Addenda

ADD 1

**Babbage, Charles** (1791–1871)

*Notes on a letter addressed by the Secretary of the Royal Society to the President* (Printed in *Philosophical Magazine and Annals of Philosophy*, June 1830).


- **Year:** 1830
- **Place:** London
- **Publisher:** Richard Taylor
- **Edition:** 1st
- **Language:** English
- **Binding:** half-bound leather over marbled paper boards
- **Pagination:** pp. 72–73
- **Size:** 211x132 mm
- **Reference:** Van S CBCP, #70; Babbage CBLP, #71, #73; Ran ODC, p. 405; MCK CBCW, v. 7, pp. 125–133

This work is a commentary on Charles Babbage's *On the Decline of Science in England*. While it does mention Babbage’s book, it mainly discusses his recent public statements concerning the dispute going on within the Royal Society (see Addenda entries **Babbage, Charles**; *Notes on a letter addressed by the Secretary, 1830*; and **Babbage, Charles**; *Notes on Dr. Roget's reply to Mr. Babbage, 1830*; and **Babbage** entries in the main text).

By this time the arguments were generating more heat than light, and participants had been reduced to saying things like how shameful it was that Babbage did not acknowledge himself as a Fellow of the Royal Society on the title page of his book.

- **Illustrations available:** None

ADD 2

**Babbage, Charles** (1791–1871)

*Notes on Dr. Roget's reply to Mr. Babbage.* In *Philosophical Magazine and Annals, Vol. VIII, No. 43*, August 1830.

- **Year:** 1830
- **Place:** London
- **Publisher:** Richard Taylor
- **Edition:** 1st
- **Language:** English
- **Binding:** half-bound leather over marbled paper boards
- **Pagination:** pp. 153–154
- **Size:** 211x132 mm
- **Reference:** Van S CBCP, #70; Babbage CBLP, #71, #73; Ran ODC, p. 405; MCK CBCW, v. 7, pp. 125–133

Babbage continues his dispute with British scientists.

- **Illustrations available:** None

ADD 3

[Babbage, Charles] (1791–1871)


- **Year:** 1830
- **Place:** London
- **Publisher:** Royal Society
- **Edition:** 1st

ADD 4

**Bedwell, William** (1561–1632)

*Mesolabium architectonicum. That is, a most rare, and singular instrument, for the easie, speedy, and most certaine measuring of plaines and solids by the foote. Necessary to be knowne of all men whatsoever, who would not in this case be notably defrauded. Invented long since by M. Thomas Bedwell Esquire. And now published, and the use thereof declared by William Bedwell, his nephew, Vicar of Tottenham. London, F. N. for William Garet, 1631.*

- **b/w:** Hood, Thomas; *The making and use of the geometriconal instrument, called a sector.*
- **b/w:** Mohr, Georg; *Euclides Danicus, bestaende in twee deelen.*
- **b/w:** Mohr, Georg; *Compendium Euclidis curiosi ..., 1673.*
- **b/w:** S., J. D.; *Gegen-übung auf ein mathematisch tractätlein, compendium Euclidis.*
- **b/w:** Pilkington, Gilbert; *The turnament of Tottenham. London, J. Norton, 1631.*
- **b/w:** Schöner, Lazarus; *De numeris geometricis. Of the nature and proprieties of geometrical numbers,* London, Richard Field, 1614.
- **b/w:** Sturm, Johannes; *De accurata circuli dimensione et quadratura cum sylvula epigrammatum, ... 1673.*
Erwin Tomash Library

Addenda (Biehler)

Addenda (Biehler)

_Ænigmatum, aliorumque versuum de numeris ..._
Louvain, Francis Simons, 1633.

Year: 1614
Place: London
Publisher: Richard Field
Edition: 1st
Language: English
Binding: 18th-century mottled calf; spine gilt in compartments; red leather label; red edges
Pagination: ff. [12]
Collation: A–B²C²D²
Size: 181x133 mm

This book is secondary to the collection and was acquired simply because it was bound with the work of Thomas Hood on the sector (see Addenda entry for Hood, Thomas; _The making and use of the geometrical instrument, called a sector_).

This describes an instrument that is really just a linear ruler with some diagonal scales.

Illustrations available:
- Title
- Scale

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**ADD 5**

**Biehler, Tobias** (1752–1834)

_Practische Anleitung für jede Zeichnung zur Jaquard-Maschine_

Year: 1839
Place: Vienna
Publisher: n/a
Edition: manuscript
Language: German
Binding: original velvet gilt-embossed boards
Pagination: n/a
Size: 272x427 mm

This large work is a description of how to set up a Jaquard loom. It begins with a description of the weaving process and the notation system used to describe a pattern. This is followed by an in-depth description of the Jaquard loom with very detailed full-page diagrams of the mechanisms. The final, and largest, part of the work is a sampler of different weavings, including their initial design documents and patterns together with swatches from the actual cloth.

Illustrations available:
- Title page
- Sample mechanical diagram
- Sample pattern
- Sample of the weaving

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ADD 4

**Mesolabivm Architectonicvm**

_Wat is_,
A most rare and singular instrument, for the easie, speedy, and most certaine measuring of Planes and Solids by the bones.

_Necessary to be knowned of all men whatsoever, who would not in these dayes insensibly defraud one._

_Invented long since by M. Thomas Bedoll Esquire_,

And now published, by the Will of his nephews, by William Bedoll, his nephew, _Printer of Totfenham._

Printed by W. C. for William Garth 1631.

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ADD 5

Linear scale, ADD 4

Jacquard loom mechanism, ADD 5
Erwin Tomash Library

ADD 6

Bierens de Haan, David (1822–1895)

Notice sur des tables logarithmiques hollandaises.
Extrait di Bibliografia e di storia delle scienze matematiche e fisiche, Tome VI, Mai 1873.

Year: 1874
Place: Rome
Publisher: Imprimerie des sciences mathematiques et physiques
Edition: Extract
Language: French
Binding: original blue printed wrappers; uncut and unopened
Pagination: pp. [ii], 36
Size: 315x228 mm.

This is a history of Dutch logarithm tables from the first tables by Ezechiël de Decker up to those of the late 1800s. The work is uncut so it is difficult to see all the contents. There are no illustrations.

Illustrations available:
None

ADD 7

Bollée, Leon Auguste Antoine (1870–1913)


Year: 1889
Place: Paris
Publisher: Gauthier-Villars
Edition: 1st
Language: French
Binding: half-bound leather over marbled paper boards
Pagination: pp. 737–739
Collation: 1–153;154'
Size: 268x215 mm
Reference: Rado ODC, p. 408

This short note introduces Bollée’s calculating machine. Previous machines had done multiplication by repeated addition—shifting the carriage between each series of adds to account for the different powers of ten in the multiplier. This process resulted in the operator having to turn the crank \( n \) times for each multiplication, where \( n \) is the sum of the digits of the multiplier. Bollée here describes his multiplication machine that was based on a mechanical set of Napier’s bones. This innovation eliminated many turns of the crank. The operator had only to perform \( r \) operations when the multiplier was an \( r \) digit number. The machine is not illustrated.

Illustrations available:
None

ADD 8

Bowditch, Charles Pickering (1842–1921)

A method which may have been used by the Mayas in calculating time

Year: 1901
Place: Cambridge
Publisher: Cambridge University Press
Edition: 1st
Language: English
Binding: original paper wrappers
Pagination: pp. 11, [1]
Size: 242x167 mm

This short paper suggests one way in which the Maya may have done their time calculations. Although the Maya knew how to divide, doing so would have been a difficult process—the number system they used for calendric notation did not have a standard base (the base of the second digit was different from the base of the other digits). Almost any procedure would have been preferable to actually doing a division that involved more than a few units. Bowditch (a descendent of Nathaniel Bowditch) suggests that they used another process only involving addition and subtraction.

Illustrations available:
Title page
ADD 9

Bramer, Benjamin (1588–1650)


Year: 1615
Place: Marburg
Publisher: Paul Egenolff
Edition: 1st
Language: German
Binding: modern quarter-leather; raised bands; speckled paper over boards
Pagination: pp. 92
Collation: A–L

This work describes the construction and usage of a sector invented by Bramer. Its appearance in 1615 seems quite remarkable. Thomas Hood had published his work on the subject in 1598, and Galileo published his in 1606 (the latter produced in only sixty copies and quite rare).

Bramer does not claim priority for his instrument and in the dedication mentions the mathematical instruments of Tycho Brahe, Thomas Digges, Gemma Frisius and Egantio Danti. He also recognizes Georg Galgemair, Franz Kessler and Matthias Bernegger for their work on the sector or, as he refers to it, the proportional compass. Bramer continues in this vein in his introduction addressed to the reader—he mentions prior work by Joost Burgi, Galileo and Philipp Horcher. Bramer also repeats his mention of Georg Galgemair, Franz Kessler and lastly Matthias Bernegger of Strassburg. He goes on to point out that he intends to present a manual for practitioners and notes the difference between a theoretical (mathematically speculativo) and an applied exposition (mechanico practico).

The work is divided into two major parts. The first chapters deal with basic geometrical concepts, and the second part deals in depth with the construction of Bramer’s instrument and the division of its scales. Bramer’s sector is unusual in that it only uses one movable arm—see the main text entries for Bramer. To facilitate dividing the scales, Bramer provides numerous tables (primes, quadratic, cubic, etc.) and explains their use in some detail. For example, in Chapter 1, the author deals with straight lines and provides a table from 1 to 999 indicating which are prime numbers and giving the divisors of those that are not prime. The remainder of Chapter 1 is devoted to applications of this table.

In Chapter 2 the subject is the division of an arc of a circle and a rudimentary form of the Bramer sector is introduced. Succeeding chapters deal with subjects of ever-increasing complexity.

Illustrations available:
Title page
Single arm sector
Factor table sample page
Angle division (Vernier) scale

Brentel, Georg

See entry for Georg Galgemair in this Addenda and in the main text.

ADD 10

Chapuis, Alfred

Automates - machines, automatiques et machinisme

Year: 1928
Place: Geneva
Publisher: S. A. des Publications Techniques
Edition: 1st
Language: French
Binding: original paper wrappers
Pagination: pp. 113, [1], [16 adverts]
Size: 200x130 mm
This short paperback book is essentially a cheaper version of Chapuis’ other 1928 publication (see main text entry for Chapuis, Alfred; Le monde des automates. Etude historique et technique). It consists of three major sections. The first, concerning automata, illustrates the internal workings of various dolls capable of writing, a moving tableau of country and city life and ends with the chess-playing machines of Torres y Quevedo. The second section deals with automatic industrial machinery and illustrates devices ranging from a simple machine for wrapping candy to milling machines and, once again, Torres’ second, more complex chess-playing machine. The third section describes the making of the film Monde les automates.

Illustrations available
Title page

ADD 10

**Dary, Michael** (1613–1679)

The complete gauger in two parts. Theoretical and practical. Shewing, the briefest ways for gauging all manner of regular vessels, whether backs (or coolers) tuns, coppers and cask; either the whole or the parts. By undeniable rules of art. Also, all manner of irregular vessels, the whole or the parts, by taking a competent number of mean diameters. Likewise tables of allowances.

Year: 1678
Place: London

ADD 11

**Enclen, Johannes, de Cusa**

Algorismus proiectilium de integris novus Magistri Johnanis de Cusa. P[er]pulchris aritmetices artis regulis earude[que], p[ro]bationibus optimis exorantus omni homini cuiuscunque stat exitreri ad modum[m] utilis et necessarius.
Year: 1502
Place: Zwolle
Publisher: A. Kempen
Edition: 1st
Language: Latin
Binding: 18th-century leather; gilt spine in compartments; red leather label; red edges; edges of boards gilt tooled
Pagination: pp. [16]
Collation: a–b
Size: 175x120 mm
Reference: Pul H4, p. 116

This early arithmetic is very short and would have been difficult to understand. It contains no concrete examples, just text set in small black letter type. It begins with short descriptions of the basic arithmetic operations of addition, subtraction, duplication, mediation, multiplication and division. The rest of the work is taken up by equally short descriptions of ten rules (the rule of three, the rule of five and several quite complex rules that were apparently little used in practice).

Illustrations available:
- Title page
- Colophon

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**Estienne, Henri**

The art of making devises: treating of hieroglyphicks, symbols, emblems, ænigma’s, sentences, parables, reverses of medallls, armes, blazons, cimiers, cypres and rebus. Fisrt written in FRENCH, and embelished with divers brasse figures by T[homas] B[jount]. Whereunto is added, a catalogue of coronet-devises, both on the Kings and the Parlaments side, in the late warres.

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**Ferguson, James** (1710–1776)

Select mechanical exercises: shewing how to construct different clocks, orreries, and sun-dials, on plain and easy principles. With several miscellaneous articles and new tables, I. For expeditiously computing the time of...
any new or full moon within the limits of 6000 years before or after the 18th century. II For graduating and examining the usual lines on the sector, plain scale and Gunter. Illustrated with copper-plates. To which is prefixed, a short account of the life of the author.

Year: 1773
Place: London
Publisher: W. Strahan and T. Cadell
Edition: 1st
Language: English
Figures: 9 engraved folding plates
Binding: contemporary leather; red leather label
Pagination: [4], xliii, [9], 272

Illustrations available:
- Title page
- Tables for creating sundials (2)

See also the main catalog entries for Ferguson, James.

This volume continues Ferguson’s semi-popular publishing of mathematical and engineering subjects. The main point of interest here is that he provides a series of tables so that readers could design and make their own sectors. This is followed by an essay in which he describes the uses of the various scales devised by Edmund Gunter and others and gives a short history of logarithms, including a translation of John Napier’s introduction to his Descriptio.

Galgemair, Georg

It is very difficult to sort out the publishing activities of the three authors Georg Brentel, Georg Galgemair and Johann Remmelin. All three deal with instruments such as the sector, and each tends to mention the others in his texts and often in the titles of the works themselves. The items in the main text are listed under the author whom it seemed most reasonable to credit—although we have changed our minds several times over this point. Perhaps the situation is best explained by remarks made by Brentel in the work Georgii Galgemairs kurzer und gründlicher underricht, 1610. This work deals with both the proportional compass and the sector. In the introduction, Brentel (writing as of May 1, 1610) states that in recent years, two works on the proportional compass have appeared: one in 1604 by Levinus Hulsius (written in German) and the other in 1605 by Philipp Horcher (written in Latin). While these works explain how to use the instrument, they do not show how to build and mark it. Brentel goes on to say that he did not personally possess sufficient knowledge to remedy this shortcoming and that in 1608 he sought out Georg Galgemair, with whom he was acquainted, and asked him to prepare a description of the instrument in German. Thus the author of this work could be considered to be either Galgemair or Brentel depending on one’s point of view. When dealing with either Brentel, Galgemair or Remmelin, it is always best to look up all three names in any reference material.

ADD 15

Glorioso, Giovanni Camillo (1572–1643)

Ad theorema geometricum a ’nobilissimo viro propositum ... responsum

b/w: Hood, Thomas; The use of the two mathematicall instruments, the crosse staffe (differing from that in common use with the mariners) and the Iacobs staffe. Set forth dialogue wise in two briefe and plaine treatises. The one most commodious for the mariner, and all such as are to deale in astronomicall matters. The other, profitable for the surveyor, to take the length, height, depth, or breadth, of anything measurable.

b/w: Peletier, Jacques; De occulta parte numerorum, quam algebraem vocant libri duo.

b/w: Enclen, Johannes; Algorismus proiectilium de integris novus Magistri Johnanis de Cusa. P(er)pulchris aritmetices artis regulis earu(m)de(m)que, p(ro)bationibus optimis exorantus omni homini cuiuscu(m)que stat
exitirerit ad modu(m) utilis et necessarius.

b/w: Ward, Seth; Idea trigonometriæ demonstratae (in usum juventutis oxoniensis).

b/w: [Ciruelo, Pedro Sanchez] - [Algorismus]; Tractatus arithmetice practice qui dicitur Algorismuc cum additionibus utiliter adiunctis.

Year: 1613
Place: Venice
Publisher: T. Baglionum
Edition: 2nd
Language: Latin
Binding: 18th-century leather; gilt spine in compartments; red leather label; red edges; edges of boards gilt tooled
Pagination: pp. 37, [1]
Collation: A–E^4 (-E4)
Size: 175x120 mm

This work is on two problems—one in geometry and one an arithmetical problem of Diophantus. It was acquired simply because it was bound with the work by Thomas Hood. The use of the two mathematical instruments ...

Illustrations available:
None

ADD 16
Goldstine, Herman Heine (1913–2004) and John Louis Von Neumann (1903–1957)


Year: 1946
Place: Menasha, WI and New York, NY
Publisher: American Mathematical Society
Edition: 1st
Language: English
Binding: original paper wrappers
Pagination: pp. 188–202
Size: 241x151 mm

This is a highly technical paper in which Goldstine and von Neumann calculate bounds for various error conditions for inventing large matrices. This was part of the ongoing concern that electronic computers might perform so many arithmetical calculations that the accumulated round-off errors would make the results meaningless. The problem was eventually shown not to be as serious as was once suspected.

Illustrations available:
None

ADD 17
Good, John (1690–a.1750)

The use of the sector, in the following parts of the mathematicks, viz. geometry, dialing, trigonometry, measuring, navigation, altimetry, astronomy, longimetria, surveying. Also the art of dialling, instrumentally performed by a new portable instrument called the horological sector; by which hour-lines may be drawn on all manner of planes however situated, in any latitude; by which instrument may be found the hour of the day, and the sun’s azimuth universally.

Year: 1713
Place: London
Publisher: For the author and sold by R. Glynne and E.Culpeper
Edition: 3rd
Language: English
Figures: 6 folding plates
Binding: contemporary paneled leather; gilt spine; red leather label
Pagination: pp. [4], 140
Collation: A–B⁻¹FK‘L²
Size: 1453X93 mm

This work is a description of the use of the sector as well as one advertising and explaining Good’s modifications to make the sector more useful in creating sundials. There is also a very short section on the use of this new sector in surveying and a two-page description of Æquinoctial rings.

Illustrations available:
Title page
Horological sector
Æquinoctial rings

The USE of the SECTOR, in these following Parts of the MATHEMATICS,
Fiz.,
Geometry, [Dialing],
Trigonometry, [Measuring],
Navigation, [Altimetry],
Astronomy, [Longimetria],
Surveying.
Also the ART of DIALING, Instrumentally Performed by a New Portable Instrument called the HOROLOGICAL SECTOR;
By which Hour-lines may be drawn on all manner of Places however situated, in any Latitude; by which Instrument may be found the Hour of the Day, and the Sun’s Azimuth Universal.

By J. GOOD, Teacher of Mathematicks.
London, Printed for the Author near the Martenbrog’s Head in St. Dunstan’s, and sold by R. Glover, at the Angle and Rector in Chiswick near the river of Teddymore, and E. Culpeper, at the G：“D”agger in Middls. More Field, Mathematical Instrument-Makers. 1717.
James Gregory, one of the great Scots mathematicians of the seventeenth century, studied in Padua, Italy, from 1664 to 1667. This work represents some of the mathematical results he discovered during that period. Upon his return to London, he was held in high regard for this work (and for another published a year later), largely because of reviews written by John Collins. He was almost immediately elected to the Royal Society and became quite influential in British mathematical circles. He is said to have had significant influence upon Newton and his work.

Illustrations available:
Title page

ADD 18

**Gregory, James** (1638–1675)

*Vera circuli et hyperbolae quadratura, in propria sua proportionis specie, inventa, & demonstrata.*

- Year: 1667
- Place: Padua
- Publisher: Jacob de Cadorini
- Edition: 1st
- Language: Latin
- Binding: 18th-century half-bound leather over marbled boards; red leather label; red edges
- Pagination: pp. 62
- Collation: A–H((-H4)
- Size: 180x130 mm

James Gregory, one of the great Scots mathematicians of the seventeenth century, studied in Padua, Italy, from 1664 to 1667. This work represents some of the mathematical results he discovered during that period. Upon his return to London, he was held in high regard for this work (and for another published a year later), largely because of reviews written by John Collins. He was almost immediately elected to the Royal Society and became quite influential in British mathematical circles. He is said to have had significant influence upon Newton and his work.

Illustrations available:
Title page

ADD 19

**Hemeling, Johann**

*Hannoversch Arithmetischer Anfang, Oder Kleines Rechnebuch, Das ist: Kurtze doch gründliche Verfassung, welcher gestalt die Jennige so in Edler Rechnekunst was nützliches zu erlernen begierig, richtiger Ordnung gemäss. Anfänglich dass sie bald zum Verstande selbiger Kunst gelangen, zu unterweisen seyn. Mit nötigem Berichte, dihnsahmer Erinner und Anmerkungen. Auff Begehren gönstiger herzn und freunde entworffen und zum Erstenmahle dem Drukk übergeben ...*

- Year: 1656
- Place: Goslar
- Publisher: Nicolaus Duncker
- Edition: 1st
- Language: German
- Plates: printed music on verso of title page; full page woodcut opposite p. 1; 26 blank leaves at end
- Binding: contemporary blind-stamped leather; blue edges
- Pagination: pp. [16], 142, [2]
- Collation: A–B—K'
- Size: 157x92 mm

This is a simple arithmetic book. It begins with the four basic operations (using the galley form for division) and then makes its way through fractions, the rule of three,
series and similar topics. There is nothing in particular to recommend it.

Illustrations available:
- Title page
- Music on verso of title page

Volume 2 is paginated from 1, so was likely designed to be issued separately. However, it is obviously a part of the set because after a short recap of the previous volume in a preface, Henrion discusses sexagesimal numbers and follows with a long chapter on spherical trigonometry. The rest of volume 2 is taken up by problems involving astronomical and navigational material, with tables that would be useful in both navigation and the creation of elementary sundials.

Illustrations available:
- Title page

ADD 20

**Henrion, Denis** (ca.1580–1632)

*Memoires mathematiques recueillis et dressez en faveur de la noblesse Francoise* [v.1 and v.2 of a 3-volume set]

- Year: 1623–1627
- Place: Paris
- Publisher: Fleury Bourriquant
- Edition: 2nd
- Language: French
- Binding: 18th-century leather; gilt spine; red leather label; red edges; edges of boards gilt tooled
- Pagination: v.1: pp. [8], 438, [2]; v.2: [16], 336
- Collation: v.1: A’$–2D’$E’ v.2: a$A’–X’$
- Size: 170x100 mm

See also the entries for *Henrion, Denis*, in the main text and the following Henrion entry in these addenda.

These are the first two volumes of a three-volume set of mathematical texts. The first volume begins with elementary arithmetic on integers and then repeats the same material for fractions. It rapidly becomes more sophisticated with a section on trigonometry followed by a large table of sines, tangents and secants (to a radius of 100,000) for every minute of the first 45 degrees (the second half of the quadrant can be found by reading the table backwards). The last half of volume 1 is taken up by problems in geometry and fortification.

ADD 21

**Henrion, Denis** (ca.1580–1632)

*Traicte des logarithmes* [v.3 of a 3-volume set]

- Year: 1626
- Place: Paris
- Publisher: Author
- Edition: 2nd
- Language: French
- Binding: 18th-century leather; gilt spine; red leather label; red edges; edges of boards gilt tooled
- Pagination: v.3: [4], 341–816
- Collation: v.3: Y’$–3E’$
- Size: 1705x100 mm

This volume, bound like the other two (see previous entry in these addenda), is largely devoted to logarithms with a table of ten-digit logarithms (0 – 20,000) and their differences. The final section describes a *Logocanon* (complex proportional scale) of Henrion’s own invention accompanied by a selection of problems in which it would be of use.
The logarithms and logocanon sections have their own title pages and dedications, but the pagination is continuous, so it is possible that they were never issued separately.

Illustrations available:
- Proportional scale
- Logocanon title page
- Logarithms title page

This book, like many others from this era, gives the elements of gauging together with a simple set of tables to help the practitioner. It begins with a discussion of decimal arithmetic. The gauging section starts simply enough with finding the volume of a cube but then rapidly progresses to topics such as To find the Content of the Frustum of a Parabolick Conoid, cut Parallel to the Base. The feature that makes this volume different is the very large, clear diagrams. Most take up a full page. Two extra pages have been bound in the back with diagrams of Fig:6, Fig:7 and Fig:8. These are on paper having the same watermark as that on the pages of the rest of the volume, but these are trimmed differently and would appear to be an afterthought to the rest of the printing. A contemporary hand has added annotations to these extra diagrams.

Illustrations available:
- Title page
- Regular diagrams
- Additional diagrams

ADD 22

Hodgeson, Marmaduke

A treatise on practical gauging: shewing a compendious and easie way to attain that useful art. The whole grounded upon the un-erring principles of geometry.

Year: 1689
Place: London
Publisher: J. Richardson for William Court
Edition: 1st
Language: English
Figures: 13 full-page woodcut diagrams
Binding: contemporary gilt spine

Pagination: pp. [14], 116, [26]
Collation: π "B–ST" 
Size: 182x112 mm
Hood, Thomas (ca.1557–1620)

The making and use of the geometrical instrument, called a sector.

Year: 1598
Place: London
Publisher: John Windet, solde by Samuel Shorter
Edition: 1st
Language: English
Binding: 18th-century mottled calf; spine gilt in compartments; red leather label; red edges
Pagination: ff. [5], 50, [1] (mismarking ff47 as 45; ff49 as 47)
Collation: A¹B¹–OP² (mismarking D¹ as Cº)
Size: 181x133 mm

Thomas Hood was a Fellow of Trinity College, Cambridge. In 1588, he was appointed mathematical lecturer to the City of London under the patronage of Sir Thomas Smith and Lord Lumley. The two patrons were wealthy individuals interested in increasing the level of mathematical ability of people such as navigators, etc. Hood gave free lectures for four years until the position was abolished. He then became a private teacher of mathematics and navigation and a dealer in books and instruments.

Hood appears to have coined the English word *sector* (at least as it applies to this instrument) in the title of this book. He must have been very familiar with the sector for some time previous to 1598 because the book is well thought out and full of useful diagrams, examples and exercises, and it is obviously not something that he created in a rush. It also advertises that his sectors can be obtained from the instrument maker Charles Whitwell (fl.1594–1606). Indeed, a sector signed by Whitwell has the date 1597, and another from the same year was made by the Englishman Robert Becket, both of which resemble the illustration in Hood’s publication. Although credit for the sector is often given to Galileo, it is clear that the instrument was well known and used in England before Galileo published his work on it. See the essay on the sector in the Appendix as well as the main text entry for Errard, Jean; La geometrie et practique generalle d’icelle.

The work begins by describing the sector and its scales together with a short description of their use. These are followed by several chapters devoted to explaining individual operations. These range from performing simple multiplication (usually couched in terms of finding lines in certain proportions) to expanding and contracting figures, if given the radius of a circle find the length of a chord of an angle, inscribing various figures inside squares and circles and similar basic functions performed with a sector.

Hood’s sector was equipped with an arc (similar to Galileo’s), various sights, a mounting so that it could be used in surveying and an index arm for taking readings across the two open arms.

Illustrations available:
- Title page
- Sector
- Last paragraph
ADD 24

Hood, Thomas (ca.1557–1620)

The use of the two mathematicall instruments, the crosse staffe (differing from that in common use with the mariners) and the Iacobs staffe. Set forth dialogue wise in two briefe and plaine treatises. The one most commodious for the mariner, and all such as are to deale in astronomicall matters. The other, profitable for the surveyor, to take the length, height, depth, or breadth, of anything measurable.

b/w: Peletier, Jacques; De occulta parte numerorum, quam algebram vocant libri duo.

b/w: Enclen, Johannes; Algorismus proiectilium de integris novus Magistri Johnanis de Cusa. P(er)pulchris aritmetices artis regulis earu(m)de(m)que, p(ro)bationibus optimis exorantus omni homini cuiuscu(m)que stat extitriter ad modu(m) utilis et necessarius.

b/w: Ward, Seth; Idea trigonometriae demonstratae (in usum juvenitatis oxoniensis).

b/w: Glorioso, Giovanni Camillo; Ad theorema geometricum a’ nobilissimo viro propositum … responsum.

b/w: [Ciruelo, Pedro Sanchez] - [Algorismus]: Tractatus arithmetice practice qui dicitur Algorismuc cum additionibus utiliter adiunctis.

Year: 1596
Place: London
Publisher: Richard Field for Robert Dexter
Edition: 2nd
Language: English
Binding: 18th-century sprinkled leather; red leather label; spine gilt; red edges
Pagination: pp. [40]
Collation: A–E (misnumbered E3 as D3)
Size: 175x120 mm

ADD 25

Hunt, William

Clavis stereometriae: or, a key to the art of gauging, with a synopsis of the laws of excise

Year: 1691
Place: London
Publisher: Benjamin Motte for the author
Edition: 1st
Language: English
Binding: contemporary leather
Pagination: pp. 72
Collation: A–F
Size: 130x781 mm

This book on gauging has little to recommend it except for the appendices on a Snopsis of the Laws of Excise.
This section contains the rates of excise for different beers, wines and strong spirits as well as several pages of interesting items such as *Brewing Vessels to be Gauged by two Artists upon Oath*; *Not to be erected, altered or enlarged by Brewer or Retailer* (penalty 50 pounds a vessel); and *Bribes not to be given or taken* (penalty 10/- each).

The last four pages describe *The Salisbury Case*, in which several brewers were charged with false Entries and other fraudulent Practices ag(a)inst his Majesty's said Duty.

The tight binding of this work would make it difficult to use. The fact that it is of very small format (and consequently of small print and difficult to read) would have made it ideal to carry in the pocket as a reference work when actually gauging. The diagrams are cut, evidently from a larger sheet, into various shapes and sizes and then pasted into the book. This construction results in a volume that looks like it would be awkward to read. The title page is repeated where the frontispiece would normally appear.

Illustrations available:
- Title page

**ADD 25**

**Hunt, William**

*A guide for the practical gauger, with a compendium of decimal arithmetick. Shewing briefly I. Many plain and easie ways how to gauge Brewer's tuns, coppers, backs, &c. Also, the mash-tun, either in whole, or gradually from inch to inch, with divers new tables for facilitating the work. II. The gauging of any wine, brandy, ale or oyl cask, either the whole, or in part, with the construction and use of two tables of area's of circles and Sybant Hantz his table of area's of segments of a circle. III. The mensuration of all manner of superfices, as board, glass, pavement, wainsot, tiling, floors, roof, &c. also brickwork, timber and stone. Added as an appendix to the former work.*

Year: 1673
Place: London
Publisher: John Darby for Nathaniel Ponder
Edition: 1st
Language: English
Binding: contemporary leather
Pagination: pp. [26], 358 (misnumbered 288 as 268, 323 as 223, 326 as 226, 330 as 230, 331 as 231), [4], 30 (29 misprinted on verso of 27), [64]
Collation: A'a'B–Z'2A'–B'A–D'
Size: 147x87 mm
Reference: Hend BTM, #49.0, p. 69

This is much more a practical book on gauging than many claiming that title. It begins with a short section on decimal arithmetic; then has six individual sections dealing with basic geometry of circles, spheres, cylinders, cones, ellipses and regular polygons and ends with a section on cask gauging. The really practical part of this volume is the final two thirds which contain almost any table a gauger might need, including a table of six-figure logarithms to help with any calculation for which the reader might not find a ready-made table entry.

The frontispiece, showing a handsome portrait of the author, is also adorned with dividers and gauging rods.

Illustrations available:
- Title page
- Frontispiece
ADD 27

**Hutton, Charles** (1737–1823)

*Tables of the products and powers of numbers. Namely, 1st the products of all numbers to 1000 by 100. 2nd, the squares of all numbers to 24500. 3rd, the cubes of all numbers to 1000. 4th, the first ten powers of all numbers to 100. 5th, tables for reducing, weights and measures from one denomination to another. With an introduction, explaining and illustrating the use of the tables.*

Year: 1781  
Place: London  
Publisher: Commissioners of Longitude (printed by William Richardson)  
Edition: 1st  
Language: English  
Binding: contemporary leather; spine gilt; red leather label  
Pagination: pp. [viii], 103, [1]  
Collation: a–b²–AC²  
Size: 428x265 mm

See main catalog entry for information on Charles Hutton.

This product table would have been extremely useful. Although the ability to multiply was more common in the 1700s than in the 1600s, it was still a daunting task to perform a multi-digit multiplication. It was, of course, to remain a difficulty until the price of personal electronic calculators dropped to the point at which they were less expensive to purchase and much more accurate than this type of publication. It begins with five pages of description and well-chosen examples of how to use the tables together with mathematical formulae to aid in situations in which the required result would not be in the book. As indicated in the title, the major table is one of products, but it also contains tables of squares, cubes, powers and various commercial tables.

Illustrations available:  
Title page  
Sample table pages
was obtained simply because it was bound with the work by de Decker.

Illustrations available:
Title page

ADD 29
Kegel, Johann Michael


Year: 1696
Place: Frankfurt on Main
Publisher: Johann Valentin Schäller
Edition: 2nd
Language: German
Binding: 18th-century mottled calf; title in red and black; spine gilt in compartments; red edges; red leather label
Pagination: pp. [14], 276, [12]
Collation: ) ( 8 [ – ) ( 8 A – S
Size: 157x90 mm

This work is secondary to the collection. It was obtained simply because it was bound with the work by Thomas Hood (see entry for Hood, Thomas, in this addendum).

This is a commercial arithmetic. It begins with simple arithmetic and a multiplication table. The addition table follows later and is itself followed by a subtraction table and, later in the work, by a division table showing remainders and quotients. The galley method of division is used in the examples. After dealing with integers, Kegel does it all over again with fractions—and then again with mixed-radix numbers (money). Then follows extensive discussion on the usual topics such as the rule of three.

The last half of the book deals with what Kegel terms Italian Precitice (Practica Italica) which is generally concerned with the more advanced topics. It consists of forty-seven short chapters, some only a page in length, with the emphasis on bookkeeping, but ends with topics such as arithmetic and geometric progressions.

The title page is cropped slightly, so the printer’s name is missing. It should read Verlegt und zu finden bey Johann Valentin Schälern am Niclaus-Thurn. Gedruck bey Johannes Wust, 1696.
ADD 30
Kratenstein, Christian Gottlieb


Year: 1805
Place: Geneva
Publisher: J. J. Paschoud
Edition: 1st
Language: French
Binding: original paper-covered boards; spine gilt; edges sprinkled
Collation: π'4 A–Z2A–2O8
Size: 195x122 mm
Reference: Jeremy Norman 2/23/2005 Auction Catalog #11, p. 3

Kratzenstein, a Danish physician and scientist, describes his reconstruction of Leibniz’s calculating machine that he presented before members of the Imperial Academy of Sciences in Saint Petersburg in 1762. There are no illustrations of any kind.

Illustrations available
Title page

NOTICE DE LA VIE ET DES ÉCRITS
D’
GEORG-LOUIS LE SAGE de Genève,
Membre de l’Académie de l’Univer de Paris, des Académies de Bohème, des Académies de France, de Berlin, de Prusse, de la Société Royale de Londres, etc. de différentes de l’ordre de l’Impératrice de Russie, Correspondant de l’Académie des Sciences de Pél, etc. éditeur du Mémoire de l’Imperial National de France.

SUIVI D’ÉPITAPHE

A GÉNÉVÉ,
Publié par J. L. PASCHEUX, Imprimeur-Libraire.
1805.

ADD 31
Master, Martin

Surveyours perambulator

Year: 1661
Place: London
Publisher: Robert and William Leybourn
Edition: 1st
Language: English

Binding: 18th-century mottled calf; gilt edges; spine gilt in compartments; red leather label; binding edges gilt rolled
Pagination: pp. [16], 71, [1]
Collation: A’4 B–D’
Size: 133x68 mm

Master calls himself a student in mathematics in Canterbury, but at the time of this publication he was living in Epping.

This work describes a measuring device with a large wheel. The wheel drives a series of counters, each with a hand like a clock, that ride above the wheel. The recording device is analog in nature (it is not pictured, but the description is clear)—like a modern electricity meter. It contains five dials and could record up to 125 miles before the dials are reset to zero. The major wheel is ninety-nine inches in circumference (half a pole or perch). The entire system can be broken down into many small pieces (the wheel itself consists of six pieces) that can be fitted in a box for easier transport or storage. The individual pieces are attached together with brass screws. The device is pictured in the frontispiece.

After describing the construction of the device, Master spends some time discussing how it is better than a chain and then deals with many cases in which its use could cause problems (e.g., the operator is unable to cross a ditch near the edge of the field being measured). The work ends with an example survey of an imaginary field of irregular shape.

The device was evidently made, to the author’s design, by two different people—the recording wheels were done by the clock maker Thomas Loomes (at the sign of

THE SURVEYOURS PERAMBULATOR:
OR,
An Engine wherewith the Surveyor may with much more speed, ease, and care measure Land then either with Chain or Pole,
And wherewith he may Travel a whole day, and at his journeyed, he shall have the Length of the ground given him at an instant unto the hundred part of a Pole.

By MARTIN MASTER, Student in the Mathematicks.

LOND.,
Printed by Robert and William Leybourn, and sold by Mr. G. Gobelin, at the Globe in Fetter-Lane, 1661.
the mermaid in Loathbury), and the wooden frame and wheel by Jo. Broun (in the Minores). He also mentions Mr. Anthony Thomson, an instrument maker living in Hosier Lane in Smithfield, London, but gives no indication that Mr. Thomson took part in the construction of his device.

The printing was done by William Leybourn, who was to become a major surveyor in London himself. Leybourn does not mention this perambulator in any of his subsequent books, thus it was likely difficult to use and/or not very popular.

Illustrations available:
- Frontispiece
- Title page

**ADD 32**

**Metius, Adriaan Adriaansz (1571–1635)**


- Year: 1634
- Place: Amsterdam
- Publisher: Henderick Laurentsz
- Edition: 1st (2nd issue)
- Language: Dutch
- Binding: contemporary mottled calf; spine gilt-decorated in compartments; red leather label; marbled edges
- Pagination: pp. [16], 246, [8]
- Collation: .?..8
- Size: 140x89 mm
- Reference: Hymn AC, #2222; B de H BNHS, #3204, p. 190

This is an earlier edition of the Metius work describing Napier’s bones (see entry in the main text for this same author and title for details). This one has the individual diagrams for each bone cut apart rather than in one large sheet like the copy in the British Library has.

Illustrations available:
- Frontispiece

**ADD 33**

**Mohr, Georg (1640–1697)**

*Compendium Euclidis curiosi: Dat is, meetkonstigh passer-werck, hoe men met een gegeven opening van een passer en een liniael, de werck-stucken van Euclides, onttvinden kan. Te samen gestelt door liefheber der selver konst. Amsterdam, Joannes Jansson van Waesberge, 1673*

b/w: *Hood, Thomas; The making and use of the geometricall instrument, called a sector.*

b/w: *Mohr, Georg; Euclides Danicus, bestaende in twee deelen.*

b/w: *S., J. D.; Gegen-übung auf ein mathematisch tractätlein, compendium...*

b/w: *Pilkington, Gilbert; The turnament of Tottenham. Or, the wooing, winning, and wedding of Tibbe, the reeu’s daughter there.*

b/w: *Bedwell, William; Mesolabium architectomicum.*

b/w: *Schöner, Lazarus; De numeris geometricis.*

b/w: *Sturm, Johannes; De accurata circuli dimensione et quadratura cum sylvula epigrammatum, evignatrum, aliorumque versuum de numeris, ad animum, partim instruendum, partim recreandum, inventis.*
Mohr was born in Denmark but lived much of his life in Holland. He is known to have visited England and France. He is mentioned in the correspondence between Oldenburg (Royal Society) and Leibniz with regard to problems in algebra. He is well known for advocating the practice of doing all geometric processes with a compass alone—something that was not proven even possible until 125 years after Mohr’s time.

This, like his 1673 work noted next in these addenda, is a work on geometry that is secondary to the collection. It was obtained simply because it was bound with the work of Thomas Hood. For further details, consult K. Anderson and H. Meyer, “Georg Mohr’s three books and the Gegenubung auf Compendium Euclidis curiosi,” *Centaurus*, 28, 1985, pp. 139–144.

Illustrations available:
- Title page

See previous entry in these addenda for Mohr, Georg; *Compendium Euclidis curiosi*.

Mohr signed the title page—the last few typeset lines mention that the author’s signature is an authentication device.

Illustrations available:
- Title page
ADD 35
[Napier, John (1550–1617)]

Enneades arithmeticae: the numbring nines. Or, Pythagoras his table extended to all whole numbers under 10000. And the numbring rods of the Right Honourable John Lord Nepeer, enlarged with 9999 fixt columns or rods, of single, double, triple, and quadruple figures, and with a new sort of double and moveable rods, for the much more sure, plain and easie performance of multiplication, division, and extraction of roots. The whole being very useful for most persons, of whatever calling and employment, in all arts and sciences. All having frequent occasions of accomplts, numbring, measuring, surveying, gauging, weighing, demonstrating, &c. The Devine wisdom having from the beginning disposed all things in measure, number and weight, Sap.11.21

b/w: Gemma Frisius, Reiner; Arithmeticae practicae methodus facilis.

b/w: [Mabbut, George]; Tables for renewing & purchasing of the leases of cathedral-churches and colleges, according to several rates of interest: with their construction and use explained.

b/w: Scheuchzer, Johann Jacob; Praelectio de matheseos usu in theologia.

b/w: Lightbody, James; The new art of gauging and measuring without inches or division.

Year: ca. 1684
Place: London
Edition: 1st
Language: English
Figures: 2 engraved folding plates (cropped, but data verified from a copy in the Clark Library)
Binding: contemporary leather; red leather label; edges of boards gilt tooled; red edges

ADD 36
Pilkington, Gilbert

The turnament of Tottenham. Or, the wooing, winning, and wedding of Tibbe, the reeu's daughter there.

London, J. Norton, 1631

b/w: Hood, Thomas; The making and use of the geometrical instrument, called a sector.

b/w: Mohr, Georg; Euclides Danicus.

b/w: Mohr, Georg; Compendium Euclidis curiosi.

b/w: S., J. D.; Gegen-übung auf ein mathematisch tractätzlein.

b/w: Bedwell, William; Mesolabium architectomicum.

b/w: Sturm, Johannes; De accurata circuli dimensione et quadratura.

Year: 1631
Place: London
Publisher: John Norton
Edition: 1st
Language: English
Figures: 2 engraved folding plates
Binding: 18th-century mottled calf; spine gilt in compartments; red leather label; red edges
Pagination: ff. [21]
Collation: A–B'C'C'–D'E'E'
This work is secondary to the collection. It was bound with the Thomas Hood work on the sector.

Illustrations available:
None

Remmelin, Johann
See entry for Georg Galgemair in these addenda.

ADD 38
Sabine, Edward (1788–1883)
Notices occasioned by the perusal of a late publication by Mr. Babbage. In Philosophical Magazine and Annals, Vol. VIII, No. 43, July 1830.
b/w: Babbage, Charles; Notes on a letter addressed by the Secretary of the Royal Society to the President.

Year: 1830
Place: London
Publisher: Richard Taylor
Edition: 1st
Language: English
Binding: half-bound leather over marbled paper boards
Pagination: pp. 44–50
Size: 211x132 mm

Charles Babbage had noticed a few anomalies in a publication by Sabine and had written a small paper pointing them out. Here Sabine replies that the instrument he was using was incorrectly calibrated, but that despite this problem, the errors were so small as to be meaningless in the context.

Illustrations available:
None

ADD 39
Scheuchzer, Johann Jacob (1672–1733)
Prælectio de matheseos usu in theologia
b/w: [Mabbut, George]; Tables for renewing & purchasing of the leases of cathedral-churches and colleges, according to several rates of interest: with their construction and use explained.
b/w: [Napier, John]; Enneades arithmeticae: the numbring nines.
b/w: Gemma Frisius, Reiner; Arithmetice practicae methodus facilis ...
b/w: Lightbody, James; The new art of gauging and measuring without inches or division.

Year: 1712
Place: Amsterdam

ADD 37
Reyher, Samuel (1601–1673)
Arithmetica Oder Rechen-Büchlein Zum einfältigsten und deutlichsten Auff gnädigen Fürstl. Befehl für die Schulen Im Fürstenthumb Gotha ...

Year: 1649
Place: Gotha
Publisher: Johann Michael Schall
Edition: 2nd
Language: German
Binding: rebound in contemporary vellum
Pagination: pp. 190, [2]
Collation: A–L^8
Size: 148x90 mm

Reyher was a German jurist, schoolmaster and mathematician. He held the post of professor of mathematics at Kiel University for a few years before his death. He wrote more than sixty works on subjects ranging from mathematics to attempts to reconcile church dogma and the new discoveries in science. His arithmetic books went through many different editions. His popularity rests on the fact that the explanations were clear, concise and illustrated with well-chosen examples. He spends the first 140 pages dealing with elementary operations, first with integers and then with fractions.
Publisher: R. & G. Weitstein
Edition: 2nd
Language: Latin
Plates: Title in red and black
Binding: contemporary leather; red leather label; edges of boards gilt tooled; red edges
Pagination: pp. 45, [1]
Collation: A–B C
Size: 145x85 mm

This short tract on mathematical topics was acquired only because it was bound with the work on Napier’s bones—see entry in these addenda for Napier, John; Enneades …, 1684.

Illustrations available:
Title page

ADD 39

**PRAELECTIO DE MATHESEOS USU IN THEOLOGIA.**


Title page

ADD 40

**Schöner, Lazarus** (ca.1543–1607)

*De numeris geometricis. Of the nature and proprieties of geometricall numbers. First written by Lazarus Schonerus, and now Englished, enlarged and illustrated with divers and sundry tables and observations concerning the measuring of plaines and solids. All teaching the fabricke, demonstration and use of a singular instrument, or rular, long since invented and perfitted by Thomas Bedwell Esquire.*

b/w: **Hood, Thomas;** The making and use of the geometricall instrument, called a sector.

ADD 40
ADD 41
S., J. D. - [ANON]

*Gegen-übung auf ein Mathematisch Tractätlein, Compendium Euclidis Curiosi genant, worin Nebst kurzem Anweis, um verscheidene Euclidische Aufgaben mit einer gegebenen Oeffnung des Zirkels noch auf andere Ahrt zu machen; zu mehrern Nutzen wird vorgestellet Eine kurze, jedoch grundrichtige Manier mit deb Körperlichen Inhalt einer Festung mit geringer Mühe aus zu rechnen.*

b/w: **Hood, Thomas;** *The making and use of the geometrical instrument, called a sector.*
b/w: **Mohr, Georg;** *Euclides Danicus.*
b/w: **Mohr, Georg;** *Compendium Euclidis curiosi.*
b/w: **Pilkington, Gilbert;** *The turnament of Tottenham.*
b/w: **Bedwell, William;** *Mesolabium architectomicum.*
b/w: **Sturm, Lazarus;** *De numeris geometricis.*
b/w: **Sturm, Johannes;** *De accurata circuli dimensione et quadratura.*

Year: 1673  
Place: Amsterdam  
Publisher: Joannes Jasson van Waesberge  
Edition: 1st  
Language: Dutch  
Binding: 18th-century mottled calf; spine gilt in compartments; red leather label; red edges  
Pagination: pp. 24  
Collation: A–C⁴  
Size: 181x133 mm  
Reference: B de H BNHS, #4111, p. 238; Not in Cro CL  

There is some suspicion that this work was written by Georg Mohr (see entries for him in these addenda). For further details, consult: K. Anderson and H. Meyer, “Georg Mohr’s three books and the Gegenübung auf Compendium Euclidis curiosi,” *Centaurus*, 28, 1985, pp. 139–144.

ADD 42

**Smith, Laurence Dwight**

*Cryptography. The science of secret writing*

Year: 1943  
Place: New York  
Publisher: W. W. Norton  
Edition: 1st  
Language: English  
Binding: original cloth boards; with dust jacket  
Pagination: pp. 164  
Size: 213x140 mm  
Reference: Gal BLC, p. 172  

This is an elementary book on cryptography. It deals with the history of the subject, followed by all the usual simple ciphers. It ends with a large series of problems for the reader to solve. An interesting appendix gives two pages of notes on the enciphering of Japanese—perhaps an indication of the author’s profession during World War II.

Illustrations available:  
Title page

ADD 43

[Taton, Rene (1915–2004)]

*Le calcul mecanique*

Year: 1949  
Place: Paris  
Publisher: Universitaires de France  
Edition: 1st  
Language: French  
Binding: original paper wrappers
Rene Taton, a well-known French historian of science, began his career as a professor in an institute training primary-school teachers. At the end of World War II, he was offered the chance to study for a Ph.D. in the history of science. This was the first time that such a specialization had been offered in France.

This small book traces the history of calculating machines from the time of Blaise Pascal to World War II. Taton covers the traditional digital mechanical calculating machines but also includes analog planimeters and the more modern punched card accounting machines. The last chapter (Les grandes machines mathématiques) touches on the latest developments of the Harvard Mark I, ENIAC and the French computer project being headed by Louis Couffignal.

Illustrations available:
Title page

ADD 44
Taylor, John (fl.1650–1701)

The semicircle on a sector, in two books. Containing the description of a general and portable instrument; whereby most problems (reducible to instrumental practice) in astronomy, trigonometry, arithmetick, geometry, geography, topography, navigation, dyalling, & c are speedily and exactly resolved.

Year: 1667
Place: London
Publisher William Thompson
Edition: 1st

ADD 45
Vernier, Pierre (1584–1638)

La construction, l’usage et les proprietez du quadrant nouveau de mathematique. Comme aussi la construction de la table des sinus, de minute en minutes successuement par un seul maxime. De plus ung[e]
abregé des dictionnaires tables en une petite demye page avec son usage. Et finalement la méthode de tréùver les angles d’un triangle par la connaissance des costez, & les costez par les angles, sans l’ayde d’aucune table.

Year: 1631
Place: Brussels
Publisher: François Vivien
Edition: 1st
Language: French
Binding: 18th-century leather; gilt spine; red leather label; red edges; edges of boards gilt tooled
Pagination: pp. [12], 122
Collation: *A–H*(–H8)
Size: 160x946 mm

This work describes a survey instrument that is little more than a simple quadrant with two sighting vanes attached. The text first discusses its construction and then illustrates its use with simple examples.

Illustrations available:
- Title page
- Instrument

ADD 46
Ward, John

A compendium of algebra. Containing plain and easie rules, for the speedy attaining to that art. Exemplified by various problems, with the solution of their various equations in numbers by a new and general method of resolving all kind of equations, with great ease and expedition, very different from all others yet extant. Applied to squaring the circle, making of sines, tangents and logarithms with great facility. Also an appendix concerning compound interest and annuities.

b/w: Taylor, John; The semicircle on a sector, in two books.

Year: 1698
Place: London
Publisher: William Tompson
Edition: 2nd
Language: English
Binding: contemporary leather; gilt-decorated spine in compartments; red leather label
Pagination: pp. [8], 112
Collation: A‘B–K‘L‘
Size: 133x76 mm

This item is secondary to the collection. It was obtained only because it was bound with the work of John Taylor (The semicircle on a sector …).

Illustrations available:
- Title page

ADD 47
Wastell, Thomas

The application of a new portable scale, (being the first of this nature) in resolving questions in the following particulars, viz. Interest, for any sum, time or rate, discount, of bills, tallies, stocks, &c. Factoridge, brokeridge, commission exchange, &c. at all rates. Of any quantity of goods, merchandise, or any fractional part of an integer. Of any number of pistols, dollers, or other foreign coin. Of wages due to any workmen or seamen, for any time or rate. As also short allowance. Number, of days in any distance of time. Proportion, of any sum per annum, to one or any number of days. And several other profitable uses, with speed and certainty. Necessary for all persons of any quality, function, or profession. invented and calculated by Tho. Wastell

Year: 1700
Place: London
Publisher: Printed for the Author, and sold by Richard Mount
Edition: 1st
Language: English
Binding: contemporary paneled leather; spine with five raised bands; compartments with double-gilt fillet and gilt flower in center; board edges gilt rolled; spine rubbed
Pagination: pp. 23
Size: 150x90 mm

This rare item describes a portable scale consisting of six rods, each marked with the digits 1 to 9. The first rod represents units, the second tens, etc. Each rod could be rotated to show a different scale on the front or back. There is, unfortunately, no illustration of the instrument. The device was used for commercial calculations, and the book describes the process for computing interest, discounts, brokerage fees, conversion of foreign coins and wages and similar processes. A table on the last page gives the decimal equivalents of shillings, pence and farthings. A contemporary hand has added two pages of notes indicating the page number on which each operation can be found and which side of the scale is used in that operation.

The only other known copy of this work is in the Folger Shakespeare Library. The Folger copy is of the second edition (also published in 1700) and is an expanded version of this first edition (forty pages in the Folger versus twenty-three in this first edition). This first edition is unrecorded in Wing (ESTC). The second edition title page is clearly different from that of the first, so there is no mistaking the two editions even though they were both published in the same year.

Illustrations available:
Title page
Description of the scale
Decimal equivalent table

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Wilbur, John Benson

The mechanical solution of simultaneous equations.

Year: 1936
Place: Lancaster, PA
Publisher: Franklin Institute
Edition: 1st
Language: English
Figures: 4 photolith plates in text
Binding: original paper wrappers
Pagination: pp. 715–724
Size: 242x170 mm

This interesting paper describes a large mechanical device for the solution of simultaneous equations. It relied on a number of steel plates and a flexible steel tape (representing the coefficients of the equations) running around the plates. The large plates were permitted to rotate, and when a stable situation was found, the angles through which the plates rotated would provide a solution to the set of equations. The machine was designed to solve nine equations in nine unknowns.

The Wilbur machine was one of a number of similar devices (the Mallock machine being another—see entry for *Mallock, R. R. M.*; *An electrical calculating machine*) constructed in the 1930s to help solve sets of equations (which would also help in the solution of various types of differential equations). We have reason to believe that the original Wilbur machine is currently in a museum in Japan.

Illustrations available
Entire article with photos (6 scans)
ADD 49

Wingate, Edmund (1593–1656)

Ludus mathematicus: Or, the mathematical game. Explaining the description, construction, and use of the numerical table of proportion. By help whereof, and of certain chessmen (fitted for that purpose) any proposition arithmetical or geometrical (without any calculation at all, or the use of pen) may be readily and with delight resolved, when the term required exceeds not 100000.

Year: 1654
Place: London
Publisher: Printed by R. & W. Leybourn and are to be sold by Philemon Stephens
Edition: 1st
Language: English
Figures: one folding plate
Binding: contemporary paneled leather; spine with two raised bands; compartments with double-gilt fillet and gilt flower in center; red leather label; spine rubbed
Pagination: pp. [14], 76
Collation: A8 (-A2) B–D12 E2
Size: 114x67 mm

See also the main text entries for Edmund Wingate.

When sold at Sotheby’s in 2005, this item was described as lacking one plate. That description was produced by duplicating one that described a copy with two plates—the copy upon which that description was based had the same plate bound in twice by error. Therefore, this copy is complete.

Wingate describes a logarithmic scale of his own devising, although he gives credit to Edmund Gunter for his line of numbers. The scale is described in detail but not illustrated. This scale can be used to do elementary arithmetic and proportional calculations (rule of three, etc.). He describes how the scale can be used by placing pointers (he describes them as moveable Chess-men) and then manipulating them in various ways. The plate bound into the book illustrates several linear scales to be used in finding the decimal equivalents of money and weights, etc. There are scales for decimal conversions of items based on 4s, 12s, 16s, and 20s.

Illustrations available:
Title page
Decimal equivalent scales

ADD 50

Wursten, Christian (1544 – 1588)

Elementa arithmeticae, logices legibus deducta, in usum Academiae Basil.

Year: 1602
Place: Basel
Publisher: Sebastian Henricpetrus
Edition: 4th
Language: Latin
Binding: 18th-century leather; gilt spine; red leather label; red edges; edges of boards gilt tooled
Pagination: pp. 182, [2]
Collation: A–L’M’
Size: 160x94 mm

Also known as Wurzticius, Ursticius, Urstisius, or Urstis, Wurstisen was a professor of mathematics (1565) and later theology (1585) at the University of Basel. He is best known for his Bassler Chronick, a history of Basel.
This is a simple arithmetic. It begins with a pedantic description of the four basic arithmetic operations. It proceeds to fractions and continues with many examples of proportion, mixed-radix numbers and similar topics. It ends with a short section on squares, cubes, areas and volumes.

Illustrations available:
Title page
Colophon

Addenda (Wurstisen)