

The earliest printed arithmetic textbooks in 45 European languages

The objective is to find for each of the 45 most important European (vernacular) languages in which year the earliest arithmetic textbook was printed and to give a brief description of it. This issue was not completely examined up until now.

Motivation and relevance for the history of mathematics education

- 1 Arithmetic: It is the gateway to other branches of mathematics, such as algebra, geometry, astronomy etc. Merchants and traders in the early modern times needed arithmetic for all sorts of commercial calculations.
- 2 Vernacular languages (whether a language is vernacular, can depend on the region: e. g. English was not vernacular in colonial India, but is vernacular in the United Kingdom): The upcoming demands of merchants for alphabetization and fundamentals of mathematics in the 15th century lead to the foundation of municipal schools where vernaculars were used as teaching languages. That allowed knowledge to leave the former Latin-based educational system and made it available for larger parts of the population (nevertheless I include Latin as former teaching language in my research).
- 3 Printed textbooks: In contrast to exhaustingly copying manuscripts, the invention of printing with moveable types could quickly produce big quantities of the same text. Thus, it was easier to spread knowledge. Even autodidactic studying independent of any human teacher became possible.
- 4 The earliest printed textbooks: The earliest years of publication for each language show the temporal process of spreading arithmetic knowledge throughout Europe. (As a side effect, they also show the development of nation states and national awareness.)

Research methods

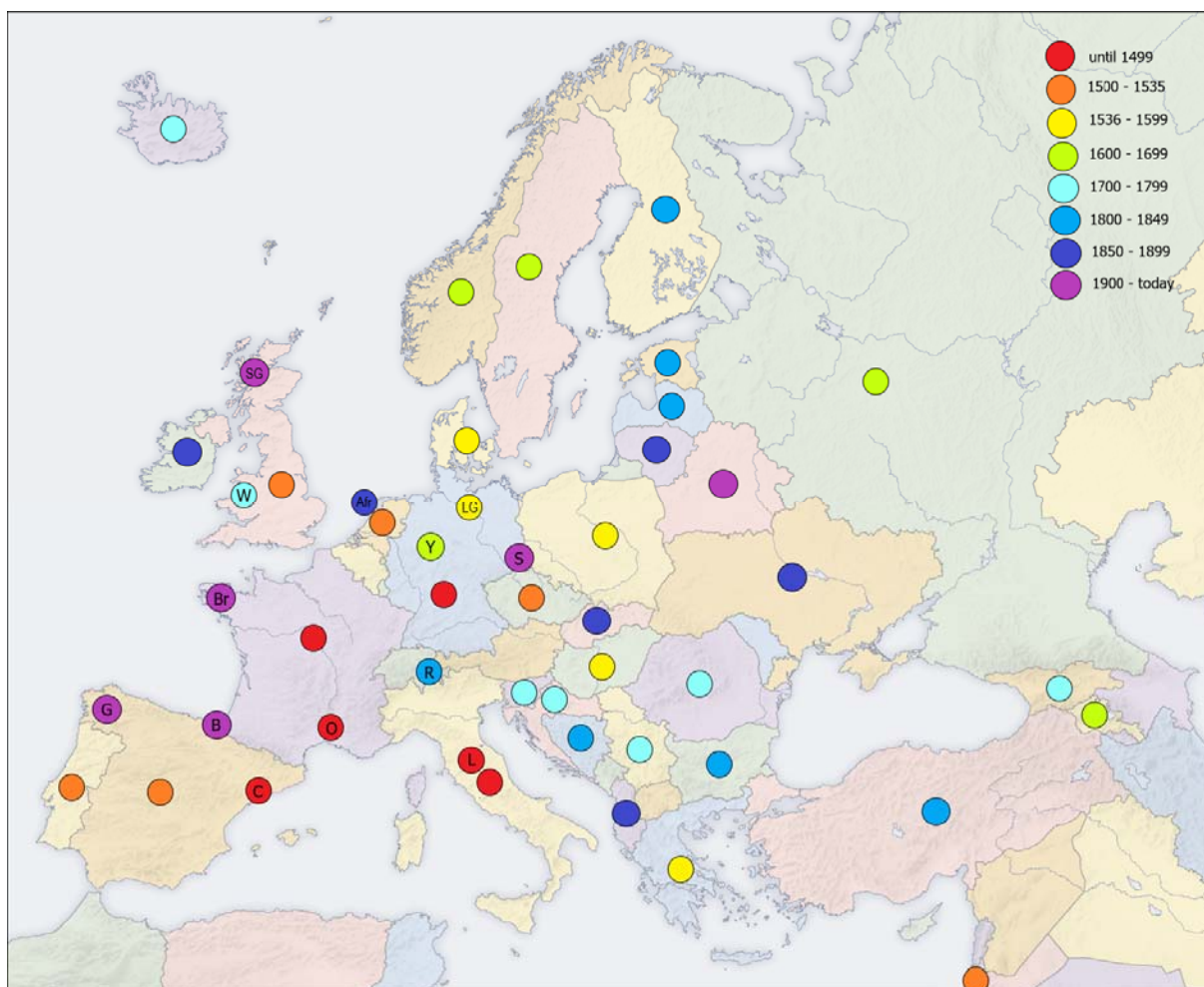
- 1 Depending on the (expected) year of publication of the earliest arithmetic textbook in a given language, you search *Union Catalog of Incunables* (State Library Berlin, until 1500), *Ars mercatoria* (by Hoock/Jeannin, until 1700), *Karlsruher Virtueller Katalog* and *WorldCat*, look for special secondary literature and ask national libraries. Thus, you will even discover some earliest printed arithmetic textbooks not recorded in *Ars mercatoria*: English (1526), French (< 1496), Modern Greek (1569), Hebrew (1533), Yiddish (1699).
- 2 Regarding the contents of the textbooks found in a catalog, you cannot just rely on the keywords mentioned there, but you yourself have to understand title and table of contents in order to judge a textbook. That is, you have to translate them

with the help of online and printed dictionaries and grammar books, machine translation systems (Google translate) and even friendly native librarians.

Research results

In a forthcoming catalog, I will arrange brief descriptions (containing title facsimile, title transcription, title translation and content overview) of the earliest arithmetic textbooks in 35 European languages (and in 45 languages worldwide in less detail) published before 1900 in order to open the access to the history of mathematics of various ethnic and linguistic groups.

In my contribution, I intend to give an overview of the earliest publications of arithmetic textbooks in Europe (see map below) and to briefly present a selection of the following hardly known earliest textbooks: English (1526), French (< 1496), Romanian (1777), Slovene (1781), Welsh (1768) and Yiddish (1699).



The earliest publications of arithmetic textbooks in European languages
(Afr Afrikaans, B Basque, Br Breton, C Catalan, G Galician, L Latin, LG Low German,
O Occitan, R Romansh, S Sorbian, SG Scottish Gaelic, W Welsh, Y Yiddish).

The temporal intervals are oriented towards entire or half centuries and defined in a way
that each of them contains approximately the same number of languages.

References

(This list does not cover all of the European languages.)

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Anonym: *Arte and science of arismetique*. London: Richard Faques 1526-03-13; only the colophon page survived (London British Library).

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Shats, Aryeh Löw (Leyb) Segal: *Sefer Yedi'at ha-ḥešbon*. Amsterdam: Ašer Anšel Ḥazan, Yišaḳar Ba'er 1699 (Hebrew [5]459) (Amsterdam Bibl. Rosenthaliana (University Library)).