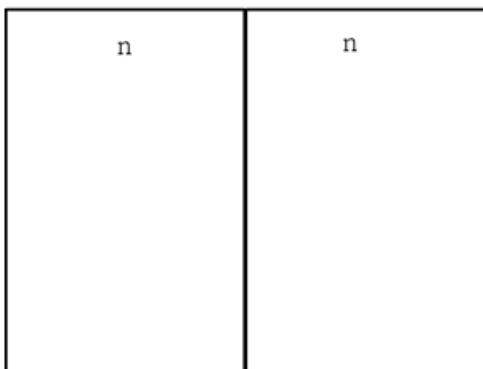
page (Table 1: Nos. 1, 3-5, 7-10, 12-14, & 16-17). Type A can be further divided into three subtypes. Subtype A-I features an index (No. 1). Subtype A-II features a table of contents (Nos. 4, 7-8, and 12-14); and Subtype A-III has neither an index nor a table of contents (Nos. 3, 5, 9-10, and 16-17).

The second type, Type B comprises books in which the page numbers were printed in the middle of the headline on both the recto and verso pages (Table 1: Nos. 2 and 11).

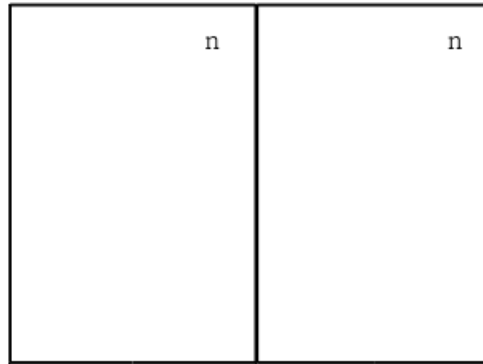
The final type, Type C comprises books in which the page numbers were printed at the rightmost area of the headline on both the recto and verso pages (Table 1: Nos. 6 & 15). Each of these types and subtypes are described in detail below.



Type A



Type B



Type C

Figure 1. Types of pagination by Aldus Manutius

3. *Pagination Type A*

3.1. *Subtype A-I (No. 1)*

Book No. 1 in Table 1 is the 1499 edition of Perotti's *Cornucopiae* (in-folio), which is the first book printed in Europe to feature printed page numbers.⁴ Aldus printed page and line numbers on each page of this text and referenced those numbers in the vocabulary index, which was comprised of an alphabetically-ordered Latin glossary, to allow the reader to easily locate a given word. Line numbers 1-59 were printed on each line in the inner margin of the text. Aldus used the word “semipagina” (half of one leaf) to refer to the modern concept of a “page” on the title page (1*r*) and in his comments after the preface (1*v*) as, at the time, there was no word to denote this concept.⁵

⁴ Paul Saenger states that early pagination appeared in ancient Greek papyri and medieval Coptic manuscripts (Saenger 1996, 254).

⁵ Aldus used the word “pagina” on the title page of *Epistolae diversorum phi-*

Aldus also printed an alphabetically-ordered vocabulary index with page numbers in the 1502 edition of Ovid's *Metamorphoses* (8vo) (No. *). However, he did not paginate this text. He again used "semipagina" in the explanatory note in the index (a4r).⁶ Some copies of this edition were paginated by someone else. For example, in the copies held at the Ambrosian Library (S.Q.#L. VIII.40) in Milan and the National Central Library of Florence (RARI.22.A.7.19.1/2), the page numbers were written in the upper right corner of the recto page, and upper left corner of the verso page. On the other hand, in the copy held at the Braidense National Library (A.O.9.10) in Milan, the page numbers were written in the lower right corner of the recto page and in the lower left corner of the verso page. This pagination was executed by a contemporary hand, and the same hand foliated the work in the upper right corner of the recto page.

3.2. Subtype A-II (Nos. 4, 7-8, and 12-14)

No. 4 is the 1504 edition of Demosthenes (in-folio). This edition includes a table of contents ("Pinakes" in Greek) with page numbers in the signature 2a2v. Aldus printed foliation numbers "4-5" on folios 4-5 in the first quire, however, other folios in the same quire were not foliated. The text was paginated 1-320 and 1-286, although many of the page numbers were misprinted. Aldus printed a second edition of Demosthenes in 1513 (No. 14) based on this first edition. The pagination is extremely similar in both editions, however, the preliminaries of the second edition did not have any foliation number.⁷

No. 7 is the 1508-09 edition of *Rhetores Graeci* (in-4to), the collected works of Ancient Greek rhetoricians. This edition was the first

losophorum, published on 17 April 1499. However, the word "pagina" in this book meant "folium".

⁶ Vecce 1998, 123-124.

⁷ Vecce 1998, 129-130.

paginated quarto edition. The title page (*1r) includes a brief table of contents with “semipagina” numbering, and the preliminaries include another detailed table of contents (“Pinakes”) of rhetoricians (*2v-*7v).

No. 8 is the 1509 edition of Plutarchus’s *Opuscula* (in-folio), including a detailed table of contents (“Pinakes”) (†2r-†7r) in the preliminaries. This edition was paginated until 1050 and is the largest paginated book printed by Aldus.

No. 12 is the 1513 edition of *Oratores Graeci* (in-folio), the collected works of Ancient Greek orators, in three volumes. The table of contents, “Pinakes”, was printed on the verso of the first pages of each volume. The first volume was paginated as 1-197 containing 201 pages and the second volume was paginated as 1-162 containing 163 pages. The third volume was wrongly paginated as 1-197, [3], and 98-167, and it actually contained 269 pages.

No. 13 is the 1513 edition of Plato’s *Opera* (in-folio). It was printed in two parts. The first part was paginated 1-502 and the second part was paginated 1-439. This edition included an index (“Index Librorum”) of Plato’s works (1 2v) without page numbering, and included a table of contents (“Pinakes”) with page numbers (1 5r).

3.3. Subtype A-III (Nos. 3, 5, 9-10, and 16-17)

No. 3 is the 1504 edition of Johannes Philoponus’s *Commentary on Posteriora Resolutoria of Aristotle* (in-folio). The text of the book was paginated 3-295, followed by a list of the different readings of Greek words, which appeared without pagination in Aristotle’s works (u1-x4r).

No. 5 is the 1505 edition of Aesopus (in-folio) which features a complicated pagination. The Greek text was printed in the quires a-d, while the Latin-translated text was printed in quires A-D. Each of the pairings, quires “a” and “A”, “B” and “b”, “c” and “C” and “D” and ‘d’ were bound as one quire, although quires b-d were paginated

while “a” and “A-D” were not. Page numbers 17-22 and 27-32 were printed in quire “b”, 33-48 were printed in quire “c”, and 49-64 were printed in quire “d” (Figure 2). In the following quires, “e-i”, only the Greek text was printed together with page numbers 65-142. The final part of the book comprised a selected list of proverbs from Lucillus of Tarrha, Dydmus and *Suda*. It consisted of quires “κ-o” in double column and features column numbers 1-172 in the middle of each column headline. At the end of the book Aldus used the Latin word “pagina” in the sentence “ut pagina paginae respondeat, & uersui uersus” (just as the page corresponds to the page and the line corresponds to the line) (o4r). Here, he first used the word “pagina” as to denote the modern “page”.

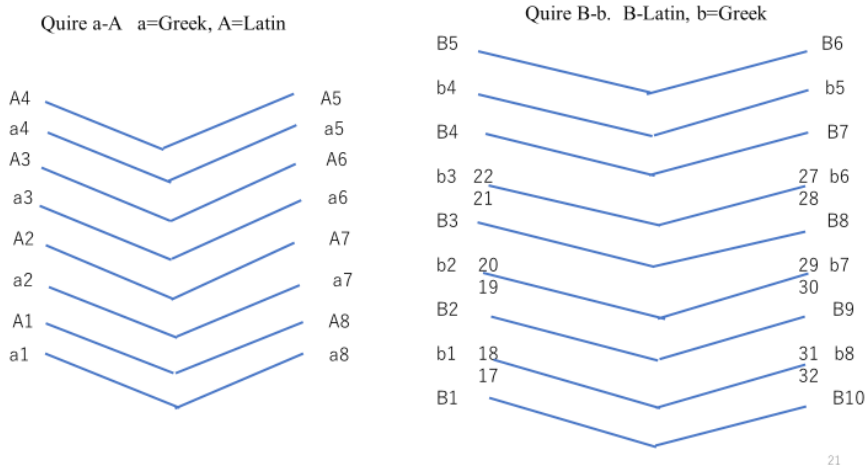
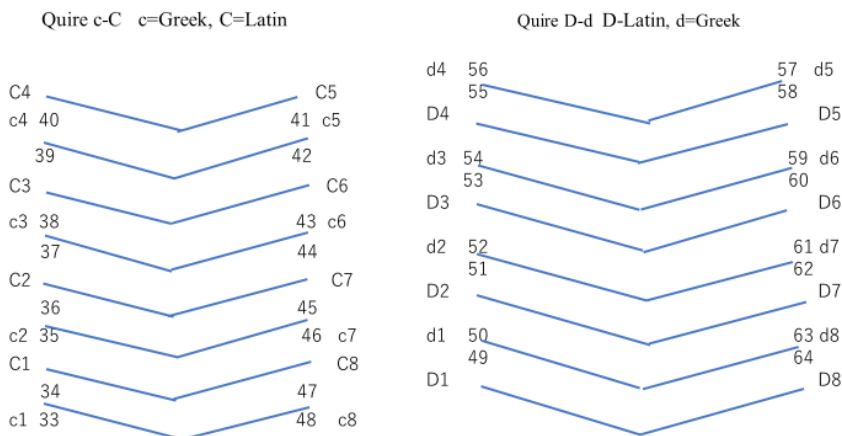


Figure 2/A. Constructions of quires a-A and B-b in the 1505 Aldine edition of *Aesopus*



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Figure 2/B. Constructions of quires c-C and D-d in the 1505 Aldine edition of *Aesopus*

No. 9 is the 1508 edition of Horatius (in-8vo) including the errata (a7r), in which the “charta” number was used to denote the same sense as “pagina”. The text of the book was paginated 1-310 including several misprints.

Aldus printed the 1509 edition of Sallustius (in-8vo) (No. 10) just after the above-mentioned Horatius (No. 9). The text of this edition was paginated 1-279 including just a few misprints.

No. 16 is the 1513/14 edition of Alexander Aphrodisias, *In topica Aristotelis commentarii* (in-folio). One sheet was interpolated in the first quire “A”, which was composed of the ten leaves A1, χ 1, A2-A7, χ 2 (blank) and A8. The pagination starts from page 3 (A2r).

No. 17 is the 1514 edition of Athenaeus, *Deipnosophistae* (in-folio). The pagination of “ α 3(A2r)- α 38 (B9v)” in the first two quires “A-B” was created especially for the preliminaries of the book. This marks the first attempt to paginate preliminaries independent of the text. The text was paginated 1-294 from a1r to t3v without the letter “ α ”. Moreover, line numbers were printed every five lines in the inner mar-

gin of the text. This edition would have included the index showing page and line number like the index of *Cornucopiae*, but an index could not be realized.

4. *Pagination Type B (Nos. 2 and 11)*

No. 2 is the 1503 edition of Lucianus (in-folio) which features an unusual pagination. The quires α - ω 2α - 2ϵ are paginated 1-449, including a table of contents (“Pinakes”) of Lucian’s works with page numbers on the last two pages. A blank page (2 ϵ 2v) follows page 449 (2 ϵ 2r), and page number “450” was printed in the middle of the headline of the next recto page (2 ζ 1r) where the works of Philostratus begin. After this page, even numbered pages are printed on the recto page and odd numbered pages are printed on the verso page. A table of contents for Philostratus’s works including page numbers was printed on the final page of the book. The second Aldine edition of Lucianus (EDIT 16 CNCE 37673) printed in 1522 has the same pagination as the first edition, thus, the printer of the second edition, Aldus’s successor Andrea Torresani (1451-1529), did not consider this pagination strange.

No. 11 is the 1512 edition of Manuel Chrysoloras’ *Erotemata* (in-8vo). This book was paginated from 3 (a2r) to 296 (t7v), including a few misprints.

5. *Pagination Type C (Nos. 6 and 15)*

No. 6 is the 1508 edition of Pliny the Younger’s *Epistolae* (in-8vo). This book is the first paginated book printed in octavo. The text of the book is paginated 1-525, including several misprints. However, the pagination is extremely unusual; a single parenthesis “(“ is printed before most page numbers, and other page numbers (e.g. pp. 70, 84,

232, 360) were attended by double parentheses “(“. Several other page numbers (e.g. pp. 1, 4-5, 12-13, 51-54, 60, 64, 103, 118, 125, 182, 278) were entirely without parentheses. This edition contained an index for personal names in “Libri I-IX” and a table of contents of “Liber X” featuring page numbers, located at the back of the book. The second Aldine edition of Pliny the Younger’s *Epistolae* was published in 1518. The page numbers of this edition are not attended with parentheses except for quires “a” and “b”. The index and table of contents of this edition had been included in the preliminaries.

No. 15 is the 1513 edition of Pindarus (in-8vo). This book was paginated 1-373 using Arabic numerals without parentheses. A table of contents with page numbers was included in the preliminaries (*3r -*4r). Both Type C books contained a table of contents.

6. *Aldus’s pagination and a table of contents*

These analyses clarify that Aldus preferred pagination Type A, although he employed Type B and Type C pagination for the octavo format. He tested all these types until 1508 and had completed Type A pagination by 1514. Nos. 1, 6 and * include indices; Nos. 2, 4, 6-8, and 12-15 include tables of contents with page numbers; and Nos. 1 and 17 had line numbers in the text. The other seven books (Nos. 3, 5, 9-11 & 16-17) have either an index nor a table of contents. At first, Aldus tried to edit a more precise index in the 1499 edition of *Cornucopiae*, he adopted pagination and line numbers here and provided an index only in the other two Latin books (Nos. * and 6). However, he included a table of contents in nine books (Nos. 2, 4, 6-8, and 12-15). These nine books were mostly Greek books. It is certain that Aldus’s pagination was mainly intended to indicate the positions of the text by page numbers in the table of contents.

7. *The influence and spread of Aldus's pagination*

Aldus's pagination immediately influenced some of his contemporary printers. The Aldine counterfeits printed by Balthazard I de Gabiano (d. 1517) and Barthélemy Trot in Lyon appeared almost instantaneously: it is supposed that Trot counterfeited an edition of Sallustius, *De conjuratione Catilinae, de bello Jugurthino*, in 1510⁸ based on the 1509 Aldine edition of Sallustius (Table 1, No. 10), and an edition of Horatius, *Poemata*, on 26 February 1511/12⁹ based on the 1509 Aldine edition of Horatius (Table 1, No. 9). These two counterfeit editions had Aldine pagination and included many more misprints of page numbers than the Aldine editions. However, the next paginated book in Lyon was not published until 1526, when Antoine du Ry, who had no relationship with Aldus, printed the first edition of Sante Pagnini's *Hebraicas institutiones*.¹⁰

Aldus was also influential in Florence. There, Filippo Giunta (1497-1517) published three paginated books based on the Aldine editions. The first of these is the 1514 edition of *Encheiridion grammatices eisagoges including Chrysorolas's Erotemata* (8vo).¹¹ In this edition, Giunta printed the page numbers in the middle of the headline in Aldine Type B, based on the 1512 Aldine edition of Chrysoloras's *Erotemata* (Table 1, No. 11). The second is the 1515 edition of Pliny the Younger's *Epistolae* (8vo),¹² which was paginated in Aldine Type C. This edition was clearly based on the 1508 Aldine edition of Pliny the Younger (Table 1, No. 6). However, Giunta did not use parentheses before page numbers in his edition. The last of these editions is Chrysoloras's *Enchiridium grammatices*, published in 1516.¹³ This

⁸ Baudrier 8 ser. 1910, 420; LYON 151-16 10059.

⁹ Baudrier 8 ser. 1910, 421; LYON 15-16 10060.

¹⁰ Baudrier 10 ser. 1913, 425; LYON 15-16, 11552.

¹¹ EDIT 16 CNCE 67886; Pettas 2013, 264, No. 68.

¹² EDIT 16 CNCE 28734; Pettas 2013, 276, No. 85.

¹³ EDIT 16 CNCE 12130; Pettas 2013, 284, No. 97.

edition was based on the 1512 Aldine edition. After Filippo Giunta passed away in 1517, paginated books were probably not printed in Florence until 1531, when his son Bernardo Giunta (d. 1551) printed a paginated edition of Erasmus's *Familiarium colloquiorum*.¹⁴

Aldus also influenced Johann Froben of Basel. Froben published Desiderius Erasmus's *Adagia* (in-folio) in 1513.¹⁵ This edition was based on the 1508 Aldine edition (EDIT 16 CNCE 18199) which was foliated,¹⁶ therefore Froben foliated his 1513 edition. After hearing the publication of this edition, Erasmus came to Basel in 1514 and demanded that Froben would print a newly revised and enlarged edition of *Adagia*. This new edition included page numbers and line numbers in its index in accordance with subtype A-I. It is possible that Erasmus brought the idea of pagination to Froben, because Erasmus had seen some paginated books when he stayed at Aldus's printing house in Venice for nine months in 1508.¹⁷

Aldus' influence on Froben can be seen clearly in Lodovico Ricchieri's *Lectionum antiquarum libri XVI* (in-folio) published by Froben in 1517.¹⁸ This edition was based on the 1516 Aldine edition (EDIT 16 CNCE 47593) Aldus planned and his successor Torresani printed. The first word in the index of both editions is the same: "Abacion pagina 195". But Froben printed page number 1 as "Fo.1", not "pagina 1". Later, in the 1521 edition of Cyprianus' *Opera*,¹⁹ he used "alteram foliorum faciem" (one of the surfaces of the leaf) to denote the modern word "page". He had not yet been convinced of the meaning of the word "pagina". However, he published many paginated editions of Erasmus's works and Greek and Roman classics between 1515 and 1527 (Figure 3).

¹⁴ Pettas 378, No. 237. This edition is not included in EDIT 16.

¹⁵ VD 16 E 1931.

¹⁶ Vecce 1998, 132-134.

¹⁷ Saenger, 1996, 276-277.

¹⁸ VD 16 R 2163 & R 2164.

¹⁹ VD 16 C 6509.

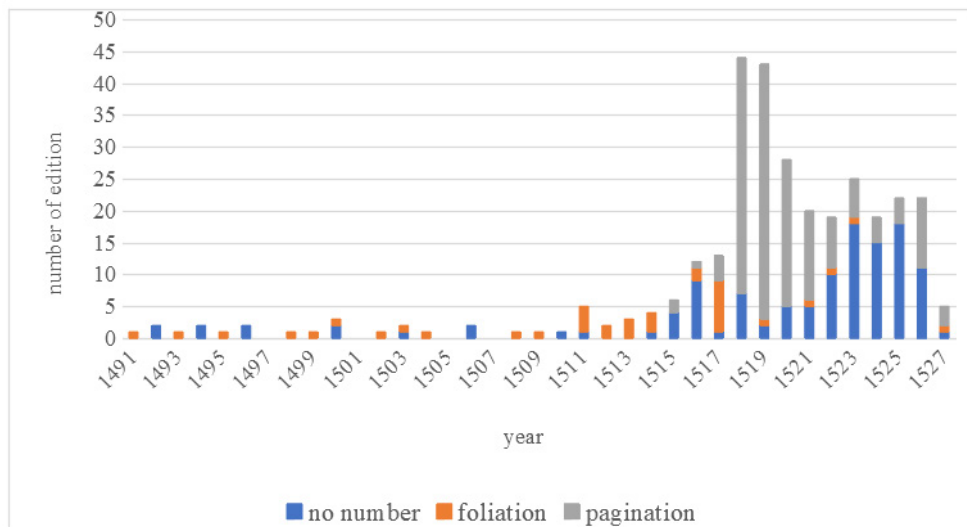


Figure 3. Statistics of pagination by Johann Froben, Basel (Sebastiani 2018)

Thanks to Froben’s efforts, many paginated books were published in Basel. Pagination eventually spread to Strasbourg, Cologne and Mainz in the Rhine River Basin, Paris in France, and Antwerp in the Low Countries until 1520. At the same time, pagination was executed at Leipzig and then Wittenberg in the eastern part of Germany, before arriving at Augsburg and Nuremberg in South Germany, and Milan and Rome in Italy. The first paginated book in London was printed in 1531 (Table 2).

<i>Year</i>	<i>Place of publication</i>	<i>Printer</i>	<i>Author, Title, format</i>	<i>Database and No.</i>
1499	Venezia	Aldo Manuzio	Perotti, Niccolò, <i>Cornucopiae, siue linguae latinae commentarii</i> . Folio.	ISTC ip00296000
[1510]	Lyon	[Balthélemy Trot]	Sallustius, <i>De coniuratione Catilinae. Eiusdem De bello Jugurthino</i> . 8vo.	LYON 15-16 10059

1511/12	Lyon	[Balthélemy Trot]	Horatius, <i>Poemata</i> . 8vo.	LYON 15-16 10060
1514	Firenze	Filippo Giunta	Chrysoloras, Manuel, <i>Encheiridion grammatices eisagoges</i> , 8vo.	EDIT 16 CNCE 67886
1515	Basel	Johann Froben	Erasmus, Desiderius, <i>Prouerbiorum Chiliadas</i> . Folio. 2 eds.	VD 16 E 1933, E 1934
1515	Basel	Johann Froben	Seneca, Lucius Annaeus, <i>Lucubrationes omnes</i> . Folio.	VD 16 S 5758
1515	Straßburg	Matthias Schürer	Erasmus, Desiderius, <i>Lucubrationes</i> . 4to.	VD 16 E 2745
1516	Köln	Kartaus St. Barbara	Cyprianus, Thascius Caecilius, <i>Libellus, de oratione dominica Christiano cuilibet patrem</i> . 8vo.	VD 16 C 6534
1516	Leipzig	Valentin Schumann	Croke, Richard, <i>Tabulae, Graecas literas compendio discere cupientibus</i> . 4to.	VD 16 C 5896
1519	Mainz	Johann Schöffler	Erasmus, Desiderius, <i>Ratio seu Methodus compendio perueniendi ad uerã Theologiam</i> . 8vo.	VD 16 E 3516
1519	Mainz	Johann Schöffler	Livius, Titus, <i>Duobus libris auctus</i> . Folio.	VD 16 L 2091
1519	Paris	Conrad Resch and Pierre Vidoué	Hutten, Ulrich von, <i>Aula Dialogus</i> . 4to.	USTC 145088
1520	Antwerpen	Michael Hillenius Hoochstratanus	Novum Testamentum	USTC 437137
1520	Wittenberg	Melchior Lotterd, d.J.	Plato, <i>Platonis Axiochus</i> . 8vo.	VD 16 P 3310

1521	Milano	Giovanni Castiglione	Hutten, Ulrich von, <i>Aula. Dialogus. Iulius</i> . 8vo.	EDIT 16 CNCE 23022
1522	Augsburg	Johann Rynmann; Hagenau: Heinrich Gran	Eusebius, <i>De Euangelica præparatione</i> . 4to.	VD 16 E 4299
1522	Hagenau	Thomas Anshelm	Erasmus, Desiderius, <i>Parabolaë siue Similia</i> . 8vo.	VD 16 E 3251
1524	Frankfurt am Main	Christian Egenolff, d.Ä	Bugenhagen, Johannes, <i>Deuteronomion. Samuel Propheta</i> . 8vo.	VD 16 ZV 1581
1525	Nürnberg	Johann Petreius	Bugenhagen, Johannes, <i>In regum duos ultimos libros</i> . 8vo.	VD 16 B 9331
1526	Roma	Francesco Minizio Calvo	Bona, Giacomo, <i>De vita et gestis Christi</i> . Folio.	EDIT 16 CNCE 6804
1528	Leuven	Thierry Martens	Campen, Johannes van, <i>Ex variis libellis Eliae grammaticorum omnium</i> . 4to.	USTC 404837
1531	London	Petrus Treuerus	Aesopus, <i>Aesopi Phrygis et vita ex maximo Planude desu[m]pta, et fabellæ iucu[n]dissime</i> . 8vo.	ESTC S90044

Table 2. The first paginated book published in the leading publishing centres in the fifteenth and sixteenth centuries

Bibliografia

- Baudrier 1910 = Henri-Louis Baudrier, *Bibliographie lyonnaise. Recherches sur les imprimeurs, libraires, relieurs et fondeurs de Lettres de Lyon au XVIe siècle*, 12 sér. Lyon, L. Brun, 1895-1921.
- EDIT 16 = Istituto Centrale per il Catalogo Unico delle biblioteche italiane e per le informazioni bibliografiche, EDIT 16, <http://edit16.iccu.sbn.it/web_iccu/imap.htm> (last seen: 20.01.2020).
- ESTC = The British Library, ESTC, <http://estc.bl.uk/F/?func=file&file_name=login-bl-estc> (last seen: 20.01.2020).
- Febvre - Martin 1958 = Lucien Febvre - Henri-Jean Martin, *L'apparition du livre*, Paris, Éditions A. Michel, 1958.
- GLN 15-16 = La Bibliothèque de Genève, GLN 15-16, <<http://www.ville-ge.ch/musinfo/bd/bge/gln/>> (last seen: 20.01.2020).
- Gültlingen 1992-2019 = Sybille von Gültlingen, *Bibliographie des livres imprimés à Lyon au seizième siècle*, avec la collaboration de René Badagos, Jean-Paul Laroche, t. 1-15, Baden-Baden, Bouxwiller, Valentin Koerner, 1992-2019.
- Harris 2016 = Neil Harris, *Aldus and the making of the myth (or What did Aldus really do?)*, in *Aldo Manuzio: la costruzione del mito*, a cura di Mario Infelise, Venezia, Marsilio, 2016, p. 346-385.
- ISTC = The British Library, ISTC, <http://data.cerl.org/istc/_search> (last seen: 20.01.2020).
- LYON 15-16 = William Kemp et Jean-François Vallée, LYON 15-16, <<http://www.lyon15-16.org/>> (last seen: 20.01.2020).
- McKerrow 1948 = R.B. McKerrow, *An introduction to bibliography for literary students*, Oxford, At the Clarendon Press, 1948.
- Pettas 2013 = William A. Pettas, *The Giunti of Florence: a Renaissance printing and publishing family; a history of the Florentine firm and a catalogue of the editions*, New Castle, DE, Oak Knoll Books, 2013.
- Saenger 1996 = Paul Saenger, *The impact of the Early Printed Page on the*

- History of Reading*, «Bulletin du Bibliophile», 3 (1996), p. 237-301.
- Sebastiani 2018 = Valentina Sebastiani, *Johann Froben, printer of Basel: a biographical profile and catalogue of his editions*, Leiden, Brill, [2018].
- Smith 1988 = Margaret M. Smith, *Printed foliation. Forerunner to printed page-numbers?*, «Gutenberg-Jahrbuch», (1988), p. 54-70.
- University research library, Los Angeles, Calif. 2001 = *The Aldine Press: catalogue of the Ahmanson-Murphy collection of books by or relating to the press in the Library of the University of California, Los Angeles, incorporating works recorded elsewhere*, Berkeley, University of California Press, 2001.
- USTC = Andrew Pettegree (director), USTC, <<http://ustc.ac.uk/index.php/search>> (last seen: 20.01.2020).
- VD 16 = Bayerische Staatsbibliothek, <https://opacplus.bibbv.de/Touch-Point_touchpoint/start.do?SearchProfile=Altbestand&SearchType=2> (last seen: 20.01.2020).
- Vecce 1998 = Carlo Vecce, *Aldo e l'invenzione dell'indice*, in *Aldus Manutius and Renaissance culture: essays in memory of Franklin D. Murphy: acts of an International Conference, Venice and Florence, 14-17 June 1994*, edited by David S. Zeidberg; with the assistance of Fiorella Gioffredi Superbi, Florence, Leo S. Olschki, 1998, p. 109-141.

Abstract

Pagination is an important element of the modern book, but the development of pagination and printing techniques have not been adequately studied. The author of this paper discusses pagination by Aldus Manutius (ca. 1450-1515) and his influence on the contemporary printers. Aldus printed 17 paginated books between 1499 and 1514, of which 13 books were printed in Greek (Table 1). His pagination can be divided into three types. Type A comprises books in which the page numbers were printed at the rightmost point of the headline on the recto page and at the leftmost point of the headline on the verso page. Type B comprises books in which the page numbers were printed in the middle of the headline on both the recto and verso pages. Type C comprises books in which the page numbers were printed at the rightmost point of the headline on both the recto and verso pages (Figure 1). Aldus' preferred Type A and trialled Type B and C paginations when printing in octavo format. He tested all these types until 1508. Among these 17 paginated books, Aldus provided table of contents to nine books (Nos 2, 4, 6-8, and 12-15) and provided index to two books (Nos 1 and 6). But other seven books (Nos 3, 5, 9-11 and 16-17) were not provided any table of contents and index. It is certain that Aldus's pagination was mainly intended to indicate the positions of the text by page numbers in a table of contents. His works influenced directly Lyon, Florence, and Basel. Johann Froben of Basel (ca. 1460-1527) printed many paginated books including Erasmus's works, and Greek and Roman classics (Figure 3). Due to Froben's efforts, pagination spread throughout the Rhine River Basin, Paris, and Antwerp until 1520, and then appeared at some leading centres of printing in East and South Germany, and England (Table 2).

Pagination; Aldus Manutius; Lyon; Florence; Basel; Johann Froben

L'impaginazione è un elemento importante del libro moderno, ma lo sviluppo delle impaginazioni e delle tecniche di stampa non è stato abbastanza studiato. L'autore di questo articolo discute dell'impaginazione di Aldo Manuzio (1450-1515)

ca.) e della sua influenza sulla storia del libro. Aldo stampò 17 libri impaginati tra il 1499 e il 1514, di cui 13 libri in greco (Tabella 1). La sua impaginazione può essere divisa in tre tipi. Il tipo A comprende libri in cui i numeri di pagina sono stati stampati nel punto più a destra del titolo nella pagina di recto e nel punto più a sinistra del titolo nella pagina di lato. Il tipo B comprende libri in cui i numeri di pagina sono stati stampati al centro del titolo su entrambe le pagine recto e verso. Il tipo C comprende libri in cui i numeri di pagina sono stati stampati nel punto più a destra del titolo su entrambe le pagine recto e verso (Figura 1). Le impaginazioni preferite di Tipo A e di tipo B e C di Aldo durante la stampa in formato ottavo. Ha testato tutti questi tipi fino al 1508. Tra questi 17 libri impaginati, Aldo ha fornito il sommario (table of contents) con i numeri di pagina a nove libri (nn. 2, 4, 6-8 e 12-15) e ha fornito l'indice a due libri (nn. 1 e 6). Ma ad altri sette libri (nn. 3, 5, 9-11 e 16-17) non è stato fornito alcun sommario e indice. È certo che l'impaginazione di Aldo aveva principalmente lo scopo di indicare le posizioni del testo in base ai numeri di pagina in un sommario (a table of contents). Le sue opere influenzarono direttamente Lione, Firenze e Basilea. Johann Froben di Basilea (ca. 1460-1527) ha stampato molti libri impaginati, tra cui le opere di Erasmo e i classici greci e romani (Figura 3). Grazie agli sforzi di Froben, l'impaginazione si diffuse in tutto il bacino del Reno, a Parigi e ad Anversa fino al 1520, per poi comparire in alcuni importanti centri di stampa nella Germania orientale e meridionale e in Inghilterra (Tabella 2).

Paginazione; Aldo Manuzio; Lione; Firenze; Basilea; Johann Froben