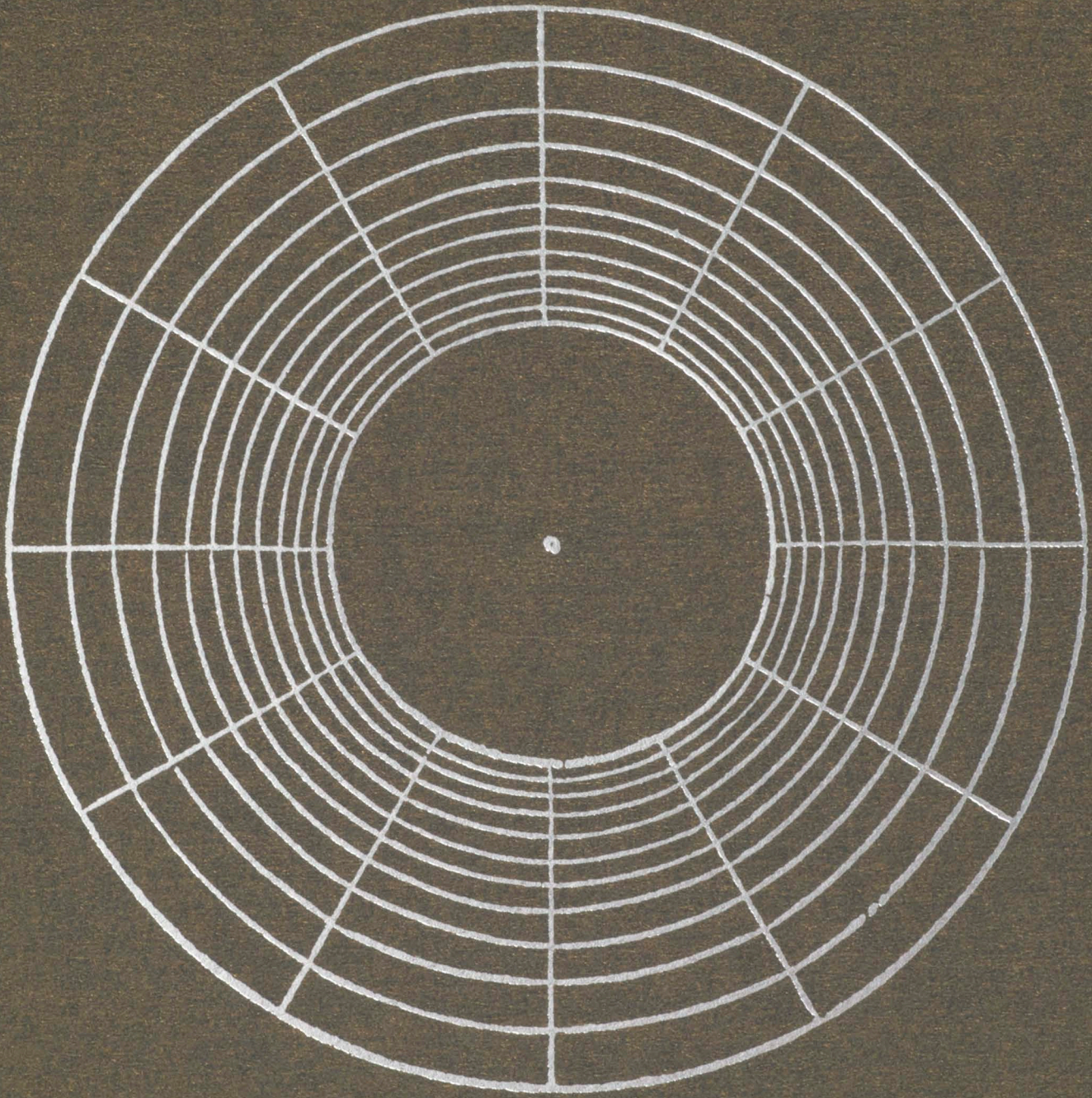


† DE·ARTIFICIALI·PERSPECTIVA·



·VIATOR





the earliest printed treatise on perspective:  
Jean Pèlerin · *De artificiali perspectiva* · Toul 1505

BOUND WITH  
Vitruvius · *De architectura libri decem* · Venice 1511

BOUND WITH  
Albrecht Dürer · *Underweysung der Messung* · Nuremberg 1525

offered for sale by  
ROBIN HALWAS LIMITED

price on request

PÈLERIN, Jean, *called Viator*

Vihiers (Anjou) *circa* 1433–1440 — Toul 1524

*De artificiali p[er]spectiva.*

Toul, Pierre Jacobi, 9 July (*i.e.* 23 June) 1505

To anyone who is familiar with fifteenth-century and early sixteenth-century pictures, and especially with the book illustration of that time, the first sight of a copy of the *De artificiali perspectiva* ... comes with a sort of a shock.

The many pictures of known buildings with which Viator exemplified his perspective method are so clear, so reasonable, so just, that they are wholly out of tune with anything that had been done before them or that was done for a long time afterwards. Such a sudden step across the centuries into a completely modern system of pictorial organization and point of view can hardly have happened on any other occasion.

William M. Ivins, Jr.

*On the rationalization of sight,  
with an examination of three Renaissance  
texts on perspective,  
Metropolitan Museum of Art,  
Papers, no. 8 (New York 1938), p.30*

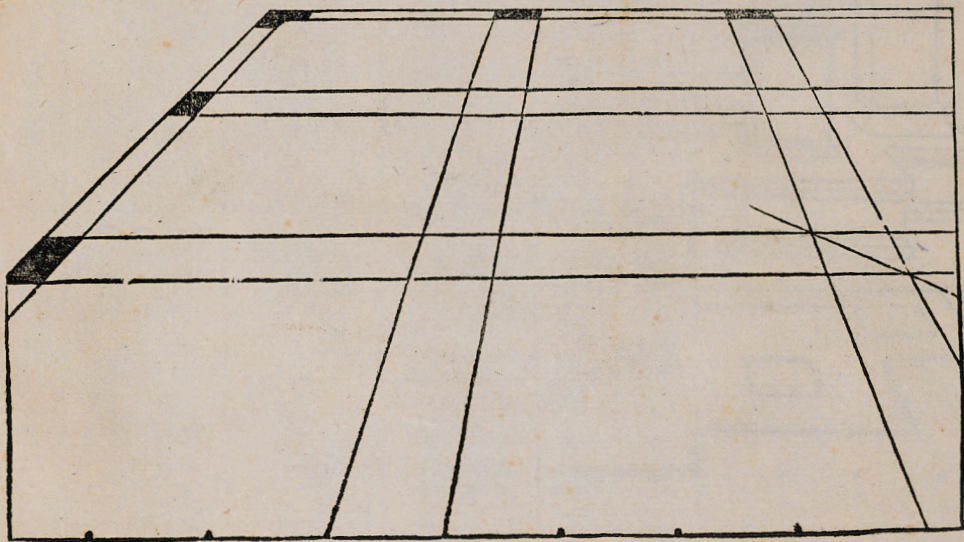
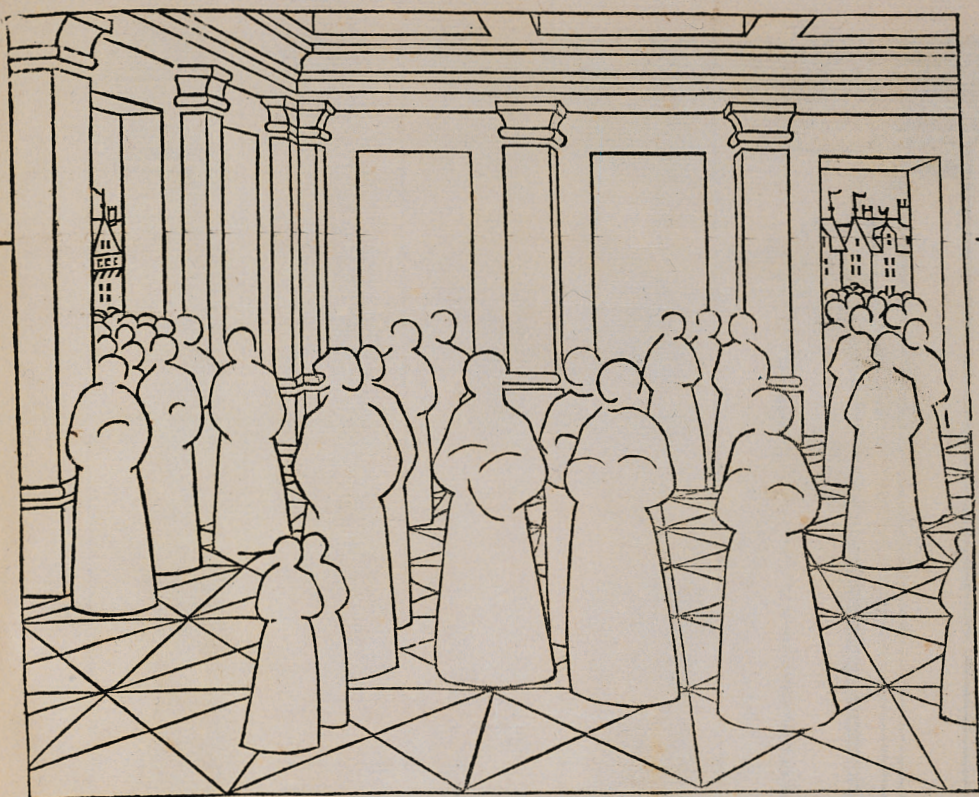
Folio (290 × 210mm), 44 leaves (of 46), collating A<sup>8</sup> B<sup>8</sup> C<sup>8</sup> D<sup>8</sup> E<sup>10</sup> [F]<sup>4</sup> (bifolium A4 + A5 lacking, supplied in contemporary manuscript), not foliated or paginated. Printed in two sizes of Gothic text type, the Latin text 34 lines per page (20 lines of which measure 141mm) with capitals of two sizes and the French translation 37 lines (20 lines measure 125mm) also with capitals of two sizes (larger from the same alphabet used in the Latin). Uniform paper stock with watermark of a bull's head surmounted by a star (see discussion below).

CONTENTS A1 recto xylographic title with diagram (blank verso), A2–A3 Latin text headed *De perspectiua positua: Compendium* illustrated by three woodcut diagrams printed recto and verso, A4 manuscript copy of text written recto and verso, A5 manuscript copy of woodcut diagrams (blank verso), A6–E9 thirty-six full-page outline woodcut illustrations (blank versos), E10 recto postscript by Pèlerin commencing *Habes optime lector de perspectiua positua* and beneath the printer Pierre Jacobi's large (100 × 82mm) musical rebus and cross device (Silvestre 952), a woodcut initial, and colophon: *Impressum Tulli Anno catholice veritatis Quingentesimo quinto supra Milesimum: Ad nonum Calendas Julias. Solerti opera petri iacobi presbyteri Incole pagi Sancti Nicolai* (blank verso), F1–F4 French translation commencing *Leuure deuant mis parfait* ... (last line:) *Finis. Laus deo* (printed recto and verso, except last verso blank). A bifolium of letterpress (entire German text from the Nuremberg 1509 edition) was inserted after folio E8 at time of binding (see below).

CONDITION title-page and folios B1–B2 with spots and stains caused by readers, four leaves in gathering D lightly discoloured with brownish spots (aberrant paper quality), otherwise a fine, clean and crisp copy.

PROVENANCE successive owners have obliterated most marks of ownership from the volume: an ink inscription is virtually erased from upper edge of the front paste-down (probably a personal ownership entry), an exlibris is lifted







from centre of front paste-down (glue stain 94 × 68mm), a label most probably displaying a shelfmark is detached from the back (30 × 35mm, where it had obscured ink shelfmark *H. | 60.*), another label detached from upper left corner of the front cover (40 × 50mm), two ownership stamps (20 × 50mm) expertly deleted, one from blank area of Vitruvius folio AA1, the other from blank area of Pèlerin folio F4.

**BINDING** a *Sammelband* containing three books (in order Vitruvius, Dürer, Pèlerin) with a vellum tab (40 × 13mm) affixed to title-pages of Dürer and Pèlerin, bound in Germany *circa* 1600, the material plain calf vellum drawn over thin paper boards, sewn on tawed supports which are laced through the cover, round undecorated back lettered in ink *Vitruvius | cum figuris | item | Perspectiva* and above shelfmark *H. | 60.*, green stuck-on endbands sewn over flat parchment cores, plain edges (see discussion below). Protected in a slipcase.



2. Title-page with woodcut diagram of twelve concentric circles, the traditional image of the Aristotelian cosmos (folio A1 recto).

*Reproduced on previous page* 1. Perspectival rendering of an entryway with figures (folio B6 recto).

*Reproduced opposite* 3. A domestic interior, reputedly the author's bedroom (folio B5 recto).

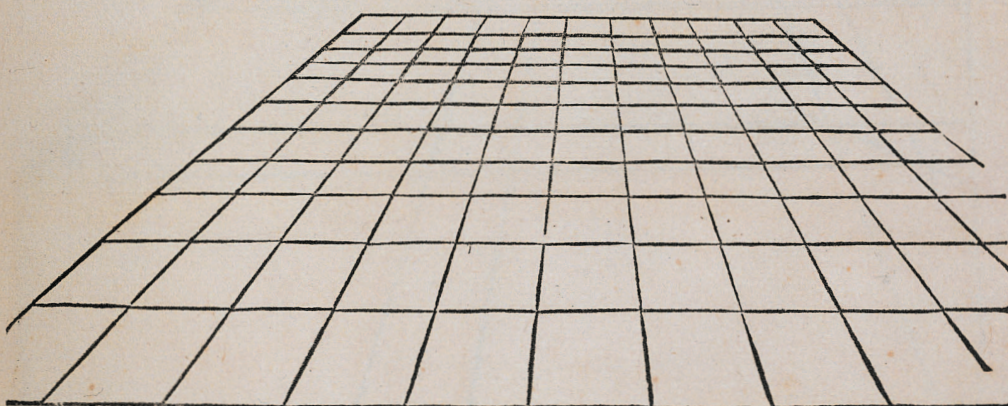
First edition of the first printed treatise on artists' perspective, a practical book of instruction with a text in Latin and French illustrated by an astonishing series of full-page woodcuts demonstrating the perspectival representation of landscapes and of architectural exteriors and interiors, both with and without human figures, in a way which seems to belong to two centuries later, if not to our own time. It is the first book printed at Toul (Meurthe-et-Moselle), one of twenty-two known copies, the first copy to be publicly offered for sale since 1935, and apparently one of only two copies remaining in private hands.

The work codifies the old atelier methods of perspective in use north of the Alps in the 15th and 14th centuries, while at the same time presenting a foretaste of the science of the Italian perspectivists.<sup>1</sup> An introductory text, printed in Latin and in Old French, explains the essence of this 'theory', beginning with principles of both optics (the two modes of visual perception described by Alhazen) and geometrical construction (points and lines as forming the foundation of pictorial representation), after which commences a discussion of techniques for constructing spatial illusion applying the 'tiers points' system.

The success and wide influence of the book owe less to the author's text than to the woodcut illustrations which demonstrate his method at work. Carefully chosen and presented in a logical manner, these large woodcuts provide perspectival renderings of real and known monuments observed by the author, including the interior of Notre Dame in Paris (folio D8), the reputed sanctuary of the Mary Magdalen at Saint-Maximin-la-Sainte-Baume in Provence (folio E3), and a chapel at Maillezais in Vendée (folio E9), as well as anonymous and imaginary scenes: a domestic interior (folio B5, see our fig. 3 opposite), a mulberry tree

1 According to some critics, Pèlerin is an original theorist, and introduces here revolutionary methods of perspective approximating and anticipating the speculations of Leonardo da Vinci and Leon Battista Alberti; see particularly, Liliame Brion-Guerry, *Jean Pèlerin Viator. Sa place dans l'histoire de la perspective* (Paris 1962). Contrary opinions are expressed by Claude Schaefer, in *The Art Bulletin* 49 (1967), pp.180–183; and Thomas Frangenberg, 'The image and the moving eye: Jean Pèlerin (Viator) to Guidobaldo del Monte', in *Journal of the Warburg and Courtauld Institutes* 49 (1986), pp.150–171. Brion-Guerry clarifies her argument in 'Le *De artificiali perspectiva* de Jean Pèlerin (Viator) et le problème de ses origines: un essai de mise au point', in *Filippo Brunelleschi: la sua opera e il suo tempo* (Florence 1980), I, pp.307–323. See also Martin Kemp, *The Science of art. Optical themes in western art from Brunelleschi to Seurat* (New Haven & London 1990), pp.64–66.









4. Façade of Saint-Maurice d'Angers (folio E1 recto).

Reproduced opposite 5. First page of Latin text  
(folio A2 recto).

in a glazed conservatory (folio E4), and crowds gathered in a peristyle (folio A8) and in an entryway (folio B6, see our fig. 1).<sup>2</sup> Frontal arrangements and oblique settings both feature and most of the examples are accompanied by a diagram showing how the perspective of the picture has been constructed.

The woodcuts are executed in simple outline in an uncommon manner, with parts of the design being effectively left to the imagination. In their style and quality, they are unlike any prints of their time, and several critics have remarked of their unheralded and startling modernity. Pèlerin acknowledges his invention of the designs in the

<sup>2</sup> See Brion-Guerry (*Op. cit.*, note 1) for identifications of the monuments. On the woodcut of the interior of a court room (folio D4), correcting a miniature by Jean Fouquet (in Laurent Gyrard's manuscript Boccaccio, BSB Munich, Cod. Gall. 6), see Claude Schaefer, *Jean Fouquet. An der Schwelle zur Renaissance* (Dresden & Basel 1994), pp.189, 192, 264. A bronze relief of circa 1480 in the National Gallery of Art in Washington, DC, is associated with the sculptural Madonna and Child represented in the woodcut folio B7 (correspondence file in Pierpont Morgan Library).

text, explaining that he had drawn only the principal lines, omitting details, because a small space can not hold as much as a large space, and inviting those who use the book to supply the omissions for themselves. His block cutter incorporated in the illustration of a church at Angers a Lorraine cross (positioned in the sky, see our fig. 4) and the woodcuts have been ascribed to either or both Jacquemin Woeiriot and Gabriel Salmon, prominent Lorraine artists who employed that mark, in the absence of other plausible candidates.<sup>3</sup>

#### THE AUTHOR

Jean Pèlerin was born between 1433 and 1440 at Vihiers, near Saumur in Anjou, entered holy orders, studied at Poitiers or Angers, and completed the degree of *licencié en droit*. At an early date, he became associated with the artistic entourage of René I of Anjou. By 1467, he had become attached to the court of Louis XI, as *secretarius regius*, and was undertaking diplomatic missions (his sobriquet, Viator, the Latin translation of his surname, registers a habit of travel). About 1473, he became chaplain to Philippe de Commines, and met the painter-illuminators Jean Fouquet, Jean Colombe, and Jean Poyet. In 1476, Pèlerin entered the service of René II duc de Lorraine et de Bar. He was appointed canon of St.-Dié, Vosges, in 1483, and soon became a participant in the intellectual milieu centred around the Gymnasium Vosagense.

In 1498, Pèlerin was appointed canon of the chapter of Toul and *maître de fabrique*, in charge of the repair and redecoration of the cathedral and chapter buildings, overseeing building works and controlling finances. In addition, he designed and constructed funerary monuments in an Italianate style, for the cathedral of Toul, for the 13th century church at Liverdun, and for St. Médard at Blénod-lès-Toul. At uncertain dates, Pèlerin translated the Book of Job from Hebrew (posthumously published at Alençon or Paris by Simon Du Bois circa 1534), and translated or wrote

<sup>3</sup> Compare Albert Ohl des Marais, 'Jacquemin Woeiriot, graveur sur bois du XVIe siècle', in *Byblis* 10 (Spring 1931), p.15 and 'Gabriel Salmon, graveur sur bois lorrain', in *Byblis* 10 (Summer 1931), pp.139-144; Ruth Mortimer, *Harvard College Library, Department of Printing and Graphic Arts, Catalogue of books and manuscripts. Part I: French 16th century books* (Cambridge, MA 1964), pp.523-524; Robert Brun, *Le livre français illustré de la renaissance* (Paris 1969), p.269; *The French Renaissance in prints from the Bibliothèque Nationale de France*, exhibition catalogue University of Southern California (Los Angeles 1995), p.199; *Trésors des bibliothèques de Lorraine*, edited by Philippe Hoch (Paris 1998), p.78.



## De perspectiua positiua: Cōpendiū.

**F**undamentis edificatum iri. Mox sensim extruendum cor-  
pus. & tectum imponendū. Etenim (quod philosophicis spe-  
culationibus perspectum est) omnes res videntur tanq̃ per  
lineas ab oculo egredientes: scilicet p̃ triangulū. Qui<sup>9</sup> basis est res vi-  
sa: eiusq̃ diameter/ super partes ipsius rei vise discurret. Sed lux ab  
oculo non egreditur: verum ex lucis exterioris splendore in oculum ca-  
dēte/ fit reflexio/ quasi a speculo ignito: per quam forme rerum conci-  
piūtur. Quarūquidem formarum designatiua expressio/ deriuatur a  
puncto. Qui licet indiuiduus sit: euoluitur tamen/ & in lineam ac line-  
as explicatur. Ex quibus figure componuntur: per quas/ cum punc-  
tis et lineis huiusmodi/ via ad propositum aperitur.

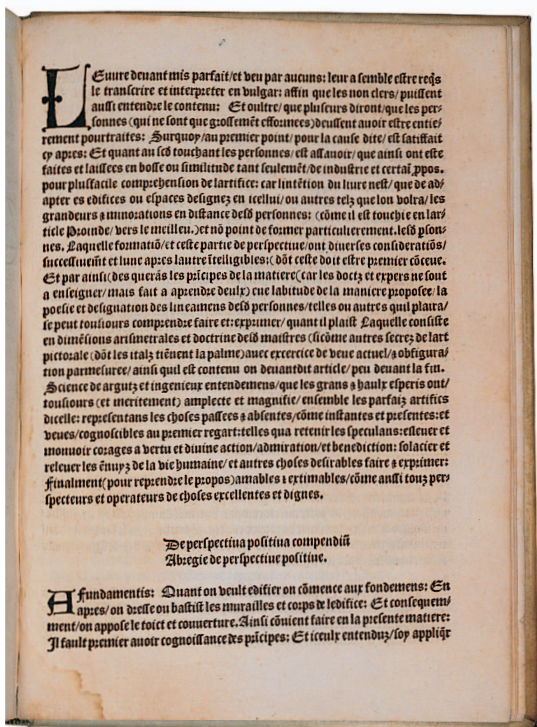
**P**unctus principalis in perspectiua/ debet ad normam oculi cōsti-  
tui: qui pūctus dicitur fixus vel subiectus. Deinde linea produci  
ad vtramq̃ partem: et in ea duo alia puncta/ equedistancia a subiecto  
signari: propiora in presenti/ et remotiora in distantī visu: que dicunt̃  
tercia puncta. Possunt etiam fieri in ipsa linea alia puncta: vbi appa-  
ratus edificiū plurium āgulozum/ vel aliud quid situ diuersum/ occur-  
rerit. Dicitur autem pyramidalis: quia anguli seu acies pyramidū (de  
quibus postea dicitur) ex punctis in ea signatis deducuntur. Vocatur  
etiam horizontalis: quia solem orientē ostendit/ et occidētē abscondit.  
Et semper equat oculum hominis vbiq̃q̃ fuerit: etiam si turrim ex-  
cellam ascenderit/ vel superciliū montis. Ad quam quoq̃ altitudinē/  
extremitas/ seu terre/ siue maris/ debet semper terminari. Nisi altio-  
res intermedii montes fuerint obiecti.

---

**D**einde alia inferior linea statuēda est/ que terrea dicitur: & in ea  
(si edificiū supererigi/ vel dimensionis ratio concipi pretendat̃)

A ii.





6. First page of French text (folio [F]1 recto).

a commentary on the *Cosmography* of Ptolemy very probably for the publication programme of the Gymnasium Vosagense (a work since lost). His most important treatise, *De artificiali perspectiva*, is sometimes also considered as part of the publication programme of that literary and scientific association. Three editions of it were printed before Pèlerin's death which occurred on 1 February 1524.

#### THE PRINTER

All three editions were printed by Pierre Jacobi, proto-typographer of nearby St.-Nicolas-du-Port (situated on the Meurthe, between Nancy and Lunéville). Jacobi had entered the service of René II, duc de Lorraine et de Bar, as calligrapher and bookbinder, in about 1492, and thereafter learned to print, probably at Strasbourg. He commenced printing at St.-Nicolas-du-Port in 1501 and in 1503 printed there *Hore Virginis Mariae ad usum Tullensis* with illustrations executed perhaps by Jacquemin Woeiriot. Jacobi worked fitfully, issuing public ordinances and broadsides, until in 1518 he printed his most substantial book, Pierre de Blarru's *Nanceidos*, a poem celebrating the battle of Nancy (1477), with text woodcuts probably executed by Gabriel

Salmon. Apart from the three editions of *De artificiali perspectiva* which Jacobi issued for Pèlerin at Toul, his publications all name St.-Nicolas-du-Port as place of printing.<sup>4</sup>

Jacobi reportedly transported his press to Toul and printed the first edition of *De artificiali perspectiva* in Pèlerin's own house, under its author's supervision.<sup>5</sup> In all copies of the 1505 edition we have examined, the initial quire A contains sheets marred by offsetting, invariably heaviest on A2 + A7, in several copies all four sheets of the gathering are thus spoiled.<sup>6</sup>

Set-off occurs when ink from the side of the sheet printed first accidentally transfers to the tympan cloth during the printing of the other side and then back again on to subsequent sheets of the reiteration. In ordinary circumstances, a pressman remedies offsetting during the reiteration by cleaning the tympan cloth with lye, alternatively by placing waste paper on the tympan behind the sheet being printed and changing it regularly, sometimes at each impression. Any spoiled sheets are customarily discarded and there is no easy explanation of their use in many – perhaps all – copies of this edition.

After printing, Jacobi folded the sheets prematurely, gathering, collating, and beating them flat with a hammer, in preparation for binding. The soft ink offset once again, this time throughout the book, from rectos on to opposite versos (and *vice versa*), and from the first page of one quire on to the verso of the last page of the quire preceding.<sup>7</sup>

At least five of the twenty-two known copies of the 1505 edition lack the final four-leaf gathering of French text, too many to be accounted for simply by the ravages of time. Since this gathering alone in the book is unsigned, it could be the translation was an afterthought, and separate issues (one with, the other without French text) co-exist within the

4 Jean Nicolas Beauupré, *Nouvelles recherches de bibliographie lorraine 1500–1700* (Nancy & Paris 1856), pp.12–13; Albert Ronsin and Albert Kolb, in *Répertoire bibliographique des livres imprimés en France au seizième siècle* (Baden-Baden 1999), VI, pp.37–38 (St.-Nicolas-du-Port) and p.113 (Toul).

5 Albert Kolb, 'Bibliographia Tullensis: Die Toulser Drucke 1505–1700', in *Gutenberg-Jahrbuch* 1962, p.199; Brion-Guerry (*Op. cit.*, note 1), p.153; Albert Ronsin, 'Les deux premiers siècles de l'imprimerie & de la librairie en Lorraine', in *Trésors des bibliothèques de Lorraine* (*Op. cit.*, note 3), p.56.

6 In the present copy, a light impression of A8 recto is visible on A1 verso, A7 recto on A2 recto and verso, A7 recto also appears on A2 verso, A3 recto on A6 recto, A2 recto and verso on blank A7 verso (multiple impressions), and A1 recto on blank A8 verso.

7 For the procedure, see Bernard C. Middleton, *A History of English craft bookbinding technique* (London 1978), pp.7–8.



edition. Alternatively, it could be that Jacobi miscalculated, printed an inadequate quantity of French text sheets (or an unexpectedly large number was spoiled by offsetting), and the supply ran out quickly as the book was assembled.

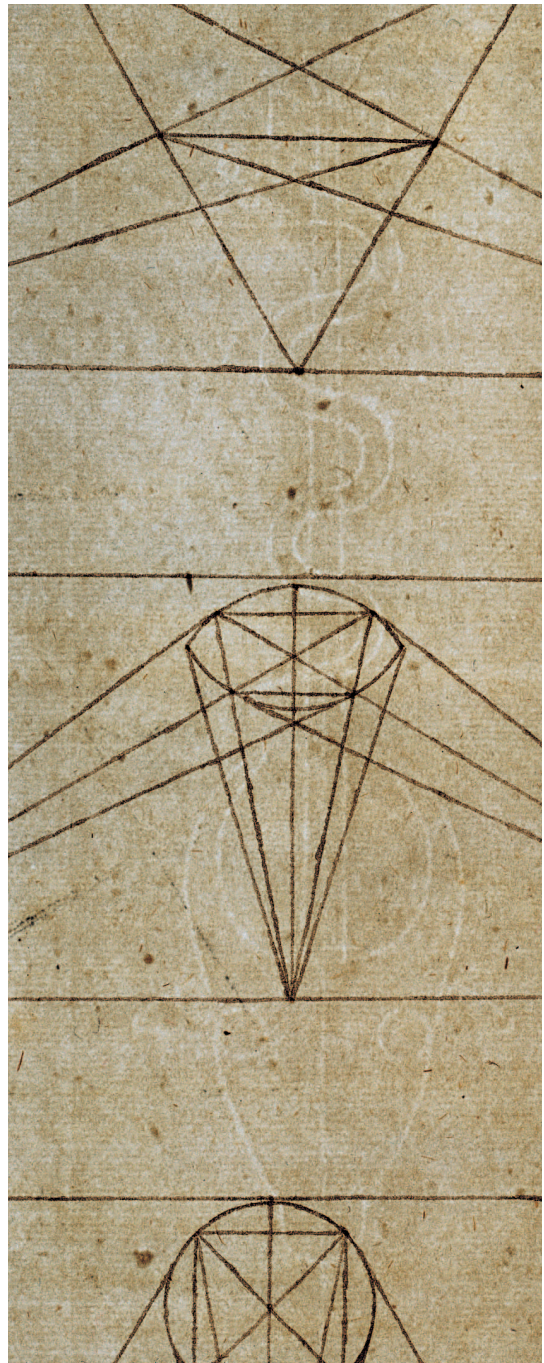
The defect of the present copy – the absence of folios A4 + A5, the innermost bifolium of quire A, and interpolation of an aesthetically pleasing manuscript transcription – is most probably the consequence of the printer's inability to control offsetting occurring during the reiteration and during beating and pressing of the newly printed book. While the cause is indeterminable, there is no doubt the copy was 'completed' before it left the press – in all probability by the author himself – within a day or two after printing. On the blank last page of the interpolated bifolium appears an offset impression of the woodcut printed on the following page (folio A6 recto). This offset must have occurred before the ink set immutably, almost certainly at the moment the folded book was beaten flat.<sup>8</sup>

All copies we have examined are printed on a single batch of paper bearing a watermark of the type known as 'Tête de boeuf surmontée d'une étoile'.<sup>9</sup> The mark is recorded, but the mill has yet to be identified. The watermark in the interpolated sheet of manuscript is of a related type designated 'Tête de boeuf au serpent s'enroulant autour d'une croix' (see our fig. 7). Local mills produced paper watermarked with this image, but no exactly comparable mark can be identified in available repertories.<sup>10</sup>

8 Numerous copies were evidently gathered, folded, and beaten while the ink was still wet. Similar offsetting, but to greater extent, occurs in both British Library copies: in one (our census no. 9) A4 recto carries a weak impression of A3 verso, A5 recto of A4 verso, A5 verso of A6 recto; in the other copy (our census no. 10) the offsetting is almost constant: A1 verso has a weak impression of A2 recto, A2 verso of A3 recto, A5 recto of A4 verso, A5 verso of A6 recto, A6 verso of A7 recto, and some woodcuts have also offset in quires B, C, E.

9 The watermark is reproduced by Gerhard Piccard, *Die Ochsenkopfwasserzeichen. Findbuch der Wasserzeichenkartei Piccard im Hauptstaatsarchiv Stuttgart* (Stuttgart 1966), II/2, 2. Teil, p.452, Abteilung VII, Typ. 951. Two paper moulds can be identified: the watermark in one is exactly as reproduced by Piccard; the watermark in the other mould is worn, the wire forming one nostril having detached from its original position and shifted upwards.

10 Paper with the mark 'Tête de boeuf surmontée d'une croix auteur de laquelle s'enroule un serpent' of 1506 (in registers of the Châtellenie de Rambervillers, Archives des Vosges) is described by Jean-Marie Janot, *Les Moulins à papier de la région vosgienne* (Nancy 1952), pp.46, 461, 515. A similar mark is Piccard (*Op. cit.*, note 9), p.761, Abteilung XV, Typ. 171 (recording use 1522–1524).



7. Watermark in interpolated X2 (leaf turned upside down). Reproduced with enhanced contrast. Height of mark 161mm.

*Reproduced overleaf*

8. Folios A3 verso and interpolated X1 recto with text handwritten by the author or printer.



etiam minus secundum sedem fingentis: et presentem aut distantem  
visū. Circulus vero qui circa tetragonū erectū extat speric⁹ circa stra-  
tum fit oualis/ aut lenticularis/ secundū differentias sedium/ et visū  
premissorum. Que propositiones/ super secundā figuram possunt cō-  
prehendi. Tercia deinde figura/ tetragonum ipsum p̄tinet/ absq; spe-  
rali circumferentia: remanētibus piramidibus premissis. Que tamē  
deinceps in aliis sequentibus figuris/ non ponentur in integrum: sed  
id solum ex eis quod erit necessarium. Licet suffingantur semper/ vel  
subintelligantur: vt constabit intuentibus.

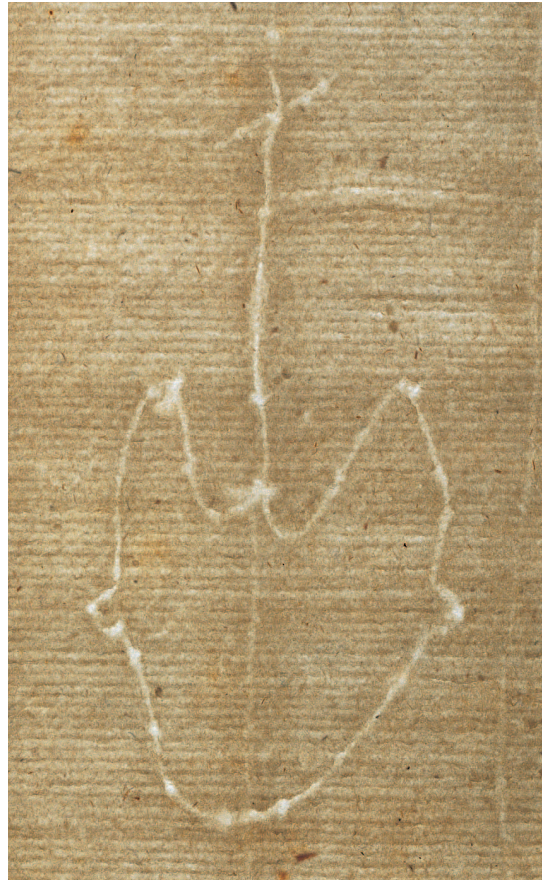
**D**imiuntia quoq; pauimenta/ accipitur super huiusmodi tetra-  
gonum/ p̄ctis partitum/ et lineis radialibus distinctum/ a sec-  
tiōibus diametrozū piramidarū inclinatarum/ sicut premissum est:  
vt quarta/ quinta/ et sexta figuris/ cum quatuor sequētibus pluribus  
modis ostenditur. Et possunt fieri alia diuersa pauimēta/ et multipli-  
cari/ ac dilatari/ ad placitum. Qui planicie/ campēstris spacia  
diminuere voluerit: protractis lineis rectis pauimēti sufficti/ intentū  
habebit. Nisi alia geometrali industria id facere pernouerit. Quā-  
titas vero seu minozatio personarū: duobus modis accipitur. aut enī  
ex cōmuni: aut ex eleuata sede conspiciuntur. Si ex sede cōmuni: a situ  
pedum earum capiuntur: et linea pyramidalī. Quam eciam lineam/  
persone huiusmodi/ possunt a luminibus sursum excedere: vel āplius  
in proceriore/ aut gigātea magnitudine. Si ex eleuata sede: vtendū  
est inclinata pyramide/ a puncto subiecto vel altero ex tertiis exeunte:  
cuius latitudo basis/ aperiatur/ ad altitudinem proxime seu maioris  
persone/ in spacio statuende: secundum cuius pyramidis inarctationē  
persone huiusmodi/ a plantis ad summa capitum/ accipiet minozati-  
onem: Quarū triū propositionū/ ponūtur exempla/ per tres figuras  
sequentes pauimenta. Ex quibus figuris nouissima ordinat secundū  
sedem paulum eleuatam tantum/ que tamē altius potest eleuari: eciam  
supereleuari: et linea orizontalis/ ac acies pyramidis inclinate/ simul  
in altari/ prolongari ue/ aut dilatari/ vt prenotatū est/ in articulo de fi-  
guris elementaribus: prout et plane comprehendetur ab intentis spe-  
culatoribus. Obicunq; autem pueri vel adolefcētes erunt fingendi:



pro etatibus singulorū veniet in q̄ntitate altitudinis  
metiendi: Quib⁹ pueris / ceterisq; ubilibet assignatis  
p̄sonis / proportionēs legitime dabunt pro magnitu-  
dinibus suis. Et quod de personis per omnia dicatur:  
de ceteris animantib⁹ similiter intelligit. Porro:  
diminutio latitudinis colūnarū / et similium rerum /  
accipit ex diminutionib⁹ tetragonū / sup̄eleuatis /  
tanq̄m a basi / colūnis et reb⁹ huiusmodi. Altitudines  
vero / constant per pyramides oportunas: iacentes  
scilicet / aut pendentēs: secundū earundē sublimitatē /  
et videntis sedem. Sed hoc aduertendū est / q̄ in  
visu multū distantī seu longinquo: expedit sepe nu-  
mero uti industria et ingenio. Similit⁹ et in mul-  
tis aliis / speculationi arguti⁹ relictis.

**P**Roinde (supradictis ad effectū pretentū plane  
susceptis) figure exēplares ad inductiuā descri-  
pte videant. Quarū nōnullē / ex memoria structū-  
rarū / et picturarū quādoq; visarū. Alię / ex ipsa  
speculatione sūt erecte. Quę cōcipiunt per elemēta  
premissa / tanq̄m per litteras verba: Quinpotius /  
sup̄ huiusmodi figuris / intelligent eorundē elemen-  
torū officia: quomā videlicet / planis formis statuendis  
(a quib⁹ edificia huiusmodi exurgūt) et reb⁹ effingēdis /  
ac cōmissuris / seu adunationib⁹ earū / manu ductiuam  
habent aptitudinē. In figuris quidē edificiorū a fron-  
te cōspectorū / pyramis recta pavimentū cōstituit:  
et due vel plures hincinde iacentes / latera seu parie-  
tes: Eversa vero / testudinē aut textū desuper. In  
edificiis quoq; ab angulo cōspectis / diffusa et bicornis  
operant: duplex / in utrisq;: pendens / plurib⁹ reb⁹:  
derea / nōnullis gradib⁹ ponendis deseruit. Cetera  
videbunt experimēto ipsarū figurarū: In quib⁹ ta-  
men / proportionēs particulares p̄sonarū / nō obser-  
uant precise: sed q̄ntitates magnitudinū maxime:  
quę / ad propositū faciūt. Nec edificia protrahunt /  
aut variant ad omnē plenitudinē: propter spaciōrū  
angustias / et faciliore conceptū artis / et operis:





Sixteenth-century paper utilised as binder's endleaves. Reproduced with enhanced contrast.  
9. Watermark in front endpaper. Height 67mm. 10. Back endpaper. Height 102mm

#### THE BINDING

It is likely that Pèlerin distributed the edition himself, presenting copies to his patrons and friends. Judging by his printer's premature beating of the roughly folded sheets, a number of copies may have been immediately sewn into interim bindings, perhaps bindings fashioned by Jacobi himself (he had been working as a bookbinder ten years previously). If any copies were specially bound for presentation, none has survived. About 1600, our copy was extracted from its interim binding and installed together with two books on similar subjects (removed from other bindings, as evidenced by varying positions of vacant sewing-holes) in a new vellum *Sammelband*.

The assembly of the *Sammelband* *circa* 1600 is conjectured from the binder's use of tawed supports which are laced through the cover. By about 1620, German binders had progressed to sewing on flat parchment supports.<sup>11</sup>

At the front of the volume, between the first and second books (Dürer | Vitruvius), and at the back, the binder supplied blank paper in the usual way, as pastedowns to reinforce the joints of the covers, and to give additional protection to the first and last pages. Astonishingly, this paper seems to have been lying around unused for a very long time (it was not taken from previous bindings on these books). Although not evidence for dating, the endleaves do confirm compilation of the *Sammelband* in southern Germany.<sup>12</sup>

<sup>11</sup> Our dating of the binding is based on information kindly offered upon examination by Dr. Nicholas Pickwood (River Farm, Great Witchingham, Norwich NR9 5NA).

<sup>12</sup> The front endleaves (originally three: a single bifolium with another leaf following, the leaf conjugate with the pastedown later extracted) and the intermediate blank leaves (two: a bifolium) were made in different moulds at the same mill. The watermark is reproduced by Piccard (*Op. cit.*, note 9), p.294,



## LATER EDITIONS

In April 1508, an unacknowledged abridgment of *De artificiali perspectiva* illustrated by nine woodcuts adapted from the Toul blocks was incorporated (as 'Introductio architecturae et perspectivae') in a reprint of Gregor Reisch's popular *Margarita philosophica* published by Johann Grüninger at Strasbourg.<sup>13</sup> One year later, a Nuremberg *Formschneider*, Jörg Glockendon, cut close copies of all thirty-seven of the Toul blocks, and published *Von der Kunst Perspectiva*, presenting Pèlerin's Latin text together with a new German translation. Bound in our *Sammelband* is the complete German text of Glockendon's edition (two leaves, inserted by the binder after folio E8, see our fig. 11).<sup>14</sup>

These circumstances apparently encouraged Pèlerin to prepare a new edition of his treatise. Entitled *De artificiali*

*perspectiva ... Secundo*, it was printed by Jacobi at Toul on 12 March 1509 (1510).<sup>15</sup> The blocks cut for the 1505 edition were not available and a new set was produced. Ten subjects were not recut, but replaced by new illustrations.<sup>16</sup> One of these new blocks (folio C1 verso) is Pèlerin's 'corrected' version of the perspective of a woodcut executed by Dürer *circa* 1505, 'Presentation of Christ in the Temple'. Dürer in turn studied Pèlerin's illustrations and his engraving of *circa* 1514, 'St. Jerome in his study', is a variation on Pèlerin's perspectival rendering of a domestic interior (our fig. 3). The organisation of the illustrations was changed and the woodcuts no longer presented as plates, but printed on both rectos and versos. Pèlerin wrote additional preliminary text and also distichs explicating each illustration.

The abbreviated version of the treatise published in Reisch's *Margarita philosophica* remained in print (new editions appeared at Strasbourg in 1512 and 1515 and a revised edition, edited and augmented by Oronce Finé, at Basel in 1535 and 1583). Meanwhile, Pèlerin prepared a third edition, *De artificiali perspectiva ... Terzo*, printed by Jacobi on 7 September 1521, essentially an unchanged reprint of the 1509 edition, only an enumeration of artists and friends of the author added on the title-page.<sup>17</sup>

Adaptations of Pèlerin's illustrations began to illustrate other texts, for example, a treatise entitled 'Optice' in Joachim Sterck van Ringelbergh's *Opera* (first printed at Lyon in 1531). A second edition of *Von der Kunst Perspectiva* (the blocks only, without any text) was published by Albrecht Glockendon at Nuremberg in 1540.<sup>18</sup>

Abteilung III, Typ. 5, recording use in southern Germany between 1523 and 1532. The back endleaves (three: a single bifolium with another leaf following) show a similar watermark, reproduced by Piccard (*Op. cit.*, note 9), p.332, Abteilung V, Typ. 255, also recording use in southern Germany, but 1511–1514.

13 Editions of Reisch's *Margarita philosophica* containing Pèlerin's treatise are described by Hermann Schüling, *Theorien der malerischen Linear-Perspektive vor 1601* (Gießen 1973), pp.28–30, nos. 31–37.

14 Glockendon set the text with greater economy than Jacobi and in his edition the Latin text fits easily on two (instead of four) leaves and the German translation occupies another two leaves, then follow the thirty-seven woodcuts, printed again as plates with the versos left blank (total including title of 42 leaves). Moriz Sondheim, 'Jörg Glockendons Kunst Perspectiva' in *Berichte des Freien Deutschen Hochstiftes zu Frankfurt am Main*, Neue Folge 8 (1892), pp.195–211; Schüling (*Op. cit.*, note 13), pp.30–31, no. 38 (five copies located). Another copy in Sammlung Otto Schäfer, Schweinfurt (formerly Börner – [booksellers Rudolph Weigel, *Kunstskatalog*, Leipzig 1853, IV, no. 19422] – Feldzeugmeister Hauslab – Prince Liechtenstein – [booksellers H.P. Kraus, *Catalog 90*, item 131], lacks the two leaves of Latin text. An incomplete copy was offered *circa* 1985 by the booksellers Patrick & Élisabeth Sourget (*Deux cents livres précieux de 1467 à 1959*, item 6). Sondheim cites a copy in the stock of the Frankfurt am Main booksellers Joseph Baer & Co.

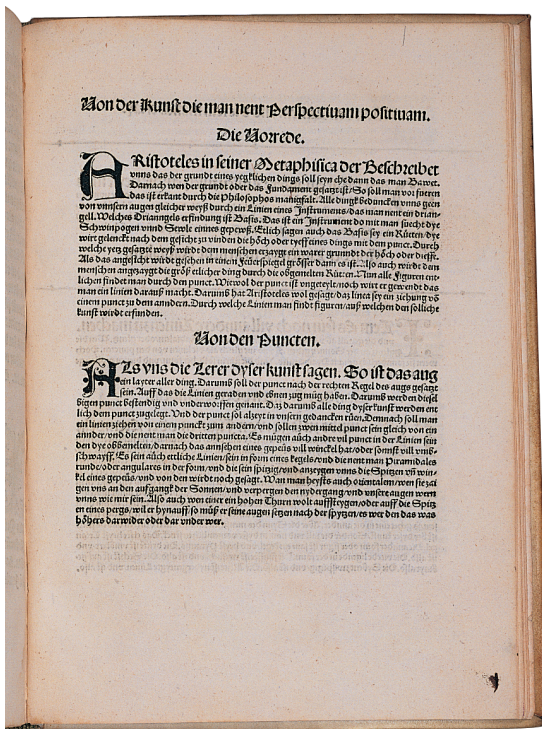
15 Brion-Guerry (*Op. cit.*, note 1), p.157; Schüling (*Op. cit.*, note 13), pp.27–28, no. 29. Copies in the British Library (shelfmark C 24 c 7), Bodleian Library, Oxford (H 8.9 4 Art, lacking title-page); Bibliothèque Nationale, Paris (Rés. V 167), Bibliothèque Mazarine, Paris; Österreichische Nationalbibliothek, Vienna (shelfmark 11 D 2, exhibited in *Albrecht Dürer 1471–1971*, Germanisches Nationalmuseum, Nuremberg 1971, no. 634); and Herzog-August-Bibliothek, Wolfenbüttel (A 16.1 Geom. 2°, evidently a fragment of 29 leaves only). A copy was offered *circa* 1979 by Librairie Robert Valette, *Livres et autographes du XVe au XXe siècle* [catalogue, n.s., no. 5], item 8.

16 The ten woodcuts not recut for the second and third editions are printed on folios A8, B3, B7, C3, D1, D2, D3, D6, E7, E8.

17 Brion-Guerry (*Op. cit.*, note 1), p.158; Schüling (*Op. cit.*, note 13), p.28, no. 30. Copies in the British Library (shelfmark 794 i 22), Cambridge University Library (Adams P–579), Bibliothèque Nationale, Paris (Rés. V 169), Bibliothèque de l'Arsenal, Paris (two copies), Bodleian Library, Oxford (Douce P subt 35), Bibliothèque Sainte Geneviève, Paris (*Catalogue des ouvrages imprimés au XVIe siècle*, Paris 1980, no. 1547), and Biblioteca Apostolica Vaticana, Rome (Cicognara 869). The Nostitz – Guyot de Villeneuve (sale March 1900, lot 301) – Rothschild copy is described by Auguste Émile Picot, *Catalogue des livres composant la bibliothèque de feu M. le Baron James de Rothschild* (Paris 1884), IV, pp.37–39, no. 2763. A copy is offered in *Bulletin de la librairie Damascène Morgand* (Paris 1887–1889), IV, p.471, no. 13830.

18 Anatole de Montaiglon, *Notice historique et bibliographique sur Jean Pèlerin* (Paris 1861), pp.27–28; Hugh William Davies, *Catalogue of a collection of early German books in the library of C. Fairfax Murray* (reprint London 1962), no. 325; Schüling (*Op. cit.*, note 13), p.31, no. 39.





11. German text from the Nuremberg piracy of 1509  
(inserted by the binder after folio E8).

Finally, an adaptation of *De artificiali perspectiva* entitled *La perspective positive* was published at La Flèche by Georges Griveau, in 1635. Edited and illustrated by Mathurin Jousse, this work featured freely engraved, reduced and reversed, copies of the woodcuts as they appear in the 1521 Toul edition.

REFERENCES Hugh W. Davies, *Catalogue of a collection of early French books in the library of C. Fairfax Murray* (London 1910), no. 566; Ruth Mortimer, *Harvard College Library, Department of Printing and Graphic Arts, Catalogue of books and manuscripts. Part I: French 16th century books* (Cambridge, MA 1964), no. 420; Robert Brun, *Le livre français illustré de la renaissance* (Paris 1969), p.269; Luigi Vagnetti, *De naturali et artificiali perspectiva: bibliografia ragionata delle fonti teoriche e delle ricerche di storia della prospettiva*, Studi e documenti di architettura (Florence 1979), pp.311–314, no. Ellb2; *Architectural theory and practice from Alberti to Ledoux*, edited by Dora Wiebenson (second edition Chicago & London 1983), no. III–B–1

## PROVISIONAL CENSUS *De artificiali perspectiva* 1505

ABBREVIATIONS Liliane BRION-GUERRY, *Jean Pélerin Viator. Sa place dans l'histoire de la perspective* (Paris 1962); Arthur RAU, 'Les exemplaires connus de la *Perspective* de J. Pélerin', in *Humanisme et Renaissance* 2 (1935); Hermann SCHÜLING, *Theorien der malerischen Linear-Perspektive vor 1601* (Gießen 1973); RÉPERTOIRE *Répertoire bibliographique des livres imprimés en France au seizième siècle*, volume VI (Baden-Baden 1999)

- 1  
Augsburg, Staats- und Stadtbibliothek  
(shelfmark 2° Math 109)<sup>1</sup>  
Page 304 × 207mm. 42 leaves, lacking French text  
Extracted from a Sammelband  
Bound in 19th-century blue paper boards
- 2  
Basel, Universitätsbibliothek  
(shelfmark K I I 4 Nr 3)<sup>2</sup>  
Page 298 × 195mm. 46 leaves, complete  
Provenance: probably Bonifacius (1495–1562) or Basilius (1533–1591) Amerbach (bound third in a Sammelband of eight books, printed 1502–1577, of which no. 2 inscribed *Amerbach, ex dono Henric Petri 1551*)  
In a 16th-century vellum Sammelband
- 3  
Boston, Museum of Fine Arts  
(acquisition number 35.54)<sup>3</sup>  
Page dimensions not known. 46 leaves, complete  
Provenance: Leon de Laborde (according to a note in Jacques Charles Brunet's handwriting reported in the

- 1 Copy cited Schüling p.27. In this copy, folios A2 and A3 were carelessly folded, and the deckle fore-edges accidentally preserved untrimmed by the binder (page width unfolded 219/228mm).
- 2 Copy cited Brion-Guerry p.155; *Répertoire* p.113; Schüling p.27; Sabine Stampfli, *Katalog älterer Kunstbücher aus der Universitätsbibliothek Basel, 1495–1847. Ein Auswahlverzeichnis* (Basel 1978), p.112, no. 503. Exhibited: *Dix siècles de livres français*, Musée Beaux-Arts de Lucerne, 9 July–2 October 1949 (Lucerne 1949), p.32, no. 84.
- 3 Copy cited Rau p.478, no. 2; Henry Preston Rossiter, 'The perspective of Jean, called Pélerin, Canon of Toul', in *Bulletin of the Museum of Fine Arts* [Boston] 33 (1935), pp.31–33; Brion-Guerry pp.154–155; *Répertoire* p.113; Schüling p.27.



copy); Ambroise Firmin-Didot (sale Paris 29 May 1879, lot 284, to Quaritch); Bernard Quaritch (offered in their *General Catalogue*, London 1887, nos. 4377 and 37543, price £100; and *Monuments of typography*, London 1897, no. 471, price £105); Comtesse de La Baume-Pluvinel (sale Paris 24 April 1934, lot 119); E.P. Goldschmidt & Co., by whom sold to BMFA in 1935  
In a 19th-century green morocco binding (by Hagué)

4  
Cambridge, University Library  
(shelfmark Syn 4.50.5)<sup>4</sup>  
Page 294 × 212mm. 42 leaves, lacking French text  
Provenance: Georg II Fugger (1517–1559)  
In a 19th-century brown morocco binding

5  
Cambridge, Massachusetts, Harvard University  
(shelfmark Typ 515 05.679 F)<sup>5</sup>  
Page 298 × 202mm. 42 leaves, lacking French text  
Provenance: title-page inscribed *Venerabilis Dominus Magister Petrus Fridman dono dedit Vuolphg. Schmido Amicitie Ao. 1552*; Dietrichstein-Nikolsberg library (sale Lucerne 21–22 November 1933, lot 268, bought by Arthur Rau, for 1500 Swiss francs); Philip Hofer, New York, by 1935; his gift to Harvard College Library  
Extracted from a *Sammelband* and rebound *circa* 1934 in black morocco (by Sangorski & Sutcliffe)

6  
Frankfurt am Main, Stadt- und Universitätsbibliothek  
(shelfmark Einbandsammlung 34, Nr 6)<sup>6</sup>  
Page 315 × 210mm. 46 leaves, complete  
Provenance: Ottheinrich, Kurfürst von der Pfalz (1502–1559); Johann Hartmann Beyer (1563–1625)  
In a calf *Sammelband* (eight books, printed 1505–1550) with gilt supralibros (portrait and insignia) of Pfalzgraf Ottheinrich and date 1550

4 Copy cited H.M. Adams, *Catalogue of books printed on the Continent of Europe, 1501–1600, in Cambridge libraries* (Cambridge 1967), P–578; *Répertoire* p.113; Schilling p.27.

5 Copy cited Rau p.478, no. 5; Brion-Guerry p.155; Ruth Mortimer, *Harvard College Library, Department of Printing and Graphic Arts, Catalogue of Books and Manuscripts. Part I: French 16th Century Books* (Cambridge, MA 1964), no. 420; *Répertoire* p.113; Schilling p.27.

6 Copy cited Schilling p.27. The lower deckle edges are preserved by the binder.

7  
Göttingen, Niedersächsische Staats- und Universitätsbibliothek  
(shelfmark 2 Bibl UFF 241)<sup>7</sup>  
Page dimensions not known. 46 leaves, complete  
Binding not known

8  
Leipzig, Universität, Universitätsbibliothek ‘Bibliotheca Albertina’  
(shelfmark Math 63–t)<sup>8</sup>  
Page 298 × 210mm. 46 leaves, complete  
Probably extracted from a *Sammelband*  
Bound in 19th-century paper boards

9  
London, British Library  
(shelfmark C 24 c 21)<sup>9</sup>  
Page 301 × 210mm. 46 leaves, complete  
In a 19th-century green morocco binding

10  
London, British Library  
(shelfmark 536 l 21/1)<sup>10</sup>  
Page 283 × 197mm. 43 leaves, lacking E5 and F1 + F4 of French text  
Provenance: probably Sir Hans Sloane; octagonal black ink stamp ‘Museum Britannicum’ (type used *circa* 1760; see David Pearson, *Provenance research in book history. A handbook*, London 1994, pp.92, 95, and fig. 3.5)  
In a modern half-cloth library *Sammelband*

11  
Munich, Bayerische Staatsbibliothek  
(shelfmark 2 Math p 9)<sup>11</sup>  
Page 295 × 210mm. 42 leaves, lacking French text  
In an 18th-century vellum binding

7 Located in library OPAC, otherwise undocumented.

8 Located in library OPAC, otherwise undocumented.

9 Copy cited *Short-title catalogue of books printed in France and of French books printed in other countries from 1470 to 1600 now in the British Museum* (London 1924), p.343; Rau p.478, no. 7; Brion-Guerry p.155; *Répertoire* p.113; Schilling p.27.

10 Copy cited *Short-title catalogue* (*Op. cit.*, note 9), p.343; Rau p.478, no. 8; Brion-Guerry p.155.

11 Copy cited Schilling p.27; Bayerische Staatsbibliothek, *Alphabetischer Katalog 1501–1840* (Munich 1987), volume 7, p.390.



12

Munich, Bayerische Staatsbibliothek  
(shelfmark 2 Math p 9 a)<sup>12</sup>  
Page 302 × 213mm. 46 leaves, complete  
Rubricated in blue and red ink  
Extracted from a Sammelband (old foliation 197–242)  
Bound in 19th-century paper boards

13

Nancy, Bibliothèque municipale  
(shelfmark Res. 4230)<sup>13</sup>  
Page 277 × 205mm. 46 leaves, complete  
Provenance: Léon Cailhava (sale Paris October 1845, lot 1169, sold for 315 French francs)  
Gathering [F]<sup>4</sup> inserted from another copy  
In a 19th-century red morocco binding (by Koebler)

14

New York, Pierpont Morgan Library  
(shelfmark 25572 E 12 c)<sup>14</sup>  
Page 272 × 208mm. 46 leaves, complete  
Provenance: acquired from the Munich booksellers Jacques Rosenthal in 1928  
Bound in vellum-backed mottled paper boards

12 Copy cited *Alphabetischer Katalog* (*Op. cit.*, note 11), volume 7, p.390.

13 Copy cited Jean Nicolas Beaupré, *Nouvelles recherches de bibliographie lorraine 1500–1700* (Nancy & Paris 1856), pp.20–21; Anatole de Montaiglon, *Notice historique et bibliographique sur Jean Pèlerin dit le Viateur* (Paris 1861), p.21; Jacques Charles Brunet, *Manuel du libraire et de l'amateur de livres* (Paris 1860–1865), V, col. 1169; Johann G.T. Graesse, *Trésor de livres rares et précieux* (Dresden 1867), VI, p.296; Justin Favier, *Trésor du bibliophile lorrain* (Nancy 1889), pp.23–24 & pl. 32 (title page); Justin Favier, *Catalogue des livres et documents imprimés du fonds lorrain de la Bibliothèque Municipale de Nancy* (Nancy 1898), p.672, no. 11208; Rau pp.477–478, no. 1; Brion-Guerry p.155; *Répertoire* p.113; Schüling p.27; *Trésors des bibliothèques de Lorraine* (*Op. cit.*, note 3), p.78 (folio A8 reproduced).

14 Copy cited *The Pierpont Morgan Library, a review* [1924–1929] (New York 1930), p.105 (acquired as 'one of four known copies'); Rau p.478, no. 4; Brion-Guerry pp.154–155; *Répertoire* p.113; Schüling p.27. Exhibited: *The first quarter-century of the Pierpont Morgan Library. A retrospective exhibition* (New York 1949), no. 204. Facsimile: William M. Ivins, Jr., *On the rationalization of sight, with an examination of three Renaissance texts on perspective*, Metropolitan Museum of Art, Papers, no. 8 (New York 1938), Appendix, pp.47–53 (facsimile reprint of French text; a facsimile reprint of the entire copy is appended to the reprint New York 1973).

15

Paris, Bibliothèque nationale, Département des Estampes  
(shelfmark I ag 14 Rés.)<sup>15</sup>  
Page dimensions not known. 46 leaves, complete  
Provenance: acquired from Rapilly *circa* 1871  
Bound in red morocco

16

Paris, Bibliothèque de la Sorbonne  
(shelfmark Réserve XVI 134)<sup>16</sup>  
Page dimensions not known. 46 leaves, complete  
Provenance: Collège Louis-le-Grand  
Binding not known

17

Paris, private collection (seen by Rau *circa* 1935)<sup>17</sup>  
Page (or binding?) 304 × 205mm. 46 leaves, complete  
Provenance: [apparently *Catalogue des livres de la Bibliothèque de M. Pierre-Antoine Bolongaro-Crevenna*, Amsterdam 1789, II, p.241, no. 2790]; Benjamin Heywood Bright (sale Sotheby's March 1845, lot 4354); Bertram, 4th Earl of Ashburnham (sale Sotheby's 9 May 1898, lot 3848); Charles Fairfax Murray (sold *circa* 1918, possibly to Rahir)

In an 18th-century citron morocco binding (with [Hieronymus Rodler], *Ein schön nützlich büchlin und underweisung der kunst des Messens*, Simmern 1531)

15 Copy cited *Catalogue Général des livres imprimés de la Bibliothèque nationale. Auteurs* (Paris 1935), volume 132, col. 361 & volume 208 (1970), col. 70; Bibliothèque nationale, *Inventaire du fonds français. Graveurs du seizième siècle* (Paris 1938), II, pp.30–32 (inexact collation); Brion-Guerry p.155 (this the copy utilised for her study); Robert Brun, *Le livre français illustré de la renaissance* (Paris 1969), p.269; *Répertoire* p.113; Schüling p.27. 'La date et le lieu d'impression, qui ne figurent pas sur cet ex., sont restitués d'après la notice d'Anatole de Montaiglon' (*Catalogue Général*).

16 Copy cited Charles Beaulieux, *Catalogue de la Réserve XVIe siècle de la Bibliothèque de l'Université de Paris* (Paris 1910), I, p.293; Brion-Guerry p.155; *Répertoire* p.113; Schüling p.27; Pierrette Limacher, *Inventaire des livres du XVIe siècle de la Bibliothèque de la Sorbonne. Tome I* (Paris 1984), col. 211, no. 512.

17 Copy cited by Hugh W. Davies, *Catalogue of a collection of early French books in the library of C. Fairfax Murray* (London 1910), no. 566 (inexact collation); Rau p.478, no. 3; Brion-Guerry p.155.



Pommersfelden, Graf von Schönborn'sche  
Schlossbibliothek  
(shelfmark LV 84)<sup>18</sup>  
Page dimensions not known. Apparently complete  
Provenance: inscribed *Sebastian Holtzfeld*; Charterhouse  
of Erfurt (according to Brion-Guerry)  
Bound in contemporary reversed leather (with Vitruvius,  
[De Architectura libri X], Venice 1511)

Rome, Biblioteca Apostolica Vaticana  
(old shelfmark, G. IV E5 31)<sup>19</sup>  
Page dimensions not known. 40 leaves, lacking A1, A3,  
A6, E1, E10, F4  
Provenance: conte Leopoldo Cicognara (1767–1834)  
'Rilegatura antica in cuoio' (according to Da Villa)

Vienna, Österreichische Nationalbibliothek  
(shelfmark 72 E. 55\*)<sup>20</sup>  
Page 296 × 206mm. 46 leaves, complete  
In a 19th-century half-calf library binding

Wolfenbüttel, Herzog-August-Bibliothek  
(shelfmark A 27.1 Geom 2<sup>o</sup>)<sup>21</sup>  
Page 306 × 215mm. 46 leaves, complete  
Provenance: August der Jüngere, Herzog von  
Braunschweig-Lüneburg-Wolfenbüttel (1579–1666)  
Bound in 16th-century leather-backed wooden boards

18 Copy cited Brion-Guerry p.155; Schilling p.27.

19 Copy cited Leopoldo Cicognara, *Catalogo ragionato dei libri d'arte e d'antichità posseduti dal Conte Cicognara* (Pisa 1821), no. 868; Maria Da Villa, 'Per la storia della prospettiva. Il *De artificiali perspectiva* e Jean Pèlerin (Viator)', in *Rendiconti dell'Accademia delle scienze fisiche e matematiche* [Naples], series 4, volume 7 (1937), pp.157–164, 200–205; Brion-Guerry p.155; *Répertoire* p.113; Schilling p.27.

20 Copy cited Montaignon (*Op. cit.*, note 13), p.21; Brion-Guerry p.155; Schilling p.27.

21 Copy cited Friedrich A. Ebert, *Allgemeines bibliographisches Lexikon* (Leipzig 1830), II, p.1026, no. 23548; Herzog August Bibliothek, *Verzeichnis medizinischer und naturwissenschaftlicher Drucke 1472–1830. Reihe A*, edited by Ursula Zachert (Millwood, NY & Nendeln 1982), volume 3, p.1258.

22 Copy cited *Catalogi Bibliothecae Christiae a cl. viro Joh. Frid. Christio P.P.O. in Acad. Lips. olim in priuatos usus collectae nunc vero auctione publica* [8 August 1757] *vendendae* (Leipzig [1757]), I, p.375, no. 3574.

- a Christ, Johann Friedrich (1701–1756)<sup>22</sup>
- b D'Estrées, Victor-Marie, duc (1660–1737)<sup>23</sup>
- c Jamnitzer, Wenzel I (1508–1585) — Panzer, Georg Wolfgang (1729–1805)<sup>24</sup>
- d Paris, unspecified public collection<sup>25</sup>
- e Paris, Bibliothèque Sainte-Geneviève<sup>26</sup>
- f Peutinger, Konrad (1465–1547)<sup>27</sup>

23 Copy cited *Catalogue des livres de la bibliothèque de feu Monseigneur le maréchal duc d'Estrées* (Paris 1740), no. 8505; Anatole de Montaiglon, *Notice historique et bibliographique sur Jean Pèlerin dit le Viateur* (Paris 1861), p.21.

24 Copy cited Georg W. Panzer, *Annales typographici ab anno MDI ad annum MDXXXVI continvati* (Nuremberg 1800), volume VIII, p.332 & (Nuremberg 1803), XI, p.509: 'Opus rarissimum. Collectionis nostrae exemplum, optime servatum, extabat olim in bibliotheca Wenzel Jamiczer'; *Bibliothecae a D. Georgio Wolfgang Panzero... nunc D. 5. Januar. Anno 1807. Publicae auctionis lege dividendae. Pars I* (Nuremberg 1806), p.44, no. 331 (in a 'Lederband').

25 Copy 'sans les quatre feuillets du texte français, qui doit se trouver dans un dépôt public français' cited by Rau p.478, no. 6; and by Brion-Guerry p.155.

26 Cited by Mercier de Saint-Léger, *Notice raisonnée des ouvrages de Gaspard Schott* (Paris 1785), pp.8–9, 86–88; lost by 1861 according to Montaignon (*Op. cit.*, note 13), p.21. Only a copy of the 1521 third edition remains in the library (*Catalogue des ouvrages imprimés au XVIe siècle*, Paris 1980, p.298).

27 Entered the Augsburg Stadtbibliothek in 1810 (bound in vellum together with Pèlerin, *De artificiali perspectiva*, Nuremberg 1509, wearing Peutinger shelfmark BB29), since lost. The volume is no. 584.1–2 in the virtual reconstruction of Peutinger's library (Dr. Hans-Jörg Künast, Institut Europäische Kulturgeschichte, Augsburg).

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VITRUVIUS POLLIO, Marcus  
Rome? *circa* 80/70 BC — Rome? *circa* 20 BC

[De architectura libri decem]  
*M. Vitruvius per locundum solito  
castigatior factus cum figuris et  
tabula ut iam legi et intelligi possit.*

Venice, Joannes Tacuinus, 22 May 1511

Folio (290 × 210mm), 124 leaves, complete, collating AA4 A–N<sup>8</sup> O<sup>6</sup> P<sup>10</sup> (blank P<sup>10</sup>), A1–O6 foliated 1–110 (the register incorrectly calls for 8 leaves in quire O). Printed in Roman type with occasional words in Greek, 41 lines.

136 woodcut illustrations and diagrams mostly enclosed by a double-line border (52 × 128mm to 230 × 132mm), plus four-piece woodcut title-border with dolphins (see below), eleven woodcut outline initials (one 9-line and ten 7-line) within a double-line border, all illustrations, diagrams, and initials with FINE CONTEMPORARY COLOURING. Woodcut orb and cross device incorporating the printer's initials (Kristeller 326). In this copy, folio 92 is correctly numbered, and the woodcut on folio G8 verso is printed upside down as usual (see below).

Inventory inscription 'N<sup>o</sup>. 2390' in brown ink at head of title-page. Marginal annotations in Latin written in brown and red ink by a single contemporary hand (see below). Ownership stamp (20 × 50mm) expertly deleted from blank area of title-page. Title-border trimmed at bottom by the binder's knife (2mm of design lost). Three small wormholes in title-page, two of which continue into quires A and B, the third persisting into quire F (passing mostly through lower margins), otherwise in excellent state of preservation.

Bound first in our Sammelband, before (2) Dürer and (3) Pèlerin (for description of binding, see above).

The didactic treatise *On Architecture* is the only text on architectural theory and practice to have survived from classical antiquity and the single most important work of architectural history in the Western world, having shaped humanist architecture and the image of the architect from the Renaissance to the present. It was written *circa* 30–20 BC for an intended readership of knowledgeable patrons

(including foremost the Emperor Augustus) and professional architects and conceives of architecture as a Liberal Art concerned with the entire built and mechanical environment. The first eight of its ten books deal with *aedificatio*, the science of building, including the education of an architect, theoretical principles, materials, public and private building types, hydrology and hydraulics; book nine is concerned with *gnomonice*, the working of the heavens, the art of making sundials, and relevant mathematics; and the last book with *machinatio* or mechanics, military engineering and ballistics.

Some eighty manuscripts of *On Architecture* survive, divided into two primary families, the oldest extant written at the Carolingian court. Until the mid-14th century, there was apparently just one copy in the Italian peninsula, in the library at Montecassino. About 1350, Petrarch brought a copy from France and showed it to Boccaccio and other literary friends, and about the same time Nicola Acciaiuoli obtained a copy from Montecassino.<sup>1</sup> By the mid-15th century, the treatise was widely disseminated in humanistic circles, and the long process of comparing the text with surviving Roman architecture had begun. Soon the treatise was directly influencing architectural practice. The first printed edition was produced by the grammarian Giovanni Sulpizio da Veroli and printed at Rome by Eucharius Silber *circa* 1486–1487. Second and third editions were published (without the name of their editor) at Venice in 1495 and 1497.<sup>2</sup>

- 1 On the manuscript tradition and transmission, see Lucia A. Ciapponi, 'Vitruvius,' in *Catalogus translationum et commentariorum*, edited by F. Edward Cranz (Washington, DC 1976), III, pp.399–409; S.F. Weiskittel & L.D. Reynolds, 'Vitruvius', in *Texts and transmission: A Survey of the Latin classics*, edited by L.D. Reynolds (Oxford 1983), pp.440–443; Carol H. Krinsky, 'Seventy-eight Vitruvius manuscripts', in *Journal of the Warburg and Courtauld Institutes* 30 (1967), pp.36–70.
- 2 The *terminus ad quem* of the undated *editio princeps* is 16 August 1487, on which day John Shirwood, protonotary to the Apostolic See in Rome, purchased a copy (now Corpus Christi, Oxford; see Dennis E. Rhodes, *A catalogue of incunabula in all the libraries of Oxford University outside the Bodleian*, Oxford 1982, no. 1835). The second edition (Goff V–307) was printed by Christophorus de Pensis on 13 November 1495 (it has an additional colophon reading Florence 1496, on which see *Catalogue of books printed in the XVth century now in the British Museum*, reprint London 1963, V, p.xlii). The third edition (Goff C–742) was printed by Simon Bevilacqua on 3 August 1497 with a tract of Cleonides prefixed. A partial collation of these editions reveals independent work by three editors; see Lucia A. Ciapponi, 'Fra Giocondo da Verona and his edition of Vitruvius', in *Journal of the Warburg and Courtauld Institutes* 47 (1984), pp.72–73 and Appendix I.



## LIBER QVARTVS.



VM aīaduertissem Impator plures de architectura pcepta volumiaq; cōmētariog; nō ordinata sed icepta vti particulas errabūdas reliqisse, dignā & vtilisimā rē putauī antea disciplinæ corpus ad pfectā ordinationē pducere, & pscriptas in singulis voluminibus singulorum generum qualitates explicare. Itaq; Cæsar priō volumine tibi de officio eius & qbus eruditū eē rebus architectum oporteat, exposui, Secūdo de copiis materiæ & qb' ædificia cōstituunt, disputauī, Tertio autē de ædiū sacrag; dispositiōibus & de earg; genere

varietate q̄sq; & quot habeāt spēs, earūq; q̄ sūt in singulis gñib', distribuōes, ex tribusq; gñib' q̄ subtilissimas hēret ppor tōib' modulog; q̄litates, ionici gñis mores docui. Nūc hoc volumē de dorici corinthiq; istitutis & oībus dicā, eorūq; discrimīa & proprietates explicabo.

De tribus gñibus columnarū origines & inuentiōes. Cap. I.

Columnæ corinthiæ pter capitula oēs symmetrias hñt, vti ionicæ, sed capitulog; altitudies efficiunt eas pro rata excelsiores & graciliores, q̄ ionici capituli altitudo tertia pars ē crassitudis columnæ, corinthii tota crassitudo scapi, Igit̄ q̄ duæ partes ē crassitudine columnarū capitulis corinthiog; adiciunt efficiunt excelsitate speciem earg; graciliore. Cætera mem



c. capitulum  
corinthiū  
d. capitulū  
ionicum

a. columna ionica  
b. columna corinthia

e. spira attica  
f. spira ionica





13. Illustrations of a water mill and the *Coclea* or water screw (folios N5 verso and N6 recto).

Reproduced on previous page 12. 'The Corinthian column appears more slender than the Ionic' (folio D8 recto).

Reproduced opposite 14. Construction of a cistern using *opus signinum*, a waterproof mortar of crushed terracotta (folio L3 recto).

The numerous Greek and Latin theoretical and technical terms, as well as proportions and measurements expressed in Roman numerals, had become garbled by generations of scribes, and the texts presented in the earliest printed editions are replete with inconsistencies, pervaded by confusing and even nonsensical passages. While some words in Greek were restored by the editor of the 1497 edition, Sulpizio and the anonymous editor of the 1495 edition had printed Greek words in Latin characters, and in all three editions blank spaces occur in book eight where three whole Greek poems belong. The nine to eleven geometric diagrams to which Vitruvius referred in his text were not preserved in the manuscript tradition. Sulpizio provided one (a circle, at the end of book one) and ordered his printer to leave wide margins in which his readers could supply their own. Additional geometrical figures were introduced in the two subsequent editions, but they were of little help in elucidating the text.

The present, fourth edition, represents a turning point in Vitruvian studies. It delivers an ingeniously reconstructed

and emended text integrated with diagrams and illustrations and complemented by a lexicon of Vitruvius' technical terminology and by a table of the mathematical symbols which he used. Nearly all the Greek words are reinstated and the Greek text of the epigrams is published for the first time. The title proudly announces the editor's achievement: 'An exceptionally good text of M. Vitruvius prepared by Giocondo with figures and index so that it can now be read and understood'. Indeed, for the first time, the work was presented in a form which enabled Renaissance architects and engineers and their patrons to comprehend what Vitruvius really wrote.

#### THE EDITOR

Fra Giovanni Giocondo (1433–1515) was a humanist philologist, thoroughly acquainted with the Greek sources of Vitruvius as well as other ancient texts on scientific disciplines, and at the same time a practising architect and field archaeologist. From his youth, Giocondo had collected Latin inscriptions and studied the remains of ancient building, in



rint, vti percolatiōibus aquæ transmutari possint, multo salubriorē ei⁹ vsū  
efficient, Limus enim cū habuerit quo subsidat, limpidior aqua fiet, & sine  
odoribus conseruabit saporem, si non, salē addi necesse erit, & extenuari.



c. mortariū

a. Fistuca seu  
uestes lignei  
b. opus signi  
num

Quæ potui de aq̃ virtute & varietate, q̃sq; habeat vtilitates, quibusq; ratio  
nibus ducatur & p̃betur, In hoc uolumine posui, de gnomonicis vero re/  
bus & horologiorum rationibus insequenti perscribam.

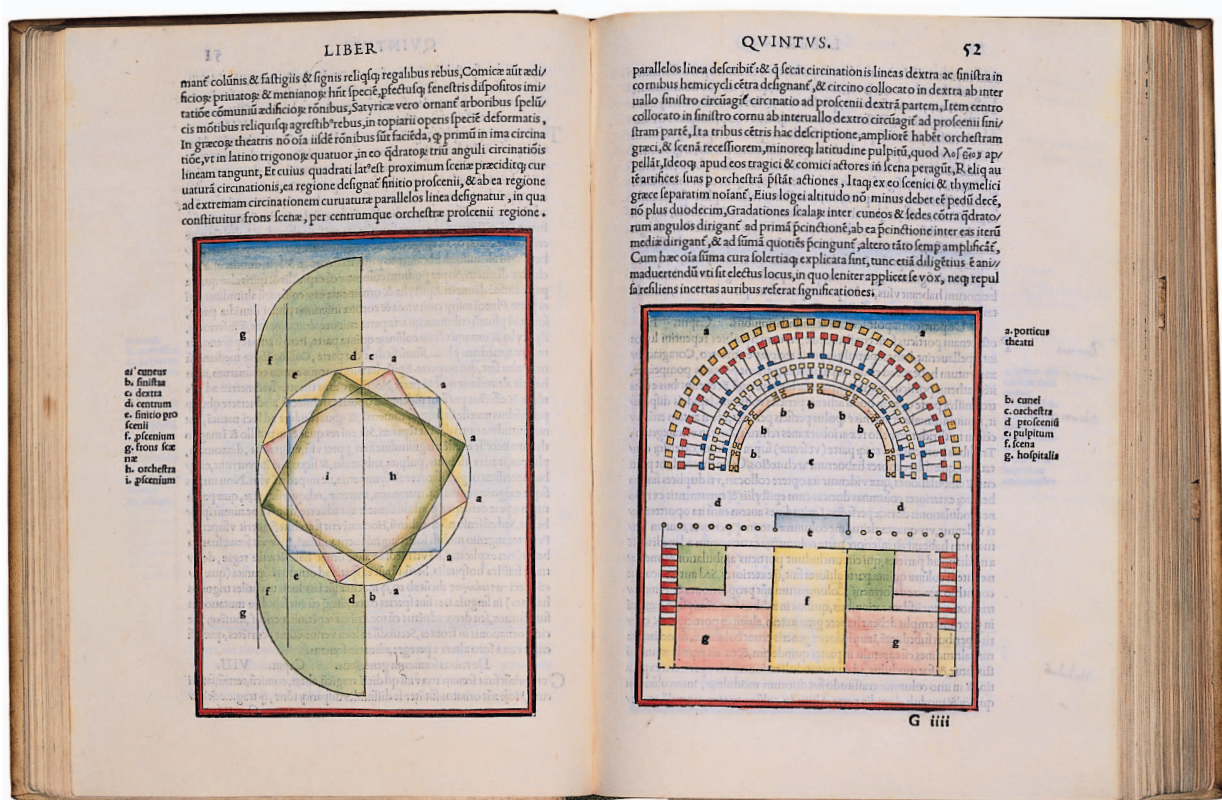
## M. VITRUVII DE ARCHITECTVRA.

## LIBER NONVS.



OBILIBVS athleticis, q olympia, pithia, isthmia, ne/  
mea, uicissēnt, græcorū maiores ita magnos honores  
constituerūt, vti nō modo in cōuentu stātes cū palma  
& corona ferāt laudes, sed etiā cū reuertant in suas ci/  
uitates cū victoria triūphantes quadrigis ī mœnia &  
in patrias inuehant e req; publica perpetua vita con/  
stitutis uestigialibus fruant, Cū ergo id aīaduertā ad  
miror quid ita nō scriptoribus iidē honores etiāq; maiores sint tributi, qui





15. Woodcuts illustrating principles of Greek theatre design (folios G3 verso and G4 recto).

Rome, and also in Naples and its environs. In 1492, he had been paid by the king of Naples for illustrating two manuscripts of the Sienese architect Francesco di Giorgio Martini, and it is supposed that Francesco di Giorgio's own study of Vitruvius – he prepared a partial Italian translation about the same time Sulpizio produced the *editio princeps* – stimulated Giocondo to edit the treatise.

In 1495, Giocondo left Naples to become 'deviseur des bastiments' to Charles VIII, king of France. During his ten-year residence in Paris, Giocondo apparently gave lectures on Vitruvius assisted by a commentary backed up with illustrations.<sup>3</sup> On returning to Italy, Giocondo settled in Venice, as architect to the Council of Ten, and in that capacity and as an hydraulics expert undertook projects throughout the

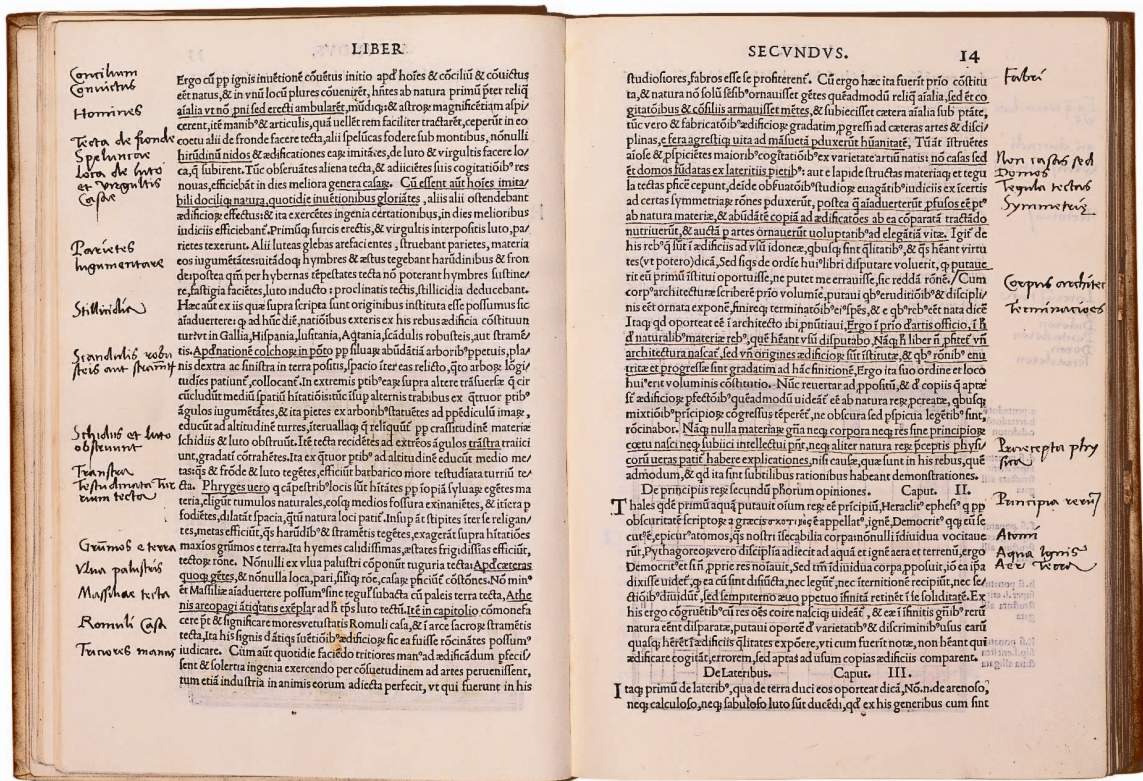
Veneto, meanwhile editing Nonius Marcellus, Caesar, and the *Scriptores rei rusticae*, for his friend the publisher Aldo Manuzio. Despite his advanced age, Giocondo was invited to Rome by Pope Leo X in 1514 and appointed architect of St. Peter's, together with Raphael and Giuliano da Sangallo; he died there on 1 July 1515.

#### THE EDITION

The exact manuscripts utilised by Giocondo in his edition of Vitruvius have not been certainly identified, however, it appears that he based his text on manuscripts of several families, including part of the manuscript tradition unknown to the earlier editors. The Greek epigrams of Vitruvius were restored by Giocondo with the help of a friend and fellow-member of the Aldine Academy, Janus Lascaris, who also identified for Giocondo some Byzantine poliorcetic sources used by Vitruvius. Giocondo's consultation of Lascaris is mentioned in a letter of Giovanni Bembo, who also credits himself, 'Ioannes Marcus of Lendinara, the expert on optics', and 'Nana, the German mathematician',

3 Vladimir Jurén, 'Fra Giovanni Giocondo et le début des études vitruviennes en France', in *Rinascimento* 14 (1974), pp.101–115, describing a copy of the Venice 1497 edition (Bibliothèque nationale, Rés. 318) containing annotations and drawings made by Guillaume Budé under direction of Giocondo; see further, Ciapponi (*Op. cit.*, note 2), p.80.





16. Annotations to a discussion of the timber huts supposedly built by primitive man (book two, chapter 1, paragraphs 2-9).

with helping Giocondo resolve other Vitruvian problems.<sup>4</sup>

The 136 woodcut illustrations accompanying Giocondo's text are an outstanding feature of his edition. They include non-technical illustrations reminiscent of Venetian painting of the time, such as the discovery of fire by primitive men (folio B5 recto), the discoveries of Archimedes (folio L5 verso), Archytas and Eratosthenes (L6 recto), and a man searching for water according to a technique described by Vitruvius (K4 recto); antique buildings in plan, elevation, and section (with particular emphasis on houses); architectural orders; and woodcuts of the machines for hydraulics, lifting, and defence described by Vitruvius in book ten. In the illustration of a mill (folio N5 verso), the two sacks on the floor have a version of the printer's orb and cross device with his initials ZT (see our fig. 13). The

4 Ciapponi (*Op. cit.*, note 2), pp.75-76, 83-84. Politian had found the epigrams in a manuscript brought to Lorenzo de' Medici from Greece (now Laurentianus Gr. 56, 1) and from that source Lascaris apparently copied them into his own copy of the Venice 1497 edition.

title-border, a continuous design with scrolling foliage and dolphin motifs in four parts, became one of the most influential pieces of ornamentation of the century, copied not only in Venice, but also at Rome, Bologna, Basel, Cologne, London, and Paris.

The edition was reprinted with Giocondo's edition of Sextus Julius Frontinus' *De aquaeductibus urbis Romae* by Filippo Giunta at Florence, in 1513, in octavo format, with reduced copies of the Tacuinus blocks. Antonio da Sangallo the younger owned a copy of this second edition, as did Raphael. Cesare Cesariano consulted a copy when producing his Italian translation, but he designed his own edition on the luxurious model of Giocondo's 1511 edition. A third edition by Giunta's heirs followed in 1522; a fourth edition was printed surreptitiously at Lyon in 1523. The text and illustrations of Giocondo's edition continued to influence editions of Vitruvius well into the next century and his table of mathematical symbols was often quoted verbatim. The impact of the edition on architects and engineers of the Cinquecento has been more difficult to assess.

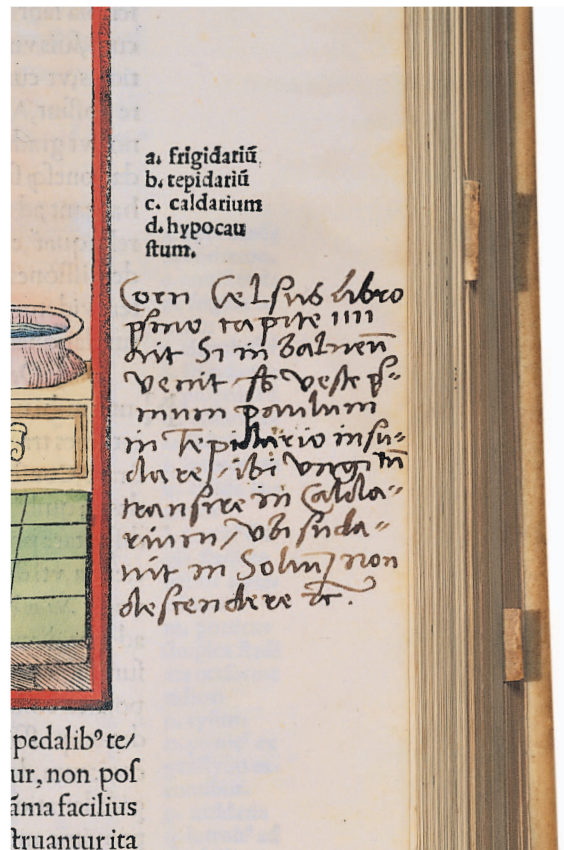


## THE COPY

There is insufficient evidence to reconstruct with certainty the history of this copy. The palette utilised by the colourist and his manner of applying the pigments strongly suggest that the copy was coloured in Venice. The colours pink, yellow, red, green, blue, and black are used on the eleven woodcut initials (50 × 45mm) and diagrams with remarkable subtlety, whereas the woodcuts incorporating background landscapes or human figures are coloured to obtain maximum dramatic effect. This style of decoration is typically Italian, quite unlike colouring executed north of the Alps.<sup>5</sup>

The annotations are by a single hand, writing in brown and red inks, apparently at different times, underscoring words and phrases to facilitate later reference, summarising in the margin the content of adjacent text, or simply extracting names out of it, occasionally commenting on a passage or on an illustration in several lines. A few Greek names and terms are translated into Latin, for example in a discussion of a herb used by the Cretans to cure splenetics (A7 recto), where the unidentified annotator cites Dioscorides, thereby possibly signalling his own background. The hand defies an unequivocal localisation to either Italy or Germany, nor can it be dated precisely.

Variation in the density of annotation reveals the interests of the annotator. He read with attention and care the first four chapters of book one, devoted respectively to the education of the architect, the analytical terms of architecture, the three divisions of architecture (construction,



17. Detail of folio G6 recto shown actual size (see footnote 6).

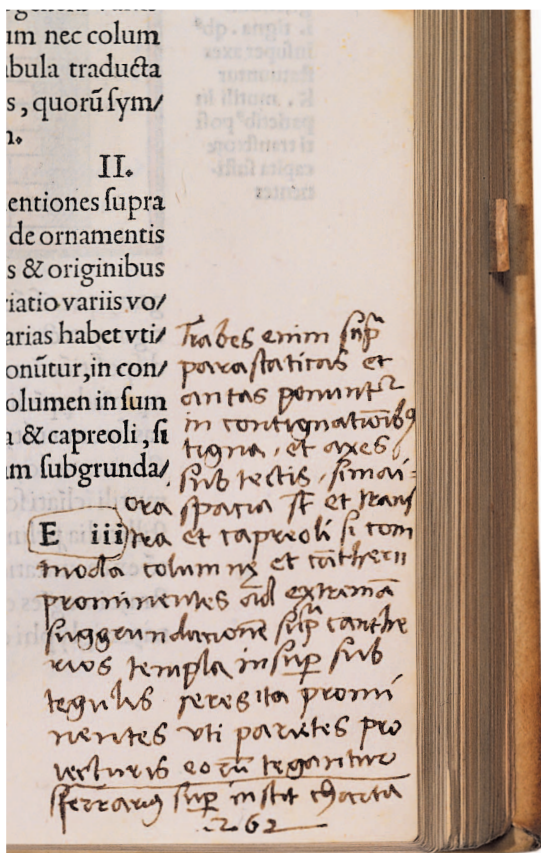
5 Two other copies with coloured illustrations have been seen recently on the market. The Otto Schäfer copy (sold by Sotheby's, New York, 8 December 1994, lot 194, realised \$145,500) is finely coloured throughout, and also partly rubricated; compare the reproduction of folio L3 recto in Sotheby's sale catalogue, p.194, with our fig. 14. Unusually, three woodcuts in the Schäfer copy (folios A4 recto, E1 recto, G8 verso) were corrected by paste-on cancels before being coloured (in our copy, woodcuts on A4 recto and E1 recto are printed correctly, and G8 verso printed upside down and coloured uncorrected).

The Haskell Norman copy (sold by Christie's, New York, 18 March 1998, lot 223, realised \$277,500) has unidentified heraldic insignia painted by a contemporary hand on folio A1 recto, and woodcut initials decorated in red, blue, and green, with penwork in white and black, highlighted with gold. The title-border and eight only of the text woodcuts were coloured at later date: the sale catalogue speculates 'perhaps in the 18th century', whereas Diana H. Hook & Jeremy M. Norman, *The Haskell F. Norman Library of Science & Medicine* (San Francisco 1991), pp.790–791, no.2157, comment 'probably not contemporary'. In the Norman copy, folio 92 is incorrectly numbered 62 (the leaf is foliated correctly in our copy).

gnomonics, mechanics), and choice of a healthful site, apparently giving up as Vitruvius commenced a technical discussion of the construction of city walls. In the margin next to Giocondo's illustration of a caryatid portico (folio A2 recto), the annotator cites Giovanni Battista Pio's *Annotamenta*, printed at Bologna in 1504–1505 (chapter 119, 'Quae sint in eodem cariatides').

A pattern is established by book two: its first two chapters, on the invention of the arts and of building and on the principles of earth–air–fire–water chemistry as expressed by the pre-Socratic philosophers, are closely annotated, also the following chapter on mud-brick masonry, after which the annotator again breaks off, leaving unremarked subsequent chapters on other building materials. He annotates the preface of the third book, concerned with judgment of artistic skill, but not the discussion which follows on temple architecture and construction (continued in book four). His next annotations





18. Detail of folio E3 recto shown actual size (see footnote 7).

appear in chapters nine and ten of book five, adjacent to discussions of theatre porticoes and baths, and include a quotation from the discussion ‘De his quibus caput infirmum est’ in Celsus’s *De medicina* (see our fig. 17).<sup>6</sup>

Uncharacteristically, chapters two, three, four, and fourteen of book seven, in which Vitruvius deals with specific aspects of finishing – plasterwork, ceilings, plasterwork in damp locations, and preparation of pigments which simulate purple, Attic ochre, malachite green, indigo, etc. – are annotated. The annotator then rested his pen until the

6 The annotation is adjacent to Vitruvius’s illustration of the correct arrangement of bronze tanks (caldarium, tepidarium, frigidarium) above the furnace in a bath (book five, chapter 10, paragraph 1) and reads ‘Corn. Celsus libro primo capite iiii Si in balne[u]m venit s[u]b veste primum paulum in tepidario insudare ibi ungi tu[m] transire in caldarium, ubi sudarit in Solium non descendere’ (compare the edition of C. Daremberg, Leipzig 1859, p.22).

preface of book eight, on ‘water as the first principle of all things’, afterwards again until a passage in chapter three, where Vitruvius refers to the medicinal properties of hot springs. The technical discussion in the final books interests our annotator not at all: only chapters concerned with the Greek inventors of sundials and water-clocks (book nine, chapter nine) and Diades and his siege engines (book ten, chapter nineteen) inspire marginalia.

There is evidence that the annotator consulted manuscripts. Adjacent to Vitruvius’s discussion of the nomenclature of Doric and Ionic roof systems (book four, chapter 2, paragraph 1), the annotator supplies in the margin (see our fig. 18) a more honest reading, deleting a gloss printed by Giocondo, Sulpizio, and the editors of the 1495 and 1497 editions. In the last line the annotator identifies the manuscript in his hands, however we make no sense of it (*fer[ia... ?] sup[er] inst[ar ?] charta 262*).

On this evidence, we conclude our unidentified annotator was more interested in Hellenistic liberal and scientific knowledge, than in Roman construction methods and forms. He knew Greek and was perhaps a physician, or at least was in possession of medical knowledge.

REFERENCES Staatliche Museen zu Berlin, *Katalog der Ornamentstichsammlung der Staatlichen Kunstbibliothek Berlin* (reprint New York 1958), no. 1798; Laurence Hall Fowler & Elizabeth Baer, *The Fowler architectural collection of the Johns Hopkins University. Catalogue* (Baltimore 1961), no. 393; Ruth Mortimer, *Harvard College Library, Department of Printing and Graphic Arts, Catalogue of books and manuscripts. Part I: Italian 16th century books* (Cambridge, MA 1974), no. 543

7 The text of Giocondo (gloss): *Trabes enim supra columnas & parastatas & antas ponuntur, in contignationibus tigna & axes, sub tectis si maiora spatia sunt, columnen in summo fastigio culminis, unde & columnae dicuntur [sic], & transtra & capreoli, si commoda, columnen & canterii prominentes ad extremam subgrundationem. Supra canterios, te[m]pla, deinde insuper sub tegulas assere ita promine[n]tes, ut parietes proiecturis eorum tegantur* (folio E3 recto and verso).

The annotator writes: *Trabes enim sup[ra] parastaticas et antas ponunt[ur] in contignatio[n]ib[us] tigna, et axes sub tectis si maiora spatia s[un]t et transtra et capreoli si commoda columnen[em] et cantherii prominentes ad extrama[m] suggrundatione[m] sup[ra] cantherios templa insup[er] sub tegul[as] [asse?]res ita prominentes ut parietes proiecturis eoru[m] tegantur*. Modern editors also delete the gloss. Manuscripts containing it are cited in the editions of Gottlob Schneider (Leipzig 1808), II, p.238; and Valentinus Rose & Herman Müller-Strübing (Leipzig, Teubner, 1867), p.88.



## DÜRER, Albrecht

Nuremberg 1471 — Nuremberg 1528

*Underweysung der messung, mit dem zirckel und richtscheyt, in Linien ebnen unnd gantzen corporen, durch Albrecht Dürer zu samem gezogen, und zu nutz allen kunstlieb habenden mit zu gehörigen figuren, in truck gebracht, im jar. M.D.XXV.*

Nuremberg, [Hieronymus Andreae, called Hieronymus Formschneider?], 1525

Folio (290 × 210mm), 90 leaves, complete, collating A–N<sup>6</sup> O–Q<sup>4</sup> (blank Q<sup>4</sup> retained), not foliated or paginated. Printed in Gothic type, 54 lines per page (folio G<sup>4</sup> recto). Errata (25 lines) on Q<sup>3</sup> verso. First state of the title-page (Bohatta 1a). Sheets of quires A–K with a pot watermark (Meder 158); in quires L–P a crown watermark with height 120mm (evidently Meder 20, reproduced oversize), in final blank a bull's head watermark with height 156mm (comparable to Meder 84, see our fig. 24).

Approximately 200 illustrations designed by Dürer and cut by Hieronymus Andreae, numbered 1–50 [50 *bis*] in book one; 1–19 [20] 21 [21 *bis*] 22–23 [23 *bis*] 24 [24 *bis*] 25–29 [30] 31–36 in book two; and 1–4 [4 *bis*] 5–6 6 [sic] 7–16 16 [sic] 17–27 [unnumbered illustrations of letter forms] 29–34 [34 *bis*] 35–42 34 [*i.e.* 43] 44–51 [51 *bis*] 52–62 [two unnumbered illustrations] in books three and four. Woodcut on folio Q<sup>3</sup> recto signed with monogram AD and dated 1525; woodcut no. 36 on C<sup>5</sup> verso and no. 26 on K<sup>1</sup> recto both printed on cancel slips pasted over woodcuts, as usual; woodcut no. 59 on P<sup>4</sup> verso and no. 61 on Q<sup>1</sup> recto are extended by means of printed pasted slips, as usual. In this copy, the upper margins of H<sup>2</sup> and H<sup>3</sup> were folded in by the binder (18mm) to safeguard the entire design.

Vellum tab affixed to margin of title-page. In excellent state of preservation.

Bound second in our Sammelband, after (1) Vitruvius and before (3) Pèlerin (for description of binding, see above).

First edition (first state) of *Instruction in measurement with compass and ruler*, the first of the three theoretical treatises published by Dürer towards the end of his life, one of the earliest mathematical works published in the German vernacular, and among the most beautiful printed books of the German Renaissance.<sup>1</sup>

The treatise is aimed at painters, sculptors, architects, goldsmiths, stonemasons and other craftsmen and explains the application of practical geometry to drawing and the principles of perspective. Dürer wrote it to repair omissions that he perceived in the training of young German artists, as the first part of the projected series *Speiss für Malerknaben* ('Nourishment for young painters') which he commenced in 1508–1509. In the dedicatory address to Willibald Pirckheimer, Dürer explains that German apprentices have 'never learned the art of measurement, without which no one can become a true artisan. It is the fault of their masters who themselves were ignorant of this skill. It is this skill which is the foundation of all painting'.<sup>2</sup>

### CONTENTS

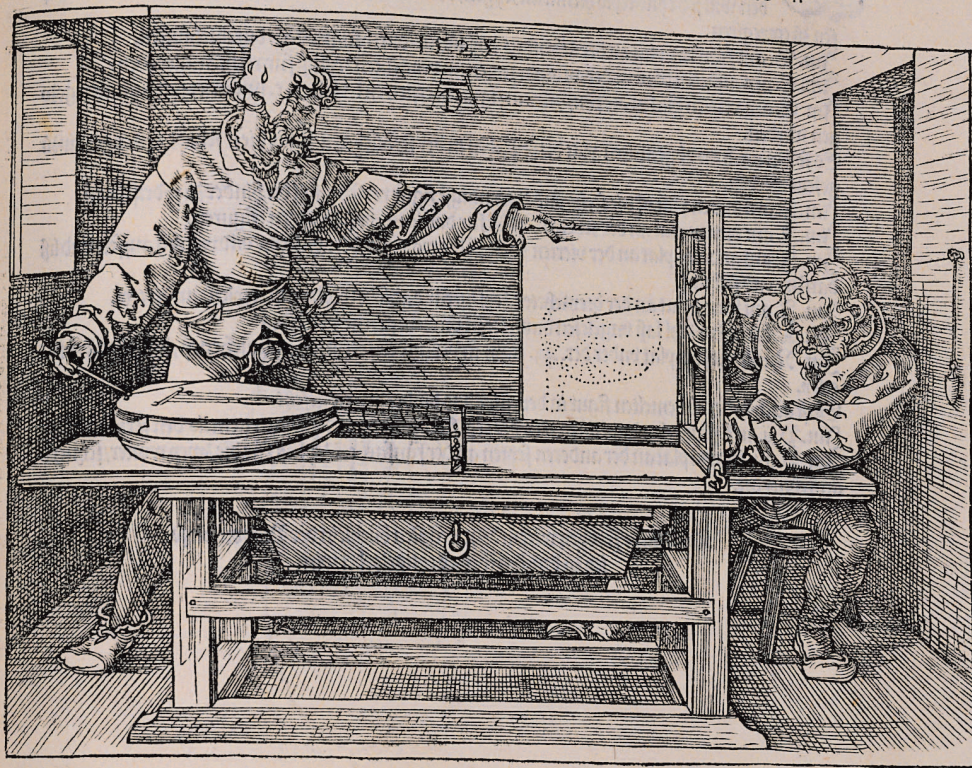
The work is divided into four books, beginning with an exposition of linear geometry, the construction of plane curves (the spiral of Archimedes, logarithmic and tangential spirals, conchoids) and helices, the construction of the so-called *folium Dureri* ('Dürer's leaf'), and the construction of conic sections, the latter being perhaps Dürer's most substantial contribution to mathematics. He considers all the conics and illustrates methods of constructing the parabolic shape of a burning mirror by use of vertical and horizontal sections and for determining the oblique section of a cone (see our fig. 21). Although theoretically sound, the latter technique is difficult to operate, and the actual shape of the section obtained is egg-shaped rather than

1 On the variant states of this first edition, see Hans Bohatta, *Versuch einer Bibliographie der kunsttheoretischen Werke Albrecht Dürers* (Vienna 1928), no. 1a; and Alvin Jaeggli, 'Bibliographical excursus', in *Albrecht Dürer. Unterweisung der messung*, facsimile reprint edited by Christine Papesch (Zurich 1966), pp.210–215. Reprints and translations are enumerated by Matthias Mende, *Dürer-Bibliographie*, *Bibliographie der Kunst in Bayern, Sonderband* (Wiesbaden 1971), pp.451–456. Dürer's *Unterricht zu Befestigung der Stett* was published in 1527 and his *Vier Bücher von menschlicher Proportion* appeared posthumously in 1528.

2 Albrecht Dürer, *The Painter's Manual: a manual of measurement of lines, areas, and solids by means of a compass and ruler*, translation & commentary by Walter L. Strauss (New York 1977), p.37.



mit einem andern puncten aber also wiß das du die gansen lauten gar an die taffel punctirſt / dann  
 zeuch all puncten die auf der taffel von der lauten worden ſind mit linien zuſamē ſo ſieheſt du was dar  
 auß wirt / alſo magſt du ander ding auch abzeichnen. Diſe meynung hab ich hernach außgeriſſen.

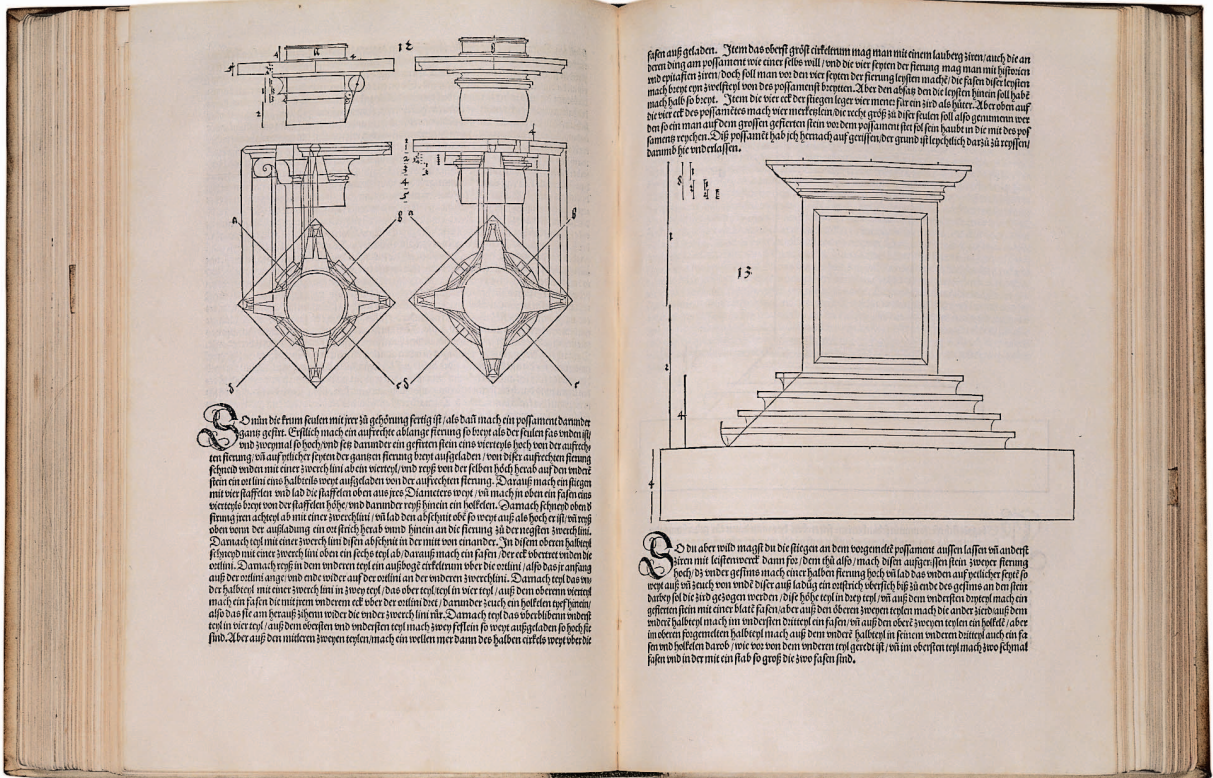


Vnd damit gũnstiger lieber Herr will ich meinem schreyben end geben / vnd so mir Got genad ver  
 leyhet die bũcher so ich von menschlicher proportion vñ anderen dartzũ gehörend geschriben hab mit  
 der zeyt in druck pzingen / vnd darpey meniglich gewarnet haben / ob sich yemand vnder  
 steen wurd mir diß außgangen bũchlein wider nach zũ drucken / das ich das  
 selb auch wider drucken will / vñ auß lassen geen mit meren vnd  
 größerem zůſas daß ich beſehen iſt / darnach mag  
 sich ein netlicher richtē / Got dem Herren  
 ſey lob vnd eer ewigklich.

¶ iij

Gedruckt zũ Nũrnberg.  
 Im. 1525. Jar.





20. Construction of a base for a twisted or Salomonic column (folio H5 verso) and decoration of the steps of a plinth (folio H6 recto).

Reproduced on previous page 19. Two draughtsmen plotting points for the drawing of a lute in foreshortening, woodcut of perspective apparatus by Dürer (folio Q3 recto).

Reproduced opposite 21. Method of producing an oblique section of a cone (folio C4 recto).

truly elliptical.<sup>3</sup>

The second book is concerned with construction of two-dimensional figures and their use in flat geometrical 'tile' patterns and similar ornamentation. In the third book, Dürer considers the application of geometrical principles to the practical tasks of architecture, engineering, and decoration, including the construction of Roman and Fraktur

letter forms (see our fig. 23). He illustrates the proportions of monumental inscriptions and provides designs of two monuments, one commemorating a victory over rebellious peasants, the other a memorial to a drunkard, both inscribed with the date 1525.

The fourth book is about the properties of polyhedra and culminates in an analysis of linear perspective.<sup>4</sup> During

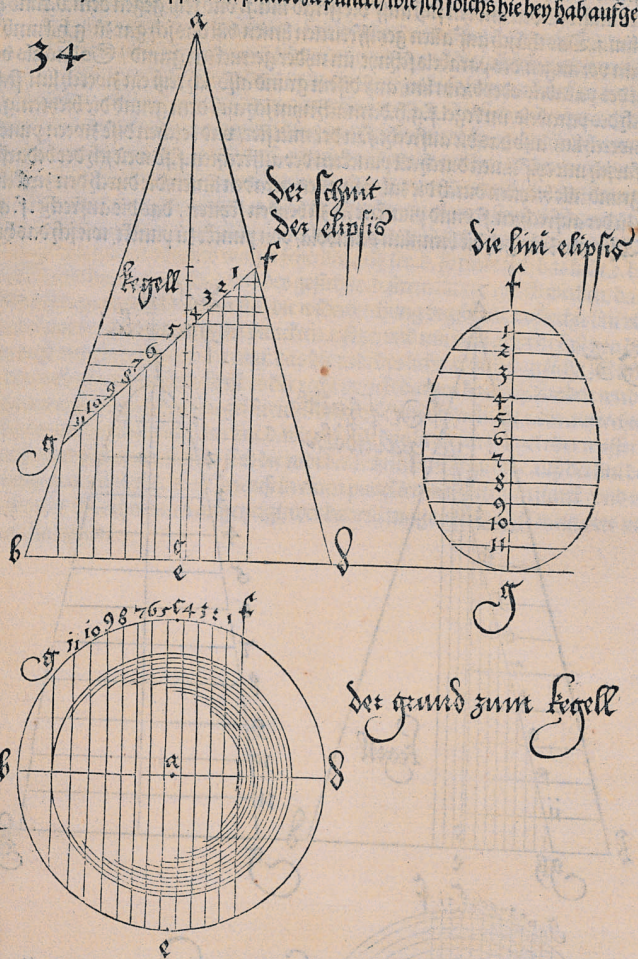
3 Martin Kemp, *The Science of art. Optical themes in western art from Brunelleschi to Seurat* (New Haven & London 1990), p.55; J.V. Field, *The Invention of infinity. Mathematics and art in the Renaissance* (Oxford 1997), pp.180–182. The classic introduction to the text is Erwin Panofsky, *The Life and art of Albrecht Dürer*, fourth edition (Princeton, NJ 1955), pp.247–260; see also Hans Rupprich, *Dürer. Schriftlicher Nachlass*, III (Berlin 1969), pp.309–317; and on the mathematics of the treatise Joseph Ehrenfried Hofmann, 'Dürers Verhältnis zur

Mathematik', in *Albrecht Dürers Umwelt. Festschrift zum 500. Geburtstag Albrecht Dürers am 21. Mai 1971*, edited by Gerhard Hirschmann and Fritz Schnelbögl (Nuremberg 1971), pp.132–151; Elisabeth Pfeiffer, 'Dürers Masseinheiten und Werkzahlen in der Unterweisung der Messung', in *Mitteilungen des Vereins für Geschichte der Stadt Nürnberg* 64 (1977), pp.111–164.

4 Fleur Richter, *Die Ästhetik geometrischer Körper in der Renaissance* (Stuttgart 1995), pp.54–58.



seyten/Also thū ich im durch die gangen zal/so dann dise puncten zu rings herum gemacht sind/ als  
dann zeich ich die eyer lini Ellipsis von puncte zu puncte/ wie ich solchs hie bey hab aufgerissen.



**D**ie Parabola ist gleicher weis zu mache/ als die Ellipsis/ Ich reiß erstlich den kegell. a. b. c. d. e. vñ  
d. nñ die aufrechte lini. a. vñ schneid das parabel/ von oben herab biß durch des kegels fuß/ al  
so das diser schnit/ ein bartlini sey gegen des kegels seiten. a. b. vñ diser schnit sey oben f. vñ d  
g. h. Darnach teil ich f. g. h. mit eyß puncten in 12/ gleiche felt/ vñ reiß zwerch linien durch all punct  
ten in. f. g. h. vñ die so auf der seiten sten gegen. a. d. die selben zwerch linien zeich ich von der aufrecht  
ten. a. an des kegels lini oder seite. a. d. Aber die an der andern seiten sten die zeich ich von der aufrecht  
a. an die seiten lini des kegels. a. b. darnach mach ich de grund des kegels vñ der dem kegell/ des Centrū  
a. vñ zirkellini. b. c. d. e. ist. Darnach laß ich auß allen puncten der zifer vñ d. f. g. h. gerad linien / auß  
dem kegell herab fallē / durch den runde grund / vñ bezeichnen sie darñ mit iren diffen/ zu gleicher weis  
C iij





Ein andre meynung.

**D**reht drey feden magst du ein netlich ding das du mit erzeuchen kanst in ein gemel bringen/  
auf ein dafel züuerzeichnen/dem thu also.  
Nist du in einem sal so schlag ein grosse nadel mit einem weyten ör die darzü gemacht ist in  
ein wand/ vnd setz das für ein aug/ dardurch zeuch einen starken faden/ vnd hencf vnden ein pley ge  
wiecht daran/ darnach setz einen tisch oder tafel so weyt von dem nadel ör darinn der faden ist als du  
wilt/ darauf stell stet ein aufrechte ram zwerchs gegen dem nadel ör: hoch oder: nider auf welche sey  
ten du wilt/ die ein türlein hab das man auf vnd zü mäg than/ diß türlein sey dein tafel darauf du  
malen wilt. Darnach nagel zwen feden die als lang sind als die aufrechte ram lang vnd preyt ist oben  
vnd mitten in die ram/ vnd den anderen auf einer seiten auch mitten in die ram vnd laß sie hangen.  
Darnach mach ein eyßnen langen steft der zü forderst am spitz ein nadel ör: hab/ dareyn feden den lan  
gen faden der durch das nadel ör an der wand gezogen ist/ vnd far mit der nadel vnd langen faden  
durch die ram hinaus/ vnd gib sie einem anderen in die hand/ vnd wart du der anderen zweyer feden  
die an der ram hangen. Nun brauch diß also/ leg ein lauten oder was dir sunst gefelt so ferr von der  
ram als du wilt/ vnd das sie vnuerruckt peleyb so lang du jr bedarfft/ vnd laß deinen gesellen die nadel  
mit dem faden hinauf strecken/ auf die nötigigsten puncte der lauten/ vnd so oft er auf einem still helt  
vnd den langen faden anstreckt/ so schlag alweg die zwen feden an der ram kreuzweyß gestracks  
an den langen faden/ vnd kleb sie zü peden orten mit einem wachs an die ram/ vnd heß deinen gesel  
len seinen langen faden nach lassen. Darnach schlag die türlein zü vnd zeichen den selben puncten  
da die feden kreuzweyß vber einander gen auf die tafel/ darnach thu das türlein wider auf vnd thu



Dürer's second visit to Italy (1506) he had become acquainted with Piero della Francesca's techniques of perspectival transformation and with aspects of Leonardo da Vinci's work, very probably through the medium of Luca Pacioli. Like Leonardo, Dürer was fascinated by geometrical ratios and the problem of transforming one geometrical form into another without loss of area or volume. He first provides four solutions to the 'Delic' problem of doubling the volume of a given cube, then presents two methods of perspective and shadow projection.

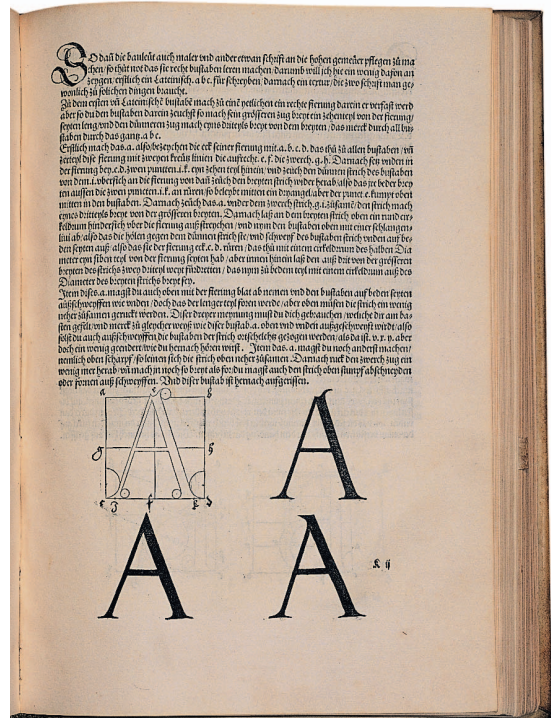
Dürer's first method uses plan and elevation (book four, fig. 56) and corresponds to a system employed by Piero. It is a method of limited practicality to artists and Dürer therefore devised an abbreviated method for constructing a square 'tile' as a ground plan on which forms could be erected. This so-called 'shorter way' (book four, fig. 59) corresponds to the procedure followed by Alberti. Dürer also drew on Jean Pèlerin's treatise *De artificiali perspectiva*, which he knew either in the Nuremberg 1509 edition (a translation of the Toul 1505 edition with exact copies of its woodcuts) or in the Toul 1509 edition (a revision by the author of the 1505 Toul edition with altered and new woodcut illustrations).<sup>5</sup>

Included in the fourth book are Dürer's depictions of two mechanical devices to aid the artist in making portraits and determining perspective. The first woodcut ('Der Zeichner des sitzenden Mannes', folio Q2 recto, reproduced opposite) shows a draughtsman using a glass plate to outline a portrait of a sitting man. Dürer explains that this instrument is good for all those who wish to draw someone's likeness and who are not sure of their skill. The device was used by Leonardo and most probably also by Alberti and there is evidence that Dürer had constructed one about 1515. The other woodcut shows two draughtsmen plotting points for the drawing of a lute ('Der Zeichner der Laute', folio Q3 recto, see our fig. 19). This unwieldy device seems to have been Dürer's personal invention.<sup>6</sup>

5 Strauss (*Op. cit.*, note 2), pp.28–29; *Albrecht Dürer 1471–1971*, exhibition catalogue Germanisches Nationalmuseum (Nuremberg 1971), no. 634; Kemp (*Op. cit.*, note 3), p.66.

6 *Albrecht Dürer 1471–1971* (*Op. cit.*, note 5), nos. 641–642; F.W.H. Hollstein, *German engravings etchings and woodcuts*, VII (Amsterdam 1962), pp.219, 258. The operation of these devices is explained in *Dürer in America: his graphic work*, edited by Charles W. Talbot (Washington, DC 1971), pp.353–354, no. 215; also by Kemp (*Op. cit.*, note 3), pp.171–172 and figs. 330–331.

7 David Landau & Peter Parshall, *The Renaissance print, 1470–1550* (New Haven & London 1994), pp.217–218.



23. Construction of Roman letters (folio K2 recto).

Reproduced opposite 22. Artist using a glass to take a portrait, woodcut of perspective apparatus by Dürer (folio Q2 verso).

#### THE EDITION

Dürer himself supervised the layout and printing of the book, which was done in a Gothic type designed by the Nuremberg *Schreibmeister* Johann Neudörfer (1497–1563). The laborious tasks of cutting steel punches of Neudörfer's letters and woodblocks of Dürer's many illustrations were performed by Hieronymus Andreae (died 1556), a *Formschneider* educated at the University of Leipzig and trained as a blockcutter in Augsburg, where he worked on several of the Emperor Maximilian's woodcut projects in association with Dürer (Andreae cut all 192 blocks of Dürer's *Triumphal Arch* and also those for the *Small Triumphal Car*).<sup>7</sup>

Andreae became a citizen of Nuremberg in 1523 and over time established a large workshop, in which was printed in 1527 Dürer's *Die Befestigungslehre* and in 1528 Dürer's *Die Proportionslehre*. He is first entered as a book printer in the register of the Nuremberg Council on 27 March 1527, so if the *Underweysung der Messung* was indeed printed by Andreae – a general assumption – it must be the first, or a very early product of his press. Two phrases in





24. Watermark occurring in the seldom retained blank folio Q4 (compare Meder no. 84).  
Reproduced with enhanced contrast. Height of mark 156mm.

the book seem to imply the treatise actually was printed in Dürer's own workshop: 'durch Albrecht Dürer in truck gebracht' (folio A1 recto) and 'das ich das selb auch wider drucken will, und auß lassen geen' (folio Q3 recto, see our fig. 19).<sup>8</sup>

A postscript warning against unauthorised copying contains an announcement of an enlarged second edition. This was not issued until ten years after Dürer's death, printed by Hieronymus Andreae, setting the text from Dürer's own copy of the 1525 first edition annotated with corrections and additions.<sup>9</sup>

REFERENCES Joseph Meder, *Dürer-Katalog. Ein Handbuch über Albrecht Dürers Stiche, Radierungen, Holzschnitte, deren Zustände, Ausgaben und Wasserzeichen* (Vienna 1932), nos. 268–269 and p.285; Staatliche Museen zu Berlin, *Katalog der Ornamentstichsammlung der Staatlichen Kunstbibliothek Berlin* (1939), no. 4607; Herbert M. Adams, *Catalogue of books printed on the continent of Europe, 1501–1600*, in *Cambridge libraries* (Cambridge 1967), D-1057 (bound with *Die Befestigungslehre*, wrongly described as a constituent part); *Printing and the mind of man. A descriptive catalogue illustrating the impact of print on the evolution of Western civilisation during five centuries* (London 1967), no. 54; Margaret Stillwell, *The Awakening of interest in science during the first century of printing 1450–1550* (New York 1970), no. 161; Luigi Vagnetti, *De naturali et artificiali perspectiva: bibliografia ragionata delle fonti teoriche e delle ricerche di storia della prospettiva*, *Studi e documenti di architettura* (Florence 1979), pp.315–320, no. Ellb7; *Verzeichnis der im deutschen Sprachbereich erschienenen Drucke des XVI. Jahrhunderts* (Stuttgart 1985), D-2856; Diana H. Hook & Jeremy M. Norman, *The Haskell F. Norman Library of Science & Medicine* (San Francisco 1991), no. 665

- 8 The 1511 edition with Latin text of Dürer's *Apocalypse* is subscribed 'Impressum Nurnberga per Albertum Durer pictorem', suggesting Dürer had sufficient equipment – possibly inherited from his godfather, Anton Koberger – to also carry out printing of the *Underweysung der Messung*; compare Jaeggli (*Op. cit.*, note 1), pp.211–213.
- 9 Dürer's personal copy is in the Bayerische Staatsbibliothek, Munich; see *Thesaurus Librorum. 425 Jahre Bayerische Staatsbibliothek*, edited by Karl Dachs (Wiesbaden 1983), no. 73. Presentation copies are cited by Fedja Anzelewsky, 'Dürers theoretische Schriften und ihre Leserschaft', in *De captu lectoris. Wirkungen des Buches im 15. und 16. Jahrhundert*, edited by Wolfgang Milde & Werner Schuder (Berlin 1988), p.31.