RICHARD C. RAMER

Special List 167

MATHEMATICS
November 2012

SPECIAL LIST 167

MATHEMATICS

SATISFACTION GUARANTEED:
All items are understood to be on approval,
and may be returned within a reasonable time
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VISITORS BY APPOINTMENT
Special List 167

MATHEMATICS

Rebirth of the Study of Mathematics and Engineering in Portugal and the Reflection of this Movement in Brazil:
First Book on Military Engineering by a Brazilian, Written in Brazil, with 14 Folding Engraved Plates

1. ALPOIM, José Fernandes Pinto de. Exame de Artilheiros que compreende Arithmetica, Geometria, e Artilharia, com quatro appendices . . . . Lisbon: Na Nova Officina de José Antonio Plates, 1744. 4°, contemporary speckled sheep (scuffed, head and foot of spine defective, corners worn, other minor binding wear), spine gilt with raised bands in six compartments, crimson morocco lettering piece, gilt letter, edges sprinkled red. Title page in red and black; engraved allegorical vignette and historiated initial on dedication leaf, typographical headpieces, woodcut tailpiece. Overall in very good condition. Small round paper seal with monogram in lower portion of half title. (12 ll.), 259 pp., 14 folding engraved plates, 4 (of 6) folding tables. $4,800.00

FIRST EDITION. This work and Alpoim’s Exame de bombeiros, Lisbon 1748, are “proofs of the rebirth of the study of mathematics and engineering in Portugal and the reflection of this movement in Brazil, and they symbolize a Luso-Brazilian contribution to this movement. They are, in short, the first two books on military engineering written in Brazil and the first two ‘textbooks’ of this kind by a Brazilian author” (Borba de Moraes I, 26). This work deals specifically with artillery. It was banned by a Carta Regia of 15 July 1744, on the ground that it did not comply with pragmatic rules for use of military titles, and is a very rare book. Alpoim was born in Rio de Janeiro and served as professor at the Aula de Fortificação in Rio de Janeiro; at his death in 1770 he held the rank of Brigadier.

The Exame de artilheiros and the Exame de bombeiros are even more widely known for the controversy that arose over their place of publication. Borba de Moraes devotes 3 pages to unraveling the “veritable bibliographic puzzle” of the printing of these two works, and to dispelling the myth that they were printed in Rio de Janeiro by Antonio Isidoro da Fonseca in 1747—a theory first suggested by Varnhagen. Since the Exame de artilheiros had been banned, Varnhagen thought Fonseca might not have wished to publish it under his own imprint. To support his theory, Varnhagen cited the facts that Alpoim was a native of Brazil, that the work was written there and dedicated to Gomes Freire de Andrade, Governor of Brazil, and that the letters to the author in the preliminary leaves are from Brazilians. Borba de Moraes gives a summary of the evidence against
this viewpoint and argues strongly that the Exame de bombeiros and Exame de artilheiros were printed in Madrid and Lisbon, as their respective title pages state.

The plates, signed by the Portuguese engraver Olivarius Cor, show cannons and various projectiles.


Rebirth of the Study of Mathematics and Engineering in Portugal and the Reflection of this Movement in Brazil:
Second Book on Military Engineering Written in Brazil,
Second Such Book Written by a Brazilian,
Dedicated to Gomes Freire de Andrade
With 20 Folding Engraved Plates

2. ALPOIM, José Fernandes Pinto de. Exame de bombeiros, que compreende dez tratados . . . . Madrid: En la Officina de Francisco Martinez Abad, 1748. 4°, contemporary sheep (chafed, upper joint cracking), spine gilt with raised bands in five compartments (upper compartment defective), crimson leather lettering piece in second compartment from head (slightly defective), text-block edges sprinkled. Title in red and black. Engraved allegorical vignette on f. ”3v. Engraved portrait of Gomes Freire de Andrade laid in: trimmed, with small piece missing from frame at lower edge, and with traces of glue on verso. Plate XVI somewhat browned, plate XVIII dampstained. Overall in good condition. Lithograph bookplate of “EMMANVEL” in circle around a five-pointed star. Engraved portrait, (20 ll.), 444 pp. [i.e., 442; pagination skips from 372 to 375], 20 folding engraved plates and 1 folding table. $5,000.00

FIRST and ONLY EDITION. This work and Alpoim’s Exame de artilheiros, Lisbon 1744, are “proofs of the rebirth of the study of mathematics and engineering in Portugal and the reflection of this movement in Brazil, and they symbolize a Luso-Brazilian contribution to this movement. They are, in short, the first two books on military engineering written in Brazil and the first two ‘textbooks’ of this kind by a Brazilian author” (Borba de Moraes I, 26).

The Exame de bombeiros is a comprehensive textbook on military bombardment. Written in dialogue form, the Exame first covers the mathematics necessary for plotting trajectories, proceeds to a long discussion of mortars and how to use them most effectively, describes more recent inventions such as the howitzer and the petard, and closes
with a long treatise on the many types of incendiary shells and their proper use. The text is enhanced with frequent references to the contributions of other military engineers, including Galileo and Vauban, and historical notes on how bombardment had contributed to the success or failure of various military campaigns. The plates depict mortars, projectiles, and incendiary shells, many shown in cross section.

Borba de Moraes devotes three pages to unraveling the “veritable bibliographic puzzle” of the printing of this work, and to dispelling the myth that it and/or Alpoim’s *Exame de artilheiros* were printed in Rio de Janeiro by Antonio Isidoro da Fonseca in 1747—a theory first suggested by Varnhagen. Since the *Exame de artilheiros* was banned by a decree of 15 July 1744 (for not adhering to the rules for the use of military titles), Varnhagen thought Fonseca might not have wished to publish it under his own imprint. To support his theory, Varnhagen cited the facts that Alpoim was a native of Brazil, that the work was written there and dedicated to Gomes Freire de Andrade, Governor of Brazil, and that the letters to the author in the preliminary leaves are from Brazilians. The most puzzling evidence of all is plate XVII, which has “Rio 1749” engraved in the lower right-hand corner. If this plate was engraved and printed in Brazil, it would be the earliest extant Brazilian engraving. Even Borba de Moraes, who argues strongly that the *Exame de bombeiros* and *Exame de artilheiros* were printed in Madrid and Lisbon, as their respective title-pages state, could give no convincing explanation of the plate XVII inscription.

Alpoim was born in Rio de Janeiro and served as professor at the Aula de Fortificação in Rio de Janeiro; at his death in 1770 he held the rank of Brigadier.

The engraved portrait of Gomes Freire de Andrade is signed by Olivarius Cor. The other plates, which illustrate geometric figures, cross-sections of cannons, and ballistics, are signed by José Francisco Chaves.


FIRST EDITION of this supplementary explanation to Biot’s popular textbook on physical astronomy; a French translation was published at Brest in 1833. One of the most distinguished scientists of his day, Jean-Baptiste Biot (1774-1862) made important contributions in physics, astronomy and mathematics. Among his many published works are several widely used textbooks, including *Traité élémentaire d’astronomie physique* (Paris, 1802 and later editions).

Andrade (1768-1830) was born in Porto and entered the Benedictine Order. After earning a doctorate in mathematics from the University of Coimbra in 1799, he began a long and distinguished career as professor of astronomy at Coimbra and director of its observatory. Nominated in 1828 as vice-rector of the university by the Junta Provisoria, Andrade was forced after the liberal uprising failed to flee to London, where he was appointed tutor to the young D. Maria II, a position he was unable to accept due to ill health.


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4. AVELLAR, Andre do. *Chronographia ou reportorio dos tempos: o mais copioso que te agora soay o a lvz. Conforme a noua reformação do Santo Padre Gregorio XIII. … Nesta quarta [sic?] impressam reformado, & accrescentado …*. Lisbon: Por Jorge Rodrigues a custa de Esteuão Lopez mercader de liuros, 1602. 4°, contemporary vellum (recased, new endpapers), with yapped edges and remains of ties. Woodcut hemisphere on title page, repeated on f. H5 recto. Numerous other woodcut illustrations in text. Many elegant woodcut initials, woodcut and typographical tailpieces and dividers. Minor browning, contemporary notes on a few leaves. Overall very good condition; fine internally. Old ink numbers in margin of title page. Leaves 365-8 with old (contemporary?) ink markings indicating passages and words to be censored or deleted, but without
prejudice to the text. Other occasional old, perhaps contemporary ink underlining and scoring of words or phrases, apparently from the same pen, without impairing readability. Contemporary signature ["Veigas"] in lower blank margin below catchword on leaf C4 recto. (7, 1 blank ll.), 373 ll. [actually 272 ll.: details below]. $8,000.00

Fifth (?) and final edition of this work dealing mainly with astrology, meteorology and geography; all the editions are rare. Originally a free translation of Jeronimo Chaves' *Chronographia o repertorio de los tiempos*, this and previous Portuguese editions (Lisbon 1585, Coimbra 1590 and 1593, and Lisbon 1594) were significantly altered. Attention is given to America (Brazil as well as the Spanish possessions), Africa, Asia and the polar regions.

Woodcuts include one of the Earth that shows Brazil and the Southern Continent, a cross-section of the Earth, each of the 12 signs of the zodiac, the sun, the moon and the five known planets. A chapter on medicine and astrology contains three anatomical cuts (one of them full-page). There are also many tables and diagrams.

This work is of considerable scientific interest, since it is one of the earliest almanacs to use and describe the new Gregorian calendar, adopted only a decade before this work's first appearance (1593). Avellar gives a complete explanation of the system of epacts that is essential for understanding the new calendar. The calendar was not completely explained until Clavius published his monumental treatise in 1603.

Andre do Avellar (born Lisbon, 1546-date of death unknown; said by Barbosa Machado to have been still alive in 1622), professor of mathematics at the University of Coimbra, was the most noteworthy Portuguese successor to Pedro Nunes. He was one of the New Christians at the University persecuted by the Inquisition from 1616 to 1626, and is said to have denounced António Homem, who was burned in 1624.

The foliation skips from 124 to 225 and is highly erratic elsewhere: quires are consistently of 8 except for O4, Ii6, Mm4 and Nn5, all of which are complete judging from the content]. (1 blank l.). Leaf 49 incorrectly numbered 46, 52 unnumbered, 82 numbered 72, 88 numbered 78, 89 numbered 90, 95 numbered 94, 95 numbered 96, 97 numbered 96, 98 unnumbered, 99-106 numbered 98-105, 107-8 unnumbered, final number in 233 printed backwards, 246 numbered 242, 247-56 numbered 246-55, 267 numbered 276, 269 number 266, 276 numbered 275, 277 numbered 279, 284 numbered 280, 291-2 (Bb3-4, but signed Bb2-3) bound in reverse order, 293-4 (Bb5-[6], but 293 signed Bb4) bound in reverse order, 305-30 numbered 304-29, 330 numbered 303, 331 numbered 338, 349 numbered 350, 350-71 numbered 352-73. Leaf M2 unsigned, L2 signed ij, Q4-5 signed Q3-4, V4 signed V5, Y4 signed Y3, Bb2 unsigned.

* Alden & Landis 602/10: citing only the British Library copy, supposedly with 372 ll. Arouca A538 (locating a copy in the Biblioteca Nacional de Portugal, and giving a different collation: the "Taboa" is said to extend to the recto of the eighth and final preliminary leaf, while the main body of text contains only 367 [i.e., 270] numbered leaves; the text of the "Taboa" in our copy, which ends on the seventh unnumbered preliminary leaf, appears to be complete; having examined the copy cited by Arouca in the Biblioteca Nacional de Portugal, it is the same as ours, except that it is missing ll. 368-73, and otherwise in inferior condition). Innocencio I, 58-9 (without collation); see also VIII, 61. Barbosa Machado I, 137. Pinto de Mattos (1970) p. 47 (calling for 373 numbered leaves).

Biblioteca Central da Marinha, *Século XVII* 38. Coimbra *Reservados* 348 (ll. 77 and 78 defective; collation appears to conform to our copy: 8 unnumbered preliminary ll., the last blank, and 272 ll.); *Suplemento* 5 (the copy cited in Porbase; incomplete, but otherwise collation appears to conform to our copy). Falha 450 (without collation). Monteverde 311 (collation agrees with our copy). Ameal 183 (collating as our copy). This edition not in JCB, *Portuguese and Brazilian Books*. Not in JFB (1994), *HSA* or *Ticknor Catalogue*. No edition
of this work in Azevedo-Samodães. NUC: MH (collating [7], 373 ll.). OCLC: 78952799 (Harvard College Library: with [7], 373 ll.; according to Hollis, first 3 ll. are worm-eaten); 560291567 (British Library: calls for 373 numbered leaves, without mention of the preliminaries); for the 1594 edition see 456841908 (Bibliothèque nationale de France); 5580306 (Newberry Library and John Carter Brown Library). Porbase locates three copies: two in the Biblioteca Nacional de Portugal (one with title page mutilated and backed, with “folhas perfuradas” [presumably serious worming]; collation given is [8], 367 [i.e. 266] ll.), and one copy at the Biblioteca Geral da Universidade de Coimbra (lacking the title page and five subsequent leaves; mentions foliation skipping from 124 to 225), and cites the Lisbon, 1594 also at the Biblioteca Nacional de Portugal (three copies, two of which are seriously imperfect), and a single copy in poor condition at the Biblioteca Geral da Universidade de Coimbra. Copac repeats British Library only for the present edition, and cites a single copy of the 1594 edition at the Middle Temple Library.
5. AZNAR DE POLANCO, Juan Claudio. *Arte nuevo de escribir por preceptos geometricos, y reglas mathematicas* . . . [Colophon] Madrid : En la Imprenta de los Herederos de Manuel Ruiz de Murga, 1719. Folio (30.7 x 22 cm.), contemporary vellum (worn and stained, lower hinge gone), horizontal manuscript short author and title on spine. Woodcut and typographical headpieces, woodcut tailpieces, some large and elaborate. Elegant woodcut initials. Total of 42 engraved plates with calligraphic examples and a few portraits. Lower edges frayed, with fraying sometimes touching the plate; fore-edges nicked, not affecting text; some foxing and soiling, marginal dampstains. Overall in good condition, if just barely so. Engraved title-page, (10 ll.), 2 engraved plates, 165 ll. [i.e. 169, including 39 engraved plates (1 folding) foliated with the text: details below]. $2,500.00

FIRST and ONLY EDITION of “uno de los libros más importantes de su tiempo sobre el difícil arte de la escritura” (Rico y Sinobas). Aznar de Polanco, one of the best Spanish calligraphers of his time, attempted to transform the art of calligraphy into a geometrical science, resulting in a book that is not only heavily illustrated, but has much more text than is common for this sort of book. This is the first Spanish writing manual listed in the Hofer catalogue; Harvard has 2 copies, both defective. Taking into consideration the rarity of this work on the market, and the fact that many copies are incomplete and / or in very poor condition, the present volume is in a relatively good state.

The engravings (by Juan Bernabe Palomino) include illustrations of Aznar’s method applied to letra bastarda, letra grifa, letra romanilla, letra de pancilla, letra redonda, letra gotica and various types of initials, as well as full-page calligraphic designs. This copy is complete with the maximum number of plates: the engraved title page, 2 engravings in the prelims, and 39 foliated with the text. Palau suggests that earlier issues may have fewer plates. The numbering is erratic, and was presumably added in a later state, since at least one known copy (at Harvard) has no numbering.

Palomino (Córdoba, 1692-Madrid, 1777), perhaps the most important Spanish engraver of his day, was the nephew of Antonio Palomino, and father of Juan Fernando Palomino, both important artists. He had worked for and learned from his uncle, while his son was his disciple.

Aznar de Polanco, born in 1663 at Mostoles, was orphaned very young and raised by the local schoolmaster. Aside from calligraphy, he was well versed in mathematics, architecture and fencing. He died in 1736.

The collation is very complicated, but this copy appears to be complete. Except for some differences in order of the leaves, it conforms to that in the Biblioteca Nacional de España, except that the Biblioteca Nacional de España copy contains an extra plate, presumably added, which is dated 1736. Preliminary matter includes the engraved title page, a plate with medallions of S. Casiano and 3 other saints in a calligraphic frame, a portrait of the author in a calligraphic frame, and 10 printed leaves. The 39 engraved plates within the text are foliated continuously with it, but are not included in the quire signatures. The plates, including the engraved title page and the two plates included in the unnumbered preliminaries, are also numbered continuously from 1 to 42 at the bottom, with the exception of the third, which is completely unnumbered, and the seventh, which is leaf 24 in the foliation of the main text, but which has no plate number. The
foliation often repeats (46-47, 57, 112, 120, 128, 138) and sometimes skips (no 59 or 116), but the collation by quires (in-4) is continuous.

* Palau 21133: calling (apparently in error) for a leaf with 4 medallions as well as a folding portrait of S. Casiano, and uncertain whether there were 37 or 39 plates in the text. Aguilar Piñal I, 3217: calling for only 11 preliminary leaves (without mention of any plates there) and only 37 plates in the text. Rico y Sinobas, *Dic. de calígrafos españoles* p. 139: calling for 165 ll., portrait, and 40 plates foliated with the text. BL, *Eighteenth-Century Spanish STC* A267. Salvá 2203. Heredia 595. Cotarelo y Mori, *Diccionario biográfico y bibliográfico de calígrafos españoles* 106. Whalley & Kaden, *Universal Penman* 117. Maggs, *Spanish Books* 68A: listing it at £21 in 1927, and describing it as “a much-sought work.” NUC: DLC, MA, ICN, MiU, N, AzU. OCLC: 778665466 (Biblioteca Nacional de España); 630638091 (Houghton Library, Universidad de Salamanca, Biblioteca Nacional de España, Universidad de Valladolid); 557607309 (British Library); 723962592 (Deutsche Nationalbibliothek); 2368246 (20 locations). CCPBE locates twenty copies, many incomplete and / or in poor condition. Rebiun locates nine copies, giving several of the same locations as CCPBE. Copac locates copies at British Library, University College of London, Victoria & Albert Libraries, plus two copies at University of London.
ARTE
NUEVO DE ESCRIBIR
POR PRECEPTOS
GEOMETRICOS,
Y REGLAS MATEMATICAS
DEL MRO. JUAN CLAUDIO
AZNAR DE POLANCO
En Madrid Año 1719
Vendese en su Casa en la
Calle de la Zarza donde
tiene Escuela y recibe
Pupilos y conces.

Item 5
6. CANGALHAS, João Pedro Ferreira. *Opusculos de arithmetica universal, publicados com a protecção da Academia Real das Sciencias e dedicados ao … D. Francisco Benedicto de Sousa Lancaster, e Noronha, nono Conde do Prado, e sexto Marquez das Minas*. 3 volumes in 1. Lisbon: Na Officina da Mesma Academia [Real das Sciencias], 1795. Large 4° (27.2 x 20 cm.), contemporary tree sheep (minor wear to corners, some worm damage near head of spine), flat spine, gilt, green and crimson morocco lettering pieces, gilt letter, triple gilt fillets in rectangle along borders of covers, gilt tooling to edges of covers and spine. Woodcut device of Academia Real das Sciencias on title pages. Mathematical equations, symbols and tables in text. A large-paper copy, clean, crisp, in near-fine condition; fine to very fine internally. (8 ll.), 285 pp.; (4 ll.), 158 pp.

FIRST EDITION, first (?) issue, with the original leaves Aa3 in volume I, and B4, C1, C4, D1 in volume II, as opposed to the cancel leaves present in most copies. Writing in 1934, Francisco Gomes Teixeira stated that aspects of this comprehensive algebra text-book were still of use (*História das matemáticas em Portugal*, p. 235). The work consists of 2 volumes of *Opusculos*, in which algebraic concepts are defined and illustrated through sample problems, and a third volume titled *Taboada de quadrados dos numeros naturaes, publicadas com a protecção da Academia Real das Sciencias*, which lists the square of all whole numbers from 1 to 8,699.

Each of the three title pages bears the imprint Lisboa: na Officina da mesma Academia, 1795. There are four *Opusculos* in the first volume, two in the second. They are: I. “Teoria preliminar dos numeros inteiros”; II. “Das equaçoens indeterminadas do primeiro grão”; III. “Instrucção às equaçoens indeterminadas do segundo grão”; IV. “Introdução ás fracçoens continuas”; V. “Introdução a diversas theorias dos numeros inteiros”; and VI. “Das fracçoens decimaes periodicas”.

The chainlines run horizontally throughout in the present copy, as opposed to the normal-size copy we have, which is a bibliographical curiosity, with the chainlines running horizontally in volume I, vertically in volume II, and both horizontally and vertically in the *Taboada*.

Ferreira Cangalhas was an officer in the army engineering corps who entered civilian life to teach mathematics privately. He published several other works on weights and measures. The work is dedicated to D. Francisco Benedicto de Sousa Lancaster e Noronha, 9th Conde do Prado and 6th Marquez das Minas.

A rare work: as specialists in Portuguese books doing business since 1969, this is the third copy we have had or seen on the market, and the only one in large paper. Moreover, and curiously, the work does not appear for sale in various catalogues of the Academia Real das Sciencias issued during the late 1790s and first quarter of the nineteenth century that were included at the end of the Academia’s publications. This is in contrast to many other works published by the Academia Real das Sciencias which long remained in print.

Cf. Innocência IV, 7 (citing only the two volumes of *Opusculos*, with the date 1796, and without giving any collation), and *Grande enciclopédia* XI, 185 (repeating the date 1796 for the *Opusculos*). We have not been able to locate any copy dated 1796. OCLC: 560204700 (British Library). Porbase cites a single copy only (21 cm. tall) with the date 1795 at the Universidade Católica João Paulo II, Lisboa, with (10), 80 pp. [We have been informed that the copy at the Universidade Católica actually contains both volume II of the *Opusculos* and the *Taboada*.] Porbase cites as well two copies in the Archivo Nacional da Torre do
Tombo (apparently on 2 of the 3 volumes). Also cited in Porbase is an incomplete copy of an earlier issue dated 1794, examined by us, containing only opusculos 2, 3 and 5, all in small quarto format. While there was not the opportunity to view the copies side by side, we think they are from the same setting of type, with minor variations. Not located in Copac. Not located in Hollis, Orbis, Melvyl, Socrates, Library of Congress Online Catalog, Clio, Catnyp, Mirlyn or Josiah.

BOUND WITH:


FIRST EDITION, second (?) issue. Writing in 1934, Francisco Gomes Teixeira stated that aspects of this comprehensive algebra textbook were still of use (História das matemáticas em Portugal, p. 235). The work consists of 2 volumes of Opusculos, in which algebraic concepts are defined and illustrated through sample problems, and a third volume titled Taboada de quadrados dos numeros naturaes, publicadas com a protecção da Academia Real das Sciencias, which lists the square of all whole numbers from 1 to 8,699.

Each of the three title pages bears the imprint Lisboa: na Officina da mesma Academia, 1795. There are four Opusculos in the first volume, two in the second. They are: I. “Theoria preliminar dos numeros inteiros”; II. “Das equaçoens indeterminadas do primeiro grão”; III. “Instrucao das equaçãoes indeterminadas do segundo grão”; IV. “Introduçao ás fraçoens continuas”; V. “Introdução a diversas theorias dos numeros inteiros”; and VI. “Das fracçoens decimaes periodicas”.

This work is a bibliographical curiosity. Imposed in quarto format, the chainlines run horizontally in volume I, vertically in volume II, and both horizontally and vertically in the Taboada.

Ferreira Cangalhas was an officer in the army engineering corps who entered civilian life to teach mathematics privately. He published several other works on weights and measures. The work is dedicated to D. Francisco Benedicto de Sousa Lancastre e Noronha, 9th Conde do Prado and 6th Marquez das Minas.

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* Cf. Innocêncio IV, 7 (citing only the two volumes of Opusculos, with the date 1796, and without giving any collation), and Grande enciclopédia XI, 185 (repeating the date 1796 for the Opusculos). We have not been able to locate any copy dated 1796. Not located in NUC. OCLC: 560204700 (British Library). Porbase cites a single copy only (21 cm. tall) with the date 1795 at the Universidade Católica João Paulo II, Lisboa, with (10), 80 pp. [We have been informed that the copy at the Universidade Católica actually contains both volume II of the Opusculos and the Taboada.] Porbase cites as well two copies in the Archivo Nacional da Torre do Tombo (apparently on 2 of the 3 volumes). Also cited in Porbase is an incomplete copy of an earlier issue dated 1794, examined by us, containing only opusculos 2, 3 and 5, all in small quarto format. While there was not the opportunity to view the copies side by side, we think they are from the same setting of type, with minor variations. Not located in Copac. Not located in Hollis, Orbis, Melvyl, Socrates, Library of Congress Online Catalog, Clio, Catnyp, Mirlyn or Josiah.

BOUND WITH:


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First Edition in Spanish of an Important Work on Optics

8. EUCLID. La perspectiva, y especularia de Euclides. Traduzidas en vulgar castellano … por Pedro Ambrosio Onderiz. Madrid: En casa de la viuda de Alonso Gomez, 1585. 4º, nineteenth-century quarter calf (light wear), spine in five compartments with raised, gilt-tooled bands, black leather label with author in gilt, text block edges marbled. Woodcut royal arms on title-page, woodcut initials (6 to 8 lines high), numerous woodcut diagrams in text (usually 10-11 lines high). Short tear in lower margin of title, without loss; some very slight scattered browning and spotting. In fine condition. Faint contemporary inscription at foot of title-page. Small engraved bookplate on front pastedown of Joaquin Garcia Icazbalceta. (6), 60 ll. $12,000.00

Rare first edition in Spanish of the Optica et catoptrica, the earliest surviving Greek work on perspective and one of the most important written before Newton’s works on optics. The colophon bears the date 1584.

The Perspectiva was translated by Pedro Ambrosio Onderiz, who in 1582 had been appointed by Philip II to a chair in the newly established Academia de Matemáticas. Although Onderiz was expressly charged with the translation of scientific works into Spanish, he published no other works. By 1595 Onderiz had been appointed cosmógrafo
LA PERSPECTIVA,
Y ESPECULARIA DE
Euclides. Traduzidas en vulgar Castella-
no, y dirigidas a la S. C. R. M. del Rey don Philippe
nuestro Señor. Por Pedro Ambrosio
Onderiz su criado.

EN MADRID.
En casa de la viuda de Alonso Góm.
Año M. D. LXXXV.
In which capacity he intended to correct various cartographical errors which were said to have unduly favored Portuguese territorial claims, but his death in 1596 prevented this.

It is likely that Spanish painters of the Golden Age consulted this work. The only earlier work by Euclid that had been translated into Spanish was Los seis libros primeros de la geometria, Seville 1576; prior to that, the only printing of Euclid in Spain was a truncated Mathematicae quaedam selectae, Alcalá 1566.

The Especularia has separate title-page, licencia, aprobacion, prologue and colophon, all dated 1584, but the quire signatures and pagination continue from the Perspectiva.

Provenance: Joaquin García Icazbalceta (1825–1894), born in Mexico City of a family of Spanish landed gentry, was a philologist and an important historian of the Spanish colonial period, as well as one of the leading Mexican bibliophiles and bibliographers of the nineteenth century. He published Apuntes para un catálogo de escritores en lenguas indígenas de América (1866); the masterly biography Don Fray Juan de Zumárraga, primer Obispo y Arzobispo de México (1881, various later editions); La bibliografía mexicana del siglo XVI (1886), a model of bibliographical erudition; Colección de documentos para la historia de México (5 volumes 1886-1892); an edition of the Arte de la lengua maya, of Fray Gabriel de San Buenaventura (1888); the Opúsculos Inéditos, latinos y castellanos, of Francisco Javier Alegre (1889), as well as other translations, critical editions and documentary collections.

He was one of the founders and the first secretary of the Academia Mexicana de la Lengua (1875–1883), and was that institution’s third director (1883-1894), being responsible for the publication of the first volumes of the Academia’s Memorias.

First Appearance of Euclid in Spain

9. EUCLID. Los seis libros primeros dela geometria de Euclides. Traduzidos en lengua española por Rodrigo Çamorano astrologo y mathematico, y cathe-dratico de cosmographia por su Magestad en la casa de la Contratacion de Seuilla. Dirigidos al illustre señor Luciano de Negron, canonigo dela sancta yglesia de Seuilla. Seville: en casa de Alonso de la Barrera, 1576. 4°, contemporary limp vellum (ties missing, light stains), vertical manuscript short author and title on spine, in a recent quarter brick-red morocco over reddish orange cloth folding box. Large woodcut arms of dedicatee on title-page. Numerous woodcut geometric designs in text. Large (13-line) woodcut initial on first page of text; a few 4- and 5-line initials; woodcut vignette tailpiece. Light dampstain in lower blank margin of final 20 leaves. Crisp; overall in fine condition. Bookplate from the Landau library, number 64704. 121, (1) ll. A4, B-P8, Q4, R2. A4 signed “4”, M2 mis-signed “M3”. Leaf 11 unnumbered, 51 misnumbered 42, 78 misnumbered 70, 84 misnumbered 76, 103 misnumbered 102, 105 misnumbered 108, and 116 misnumbered 108. $18,000.00

First Edition in Spanish, and the only edition of this translation prior to a Salamanca 1999 reprint. It is also the first printing of any text by Euclid in Spain, in any language. Zamorano (b. 1542) was professor of cosmography at the Casa de la Contratación de las Indias, as well as an astrologer and mathematician. He later became piloto mayor to King Philip II and wrote the official navigation manual of the Spanish Navy at the time of the Armada. In the present book, he emphasizes the sciences of mechanics, astronomy, and cosmography.

Thomas-Stanford comments that this volume has the appearance of a schoolbook, which would account for its rarity, and that the few copies he had been able to examine were rather worn (pp. 16–17).

Euclid’s *Elements*, a collection of definitions, axioms, theorems, and proofs in 13 books (of which 6 are included in this translation), is the oldest extant deductive treatment of mathematics, and played an important role in the development of logic and modern science. One of the world’s most successful and influential textbooks, it was first published in Venice, 1482, and has appeared in over a thousand editions.

10. FREITAS, António Gregorio de. *Tratado de navegar, ou esclarecimentos precisos em caso de dúvida muito útil aos navegantes, e com particularidade para os principiantes que se dedicão à Marinha, e Pilotagem.* Lisbon: Na Typographia Patriotic, 1823. 4°, contemporary quarter red morocco over marbled boards (corners worn; spine rubbed; other minor binding wear), flat spine gilt, text-block edges sprinkled. Woodcut Portuguese-Brazilian royal arms on title page. Geometrical diagrams, arithmetical and other tables in text. Foxing to blank margins of folding tables, otherwise clean and crisp. Overall in very good condition. 164 pp. [pp. 153 and 153 and large folding tables, with the versos blank]. $400.00

FIRST and ONLY EDITION of this textbook on navigation.

The author entered the Portuguese navy at a tender age. He achieved the rank of Capitão de mar e guerra da Armada Nacional e Real, later that of Contra-almirante. He received a number of decorations in Portugal and from the Emperor of Brazil, and died aged 85 in 1876. He wrote several other books on navigation and maritime matters and some poetry.

Advice on Using Navigational Instruments, Artillery Range, and Water Channels

11. [GARCIA] DE CESPEDES, Andres. *Libro de instrumentos nuevos de geometria muy necessarios para medir distancias, y alturas, sin que intervengan numeros, como se demuestra en la practica*. De mas desto se ponen otros tratados, como uno, de conducir aguas, y otro una question de artilleria, en donde se ponen algunas demostraciones curiosas. Madrid: Por Juan de la Cuesta, 1606. Small 4°, recent tan antique calf, covers elaborately decorated in blind, spine lettered and decorated in blind with raised bands in six compartments, blind-stamped inner dentels, text block edges sprinkled blue-green from and earlier binding. Numerous interesting woodcut mathematical diagrams. Woodcut factotum initials; woodcut headpiece on recto of first numbered leaf. One diagram cropped at outer margin with loss of about .5 cm., due to the fact that the diagram is substantially larger than the page; two others just touching, for the same reason: this problem is almost inevitable. Very minor light spotting. Overall in very good to fine condition. Contemporary inscription on title-page “Este libro es de P[ed]ro de Fuentes Pintor, Vno [vecino?] de Vallid [Valladolid?].” Small old ownership stamp on title-page and verso of final leaf. (4), 68 leaves; ¶4, A–R4. $10,000.00

FIRST and ONLY EDITION of this important work on mathematical instruments for purposes such as hydraulics, ballistics, and other geometrical problems. It includes a description of geometrical instruments (a type of quadrant and Jacob’s staff) that allow one to measure, for example, the height of a tower and the distance across a plain. It is followed by Cespedes’ explanation of how the town of Burgos should have channeled water from one place to another: the city officials ignored his advice, spent considerable money on a project that failed, and then had no money to redo the project according to Cespedes’ advice. Finally, there is an essay on the best range for artillery, written at the request of a lieutenant general of artillery in Lisbon, to settle a dispute between him and some colleagues.

Garcia de Cespedes (d. 1611), an astronomer and mathematician, was royal cosmographer. The leaf following the title lists 11 works written by him.

* Palau 98620. Picatoste y Rodriguez 313. *Ensayo de bibliografia maritima española* 1240. Simón Díaz VIII-3846. Frank Streeter 220. Goldsmith G61. Perez Pastor 935. NUC: NN, CU. OCLC: 55901472 (British Library); 637199798 (Eth-Bibliothek Zurich); 55275677 (Biblioteca Nacional de Chile); 257713091 (Herzog August Bibliothek); 66353427 (Universiteit Leiden). CCPBE locates sixteen copies, three of which are incomplete. Rebiun locates two copies, at Universitat de Barcelona and Universidad de Sevilla. Copac locates copies at the British Library and the Middle Temple Library.

12. JOSSEAUME, M. *Arithmétique Universelle, ou le Calcul Développé par l’arithmétique sans le secours de l’Algebre ni des Equations*. Paris: Chez
Jean Desaint & Charles Saillant, Libraires, rue S. Jean de Beauvais, vis-à-vis le Collège, 1754. 8°, contemporary mottled sheep (considerable wear, beginning to split at head and foot of spine), flat spine richly gilt with crimson morocco lettering piece, gilt letter, marbled endleaves, text-block edges marbled. Woodcut ornament on title-page. Woodcut and typographical head- and tailpieces. Numerous equations and a few tables in text. Light browning to title page and preliminary leaves. Light dampstain in upper outer portion of first few leaves. Overall good condition. A few early marginal notes in ink. xxiv, 292 pp. [last 3 pages misnumbered 390-392]. $300.00

FIRST and ONLY EDITION. Starting from the premise that learning the mathematics necessary for physics currently requires an amount of study that is “très difficile & très désagréable,” the author sets out a new method, more organized and standardized than those used by Descartes and Newton. Part I covers whole numbers and fractions; Part II, irrational and imaginary numbers.

OCLC: 67700583 (Bibliothek Wageningen, Netherlands); 488646045 (Royal Library of Denmark); 311976138 (University of Mannheim, Universitäts-bibliothek Freiburg calling for xxiv, 392 [i.e. 292] pp.); 469793227 (Bibliothèque nationale de France). CCFr locates three copies. Copac locates a single copy at the Royal Society.

13. LE BON, Gustave. *La civilisation des arabes.* Paris: Librairie de Firmin-Didot, 1884. Large 8° (28.8 x 20 cm.), publisher’s pebbled burgundy cloth (slight wear to corners, joints and foot of spine; head of spine and small portion of upper joint with a bit more wear), covers and spine elaborately stamped in gilt and silver in arabesque design, nicely decorated endleaves in crimson and gold, all edges gilt. Half-title and title-page in red and black; 10 lovely chromolithograph plates, plate with map of Arabia and Egypt highlighted in color, 3 other maps in text (1 full-page), 3 double-page plates in black and white, numerous other excellent illustrations in text, some full-page. Occasional minor foxing, mostly in margins. Overall in good to very good condition. (2 ll.), xv, 705 pp., 10 chromolithograph plates, 1 plate with map highlighted in color, 3 double-page plates, numerous other illustrations in text, some full-page. $500.00

FIRST EDITION of this important work on Arab art and culture. Included is a chapter on the history of mathematics and astronomy (pp. 489-501) that has illustrations of astronomical instruments. Other chapters or sections of chapters cover Arabia, the Arabs prior to Mohammed, Mohammed and the birth of the Arab empire, the Koran, Arab conquests, the Arabs in Syria, Bagdad, Persia, India, Egypt, North Africa, Spain, France, Sicily, Italy, the Crusades, Arab nomads and settled Arabs, their political and social institutions, women, religion, language, philosophy, history and literature,
geography, physical science, natural science, medicine, painting, sculpture and applied arts, architecture, commerce, Arab influences in European civilization and vice versa, causes of Arab greatness and decadence, and finally, the author’s opinion of the state of Islamic civilization in his own time.

OCLC: 1228045.


FIRST EDITION. Gives rules for fixing one’s position at sea by the stars, with sample diagrams and calculations. Mata (d. 1809) taught navigation in Lisbon and wrote several other handbooks for pilots.


15. MEDINA, Pedro de. *Regimiento de navegación compuesto por el maestro Pedro de Medina* (1563), *ahora nueva mano publicado por el Instituto de España e edición facsímile*. Introduction by Julio F. Guillén. Madrid: Instituto de España, 1964. Large 8°, original printed wrappers. Uncut and unopened. Very minor soiling to front wrapper. Internally very fine. Overall in very good to fine condition. (2 blank ll.), 156 pp., (1 l. colophon, 1 blank l.). Tables and illustrations in text. One of 1,000 copies. $100.00

Facsimile edition, with a new introduction, of what is usually counted as the second edition of an important manual on navigation, originally published in Seville, 1552. The 1563 edition is so changed as to be in reality a completely new work. The author speaks of it in the dedication as a separate work, stating that he wrote first the *Arte de navegar* (Valladolid, 1545), then the *Regimiento* of 1552, and finally this work, because men were sailing more frequently and needed to know “los casos de peligros que navegando les pueden suceder.” These dangers Medina set forth in the “Segunda parte,” ff. 57r-77, which comprises about a quarter of the book and did not appear earlier. Its twenty “Avisos a los navegantes” cover such matters as how to avoid erroneous readings on navigational instruments, what to do if the ship sinks, and how to determine if it is safe to disembark. Medina had sailed in the West Indies, and his handbooks on navigation
were indispensable for others who travelled there. This is an extremely attractive volume typographically, and an interesting and important example of illustration and decoration in an early Spanish scientific treatise. The map in this work is the same as the one that appeared in the Arte de navegar (cf. Lyell’s fig. 169). The Regimiento of 1552 had a slightly modified map, showing South America as far south as the Strait of Magellan.

Medina (1493-1567), a native of Seville, was one of the most eminent mathematicians and cosmographers of his day as well as an experienced pilot. His works were translated into French, Italian and Dutch, and served as textbooks throughout Europe.


16. PIAMONTE, Monte Real [pseudonym?]. Guia de contadores e invencam nova de contas, pela qual cada hum com só conhecer os numeros, poderá fazer qualquer genero de contas facilmente sem ajuda de tinta, & penna. Composto por Monte Real Piamonte. Acrescentado novamente a redução de todas as moedas, pezos, & medidas Estrangeiras, às deste Reyno. E huma Taboada, com as quatro especies de Contas, & suas provas, & acrescentado nesta ultima impressão. Coimbra: Na Offic. de Jozê Antunes da Sylva, Impres. da Univ., 1734. 12°, contemporary vellum (worn and soiled, but still sound). Small typographical vignette on title page. Woodcut initial. Typographical headpieces. Woodcut tailpiece. Mathematical tables and notation. Relatively light staining to upper quarter of title page, diminishing in next three leaves. Overall a good to very good copy of a book that is rare in all editions, and very difficult to obtain complete and in decent condition. Old (contemporary?) doodling on front free endleaf recto and verso and rear free endleaf verso. [108 ll.]. A-I12. $400.00

Rare work on arithmetic, mathematics, foreign exchange, exchange rates and weights and measures, replete with mathematical tables and notations.

This edition not in Innocencio, who mentions only two versions of an edition of Évora 1683; see III, 168 and 441. This edition not in Kress; see Luso-Brazilian Economic Literature Before 1850, p. 1 and Goldsmiths’-Kress Library of Economic Literature 2530.3-0 suppl. for the Évora 1683 edition. Not located in OCLC. Copac cites only the Évora 1683 copy at the University of London. KVK cites a Spanish Edition of Alcalá 1613 at the Austrian Nacional Library, and (via Porbase) Portuguese editions of Évora 1683, Coimbra 1721, and an eighteenth-century edition without date, place of printing or publisher, all at the Biblioteca Nacional de Portugal, as well as the present edition (without collation), at the Biblioteca Central da Marinha, Lisboa, and also (via the online catalogue of the Biblioteca Nacional de España) another copy of the Coimbra 1721 edition. The online CCPBE cites only a single copy of the Lisbon 1698 edition at the Biblioteca Pública Episcopal del Seminari de Barcelona.
Curriculum for the Academia Real in Porto, a Forerunner of the University of Porto


FIRST EDITION? Pages 1 through 17 contain the statutes for the Academia Real da Marinha e Commercio in Porto. The academy is to teach mathematics, philosophy, navigation, design, business, and the English and French languages.

The Academy consolidated the Aula de Náutica (established 1762) with the Aula de Debuso e Desenho (established 1779), adding classes in trade, mathematics, French, and English. In 1837 it was absorbed into the Academia Politécnica of Porto, which existed until 1911, when it was partially integrated into the newly established University of Porto.

* Not located in NUC. Not located in OCLC. Not located in Porbase. Not located in Copac.
Latin Translation by Johann Bronchorst


19. ROBERTS, Verne L., and Ivy Trent. Bibliotheca mechanica. New York: Jonathan A. Hill, 1991. Folio (28.8 x 22.5 cm.), publisher’s quarter cloth over illustrated boards with plain dust jacket, as issued (spine of dust jacket faded). As new, except for the faded spine of the plain dust jacket. xiv pp., (1 l.), 391 pp., with 50 black and white illustrations. One of 1,000 copies. $260.00

FIRST and ONLY EDITION, describing an important collection of some 1,200 books and manuscripts on mechanics, biomechanics, the strength of materials and the history of technology. Descriptions include full title, collation, condition of the Roberts copy, and extensive notes on the author and the contents.

How to Calculate Eclipses, by an Astronomer Educated in Brazil
By the Jesuits, and Tutor of the Future D. João VI
First Emperor of Brazil’s Copy

20. [ROCHA, José Monteiro da]. Demonstração e ampliação do calculo dos eclipses proposto no primeiro volume das Ephemerides de Coimbra. Coimbra:
FIRST and ONLY EDITION of this work on calculating eclipses, with a multitude of formulas and extended examples.

José Monteiro da Rocha (Canavezes, 1734–São José de Ribamar, 1819), mathematician and astronomer, spent his youth in Brazil, where he was educated by the Jesuits and joined the Company. In 1759, when the Jesuits were expelled from Portuguese dominions, he left the order, earned a degree in canon law, and returned to Portugal. He was asked by the Marquês de Pombal to assist with the reform of the natural sciences and mathematics at the University of Coimbra, and he helped write the statutes for those disciplines. He held the chairs of physics and mathematics, and later that of astronomy; in addition, he was director of the astronomical observatory at the University. Rocha was also tutor to the future D. João VI. He signs this work in print on p. lxxxviii.

* Not in Innocêncio; on the author, see V, 75; XIII, 146; XIX, 171. A biography of the author, with references, is available on the website of the Instituto Camões. See also Gomes Teixeira, *História das matemáticas em Portugal*, pp. 228-9, 239-49. Not located in NUC. OCLC: 249183469 (Staatsbibliothek zu Berlin-Preussischer Kulturbesitz); 458106137 (Bibliothèque Nationale de France). Not located in Porbase. Not located in Copac.

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**Unpublished Brazilian Mathematical Manuscript**

Manuscript on paper, Rio de Janeiro, 1811, in Portuguese, written in a small, legible hand. Dated at Rio de Janeiro, 1811. Folio (30.5 x 21 cm.), slightly later calf (still later front endleaves; joints very weak and worn, flat spine worn, some pitting to covers), covers with imperial arms of Brazil in center and blind-stamped borders of palmette and vine motifs. Formulas, tables, and an occasional geometrical diagram in text. Minor ink blots. Internally in fine condition; overall good to very good. 92 ll., foliated by original scribe; tables and geometric diagrams within text.

Apparentely unpublished manuscript, written to complement the mathematical textbooks used at the Academia do Rio de Janeiro, it also includes notes on geometry and trigonometry. Antonio José da Silva, who identifies himself here as captain of the second company of the artillery regiment of the court, may be the Antonio José da Silva listed in Sacramento Blake (I, 229-30), who was a treasury-department employee in Brazil in 1837.
22. STILLWELL, Margaret Bingham. *The Awakening Interest in Science During the First Century of Printing, 1450-1550. An Annotated Checklist of First Editions Viewed from the Angle of Their Subject Content.* New York: The Bibliographical Society of America, 1970. Very large 8°, original publisher’s cloth, spine stamped in black and gilt. As new. xxix, [1], 399, [2] pp. One of 1,500 copies. $75.00

FIRST and ONLY EDITION. Deals with astronomy, mathematics, medicine, natural science, physics and technology.

23. STOCKLER, Francisco de Borja Garção, later 1º Barão da Villa da Praia. *Compendio da theorica dos limites, ou introducção ao methodo das fluxões.* Lisbon: Na Offic. da Academia R. das Scienc., 1794. 8°, later quarter sheep over decorated boards, flat spine with gilt bands and ornaments, text-block edges sprinkled blue. Woodcut vignette of the Real Academia das Sciencias on title page. Much mathematical notation in text. Pinpoint wormhole through first 9 leaves, touching an occasional letter. Clean and crisp. Overall in very good condition. (3 ll. including half title, title, and Artigo), xiv, 100 pp., (1 ll. errata), 1 folding engraved plate with mathematical diagrams, (2 ll. advt.). $350.00

FIRST EDITION of an essay on the use of geometry to measure fluxions, the first published work by Stockler (1759-1829), who became a well known mathematician. “Fluxions” was Newton’s term for differential calculus; his *Method of Fluxions* was completed in 1671 and published in 1736.

Stockler spent most of his life involved in politics, rising to the rank of lieutenant general in the army. He was so vocally in favor of the French Revolution that he was charged in 1808 with being among those who plotted to overthrow D. João VI. After going to Brazil to plead his case before the King, Stockler did an about-face and became a staunch absolutist. Following the 1820 revolution he was dismissed from his position as governor of the Azores and was imprisoned, but was reinstated with full honors after the absolutist triumph in 1823.

24. [VILLAS BOAS, Manuel do Cenaculo]. *Cuidados literarios do Prelado de Beja em graça do seu bispado*. Lisbon: Na Officina de Simão Thaddeo Ferreira, 1791. 4°, contemporary speckled sheep (some stains and wear but sound), spine gilt with raised bands in five compartments, crimson morocco lettering piece with gilt title in second compartment from head, text block edges sprinkled red, red silk ribbon place marker. Engraved royal Portuguese coat-of-arms on title page. Typographical headpiece and woodcut factotum initial on p. 1. Marginal soiling on errata leaf, and a few marginal notes. Overall in very good to fine condition; internally fine to very fine. Neat contemporary ink signature in lower margin of title page and margin of leaf A1. Author’s name on title page, in red ink manuscript, in an early hand. (4 ll.), 552 pp., (1 l. errata). $600.00

FIRST and ONLY EDITION of the author’s best-known work. Pages 17-34 are on scientific methodology, and pages 91-157 discuss logic, geometry, and the study of mathematics. There are also sections on the study of Greek and Oriental languages (particularly Hebrew) and on theology.

The author (1724-1814) was an important figure in Portuguese literature and literary criticism during the Enlightenment. Son of a Lisbon blacksmith, he became a Franciscan at age 16, and studied and taught at Coimbra. He later served as Provincial of the Franciscan Order in Portugal (elected 1768), as Confessor for Príncipe D. José (appointed 1769), and first Bishop of Beja (appointed 1770). He was head of the Meza Censoria, and also of the Junta de Providência Litteraria, the committee appointed by Pombal to reform the universities. When the Marques de Pombal fell from power in 1777, Villas Boas retired from public affairs. In 1802 he was elected Archbishop of Evora, and while there suffered many indignities during the French invasion.

LOS SEIS LIBROS
PRIMEROS DELA GEOMETRIA
DE EUCLIDES.

Traducidos en lengua Española por Rodrigo camorano Astrolo
go y Mathematico, y Cathedratico de Cosmographia por
fu Magelban en la casa de la Contratació de Sevilla
Dedicas al illustre señor Luciano de Negro,
Canonigo dela Santia yglesia de Sevilla.

Con licencia del Consejo Real.
En Sevilla en casa de Alonso de la Barrera.
1576.