

Parchment and Scribes in the Malatestian Scriptorium

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Parchment and Scribes in the Malatestian Scriptorium

The library still preserves 343 manuscripts

128 out of these codices were copied and illuminated for Malatesta from 1445 to 1465

Actually the codicological units commissioned by Malatesta are 136

Parchment and Scribes in the Malatestian Scriptorium

The manuscripts commissioned by Malatesta present common features:

- **parchment made of goatskin**
- **size between 500 and 650 mm**
- **decoration (white-vine stem borders)**
- **Malatesta's coat of arms (the fence) on the lower margin of the first folio**



*Alm. Secund. Separe
luc. s. Epist. p. 101*

P. E. C. V. E. N. T.

hortans. ut eptas quas paulo
accuratus scripseram collige-
rem. publicanq; collegi non ser-
uato tempore online. neq; ubi

notam componebam. si ut quaeq; immanus uenerat. Su-
per et ut nec te consilia. nec me peniteat obsequii. Ita u-
fiet. ut eas quas ad huc nec lecte taceat requiram. Et si
quas addidero non supprimam. Val.

P. E. C. V. E. N. T.

Quia tuiorem aduentum tuum prorsus libe-
quem prioribus eptis promissam exhibeo. hunc
tuo ex consuetudine tua. et legas et emendes. eo magis qd
nihil ante peque eadem stilo scripsisse uideor. Tempta-
ui mihi imitari demosthenem scriptum. calium nup meū
figulis dumtaxat oronis. Tantos uitor pauci equitius
adsequi possunt. Nec mī ipsa huc ueror ne improbe-
dicam. emulationi repugnauit. Erat enim ppe tota
conuentione dicendi. Quod me longe desidia meior
mente excitauit si modo il sum ego qui excitari posset.
N en mī oīno. Martini fugitius. quoties
paulum iterare decider. non intempertius amocinanti-
bus admoneremur. Accet et non tristes et uolebamur.
N et dīq; putet me sub hac exceptione uoniam postulare
non quo magis nitendam. lunam tuam confitebor. et
ipsum et contubernales ab aduione non abhorreo. si
mō tuorasse errori nro albion calculum. adiectis.



BEATISSIMI AVRELI AVGVSTINI
DE CIVITATE DEI LIB: PRIMVS INCIPIT



ad Arcellinum
LORIOSISSI
MAM CIVI
TATEM DEI
SIVE IN HOC
TEMPORV
CVRSV CV
INTER IM
PIOS PERE
GRINATVR

ex fide vivens: sine in illa stabilitate sedis eterne: qua
nunc expectat per patientiam quoad usq. iustitia converta
tur in iudicium: deinceps adeptura per excellentiam iustiti
a ultima & pace perfecta: hoc opere ad te iustitiam: & mei
promissione: debito defendere: aduersus eos qui conditoi ei
deos suos praefertunt fili carissime: Marcelline suscepi: ma
gnum opus & arduum: sed deus adiutor noster est: Nam
scio quibus viribus opus sit ut persuadeatur superbis: quia
sit virtus humilitatis: qua fit ut omnia terrena calcantur
temporalis mobilitate nutantia non humano usurpata sit
tu: sed diuina gratia donata celsitudo eius transcendat. Re
enim & conditor civitatis huius: de qua loqui institui
in scriptura populi sui sententiam diuinae legis aperuit: qua
dictum est: Superbis deus resistit: humilibus autem dat
gratiam. Hoc vero quod dei est superbiae quodq. anime spirit
affectus: amari sibi in laudibus dici: parere subiectus & de
bellare superbos: Unde etiam de terrena ciuitate: que di
dominari appetit & si populi seruiant ipsa ei dominandi
libido dominatur. Non est ptereundum silentio quicquid



Parchment and Scribes in the Malatestian Scriptorium

The present project aims at identifying one of the features of the parchment used by the scribes, by measuring the thickness of all the leaves of every manuscript

Parchment and Scribes in the Malatestian Scriptorium

State of the art ...

The thickness of parchments in Latin manuscripts varies between 100 and 400 microns

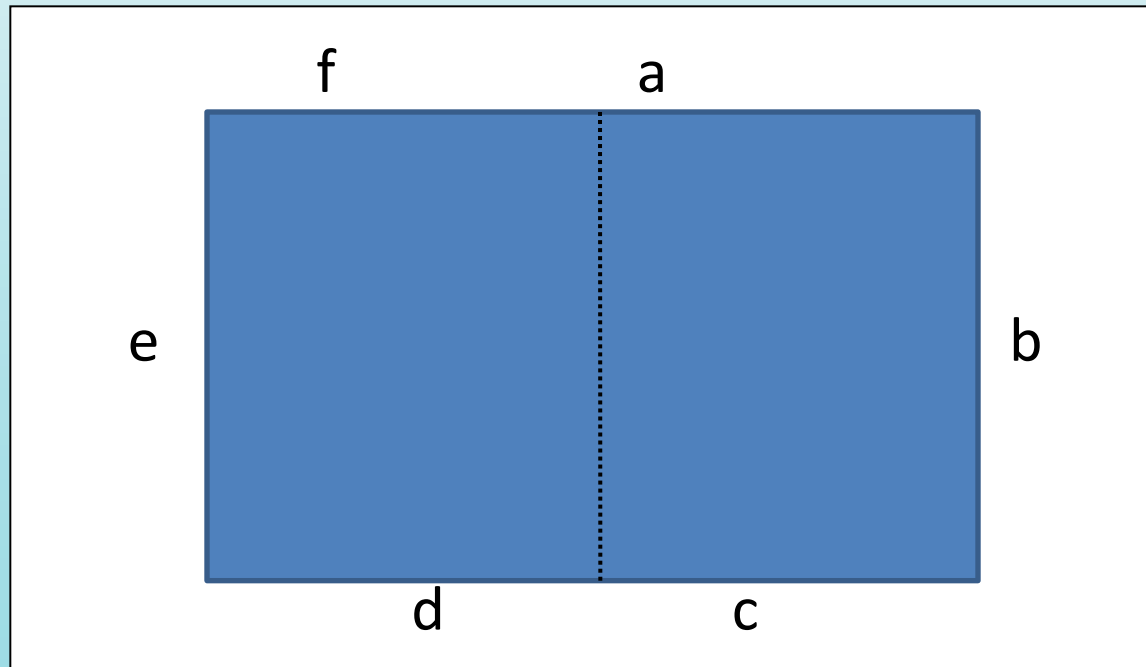
It decreases from early to late Middle Ages

The external bifolia of the quires are usually thicker than the internal ones

The thickest and irregular skins are generally used for the last quires

Parchment and Scribes in the Malatestian Scriptorium

Thickness measured in six points of every bifolium





Parchment and Scribes in the Malatestian Scriptorium

Measuring Tool

- Mitutoyo Digimatic Micrometer (Japan)
- Measure in microns (0,001 mm)
- Instrumental error in a single measurement up to 2
– 4 μm

Parchment and Scribes in the Malatestian Scriptorium

2886 quires

83889 measurements

2612 quinions (90,50%)

78360 measurements

Parchment and Scribes in the Malatestian Scriptorium

Arithmetic mean: the average of a collection of numbers, obtained by dividing the sum of the numbers by their quantity

Standard deviation: the average of the differences of each number from the mean value (i.e., the average of the squares of the differences between every random variable and the arithmetic mean)

Coefficient of variation: the ratio of the standard deviation of a distribution to its arithmetic mean

Parchment and Scribes in the Malatestian Scriptorium

Median: the numerical value separating the higher half of a distribution from the lower half. The *median* of a finite list of numbers can be found by arranging all the numbers from the lowest value to the highest value and picking the middle one. If there is an even number of data, the median is then the mean of the two middle values.

Parchment and Scribes in the Malatestian Scriptorium

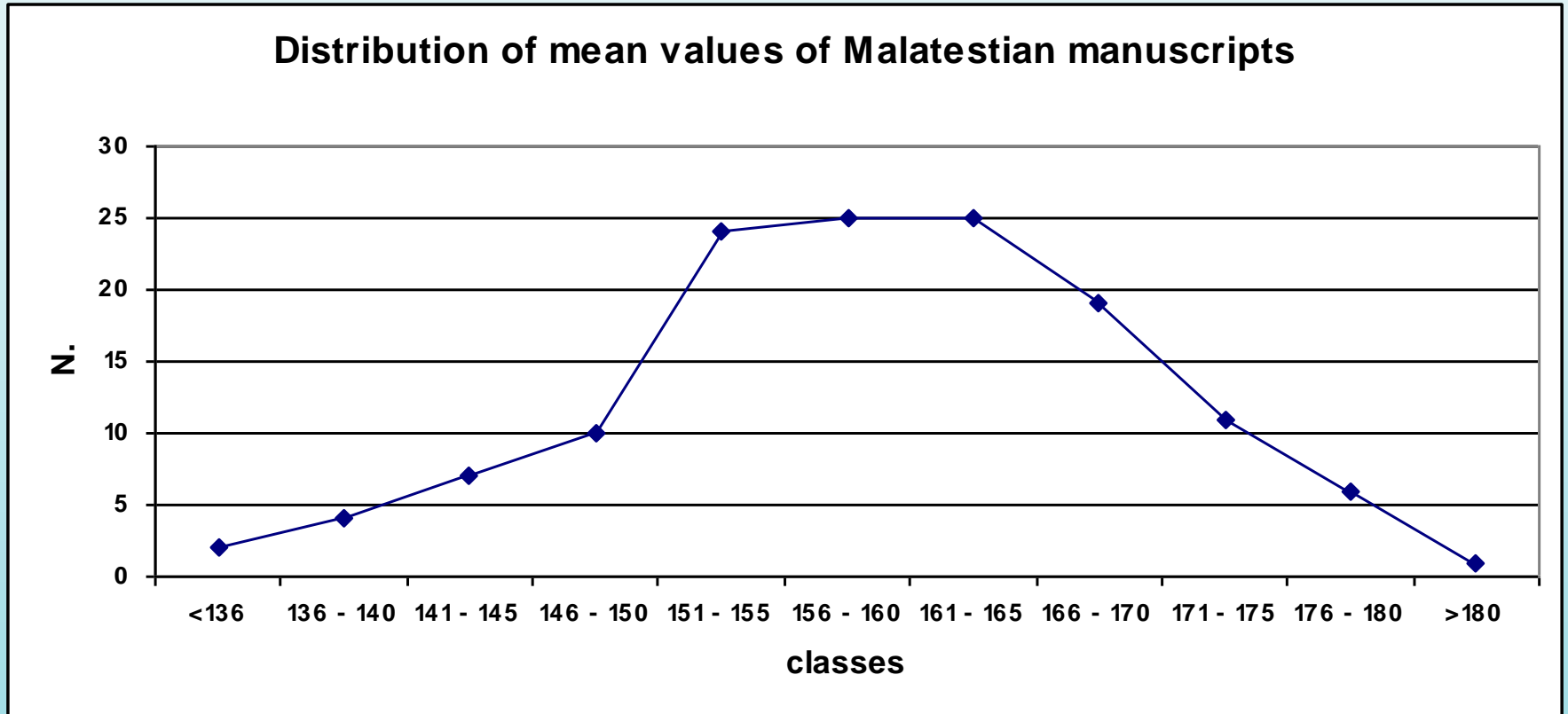
If the arithmetic mean is higher than the median, the values above the mean are fewer than those below, but more distant from the mean;

conversely, when the median is higher than the mean, there are fewer values below the mean, but they are more distant from the mean.

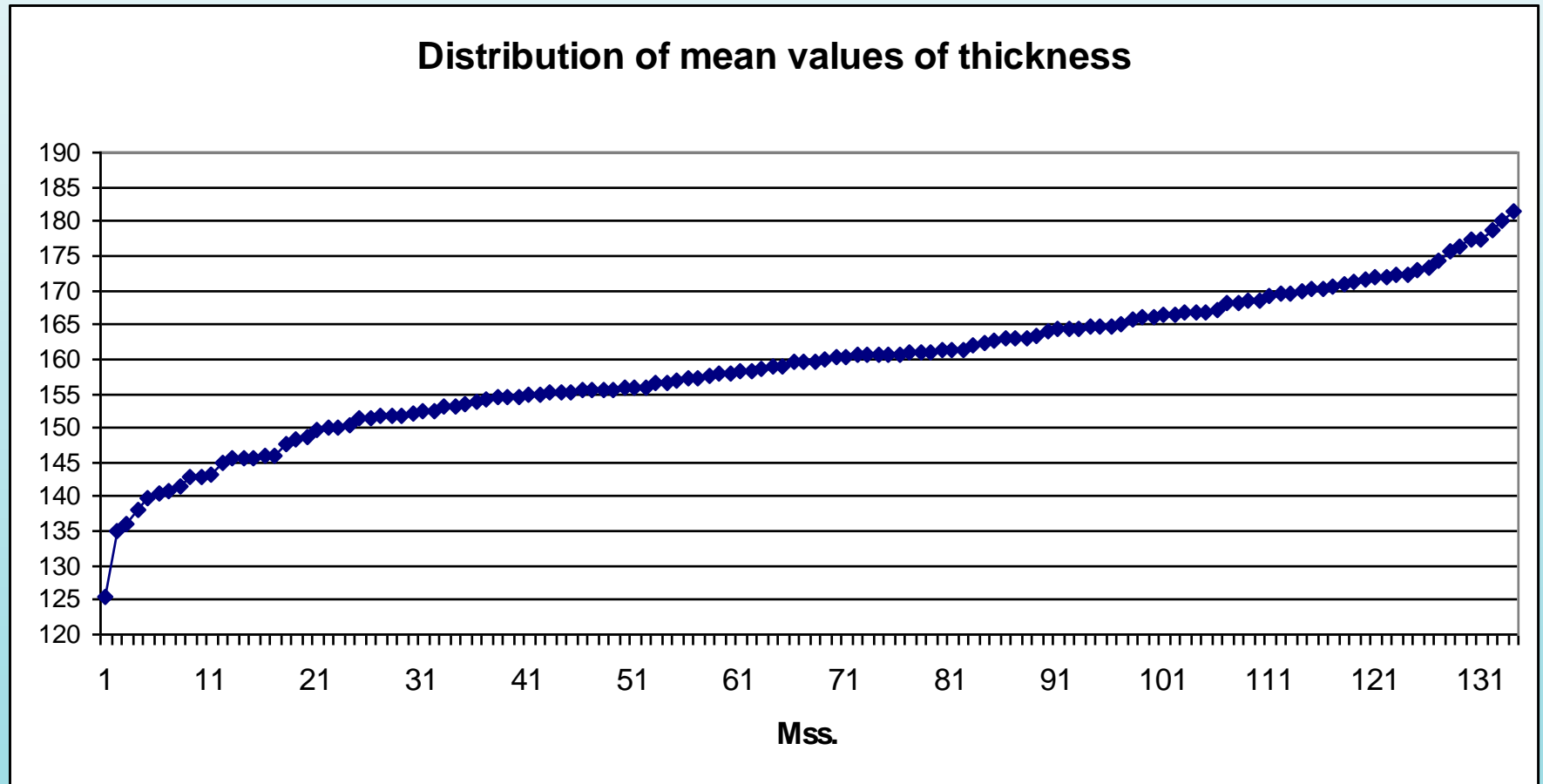
Parchment and Scribes in the Malatestian Scriptorium

	Mean of mean values	Minimum of mean values	Maximum of mean values	Range	Median of mean values
Thickness	158,924	125,329	181,452	56,122	159,497
S. D.	32,519	22,511	41,202	18,69	32,818
C. V.	20,462	15,459	26,274	10,815	20,604

Parchment and Scribes in the Malatestian Scriptorium



Parchment and Scribes in the Malatestian Scriptorium



Parchment and Scribes in the Malatestian Scriptorium

CORRELATIONS	ratio
S. D. / (b+h)	0,55
mean thick. / (b+h)	0,44

Parchment and Scribes in the Malatestian Scriptorium

points	mean	s. d.	c. v.	median	s. d	c. v.
a	152,954	26,256	17,193	153,006	26,723	17,376
b	171,560	37,594	21,805	172,925	37,651	21,718
c	152,593	27,191	17,834	153,552	27,483	17,931
d	152,893	27,453	17,970	153,508	27,850	18,142
e	170,860	37,321	21,963	172,113	38,007	22,004
f	152,692	26,319	17,317	152,567	26,531	17,447

Parchment and Scribes in the Malatestian Scriptorium

- Points 'b' and 'e' are thicker in 104 codicological units out of 136
- Points 'a - c' or 'd - f' are thicker in 15 codicological units out of 136
- The distribution of thickness is not regular in 17 codicological units out of 136

Parchment and Scribes in the Malatestian Scriptorium

bifolium	mean	s. d.	c. v.	median	s. d.	c. v.
1	162,010	32,458	20,077	163,318	33,014	20,011
2	158,629	32,585	20,560	159,563	33,314	20,672
3	159,038	31,986	20,120	160,778	32,256	20,073
4	157,860	31,960	20,235	158,463	32,118	20,188
5	156,906	32,040	20,416	158,212	32,056	20,316

Parchment and Scribes in the Malatestian Scriptorium

Quires	section	mean	s.d.	c.v.
18 (4 mss.)	I	156, 368	31, 316	20, 099
	II	156, 115	32, 023	20, 537
	III	160, 874	32, 216	20, 130
20 (7 mss.)	I	162, 058	32, 012	19, 725
	II	162, 764	34, 205	21, 093
	III	163, 617	31, 759	19, 388
24 (8 mss.)	I	159, 903	32, 279	20, 248
	II	157, 031	32, 927	20, 961
	III	156, 028	30, 608	19, 671
35 (2 mss.)	I	168, 354	27, 131	16, 034
	II	164, 668	30, 781	18, 795
	III	166, 083	35, 833	21, 607

Parchment and Scribes in the Malatestian Scriptorium

Further collected data beside the thickness:

Scribe

Date

Origin

Script

Size



Parchment and Scribes in the Malatestian Scriptorium

Identified Scribes: 11

- Andreas Catrinellus
- Franciscus de Figino (Francesco da Figline)
- Iacobus de Pergula (Iacopo da Pergola)
- Iacobus Macarius Venetus
- Iohannes de Spinalo (Jean d'Épinal)
- M. B.
- Mathias Kuler
- Thomas Blawart
- [Iohannes Maguntinus]
- [Petrus de Traiecto]
- [Scribe of *Tacitus*]

Parchment and Scribes in the Malatestian Scriptorium

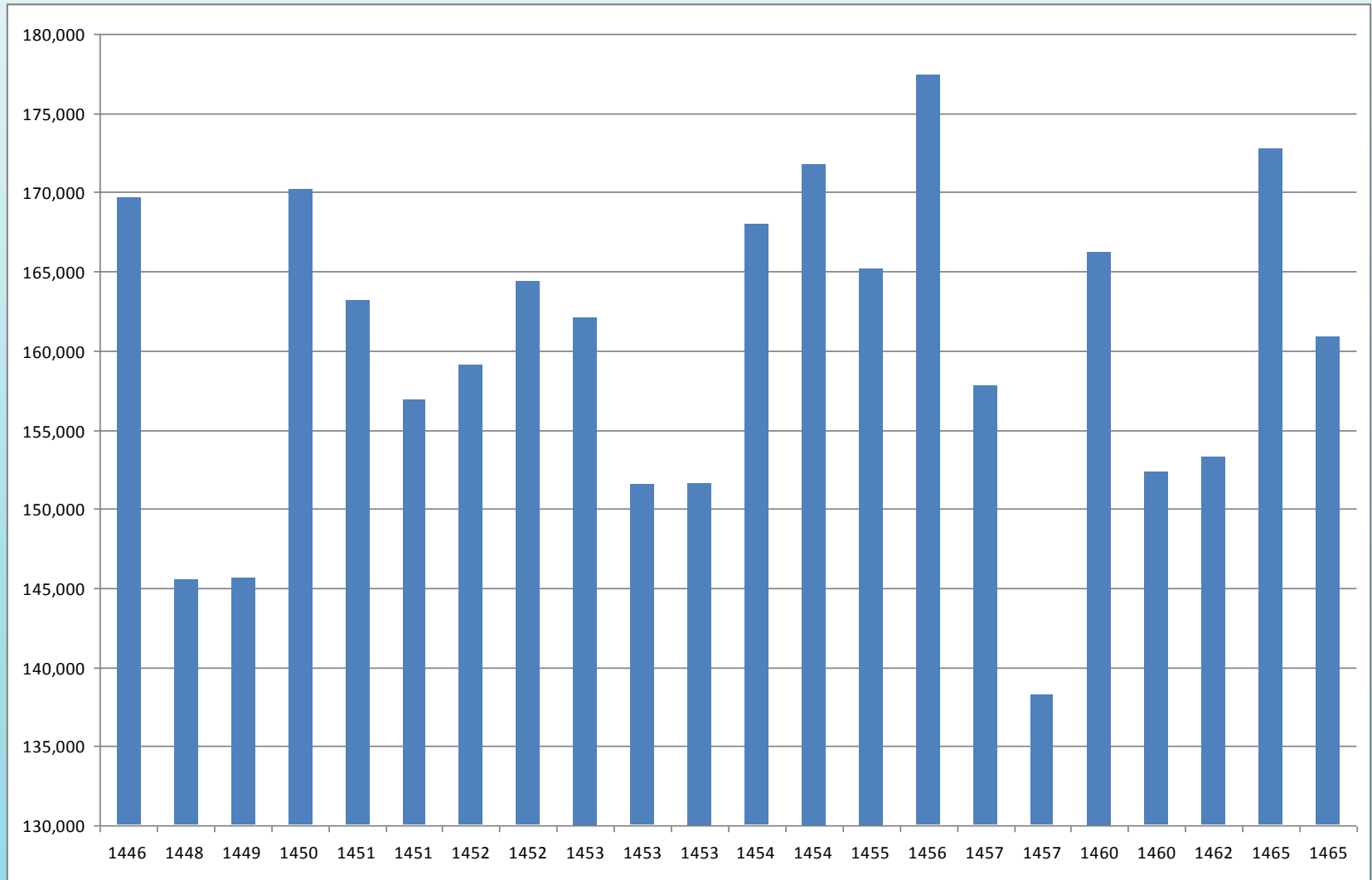
scribe	mean	s. d.	c. v.
[Scribe of <i>Tacitus</i>]	154, 736	30, 459	19, 721
M. B.	155, 648	32, 511	20, 887
Mathias Kuler	157, 636	34, 578	21, 935
[Iohannes Maguntinus]	158, 351	33, 239	20, 945
General mean	158, 924	32, 519	20, 604
Franciscus de Figino	159, 451	32, 901	20, 738
Iohannes de Spinalo	159, 936	32, 945	20, 598
Iacobus de Pergula	161, 592	30, 722	19, 008
Thomas Blawart	166, 210	36, 512	21, 968
Iacobus Macarius Venetus	166, 588	33, 575	20, 154
Andreas Catrinellus	166, 839	34, 562	20, 665
[Petrus de Traiecto]	166, 870	32, 782	19, 645

Parchment and Scribes in the Malatestian Scriptorium

scribe	mean	s. d.	c. v.
Franciscus de Figino			
Mss. for M. N.	159, 451	32, 901	20, 738
Mal. S.XXIV.5	144, 246	26, 767	18, 556
Iacobus Macarius Venetus			
Ms. for M. N.	166, 588	33, 575	20, 154
Vat. lat. 348	156, 084	26, 808	17, 175
Petrus de Traiecto			
Ms. for M. N.	166, 870	32, 782	19, 645
Vat. Urb. lat. 488	141, 994	21,714	15,292
Vat. Urb. lat. 383	147, 181	22,893	15, 555

Parchment and Scribes in the Malatestian Scriptorium

Data: 22 codicological units dated between 1446 and 1465



Parchment and Scribes in the Malatestian Scriptorium

origin	mean	s. d.	c. v.
Bertinoro (3)	158, 804	33, 236	20, 894
Cesena (2)	169, 510	37, 332	22, 023
Fano (1)	170, 174	35, 151	20, 656
Rimini (1)	169, 698	27, 644	16, 290

Parchment and Scribes in the Malatestian Scriptorium

script	mean	s. d.	c. v.
Littera moderna (21)	156,912	33,569	21,440
General mean (135)	158,924	32,519	20,604
Littera antiqua (114)	159,295	32,326	20,282

Parchment and Scribes in the Malatestian Scriptorium

size	mean	s. d.	c. v.
mm 501-550 (11)	150, 624	27, 109	18, 018
mm 551-600 (52)	154, 459	32, 358	20, 988
general mean (135)	158, 924	32, 519	20, 604
mm 601-650 (62)	163, 778	34, 158	20, 873

Parchment and Scribes in the Malatestian Scriptorium

RESULTS:

- The thickness of Malatestian parchment is on the average of Western medieval manuscripts (according to our previous results between 150 and 200 μm , not depending on the date)
- The same is true for the homogeneity of parchment, i.e. the inverse of the c.v. (c. v. about 20)
- Points 'b' and 'e' are thicker than the other four, being on the animals' spine
- The external bifolia of the quires are thicker than the internal ones
- There is no regular increase of thickness or decrease of homogeneity from the beginning to the end of the manuscripts

Parchment and Scribes in the Malatestian Scriptorium

- There is a very small difference among the folios used by the eleven scribes (from 154,736 to 166,870, i.e. less than 8%)
- The parchment of four manuscripts written by three of these scribes for other commissions proved to be thinner and more homogeneous than that they used for Malatesta. The quality of Malatestian parchment appears therefore to be somewhat poorer than that used for other clients
- The thickness of Malatestian parchment doesn't vary in a significant way during the Malatestian era (1446-1465)
- There is no important difference between the seven manuscripts whose origin is certainly known and the other ones

Parchment and Scribes in the Malatestian Scriptorium

- The folios of manuscripts in *littera antiqua* and *littera moderna* differ by only ca. 1,5%
- The parchment of the bigger folios is thicker and less homogeneous than that of the smaller ones
- So on the one hand the quality of parchment used for Malatesta differs from that used for other commissions; on the other hand there appears to be no significant difference in the Malatestian scriptorium either over the years or over the scribes. This suggests – but of course it is only an open question – that the sources of supply and methods of treatment of parchment were unique or at least standard and relatively invariant throughout the functioning of the Malatestian scriptorium.

Parchment and Scribes in the Malatestian Scriptorium

... compared with our previous results

Library	Shelfmark	Date	Author/Title	mean	s. d.	c. v.
Lucca	490	Sec. VIII/IX	Miscellany	17, 50	2, 86	16, 34
Cesena, Malatestiana	S.XXI.5	Sec. IX	Isidorus, Etimologiae	15, 76	5, 29	33, 57
Cesena, Mal.	Piana 3.210	1104 August 15	Evangelary	19, 53	4, 19	21, 43
Venezia, Marc.	II.46	Sec. XI/XII	Isidorus, Etimologiae	14, 23	3, 08	21, 64
Cesena, Mal.	Piana 3.207	Sec. XIII	Decretum Gratiani	15, 01	2, 57	17, 11
Bibl. Apost. Vat.	Val. lat. 3793	Sec. XIII/XIV	Canzoniere	14, 18	2, 34	16, 50

