

rally they represented only the coasts of the Mediterranean and Black seas, with the western and north-western parts of Europe. They have in our days been studied with deep interest and have become the subject of an extensive literature, but from the 14th to the 18th century they were but little cared for by learned geographers, and scarcely acknowledged by them as any real contribution to geographical literature. When Ptolemy's geography, with its systematically and clearly drawn maps of the *whole world* then known, was divulged in the west by means of manuscripts, imported at the beginning of the 15th century from the expiring Byzantine empire, it had the effect of an important discovery, which seized on men's minds, at first with even more force than the

rediscovery of the New World by Columbus. Not a new world, but the very world in which one was living, had been extricated from the darkness, in which it had been hidden during a whole millenium. Characteristic in this respect is the circumstance that, while Ptolemy's geography, even before the end of the 15th century, was published in not less than seven bulky folio-editions, expensively illustrated, and liberally provided with maps, the works printed during the same period on the voyages of the Portuguese along the coasts of Africa and on the discovery of the New World by the Spaniards, only formed insignificant and scantily illustrated pamphlets, whose combined contents would easily find room in a few folio-pages of the editions of Ptolemy.



5. Germania from SCHEDEL, *Liber conicarum*, Nuremberg 1493. (Orig. size 595 x 397 m. m.).

II.

Editions of Ptolemy's geography.

At the commencement of the fifteenth century the knowledge of the Greek language was very slight, even among learned men in the west. The immense influence that Ptolemy's great geographical work exercised, thus commenced at the time, when its spread had been facilitated by translation into Latin.¹ Such a translation had already been begun by EMANUEL CHRYSOLORAS, a Byzantine scholar whose

merit in promoting the spread of Greek literature in the west was very great. He had been employed by his sovereign as an ambassador to the other European courts during the last period of the Oriental Empire, and he then settled in Italy as a teacher of Greek. He died in 1415 at Constance, at the age of sixty. The translation was finished some years earlier by one of his pupils, JACOBUS ANGELUS, under whose name the

¹ It is stated that Ptolemy's geography already had been translated into Latin at the beginning of the 6th century by the celebrated philosopher and statesman BOËTIUS. The letter by CASSIODORUS (*Variarum liber I: XLV*), on which this statement is founded, contains only: *» Translationibus tuis (sc. Boëtii) Pythagoras Musicus, Ptolemaeus astronomus leguntur Italii*, and is consequently rather to be referred to Ptolemy's astronomical, than to his geographical works.

oldest latin manuscripts of the Latin version of Ptolemy's geography are usually known. In this translation, on which all the editions from the 15th century, seem to be mainly based, the word *Cosmographia* is used for the title, quite arbitrarily; instead of *Geographia*.

Nothing appears to be known with certainty respecting the life of Jacobus Angelus, judging at least from the contradictory and trivial notices of him, which RAIDEL succeeded in collecting. That learned scholar possessed a special and intimate knowledge of the literature connected with Ptolemy's translators and publishers. The date (1410), when the translation was finished, can only be determined with exactness from the circumstance, that ALEXANDER V, to whom it is dedicated, was pope from 1409 to 1410. The translation was soon spread by means of numerous copies, of which several are yet extant in the public libraries of Europe. Such a codex, in the form of a small quarto, provided with maps, executed for cardinal FILIASTRUS and finished 1427, is preserved in the town-library at Nancy. It is bibliographically described by Mr. BLAU in *Mémoires de la Société Royale des sciences de Nancy*, 1835. In the same memoir (p. 95) Mr. Blau also mentions another manuscript in quarto of the translation of Angelus without maps, which was presented in 1417 by the same cardinal to the library at Reims. That the cardinal PETRUS ALLIACUS, who died in about 1420, also had access to a copy dating from the early part of the fifteenth century, is evident from the extensive and partly verbal extract from Ptolemy's *«Cosmographia»*, which he gives in his work *«Compendium Cosmographicum»*. In a codex, preserved in the Library of the Imperial Staff at St. Petersburg, and to which I (p. 12) shall refer again, the usual dedication of Jacobus Angelus to Alexander V begins with an A, surrounded by a miniature, representing Jacobus Angelus on his knee, delivering his manuscript to the Pope seated between two cardinals. This is evidently a reproduction of the original copy presented to the pope, and as this codex is provided with maps, it is a proof, that Jacobus Angelus not only translated the text, but also latinized the maps.

The critics have held various opinions respecting the merits of the work of JACOBUS ANGELUS. Some praise his learning, and his knowledge of Greek, for the study of which he had visited Constantinople and profited by the teaching of Chrysoloras. But CONRAD GESNER finds fault with his translation, and PIRCKHEIMER says of him in the preface to the edition of Ptolemy, printed in Strassburg 1525: *«Licet græca aliquantulum calluisse videri possit, disciplinas tamen mathematicas ita ignoravit, ut plerumque nec semetipsum intellexerit.»*

Dominus NICOLAUS GERMANUS, another scholar of the fifteenth century, generally cited under the name of NICOLAUS DONIS, also deserves great credit for the share he had in spreading a knowledge of Ptolemy's geography. His merit in this respect has however been misunderstood. It is often asserted that Jacobus Angelus only translated the text without supplying it with any maps provided with latin legends, and that the merit of having first translated the maps is due to Donis. This is not correct. For, as above mentioned, the latin manu-

script of Ptolemy of 1427, which is preserved at Nancy, is provided with handsome Latin maps,² and before the year 1480 there were already two translations of Ptolemy's geography published in Italy, and supplied with Latin maps, entirely different from the maps of Donis. These are: 1st a latin edition printed in Bologna, with the inexact date of 1462, giving 26 maps on a conical projection and not on the characteristic projection of Donis; and 2d BERLINGHERIS' rhyming Italian translation with maps, all of which, excepting that of the world, are drawn on the original, equidistant, cylindrical projection. The real merit of Donis consists in the fact that he, before any printed edition of Ptolemy's geography was published, I suppose with the manual aid of several other scribes, edited a manuscript edition, based on the translation of Jacobus Angelus, and that he provided it with splendidly illuminated maps, generally drawn on an improved projection, but in other respects strictly following the Greek originals. To the old maps of the Alexandrian geographer he also added some new ones of the greatest importance to the history of geography. He dedicated his work to PAUL II, who wore the tiara from 1464 to 1471, and the initial letter of the dedication forms, as in the manuscripts of Jacobus Angelus, a richly ornamented miniature, representing Donis on his knees, and presenting his book to the Pope seated on a throne in full canonicals.³ This initial letter is reproduced in the editions printed at Ulm in 1482 and 1486, from which it has been inferred, that Donis himself was the publisher of these editions and that they were the first editions of his translation. This seems however not to be the case. At least the maps, already engraved on copper in 1478, and employed for the editions of 1478, 1490, 1507 and 1508, evidently have, as is shown by their characteristic projection, Donis for their author and translator.⁴ It is this collection of maps which, as to method of drawing, constitutes the real prototype of all subsequent atlases.

The only facts known with certainty respecting the life of Donis are, that he was a Benedictine from Reichenbach, and that he lived during the time of the pope Paul II.⁵ MURR says (*Dipl. Geschichte des Ritters Behaims*, Gotha 1801, p. 13), but without giving his authority, that he died in 1471. The similarity of names has since caused him to be confounded with the celebrated cardinal NICOLAUS CUSA, or with a supposed printer in Rome, NICOLAUS HAHN. The former died in 1464; consequently before the pope, to whom the work of Donis had been dedicated, had ever donned his tiara; and Raidel proves (p. 46) that the identification of Donis with Hahn was owing to a falsification at the sale of a parchment-copy of the edition Ulmæ 1482. In this copy the name of *«Donis Nicolaus Germanus»* had been replaced by that of *Nicolaus Gallus*, and the copy was wrongly stated to have been printed in Rome. Later *Nicolaus Gallus* was by retranslation into German changed into *Nicolaus Hahn*. Although this error was corrected in 1737 by Raidel, who had the opportunity of examining the falsified copy, the name of Hahn is still often mentioned in geographical literature, in connection with the work of Nicolaus Germanus, whose work besides (even by HUMBOLDT and D'AVEZAC) is erroneously stated to be the first edition with

¹ Jacobus Angelus is sometimes indicated by the surname of *de Scarparia* or *Florentinus*. It is however uncertain, whether these surnames belong to him, or not, as several authors of the same name as Ptolemy's translators, appear to have existed at the beginning of the 15th century.

² In the work: *Studi biografici e bibliografici sulla storia della geografia in Italia*, Vol. II: *Mappamondi, Carte Nautiche, Portolani dei secoli XIII—XVII* per G. UZIELLI e P. AMAT DI S. FILIPPO (Roma 1882, p. 5) published by *Società Geografica Italiana*, it is stated, that FRANCESCO DI LAPACINO and DOMENICO DI LEONARDO BUONINSEgni were the first who copied and provided Ptolemy's maps with Latin text.

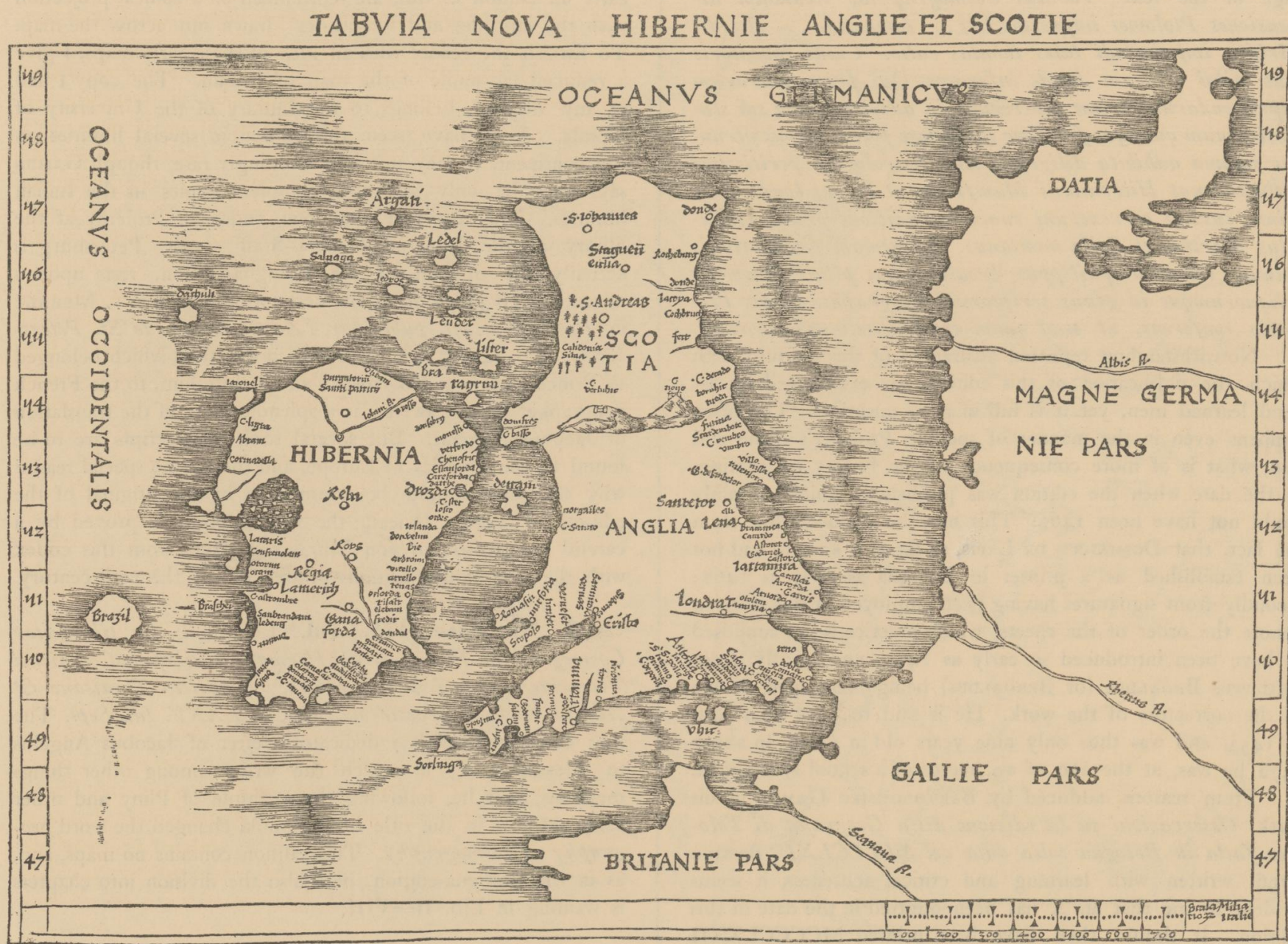
³ Some latin codices of Donis' type are dedicated to other princes; thus, such a codex preserved at the *Biblioteca Estense* in Modena, is dedicated to Prince BORSO D'ESTE, who probably 1466 remunerated Donis for it with 100 florins in gold (RUELENS, *Carte de l'Europe 1480—1485*. Texte explicatif. Bruxelles 1887). One Donis-codex, dedicated to BORSO D'ESTE, is also preserved at the *Bibliothèque Nationale* of Paris. An illuminated facsimile of the initial miniature of Donis is delivered in JOHN RUSSELL BARTLETT'S catalogue of the CARTER-BROWN Library.

⁴ This is confirmed by the *«Codex splendidissimus latinus Ebnerianus»*, described by RAIDEL. According to him the text of this codex is an unaltered copy of the translation of Jacobus Angelus, but the maps are at the end of the 2d chapter of Book VIII, expressly attributed to Donis or Nicolaus Germanus by the words: *«Nunc sequuntur tabulae per Nicolaum Germanum»*. Probably a codex of this kind has served for the edition *Romæ 1478*.

⁵ JOHANNES TRITHEMIUS, *De scriptoribus ecclesiasticis* (RAIDEL, p. 31). Tritheim, abbot in the convent of the Benedictines at Spannheim, a prolific author on various topics, was born 1462 and died 1516. He was accordingly almost contemporary with Donis.

modern maps.¹ A curious uncertainty has also prevailed as to the proper name of »Donis». It is written »Donnus Nicolaus Germanus» in the edition Ulmæ 1482 and in the codex of the Zamoisky library at Warsaw, and sometimes »Donis Nicolaus Germanus» (edit. Ulmæ 1486). In consequence of this, the editor of this edition of Ptolemy's geography is generally called »Donis», of which name I am also going to make use for the sake of brevity and clearness, and more particularly as it has become familiar in geographical literature. But it is not a correct one. At the end of Ptolemy's text in the edition Ulmæ 1486 is expressly written: *Opus Domini Nicolai Germani*, showing that *Donnus* is a rather unlucky abbreviation, and *Donis* a perversion of *Dominus*, and that the man's real name is (*Dominus*) NICOLAUS GERMANUS.

ted in the 15th, and thirty-three in the following century. These editions are of extraordinary importance to the history of cartography, and have therefore often been bibliographically described, quite lately by Mr. JUSTIN WINSOR in a very meritorious manner, with much learning and an extensive knowledge of the geographical literature.² But even his work contains some inaccuracies. He has, for instance, like the majority of other bibliographers, omitted the only edition, which renders Ptolemy's maps on an unaltered projection and he has, on the other hand, among editions of Ptolemy cited STOBNICZA's *Introductio in Ptolemei Cosmographiam* of 1512 and 1519, and WYFFLIET's *Descriptionis Ptolemaicae Augmentum* of 1597, 1598, 1603, 1607 and 1611, which works do not contain a single passage from Ptolemy, nor a single one of



6. Britannia from Ptolemaeus, Argentinae 1513. (Orig. size 516 X 316 m. m.).

The latin translation of Ptolemy's geography, or (according to Jacobus Angelus) cosmography, was at first disseminated in numerous, often splendidly decorated copies, and after the discovery of copper-plate and wood-engraving Ptolemy's atlas became one of the first great works, for the reproduction of which these arts were employed. Seven editions, of which six were provided with large maps in folio, were prin-

his 27 maps. However zealously American bibliophiles have collected editions of Ptolemy, Mr. Winsor has been obliged to cite several without having seen them himself. Moreover, he has been induced, by SANTAREM's carelessly written and uncritical contributions to the Ptolemaic literature,³ to register in his catalogue several editions which do not exist. As I have had an opportunity, at my own writing-table, of examining at

¹ — — — »mais l'Allemagne, avec ses cartes simplement taillées dans le bois sans grande habileté, par Jacques Schnitzer d'Arnsheim, pour les éditions d'Ulm 1482 et 1486, pouvait se prévaloir à son tour d'une refonte critique des dessins traditionnels d'Agathodémon, et de l'addition de cinq cartes modernes, dressées par le savant bénédictin dom Nicolas Hahn de Reichenbach» etc. *Martin Hylacomylus Waltzemüller... par un géographe bibliophile (D'AVEZAC)*. Paris 1867, p. 23.

² *A Bibliography of Ptolemy's Geography*. Cambridge, Mass. 1884 (Library of Harvard University. *Bibliographical Contributions*, No. 18). For bibliographical data to the editions of Ptolemy, see also the before mentioned work of RAIDEL; JOACHIM LELEWEL, *Géographie du Moyen Age*, Bruxelles 1852—57; IOANNIS ALBERTI FABRICII *Bibliotheca Graeca*, Edit. 3.a, Vol. V, Hamburg 1796, p. 270; HENRY HARRISSE, *Bibliotheca Americana Vetustissima*, New-York 1866, and *Bibl. Americana Vetustissima. Additions*, Paris 1872; JOHN RUSSELL BARTLETT, *Bibliographical Notices of rare and curious books, relating to America in the Library of the late John Carter Brown*, Providence 1875; *Catalogue of the printed maps, plans, and charts in the British Museum*, London 1885.

³ In a memoir on the voyages of AMERIGO VESPUCCI. *Bulletin de la Société de Géographie*, VIII, Paris 1837, p. 175.

leisure almost every authentic edition of Ptolemy's geography and thus have been able more completely and minutely, than my predecessors, to compare them especially with regard to the cartography, I think it useful and proper to give a new catalogue in this place. In doing this, I shall pay special attention to the *maps*, of which the *Tabulae novae*

or *moderna*, added in increasing number to every new edition, are of the greatest importance to the history of cartography, at least down to 1570, when the work of Ptolemy was, as a practical atlas, for ever superseded by a more perfect, modern literature of maps, headed by the *Theatrum Orbis Terrarum* of ORTELIUS, and MERCATOR'S *Atlas*.

Catalogue of editions of Ptolemy's geography.

1. Bononiae 1462 (1472). Fol. Colophon (on the last sheet but one): *Hic finit Cosmographia Ptolemei impressa opera dominici de lapis cuius Bononiensis Anno MCCCCLXII, Mense Iunii XXIII. Bononie.* On the last page of the text: *Tabulas Cosmographiae secundum dimensiones Ptolomei impressas tibi . . . commendo . . . Accedit mirifica imprimendi tales tabulas ratio. Cuius inuentoris laus nihil illorum laude inferior. Qui primi literarum imprimendarum artem pepererunt in admirationem sui studiosissimum quemque facillime convertere potest. Opus utrumque summa adhibita diligentia duo Astrologiae peritissimi castigauerunt Hieronimus Mamfredus et Petrus bonus. Nec minus curiose correxerunt summa eruditione predicti Gallettus Martius et Colla montanus. Extremam emendationis manum imposuit philippus broaldus, qui plinii Strabonis reliquorumque id genus scriptorum Geographiam cum Ptolomeo conferens, ut esset quam emendatissimum elaboravit.*

Notwithstanding repeated assurances of the assiduity with which the publication of this edition was overlooked by several learned men, yet it is full of gross misprints. This often happens even in the manner of spelling Ptolemy's name and also, what is of more consequence to the history of printing, in the date when the edition was published, which certainly could not have been 1462. This may be deduced, first from the fact, that DOMINICUS DE LAPIS, so far as is known, had not been established as a printer in Bologna as early as 1462; secondly from signatures having been employed in this work to denote the order of the sheets, which practice is not supposed to have been introduced so early as 1462; and thirdly, from PHILIPPUS BROALDUS (or BEROALDUS) being mentioned as one of the correctors of the work. He is said to have been born in 1453, and was thus only nine years old in 1462. In about 1472 he was, at the age of 19, rector of a school at Bologna.

From reasons, adduced by BARTOLOMMEO GAMBA in his work: *Osservazioni su la edizione della Geografia di Tolomeo fatta in Bologna colla data del MCCCCLXII*, Bassano 1796, written with learning and critical acuteness, it seems evident to me that an X has been omitted in the date of this edition. It should then have been printed MCCCCLXXII (1472), and not, as some bibliographers suppose, 1482 or 1492. At least the crude execution of the Bologna maps shows, that the copper-printer was altogether unacquainted with the excellent maps of SCHWEINHEIM-BUCKINCK, published in Rome in 1478. Moreover, a comparison of the text of the Bologna-edition with that of the edition »Vicenciæ 1475», seems to show, that the latter is an improved reprint of the former.¹ The maps are coloured, evidently with an illuminated manuscript as a model, the sea green (now brownish green), the

mountains ultramarine-blue, and the land partly yellow, partly carmine-red. Some of the legends are richly gilded. The *Tabula secunda* and *tertia Asiae* being united, the number of maps is only 26. It is remarkable, that the maps in so early an edition as this, are reproduced on a conical projection with the latitudes and longitudes² drawn out across the map. To furnish the reader with an idea of these early maps, I give a reduced fac-simile of the map of Britain. The copy I had at my disposal, belongs to the Library of the University of Upsala. As I have seen this edition in several libraries on the continent, it may not be exceedingly rare, though GAMBA says that he only saw two complete copies in the Italian libraries. The assertion that one codex of Ptolemy at the library of the Imperial General-Staff at St. Petersburg is actually the original of the Bologna-edition, rests upon a mistake. To judge from the description of EDW. v. MURALI in *Bulletin scient. publ. par l'Acad. Impér. de St. Pétersbourg*, X, 1842, p. 97, the codex in question, which belonged to Prince LABANOW-ROSTOWSKY and, before him, to the French geographer MAC-CARTHY, is a splendid copy of the translation of Jacobus Angelus. But several such manuscripts are to be found in the libraries of Europe, and there is no special reason why this one should be assumed to be the original of the edition of 1472. Indeed, the very opposite is proved by a careful comparison of von Mural's extracts from this codex with the text of the editions printed during the 15th century.

2. Vicenciæ 1475. Fol. Colophon: *En tibi lector Cosmographia Ptolemaei ab Hermanno leuilapide Coloniensi Vicenciæ accuratissime impressa. Benedicto Triuisano & Angelo Michaelae praesidibus. MCCCCLXXV. Idi. Sept.* The text commences with a dedicatory letter of Jacobus Angelus to Alexander V, in which the writer among other things mentions, that he, following the example of Pliny and other Latin authors in the title of the book, changed the word *geography* to *cosmography*. This edition contains no maps, and, as in the Bologna-edition, here also the division into chapters is wanting in Lib. II—VIII.

3. Firenze 1478? Fol. *Geographia di Francesco Berlinghieri Fiorentino, in terza rima & lingua toscana distincta con le sue tavole in varii siti & provincie, secondo la geographia et distinctione dele tavole di Ptolomeo. Cum gratia et privilegio.* In some copies this title is printed in red on the first page of the first leaf; in others this first page is blank, while the contents of the book are given on the inside of the leaf by the following words: *In questo volume si contengono Sette Giornate della Geographia di Francesco Berlingeri*

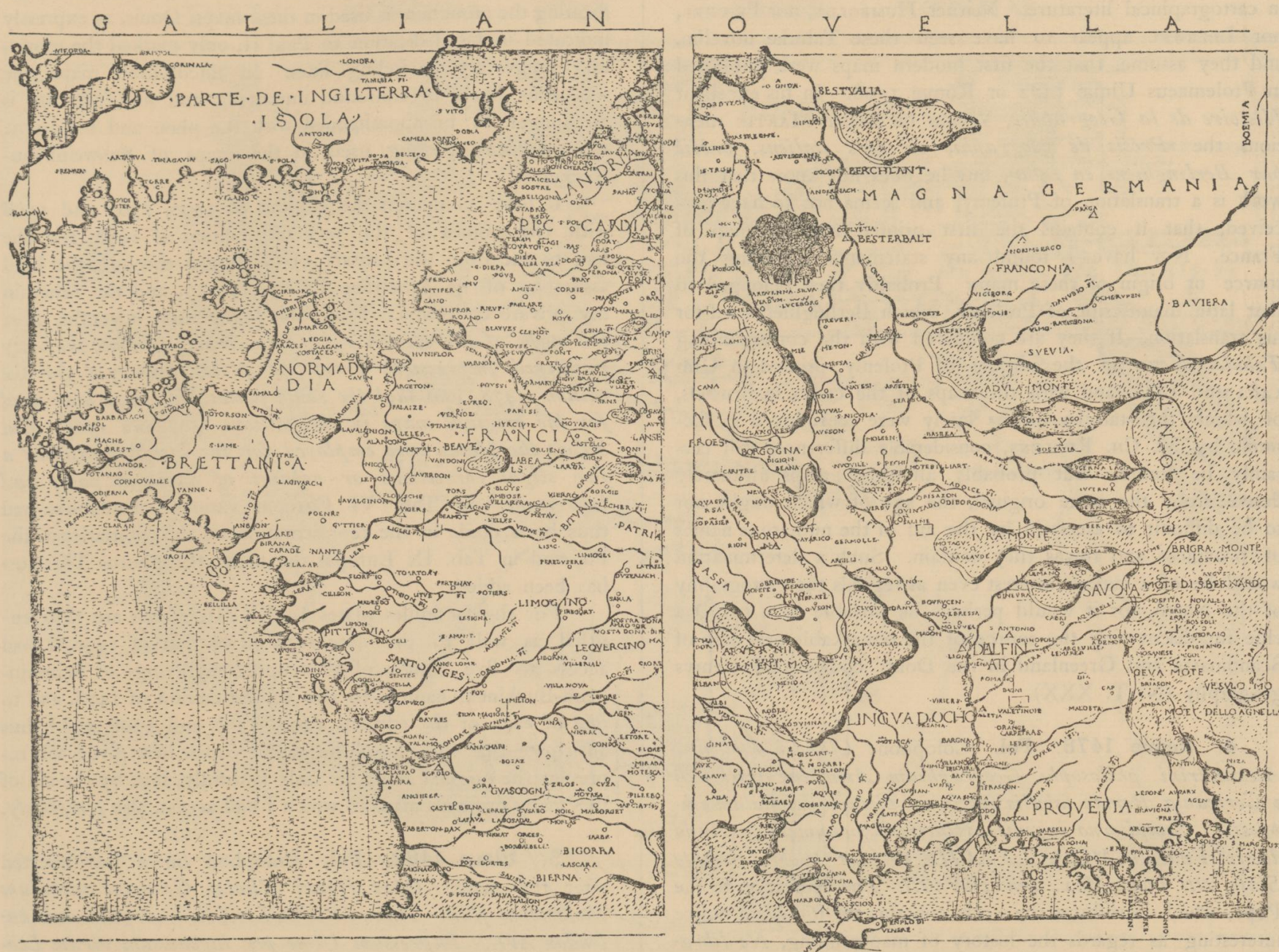
¹ The date of this edition is of very great interest to the history of cartography, as well as to that of copper-engraving. If these maps were printed in 1472, they are not only the first ones published in print, but also among the oldest known specimens of copper-plate. This question has given rise to an extensive literature, enumerated in the works of Gamba and Winsor.

² When J. VAN RAEMDONCK in *Les sphères terrestre et céleste de Gérard Mercator*, p. 298, says: »Un dernier perfectionnement apporté par Mercator à la sphère terrestre, est la graduation. A son époque, les topographes et chorographes en général, ne se souciaient nullement ni de longitudes ni de latitudes géographiques, et leurs cartes étaient, pour la plupart, sans aucune graduation», he is completely mistaken. From the beginning of the printing of maps the graduation of latitudes and longitudes were, on the contrary, marked down on most printed maps, at least in the margin. A similar graduation is also found on the globes from the beginning of the 16th century, as well as on the map of »Lotheringia» in *Ptolemaeus, Argentinae* 1513. On the contrary SEBASTIAN MÜNSTER may be reproached with having often omitted the graduation.

Fiorentino allo illustrissimo Federigo Duca Urbino. Probably the above mentioned red title was only printed in some of the copies on the title page, originally left blank.

The Colophon at the foot of the last leaf¹ of the book is as follows: *Impresso in Firenze per Nicolo Todescho et emendato con somma diligentia dallo auctore.* Thus the year of printing is not given, but it may be approximately determined from the circumstances that the Duke of Urbino, to whom the book was dedicated and to whom it had already been presented in manuscript,² died in 1482, and that the *Apologus* of MARSILIUS FICINUS, inserted in the work of Berlinghieri, was printed among the letters of the former from 1481—1482 (MURR, p. 7). LIBRI gives to this book an

is a translation not from the original Greek, but from the Latin version of Jacobus Angelus. We here meet Ptolemy's chapter on the difference between chorography and geography, his warning as to a credulous and uncritical use of the reports of travellers by land and sea, his analysis of the work of Marinus of Tyre, his chapter on the navigation from Aurea Chersonesus to Cattigara, his directions as to map- and globe-making, etc. At the beginning of the 2d, 3d, 5th, 6th and 7th libro or giorno, corresponding to the 2d, 3d, 5th, 6th and 7th books of Ptolemy, Berlinghieri does not speak any longer in his own name, but in that of Ptolemy (for instance *Claudio Ptolemeo il tertio giorno*) and the customary *Feliciter incipit* has slipped into the beginning of the different sections of the



7. Gallia novella from *Geographia di Francesco Berlinghieri*, Firenze 1478 (?). (Orig. size 493 × 373 m.m.).

earlier date than 1478 and considers it to contain the first maps printed with copper-plate. This seems to be confirmed by the want of finish and by the deficiencies in the copper-engraving, which would not have occurred, if the artist had known the fine maps of the Rome-edition of 1478.

Berlinghieri's work is a tolerably faithful translation into Italian of Ptolemy's geography or rather cosmography, for I suppose that this remarkable sample of geographical rhyming

book without translation. Ptolemy's catalogues of geographical longitudes and latitudes are also to be found in Berlinghieri's work, but alphabetically arranged, and not, as in the original, geographically.

The text is, of course, at present of slight interest at least to the geographer, but the plates are of importance, as the only copies of Ptolemy's maps printed on their original projection, with equidistant parallels and meridians. I have here

¹ The last leaf of the book fails in my copy as well as in that of the Library of the University at Upsala, both of which also want the title printed in red. The last leaf did also not exist in the copy belonging to the Library at Nuremberg, described by von MURR in: *Notitia libri rarissimi Geographiae Francisci Berlinghieri*, Norimbergae 1790. I have copied the colophon from the catalogue of LA VALLIÈRE (Vol. II, p. 514, Paris 1783), where also some bibliographical notes regarding the copy of La Vallière are communicated. It is indicated by the words: *«Première édition fort rare imprimée vers 1478»*. There are different variations in the work, described by BRUNET.

² RAIDEL (in his often mentioned work, p. 75) describes a magnificent manuscript of the geography of Berlinghieri, which belonged to Count PERTUSATI. Raidel supposes it to have been destined for the Duke of Urbino. It only contained 28 maps.

reproduced one of these maps (N. T. XXVIII). If the plate XV (from the edition of 1478 or 1490), is compared with this facsimile we shall be able to appreciate the care and accuracy, with which »Donis» followed the old originals, when redrawing the maps on a new projection.

Berlinghieri's work however derives its greatest value from the modern maps it contains, »*Novella Italia*», »*Hispania novella*», »*Gallia novella*» (N. Fig. 7) and »*Palestina moderna et Terra Sancta*». With the exception of the coarse drawing of the Holy land (N. fig. 3) published in *Rudimentum novitiorum* (Lübeck 1475), these »*Tabulae novellae*» are the first printed modern maps, the first germ of modern cartography. Notwithstanding this, they have, so far as I know, never been the subject of a monograph, or even mentioned in cartographical literature. Neither HUMBOLDT, nor PESCHEL, nor LELEWEL appear to have seen these *Tabulae novellae*, and they assume, that the first modern maps were published in Ptolemaeus Ulmæ 1482 or Romæ 1508. In his excellent *Histoire de la Géographie*, VIVIEN DE SAINT MARTIN mentions the »*Précis de géographie en vers italiens, publié par Berlinghieri en 1480*», but he does not know that this work is a translation of Ptolemy, and seems not to have perceived, that it contains the first printed modern map of France. Nor have I found any statements regarding the source or origin of these maps. Probably they belonged to that latin manuscript of Ptolemy, which Berlinghieri used for his translation. If they are compared with the corresponding *Tabulae Novae* in the editions of Ptolemy, printed in Ulm 1482 and 1486, and with the maps of the codex in Brussels, of which the »*tabulae novae*» lately were reproduced in facsimile by M. CH. RUELENS, considerable differences will certainly be found. But probably all these maps ultimately derive from the same original, the age of which ought not to be difficult to ascertain by the aid of the numerous names of provinces and towns they contain. Such a determination would be of a certain interest even as regards the cartography of the North, for it would perhaps be possible here to get a clue for discovering the source of the remarkable new map of Scandinavia and Greenland in the Donis' codices of Ptolemy's geography (N. T. XXX).

4. Romæ 1478. Fol. Colophon: *Claudii Ptolemæi Alexandrini philosophi Geographiam Arnoldus Buckinck e Germania Romae tabulis æneis in picturis formatam impressit. Sempiterno ingenii artificiique monumento. Anno dominici natalis MCCCCLXXVII. VI Idus Octobris Sedente Sixto, IIII. Pont. Max. anno eius VIII.* The dedication to the Pope, which introduces the work, contains the following notice interesting as regards the history of map-printing, *Ne librarium inscitia tua sanctitatis aures offenderet, Domitius Calderinus, Veronensis, cui huius emendationis provincia demandata fuerat, cum vetustissimo Graeco, manu Gemisthi Philosophi emendato, latino Codices se collocaturum Magister vero Conradus Sueynheim, Germanus, a quo formandorum Romæ librorum ars primum profecta est, occasione hinc sumpta, posteritati consulens, animum primum ad hanc doctrinam capessendam adplicuit, subinde mathematicis adhibitis viris, quemadmodum tabulis æneis imprimerentur, edocuit, triennioque in hac cura consumpto, diem obiit. In cuius vigiliarum laborumque partem non inferiori ingenio ac studio Arnoldus Buckinck e Germania, vir apprime eruditus, ad imperfectum opus succedens, ne, Domitii Conradyque obitu, eorum vigiliae emendationesque sine testimonio perirent, neve virorum eruditorum censuram fugerent, immensae subtilitatis machinamenta ex amussim ad unum perfecit.* These words seem to indicate that the publisher was DOMITIUS CALDERINUS, and the printer CONRAD SCHWEINHEIM and

that the latter, by whom the art of printing was introduced into Rome, for this publication, learned (»*edocuit*»), with the assistance of skilled mathematicians (mechanics), to print with copperplate. In this he was assisted by ARNOLD BUCKINCK, who also finished the work after the death of Domitius and Conradus. The confidence, pride and satisfaction expressed in the above quoted introduction as well as in the colophon, are fully justified, for the maps of this edition were, as masterpieces of copper-plate printing, not surpassed for centuries, and they will still take the first place among the maps of all the numerous editions of Ptolemy's geography hitherto published. They are based on the copies by Donis of Ptolemy's maps, but the style of the drawing is here greatly improved. Whilst, for instance, a very practical and convenient manner of indicating the mountains is used in these maps, Donis, as expressly indicated in his dedication to Paul II, only marked the mountain ranges by encircling lines. In uncoloured maps one was thus likely to confound mountains and seas, but this is no longer to be apprehended with the plain and handsome topographical dressing used in the maps of Schweinheim-Buckinck.

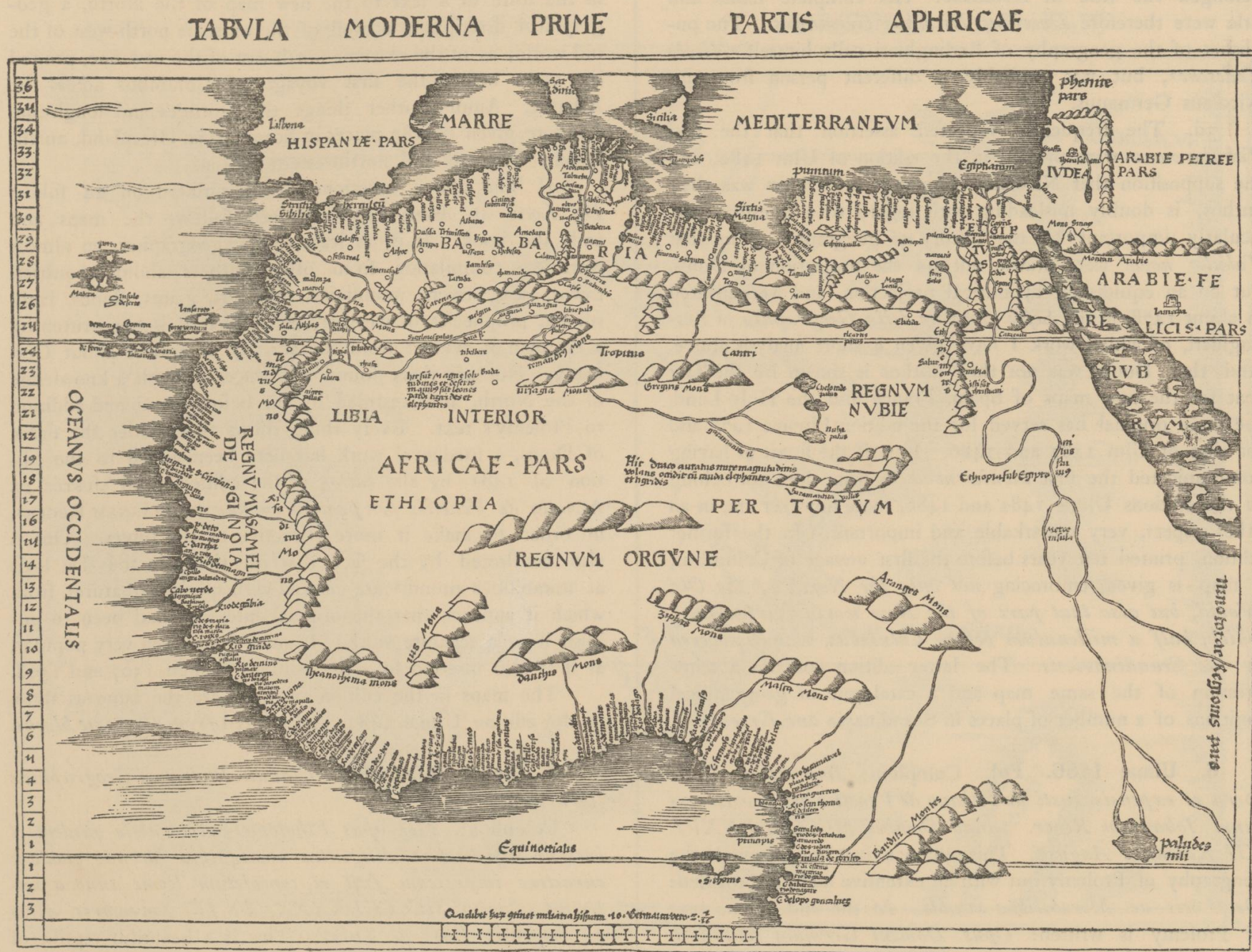
I have compared the editions of 1490, 1507 and 1508 with two copies of the very rare edition of 1478, the one lent to me from the Library of Göttingen through the kind assistance of its Librarian Dr. DZIATZKO, and the other in my private collection. From this comparison it results, *that the maps of the edition 1490 only consist of new, perfectly unaltered impressions from the plates, employed for the edition 1478, and that the same plates also have been used for the original maps in the editions 1507 and 1508. But before the plates were employed for the last two editions a few slight corrections or repairs of damaged parts had been made.* In Tab. VI Europæ various emendations had thus been made in the representation of the tributaries of the Po, and in Tab. IX Europæ the name »*Bosporus Thracius*» has been added.

For the facsimiles plates I—XXVII, which are thus entitled as well to the date 1478 as to that of 1490, I had access to five copies of the copper-engravings of Schweinheim-Buckinck, namely to two of the edition of 1478, and to one of each of the editions 1490, 1507 and 1508, and I thus anticipate that the photolithographic copies here given will represent the original maps not only faithfully, but, by the aid of the many original maps to which I had access, also *completely*.

5. Ulmæ 1482. Fol. Colophon on a leaf inserted after the maps: *Opus Donni Nicolai Germani secundum Ptolomeum finit. Anno MCCCCLXXXII, Augusti vero kalendas XVII. Impressum Ulme per ingeniosum virum Leonardum Hol prefati oppidi civem.* The work begins with a letter, *Beatissimo patri Paulo secundo pontifici maximo Donis Nicolaus Germanus*, which contains, besides the usual dedicatory flowers, an explanation why a deviation from Ptolemy's originals has occurred in the reproduction of the maps. This principally resulted from the new improved projection, with which »*Dominus Nicolaus*» seems to be not a little proud... *Cogitare cepimus quo pacto nos aliquid glorie comparemus. Rati enim nobis oblatam esse occasionem uti aliquid industrie nostre monumentum extaret et ingenii vires ducere possent statim picturam orbis proper aratione aggressi sumus.* Donis then mentions, that he, in the maps, has represented mountains, islands etc. with more care than before, and that he has added new maps of Italy, Spain and the countries of the North, among which also *Gronelandia* is enumerated. The dedication begins with a handsomely decorated initial (N) representing Donis on his knees presenting a book to a Pope in full canonicals.

After the dedication follows Ptolemy's text, divided as usual into eight books, but without any subdivisions into chapters. In accordance with what seems to have been the original intention of the author, that part of the eighth book, which contains the explanatory remarks regarding the maps, is printed on the reverse of each corresponding map. These are all in double folio, excepting the last one of Taprobane. Besides the new maps of Spain (N. fig. 11), Italy (N. fig. 12) and the countries of the North, mentioned in the preface, the edition contains a new map of Gallia and one of Palestine. There are no explanatory remarks to these maps, excepting on the reverse of the map of Italy, where a short text is printed, beginning with the following highflown praise of the country: *Plurime*

This is the first printed map which is *signed*. It is further remarkable, because the geographer for the first time has ventured to make some changes in Ptolemy's picture of the world, though as yet only for the distant north, almost unknown to the ancients, but whose inhabitants since then had so often, weapon in hand, spread knowledge of their country among the southern nations. Already during the 14th century these countries were laid down in Catalan and Italian sea-charts; and manuscript maps of them in Ptolemy's style were added to his classical work from the time that it was translated into Latin. I give Plate XXX a facsimile of the most complete among these præcolumbian maps of the North and farther on (Ch. V) a review of the oldest cartography of



8. Prima pars Africae from Ptolemaeus, Argentinae 1513. (Orig. size 580 X 416 m. m.).

sunt regiones que quidem singule singulis rebus excellere videntur. Nam thus sola arabia gignit. Balsamum nusquam nisi in Iudea legitur: ex India ebur provenit. Item aliud ab aliis nationibus accepimus. Verum si exactissime cuncta iudices, inuenies perfecto Italiam omnibus esse iure preferendam etc. From this we may conclude to what nationality the author of at least this *tabula nova* belonged.

The maps are rough, though clear and distinct wood-cuts, according to the legend on the upper border of the map of the world (N. T. XXIX) sculptured by JOHANNES SCHNITZER DE ARMSHEIM (not Arnisheim). Certainly *Schnitzer* should here be understood not as a surname, but as a professional title, and the superscription should be interpreted: 'Engraved by Johannes, sculptor from Armsheim'.

that part of the world. It is a remarkable circumstance that in 1482, when the Ulm-edition was published, or fifteen years earlier, when Nicolaus Germanus probably finished the manuscript from which it was printed, neither in Germany nor in Italy people seem to have had any idea about the Portuguese having penetrated to the south far beyond Ptolemy's 'oikumene'. At least no additions to the old maps of Africa are made in the editions of 1482 and 1486.

With regard to these editions, students of the history of cartography have been led into some mistakes, alluded to before, but to which it perhaps would be convenient here shortly to revert:

1st. To indicate these editions by the name of Donis, as has often been done, is incorrect. The text of the edition follows the translation of Jacobus Angelus. As original for

the maps has served the reproduction of Ptolemy's maps in a new projection, first executed by Dominus NICOLAUS GERMANUS. But these very maps were already engraved on copper by ARNOLD BUCKINCK in 1478, and this with a finish by no means to be claimed by the wood-cuts printed in Ulm. The edition Ulmæ 1482 contains nothing particularly belonging to Donis which is not found in the Rome edition, except the dedication to the Pope and principally its initial N, faithfully copied from the manuscript of Donis.

2d. The name NICOLAUS DONIS, so often used, is, as before remarked, incorrect. The writer of the codex for the Ulm edition was called Nicolaus. He was a native of Germany and accordingly designated as *Germanus*, and to him belonged the title of *Dominus*. His complete name and title were therefore *Dominus Nicolaus Germanus*. The publisher of the geography of Berlinghieri calls himself »*Nicolo Todescho*», but was probably a different person from this Nicolaus Germanus.

3d. The frequently repeated assertion that the first *Tabulae novæ* were printed in the edition of Ulm 1482, and the supposition that Nicolaus Germanus or »Donis» was their author, is doubly misleading with regard to a question particularly important to the history of geography. The first *Tabulae novæ* were drawn, not on the projection of Donis, but on an equidistant cylindrical projection, and were printed in about 1478, in the *Sette giornate della Geographia* of Berlinghieri, of which work I have given a short analysis above. And that Donis was not their author is shown by the fact that for the new maps of Spain, France and the Holy Land, the same original has served for the edition Firenze 1478 and for that of Ulm 1482 and 1486. But, if the merit of having communicated the first *tabulae novæ* in print does not belong to the editions Ulmæ 1482 and 1486, these however are, in an other respect, very remarkable and important. In the former edition, printed ten years before the first voyage of Columbus, a map is given, embracing not only the North of the Old World, but also that part of the New world (Greenland), which, half a millennium before Columbus, was discovered by the Scandinavians. The latter edition contains a reimpression of the same map and a catalogue of geographical positions of a number of places in Scandinavia and Greenland.

6. Ulmæ 1486. Fol. Colophon: *Impressum Vlme opera et expensis Iusti de Albano de Venetiis per provisorem suum Iohannem Reger. Anno Domini MCCCCLXXXVI. XII Kalendas Augusti.* This sentence does not terminate the geography of Ptolemy but with an extensive addition, entitled: *De Locis ac Mirabilibus mundi.* At the end of the text of Ptolemy is written: *Opus Domini Germani secundum Ptolomeum finit.* These lines correspond to the colophon in the edition Ulmæ 1482, excepting that *Donni* is corrected to *Domini*. Had this correction been observed before, the discussions about the name of »Donis» might have been spared.

The edition of 1486 is a reprint of the edition 1482, but with important additions. In the new edition the division into chapters is introduced and various smaller corrections made in the text. But in other respects the older edition is faithfully adhered to, often line for line, through whole sheets.

The most important additions are the following:

1) An introduction of forty-one folio leaves: *Registrum alphabeticum super octo libros Ptolomei.* A very great number of places, among which there are many not mentioned in the text of Ptolemy, are here enumerated, often with additional remarks, chiefly referring to the history of the martyrs and the saints. Under *Scennig* there are, for instance, allusions to the attempts made at the Council of Constance by the Swedes, to obtain canonization for a couple of Scandinavians.

No reference to the voyages of the Portuguese occurs here, although the *Fortunata insula* are mentioned with the addition: *Hic Brandianus magne abstinentie vir de scocia natus pater 1000 monachorum cum beato Maclouio has insulas septennio perlustrat* etc. Here we have the first (?) printed notice of the mythical voyages of St. BRANDON or BRENDAN. The alphabetical order in the *Registrum* is far from correct.

2) To the tenth chapter of the second book is added a *Tabula Moderna extra Ptolomeum posita*, and to the fifth chapter of the third book an appendix almost two folio-pages long: *Tabula Moderna Prussie, Suecie, Norbegie, Gotie et Russie, extra Ptolomeum posita.* These additions contain, in the form of a text to the new map of the North, a geographical description as well of the extreme north-west of the old world, as of the extreme north-east of the new one, printed six years before the first voyage of Columbus across the Atlantic. Among other things the latitudes and longitudes are here given of 183 places in Scandinavia, Greenland, north-eastern Germany and northwestern Russia.

3) The above mentioned work printed on 24 folios: *De Locis ac Mirabilibus Mundi*, follows the maps and ends the book. It is, at least to the geographer, an almost worthless compilation from other authors about countries, towns, seas, rivers, mountains, monsters, giants, floods, land-survey, prophecies of weather, etc. That it is not written by a German is evident from the scarcity of notices about Germany. Nor are there found any traces of such a knowledge of the North, as is testified by the before mentioned addition to Ptolemy's text. Every thing shows that, under the name of Donis, a mediæval work has here been added to the edition of 1482 by the editor of the edition 1486 »JUSTUS DE ALBANO de Venetiis per provisorem suum JOHANNEM REGER», in order to make it more attractive to the buyer. This is also confirmed by the fact, that the sheets in the »De locis ac mirabilibus mundi» are marked with special signatures, from which it appears, that the original intention had been to publish it as a separate work. It must have been very popular, as it is also inserted into the editions Romæ 1507 and 1508.

The maps in the edition of 1486 are the same as those in the edition Ulmæ 1482, and printed from the same blocks.

7. Romæ 1490. Fol. *Claudii Ptolemaei Geographiae libri VIII.*

Colophon: *Hoc opus Ptholomei memorabile quidem et insigne exactissima diligentia castigatum iucondo quodam caractere impressum fuit et completum Rome anno a natiuitate domini MCCCCLXXX, die IV. Novembris. Arte ac impensis Petri de Turre.* This is a beautiful reprint of the edition Romæ 1478. The maps are 27 in number and are printed from the same plates as those of the above mentioned edition. Raidel's assertion (p. 49) that the maps of this edition were engraved in a somewhat rougher manner is consequently incorrect, as presupposing new copper plates. For the origin of these remarkable maps, see above (edit. Romæ 1478).

The text in the edition 1490 contains, besides the eight books of Ptolemy's Geography, the »*Registrum alphabeticum*» and »*De Locis ac Mirabilibus Mundi*», from the edition Ulmæ 1486.

8. Romæ 1507. Fol. *In hoc opere hæc continentur: Geographia Cl. Ptholemaei a plurimis viris utriusque linguæ doctiss. emendata: & cum Archetypo græco ab ipsis collata.*

Schemata cum demonstrationibus suis correctâ a Marco monacho Caestino Beneuentano: & Ioanne Cota Veronensi viris Mathematicis consultissimis.

Figura de projectione Sphaerae in plano qua in libro octavo desiderabantur ab ipsis nondum instaurata sed fere adinventata: ejus n. vestigia in nullo etiam graeco codice extabant.

Sex tabulae noviter confectae vtz Hispania: Gallia: Livonia: Germania: Polonia: Vngaria: Russia: & Lituania: Italia: & Iudaea.

Maxima quantitas dierum civitatum: & distantiae locorum ab Alexandria Aegypti cuiusque civitatis qua in aliis codicibus non erant.

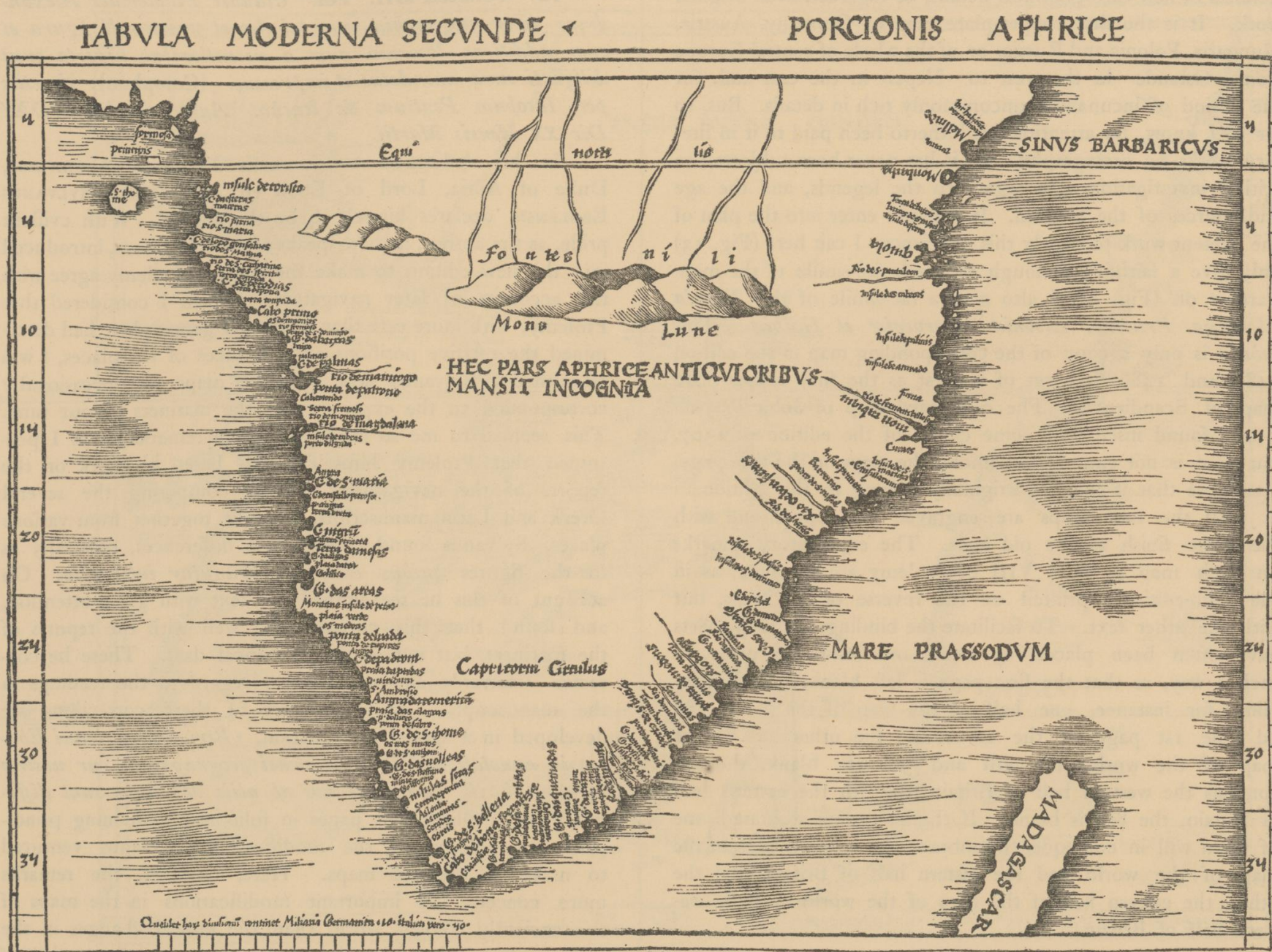
Planisphaerium Cl. Ptolemaei noviter recognitum & diligentiss. emendatum a Marco monacho Caestino Beneventano.

Cautum est edicto Iulii II. Pont. Max. ne quis imprimere aut imprimi facere audeat hoc ipsum opus pena

The work contains:
1:0. A dedication, Rmo patri Cardinali Nannatensi, in which the author, EVANGELISTA TOSINUS, enumerates his assistants, emendators and correctors, expressing the conviction, that the new edition had now attained a perfection never to be surpassed. He also commends the importance of the addenda, especially of the planisphaerium and the Tabulae novae, enumerated on the title-page.

2:0. Registrum Alphabeticum etc. A slightly altered reprint from the edition Ulmae 1486.

3:0. The text of Ptolemy's geography without the important addenda to the tenth chapter of the 2d book and the fifth chapter of the 3d book, inserted in the edition of Ulm 1486.



9. Secunda Pars Africa from Ptolemaeus, Argentinae 1513. (Orig. size 513 X 363 m. m.).

excommunicationis latae sententiae his qui contra mandatum iussumque conari audebunt.

Colophon: Explicit Planisphaerium Ptolemaei recognitum diligentissime a Marco Beneventano Monacho Caestinatorum quod antea in multis etiam antiquis exemplaribus latinis corruptissimum reperiebatur. Nec non Claudii Ptolemaei a plurimis viris utriusque linguae doctiss. emendatum cum multis additionibus Romae Noviter impressum per Bernardinum Venetum de Vitalibus. Expensis Evangelista Tosino Brixiano Bibliopola. Imperante Iulio II. Pont. Max. Anno III. Pontificatus sui. Die VIII. Septembr. MDVII.

4:0. Planisphaerium Ptolemaei, with a dedication to the Venetian patrician JOHANNES BADUARIUS, who had presented a manuscript of the Planisphere to MARCUS BENEVENTANUS.

5:0. A letter from the Pope JULIUS II, of the 28th of July 1506, giving to the editor a patent for six years to the exclusive sale of the book, on condition that the price should be fixed by the Pope's Librarian.

6:0. 33 maps, i. e. the 27 of Ptolemy, printed from the same plates, as the maps of the editions 1478 and 1490, and six new maps, viz:

Tabula Moderna Prussiae, Livoniae, Norvegiae et Gothiae.

* The assertion, that this edition should contain a new map of Benevent, is incorrect, at least to judge from the copies I had occasion to examine. I suppose that the mistake arised from some blunder in the translation of a period containing the name of MARCUS BENEVENTANUS.

Tabula Moderna Hispania.

Tabula Moderna Gallia.

Tabula Moderna Polonia, Ungaria, Boemia, Germania, Russia, Lithuania.

Tabula Nova Italia.

Tabula Moderna Terræ Sanctæ.

Of these six maps the three first and the two last ones are of least interest, as only being new, slightly altered editions of corresponding maps in the work of Berlinghieri and in the editions, printed in Ulm 1482 and 1486.

Tabula Moderna Polonia, Ungaria etc. is more important. It is evidently based on the same original, as the map in the *Liber Cronicarum* of HARTMANNUS SCHEDEL, Nurembergæ 1493 (N. Fig. 5) but may, on account of the richness of new cartographical details, be regarded as an original work. It is the first copper-plate map of Germany, Austria, Hungaria, Polonia and Russia, or of the whole of central Europe from »Ostende» in the west to »Neper» in the east and, for the period of incunabula uncommonly rich in details. But, so far as I know, no attention has hitherto been paid to it in literary works on cartography, and it has never been subjected to critical investigation with regard to the legends, and the age and sources of the original. It does not enter into the plan of the present work to supply this deficiency. I can here (Fig. 13) only give a faithful, although reduced, fac-simile of the map. Farther on (Fig. 14) I also give a fac-simile of the *Tabula Moderna Prussia, Livonia, Norvegia et Gothia*. This *tabula* is only a copy of the corresponding map in the edition 1482 and 1486, but yet of interest as the first copper-plate map of Scandinavia. The celebrated map of John Ruysch is also found inserted in some copies of the edition of 1507, but as it is not enumerated among the maps on the title-page, I suppose that it did not originally belong to this edition.

All the new maps are engraved on copper and with the same finish as the old ones. The explanatory remarks on each map in book VIII of Ptolemy are not here, as in the Ulm-editions, printed on the reverse of the maps, but with the other text. To facilitate the binding, the map-sheets have often been placed by twos, one inside the other, in such a way, as that the first page is left blank, the 2d contains, for instance, one half of the map of the world, the 3d (the 1st page of the 2d sheet) the other half of the map of the world, the 4th and 5th are blank, the 6th contains the western half of Britain, the 7th the eastern half of Britain, the 8th is blank. If the sheets are separated, one of them will in consequence embrace the western half of the map of the world and the eastern half of Britain, and the other, the eastern half of the map of the world and the western half of Britain.

9. Romæ 1508. Fol. The title-page, on the left decorated with a handsome border, runs:

In hoc opere hæc continentur.

Geographia Cl. Ptolemæi a plurimis viris utriusque linguæ doctiss. emendata: et cum archetypo græco ab ipsius collata.

Schemata cum demonstrationibus suis correctæ a Marco Beneventano Monacho caestino, et Ioanne Cotta Veronensi viris Mathematicis consultissimis.

Nova orbis descriptio ac nova Oceani navigatio qua Lisbona ad Indicum pervenitur pelagus Marco Beneventano monacho caestino ædita.

Nova et universalior Orbis cogniti tabula Ioa. Ruysch Germano elaborata.

Sex Tabulæ noviter confectæ videlicet: Hispania, Gallia, Germania Italia, & Iudæa.

Anno Virginæ Partus, MDVIII. Romæ.

Excepting a new title-page, this edition is identical with the previous one, but with the addition of a few verses to the dedication; of an extensive but not very important supplement *Nova Orbis descriptio* by MARCUS BENEVENTANUS, and of a new map of the world by JOHANNES RUYSCHE, on which the discoveries of the Spaniards and Portuguese were, for the first time, registered in the literature of cartography. Of this map, which is also sometimes inserted in the edition of 1507, a fac-simile is given on Plate XXXII. I will return further on to the same, as well as to the edition of Ptolemy in which it was published.

10. Venetiis 1511. Fol. *Claudii Ptholemaei Alexandrini liber geographia cum tabulis et universalis figura et cum additione locorum quæ a recentioribus reperta sunt diligentis cura emendatus et impressus.* (Colophon): *Venetis per Iacobum Pentium de leucho. Anno domini MDXI Die XX Mensis Martii.*

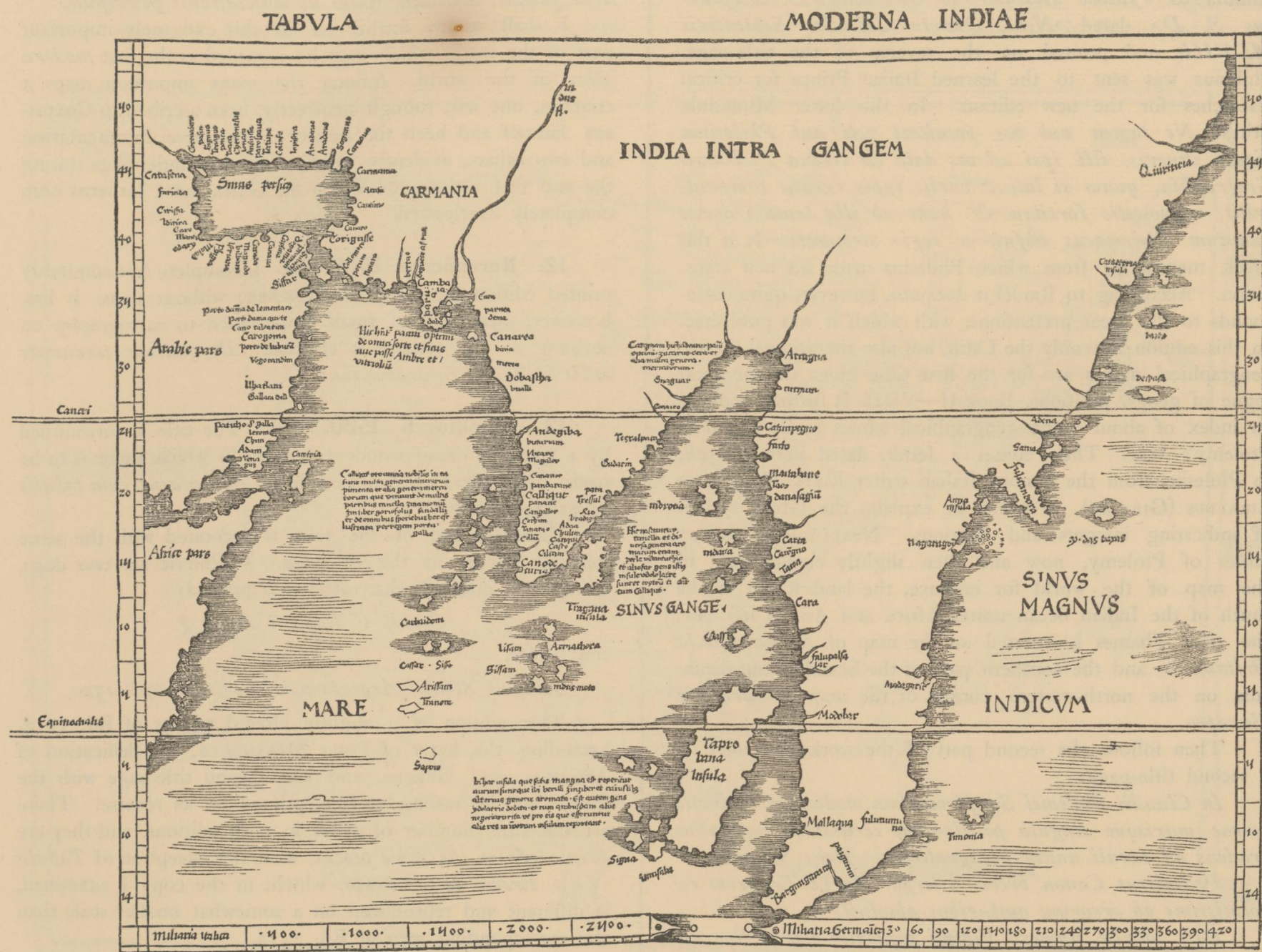
In his dedication to ANDREAS MATHEUS AQUÆVIVUS, Duke of Adria, Lord of Eboli etc., BERNARDUS SYLVANUS EBOLENSIS declares himself to be the author. With evident pride, as the author, he here speaks of the corrections, introduced into the new edition to make the maps of Ptolemy agree with the accounts of later navigators. »When I considered that Ptolemy, with more care than any other geographer, had determined the relative positions and distances of the places, I was astonished», Sylvanus says, »that his maps only occasionally corresponded to the experience of the mariners of our time. This seemed to me so much the more remarkable as I presumed that Ptolemy himself mostly based his work on the reports of the navigators». When comparing the several Greek and Latin manuscripts, brought together from various places, Sylvanus found considerable differences, especially as to the figures *quibus locorum signantur intervalla*. On account of this he reexamined the text with great attention, and found that this corresponded well with the reports of the mariners, but not so the numerical data. These he corrected arbitrarily and without any regard to the readings in the manuscripts. The principles of these corrections are developed in a special introduction, »Bernardi Sylvani Eboleensis annotationes in Ptholemaei geographiam cur nostra tabulæ ab iis quæ ante nos ab aliis descriptæ sunt differant» etc., filling four pages in folio and containing principally an apology for the modifications Sylvanus ventured to make in the old maps. Here, however, the remarks more concern less important modifications in the maps of the anciently known world than the radical changes in the whole cartography, necessitated by the new discoveries of the Scandinavians, Portuguese, Spaniards and Britons. While almost half a page is dedicated to corrections of the old map of Sicily, the circumnavigation of Africa is despatched by the following words: *Ausi nam se Lusitani, cum loca illa ignota essent, fortunæ credere, et incognita explorare maria, plurima invenere, quibus illi et æternam sibi gloriam, et nobis ac posteris omnibus jucundam novarum rerum cognitionem peperere.* Nor is there to be found a word, immediately referring to the discovery of the new world. Evidently even at Venice, which at that time possessed a richer store of commercial experience and political insight, than any other city of the world, no general idea prevailed as to the importance of the voyages of Columbus across the Atlantic or of Vasco da Gama round Caput Bonæ Spei to India. In these »annotationes» Sylvanus also inserts a long passage »Adversus Marcum beneventanum Monachum», (one of the editors of Edit. Romæ 1507 and 1508) who is charged

with *inscitia atque negligentia*. His mathematical demonstrations alone read tolerably well, but this is due to the merit of JOHANNES COTTA. After the introduction first follows the text of Ptolemy without the usual addenda, then 28 maps, of which 27 slightly retouched ones of Ptolemy, and a new map of the world.

As an edition of Ptolemy, the work of Sylvanus is quite worthless on account of the arbitrary alteration of Ptolemy's data for longitude and latitude. Nor has his attempt to transform the work of the Alexandrian geographer into a modern atlas been attended with better success. Sylvanus for instance

In typographical respects the edition of Sylvanus is distinguished by a handsome outfit. For the first time we here meet with maps printed in two colours, and, contrary to what generally was and yet is the custom, both sides of the paper are used for the map-print; excepting for the new map of the world, printed on a sheet, where the reverse is left blank. The maps are from woodcuts, for which the legends in black are produced by types fitted into the blocks.

11. *Argentinae* 1513. Fol. *Claudii Ptolemei . . . Geographiae opus novissima traductione e Graecorum archetypis*



10. Tabula moderna Indiae from Ptolemaeus, Argentinae 1513. (Orig. size 510 x 403 m. m.).

leaves the old names unchanged in maps, pretended to be modernized. The merit, however, must be conceded to Sylvanus, that he was the first to break with the blind confidence that almost every scholar in the beginning of the 16th century had in the atlas of the old Alexandrian geographer. Sometimes also the corrections and modifications by Sylvanus were real improvements. Following the sketches of the northern regions in some old portolanos, he thus published the first map of England, in which the enormous elongation to the east, which Ptolemy gives to the northern part of Scotland, is left out. But the greatest importance of this edition to the history of cartography, consists in the cordiform map of the world, of which I have given a fac-simile on Pl XXXIII. To the analysis of this map I will return further on.

castigatissime pressum: ceteris ante lucubrationum multo praestantius.

Pro Prima parte continens Cl. Ptolemaei Geographiam per octo libros partitam, ad antiquitatem suam, integre & sine ulla corruptione, . . .

Pars Secunda moderniorum Iustrationum Viginti tabulis, veluti supplementum quoddam antiquitatis obsoletae, suo loco quae vel abstrusa, vel erronea videbantur resolutissime pandit.

Colophon after Ptolemy's text: *Anno Christi Opt. Max. MDXIII. Marcii XII. Pressus hic Ptolemaeus Argentinae vigilantissima castigatione, industriaque Ioannis Schotti urbis indigenae. Regnante Maximilano Caesare semper Augusto.*

The book is dedicated to the Emperor MAXIMILIAN by JACOBUS AESCHLER and GEORGIUS ÜBELIN, »curiarum ecclesiasticarum Argentinarum causarum patroni». Eschler and Übelin were, accordingly, the editors of the work. JOHANNES SCHOTTUS is mentioned in the colophon as the printer, and from the »Ad lectorem» printed on the last leaf before the maps of the first part of the work, we learn, that the translation into latin was effected or revised by PHILESIUS or MATHIAS RINGMAN. This man (born 1482, † 1511) was for a time a professor at the Gymnasium of St. Dié, celebrated in the history of geography for attaching Amerigo's name to the New World, discovered by Columbus. As we learn from a letter of Ioannes Franciscus Picus Mirandula to »Jacobo Aeschler I. U. Doctori & complicitibus S. D.» dated »Novi, Quarto Calendas Septembris MDVIII» and printed on the reverse of the title-page, Philesius was sent to the learned Italian Prince for critical researches for the new edition. In this letter Mirandula writes: *Ne tamen aut vos poeniteat voti aut Philesium pigeat itineris, illi ipsi ad vos data est Græca Ptolemaei Geographia, quam si latina variis typis excusæ composueritis, cognoscetis forsitan & hanc ab illa tantum abesse quantum Ptolemaeus abfuit a regio stemmate.* It is this greek manuscript from which Philesius made his new translation. According to Raidel it does not, however, quite correspond to the great pretensions, with which it was published. In this edition not only the Latin, but also the original Greek, geographical names are for the first time given (in the catalogue of geogr. positions, Book II—VIII). It further contains an index of about 7,000 geographical names to be found in Ptolemy's text. Then comes a letter, dated Ferrara 1508, to Philesius from the famous Italian writer LILIUS GREGORIUS ZIRALDUS (GIRALDI), in which he explains the Greek system of indicating integers and fractions. Next follow the 27 tables of Ptolemy, now and then slightly emendated. In the map of the world for instance, the land which to the south of the Indian ocean unites Africa and Asia is left out; the river Thames is inserted on the map of *Albion Insula Britannica*; and the southern part of the Scandinavian peninsula on the north-western corner of the map of *Sarmatia Europea*.

Then follows the second part of the work, preceded by a second title-page:

In Claudii Ptolemei Supplementum modernior lustratio terrae marisque singula positionibus certissimis regulatius tradens ad sæculi nostri peragrationses. Pars Secunda.

Praemissus Canon brevis a tergo Chartæ Lectorem resolutissime ab errorum ambagibus absolvit.

Post tabulæ numero Viginti sequentes sese ordine suo sic locantur.

1. *Hydrographia, sive Charta marina: continens typum Orbis universalem iuxta Hydrographorum traditionem. Decem particulares tabulæ Europæ.*
 2. *Oceani occidentalis, seu Terræ novæ.*
 3. *Iberniæ, Angliæ, & Scotiæ.*
 4. *Ispaniæ.*
 5. *Galliæ.*
 6. *Germaniæ.*
 7. *Hungariæ, Poloniæ, Russiæ, Prussiæ, et Vualachiæ.*
 8. *Norbergiæ, et Gotthiæ.*
 9. *Italiæ, Siciliæ, et Sardinia.*
 10. *Italiæ et Siciliæ altera.*
 11. *Bossina, Serviæ, Græciæ et Sclavonia.*
- Due particulares tabulæ Aphricæ, ex Chartis Portugalensium sumptæ.*
12. *Primæ portionis Aphricæ.*
 13. *Secundæ portionis Aphricæ.*

Tres particulares tabulæ Asiæ.

14. *Asiæ minoris prima, sive maior Turciæ.*

15. *Terræ sanctæ, sive Iudææ, Palestinæ etc.*

16. *Indici maris accolæ hæc habet.*

Quattuor deinde Chorographiæ, particulariores et magis extensæ prædictis tabulæ.

17. *Chorographia eremi Elvetiorum.*

18. *Chorographia provinciæ Rheni.*

19. *Chorographia Cretæ.*

20. *Chorographia Lotharingiæ.*

Tractatus de variis moribus et ritibus gentium, nominumque localium et gentium declarationibus per 61. capita distributus finem operi ponit: lectu dignissimus, admiratione plenus, utilitatis simul ac oblectationis præcipue.

I shall return further on to this extremely important part of the work, which may be regarded as the first modern atlas of the world. Among the many important maps it contains, one has, though incorrectly, been ascribed to COLUMBUS himself and been the subject of extensive commentaries; and two others, evidently based on surveys undertaken during the two first voyages of VASCO DA GAMA, have hitherto been completely overlooked.

12. Nurebergæ 1514. Fol. Incomplete but admirably printed edition by JOHANNES WERNER; without maps. It has, however, been of no small importance to cartography on account of the treatise it contains: *De quatuor terrarum orbis in plano figurationibus.*

13. Argentorati 1520. Fol. The title is surrounded by a splendid broad woodcut border, in which there is to be read: *Ptolemaeus auctus, restitutus, emaculatus cum tabulis veteribus ac novis.*

The last leaf of the text is decorated with the same splendid border as the titlepage. Within it are two dogs, biting each others backs. Above is printed:

Caroli V Imperii Anno I.

and below:

Ioannes Scotus, Argentorati litteris excæpit 1520.

This edition is a slightly altered reprint of Ed. 1513, excluding the letter of PICUS MIRANDOLA, the dedication of AESCHLER and ÜBELIN, and the second title-page with the short, but interesting preface, printed on its reverse. There are the same number of plates in both editions, and they are printed from the same blocks, with the exception of *Tabula Nova Eremitæ Helvetiorum*, which, in the copy I examined, is different and reproduced on a somewhat smaller scale than the corresponding map of Ed. 1513.

14. Argentorati 1522. Fol. *Claudii Ptolemaei Alexandrini, Mathematicorum principis, opus Geographiæ, noviter castigatum et emaculatum additionibus rarioris et invisibilis, necnon cum tabularum in dorso jucunda explanatione. Registro quoque totius operis, tam Geographico, quam etiam historiali, facillimum introitum præbenti.* On these words follows, on the title-page, a long *Ordo contentorum in hoc libro totali*, in which the contents of the work are more particularised. Colophon: *Ioannes Grieninger civis Argentoratensis opera et expensis propriis id opus insigne, arcis notulis excæpit, laudabilique fine perfecit XII. die Marcii Anno MDXXII.*

The long *ordo contentorum*, here excluded, promises, besides a faithful translation of the text, and the 27 maps of Ptolemy, a complete index and 20 new maps provided on their reverse with extremely interesting (*jucundissimæ*) legends about the customs and manners of the inhabitants. More-

over, the edition contains a general map by LAURENTIUS FRISIUS (N. T. XXXIX), also alluded to in the title, though in obscure and scarcely comprehensible words, and two new maps of eastern Asia, not mentioned on the title-page. The number of the new maps is consequently 23 (including the map of *Lotharingia*, which, in the copy I examined, was printed on the reverse of the map of the northern countries). The 27 maps of Ptolemy are (with the exception of *Tab. V Asiae*, printed from the same block as the corresponding map of Ed. 1513 and 1520) badly executed copies, on a reduced scale, of the maps in Ed. 1513. Also 20 of the *tabulae novae* are copied from Ed. 1513, most of them on a reduced, a few on an unaltered scale. These (for instance the map of Britain) seem to have been transported

tion 1522, no traces to be found, showing that the learned men who superintended its publication, had any notion of, or paid any attention to the geographical discoveries made during the fourteen or fifteen years that had elapsed since the maps in the edition of 1513 were finished.

This edition with its 23 new maps thus had but slight influence on the progress of cartography. A retrograde step may on the contrary be traced, reaching perhaps its maximum in the ugly maps of MÜNSTER, and manifesting itself, amongst other ways, by the revival of the mediæval custom of decking continents and oceans with figures of castles and sailing ships, of monsters and demons, cannibals cutting their fellow-creatures into pieces and roasting them on spits, naked savages, kings with crown and sceptre, and other similar fantastic ornaments.



11. Hispania nova from Ptolemaeus, Ulm 1482. (Orig. size 530 X 389 m. m.).

to the new blocks by mechanical means, and reproduce the originals with tolerable accuracy, which is by no means the case with the plates, that give the maps of 1513 on a reduced scale. Out of the three maps, not borrowed from the edition of 1513, the abovementioned map of the world by LAURENTIUS FRISIUS is certainly an original work, but bad beyond all criticism, as well from a geographical as from a xylographical point of view.

The other two maps are the *Tabula Moderna Indiae orientalis* and *Tabula superioris Indiae et Tartariae Majoris* (N. fig. 62, 63). A closer examination of these maps shows that they are still almost exclusively based on traditions from Marco Polo, and the globe of Behaim. They may indeed, to a certain extent, be considered as the first reproduction of this globe, so often referred to in modern geographical literature. Consequently there are, in the *tabulae novae* of the Edi-

tion 1522 the following remarks may be of some geographical interest. The publisher of the edition, THOMAS ACUPARIUS, praises AMERIGO VESPUCCI in his preface, but does not seem to know Columbus. On the contrary, the honor of the discovery of the New World is exclusively attributed to the latter by the famous inscription on the *Tabula terrae novae* (copied from the ed. 1513), as well as by the explanatory remarks to this map printed on its reverse.

Verso on folio 100:

Et ne nobis decor alterius elationem inferre videatur, has tabulas e novo a Martino Ilacomio pie defuncto constructas et imminorem, quam prius unquam fuerent, formam redactas notificamus. But it seems to be a mistake when these words are translated in the sense that WALDSEEMÜLLER

was the author of the maps in the Ptolemy of 1513. Evidently they only indicate, that he copied the maps of 1513 on a reduced scale for the Ptolemy of the year 1522.

In the legend to *Tabula moderna terræ Sanctæ* is the following passage: . . . *Scias tamen, lector optime, iniuria aut jactantia pura, tantam huic terræ bonitatem fuisse adscriptam, eo quod ipsa experientia mercatorum et peregre proficiscentium, hanc incultam, sterilem, omni dulcedine carentem depromit. Quare promissam terram pollicitam et non vernacula lingua laudantem pronuncies.*

This phrase was repeated in the edition 1525, without attracting the attention of the religious fanatics of the time. But when they were copied by SERVETUS, in the edition of 1535, they created a great scandal, and became one of the main charges against this unfortunate sceptic, who was burned through the machinations of CALVIN.¹

The superscription of the last of the new maps is *Tabu Gran Russie*, which, as is shown by the legend on the reverse of the map, is an abbreviation of *Tabula Gronlandiæ et Russie*. By this strangely abbreviated name the editor indicates an almost unaltered copy of the inner part (*Europa, Asia and Aphrica*) of *Orbis typus universalis juxta hydrographorum traditionem* in Ed. 1513 (N. T. XXXV). This is one of the many proofs of the carelessness with which the printing of this splendid edition was superintended.

15. Argentorati 1525. Fol. Claudii Ptolemaei Geographica enarrationis libri octo Bilibaldo Pirckheimero interprete. Annotationes Ioannis de Regiomonte in errores commissos a Iacobo Angelo in translatione sua.

Colophon: *Argentoragi, Iohannes Grieningerus communibus Iohannis Koberger impensis excudebat. Anno a Christi Nativitate MDXXV. Tertio Kal. Apriles.*

This edition, which, as regards its typography, is richly illustrated, is mentioned by Raidel as: *omnium, quas vidi, editionum Ptolemaei splendidissima est*, and contains 50 maps, printed on 49 double folio-leaves. They are all, with the exception of the *Tabula V Asia*, printed from the same blocks as the maps of Ed. 1522, and, like these, are almost unaltered copies, on a reduced scale, of the maps in the edition of 1513. They, therefore, present nothing new and of special interest to the history of geography. The same may be said of the paper of REGIOMONTANUS on the errors in the translation of Jacobus Angelus, and of the extensive and singularly arranged index, provided with a separate title-page. But the following passage in PIRCKHEIMER'S dedication to *Sebastianus Episcopus Brixinensis*, may be of importance as to the history of Mercator's projection.

Ego quidem si Deus permiserit, novas aliquando tabulas edere constitui, meridianis æquidistantibus, ut Ptolemaeus jubet, et haud quaquam inclinatis, quo longitudo recte ex utraque tabulæ extremitate, cum latitudine conveniat; conservabitur et certa parallelorum ratio, non solum cum meridianis, sed in vera quoque ab æquinociali distantia, ac quantitate diei, iis locis pro fundamento positâ, quæ nostro etiam tempore diligentiori observatione sunt rectificata.

Pirckheimer here promises, or seems to promise, for his expressions are not quite clear, a modern atlas with equidistant, not converging meridians, where the degrees of longitude should be in a proper ratio to the degrees of latitude and in which such places should be selected, as a basis for the delineation of the maps, as had had their positions determined by modern observations. Unfortunately Pirckheimer never re-

deemed his promise, but the above quoted words seem to indicate, that the learned humanist and patrician of Nuremberg had the intention of publishing a map on a projection resembling that, to which Mercator afterwards attached his name and which, properly understood, has become of such immense benefit to navigation.

16. Argentorati 1532. Fol. Ptolemaei Tabula Geographica cum Eandavi annotationibus egregie illustrata.

Colophon: *Argentorati apud Petrum Opilionem MDXXXII.*

I have not seen this edition, which only contains eight maps in double-folio. Raidel does not mention it, and Winsor cites it after BRUNET. A more complete description is to be found in HARRISSE: *Bibliotheca Amer. Vetust.*, p. 285. The short notice here given of one of the maps induces me to suppose that they are printed from the same blocks as the eight maps in ZIEGLERS: *Quæ intus continentur Syria, Palestina, Arabia, Aegyptus, Schondia etc. Argentorati apud Petrum Opilionem 1532.*

17. Basilie 1533. 4.o. The first complete Greek edition of the text to Ptolemy's geography, published by ERASMUS. No maps. A complete description of this edition is given by RAIDEL (p. 34). As before mentioned the local names had already been given in the editions of 1513 and 1520, in Greek as well as in Latin.

18. Ingolstadii 1533. Introductio geographica Petri Apiani in doctissimas Vernerii Annotationes. . . Huic Accedit Translatio nova primi libri Geographiæ Cl. Ptolemaei. . . Authore Venero. . . Locus etiam pulcherrimus desumptus ex fine septimi libri ejusdem Geographiæ Claudii Ptolemaei. . . Cum gratia et privilegio Imperiali. Ingolstadii An. MDXXXIII.

WERNER'S edition of Ptolemy, printed in Nuremberg in 1514 with a new title-page, a new very extensive introduction, and an appendix describing some instruments invented by APIANUS. Of the actual text in the work of Werner there are only a couple of leaves reprinted at the beginning, and one at the end of that part of the work. The rest is inserted into this work from the old edition. No maps.

19. Lugduni 1525. Fol. Claudii Ptolemaei Alexandrini Geographica enarrationis libri octo. Ex Bilibaldi Perckeymheri translatione, sed ad Græca & prisca exemplaria a Michaële Villanovano iam primum recogniti. Adiecta insuper ab eodem Scholia, quibus exoleta urbium nomina ad nostri seculi morem exponuntur. Quinquaginta illa quoque cum veterum tum recentium tabulæ adnectuntur, varique incolectium ritus & mores explicantur. Lugduni ex officina Melchioris et Gasparis Trechsel fratrum MDXXXV.

The maps of this edition are impressions from the blocks employed for the editions of 1522 and 1525, without any additions, or emendations. They are, therefore, as bad as their prototypes, and still less on a level with the geographical discoveries of the time when the edition left the press.

As seen by the preface (*Michael Villanovanus lectori*), printed on the reverse of the title-page, the text of this edition, or rather of its commentaries, was edited by the celebrated martyr for freedom of thought, MICHAEL SERVETUS or VILLANOVANUS. The edition is, therefore, designated as *editio prima Serveti*. Remarks are often inserted in the margin of the text, displaying the vast learning of the editor. Here he also gives the modern names of the towns and

¹ Compare RAIDEL, p. 60, note. Raidel did not know the edition 1522.

countries mentioned in Ptolemy's text; an innovation, expressly mentioned by Villanovanus as a recommendation to his edition. In the margin of Lib. III cap. 5 there is, for instance: *Sinus Finnonicus*, i Lib. VII cap. 3: *Sinum Magnum dixi esse hodie mare de Sur, ad quem Hispani versus occidentem navigando perveniunt, terrestri itinere duorum dierum interjecto*. In Lib. VII cap. 2—5 there are numerous marginal notes respecting the discoveries of the Portuguese in Africa and southeastern Asia. Several of the legends of the *Tabula novæ* are also very remarkable. Here we find the above cited legend about Palestine, which, though only reprinted from the editions of 1522 and 1525, was used among the pretexts for sentencing Servetus to be burned alive. The quarrelsome enthusiast probably drew down upon himself a good deal of ill will by the way in which he here descri-

cupari contendunt, cum Americus multo post Columbum eandem terram adierit, nec cum Hispanis ille, sed cum Portugallensibus, ut suas merces commutaret, eo se contulit. Yet the map of LAURENTIUS FRISIUS is to be found in this edition, reproduced from the same block as in the edition 1525, and without the name of »America» having been erased.

20. Lisboa 1537. Fol. A translation of Ptolemy's first book is inserted in: *Tratado da Esphera com a Theorica da Sol e da Lua, e o primeiro Livro da Geographia de Ptolemeu, e duos Tratados da Cartia de marear. Com muitas notas*; by the distinguished Portuguese mathematician PEDRO NUNES. As I have not had access to this work, the reader is referred for further informations to: FABRICIUS, *Bibl. Graeca*,



12. Italia nova from Ptolemaeus, Ulm 1482. (Orig. size 567 × 370 m. m.).

bes the national character, the habits and customs of the several peoples. For instance in the legend to »Germania» there is this passage: *Producit Hungaria boves, Bavaria sues, Franconia cepas rapas & glycerhisiã, Svevia meretrices, Boemia hereticos, Bavaria iterum fures, Helvetia carnifices bubsequas, Vestfalia fallaces, tota denique Germania ac totus Septentrio gulones et potatores*; and his estimates of the characteristics of the Spaniards and French are scarcely more complimentary.

The text to the »*Oceani occidentalis seu terræ novæ tabula*» deviates considerably from the corresponding passage in the edition of 1525. Like that passage, Servetus begins with a description of the outward appearance of Columbus, but the *procera statura* is here changed into *mediocri statura*. The text, printed on the reverse of this map, ends with the following protest against the newly adopted name for the New World, derived from that of Amerigo: *Toto itaque, quod ajunt, aberrant coelo qui hanc continentem Americam nun-*

V: 278, and POGGENDORFF, Handwörterbuch zur Geschichte der exacten Wissenschaften, Leipzig 1863.

21. Coloniae 1540. 8:o. *Claudii Ptolemaei Alexandrini Philosophi et Mathematici præstantissimi libri VIII de Geographia e Græco denuo traducti . . . Joannis Noviomagi opera. Coloniae, excudebat Ioannes Ruremundanus, Anno MDXL.* A new Latin translation by the distinguished mathematician and philosopher NOVIOMAGUS or BRONCHHORST; with Greek names of places, besides the Latin ones, and an ample register. No maps.

22. Basileae 1540. Fol. *Geographia universalis, vetus et nova, complectens Claudii Ptolemaei Alexandrini enarrationis Libros VIII . . . Basileæ, apud Henricum Petrum. Mense Martio Anno MDXL.* There is also a long passage on the title-page giving the information that this edition, besides a corrected translation of Ptolemy's text, also contains the

modern names of towns, mountains, rivers etc., as well as a short description of the manners and customs of different peoples, and a complete index. It includes not only Ptolemy's old maps, *opera Sebastiani Munsteri novo paratæ modo*, but also several new ones, *modernam orbis faciem literis et pictura explicantes*. From the introduction we learn that the editor was SEBASTIAN MÜNSTER, Professor in Hebrew at the University of Basel, and an eminent geographer and mathematician.

This edition contains 48 maps; 27 of Ptolemy's (pl. 2—28) and 21 new ones, namely: Pl. 1. *Typus Universalis*, (N. T. XLIV); 29. *Europa*; 30. *Anglia*; 31. *Hispania*; 32. *Gallia*; 33. *Helvetia, prima Rheni tabula*; 34. *Germania*; 35. *Alsacia et Brisgoia, secunda Rheni tabula*; 36. *Tertia Rheni tabula*; 37. *Quarta Rheni tabula*; 38. *Brabantia, quinta Rheni tabula*; 39. *Svevia et Bavaria*; 40. *Franconia*; 41. *Schonlandia*; 42. *Polonia et Ungaria*; 43. *Italia*; 44. *Terra Sancta*; 45. *Novæ Insulæ Tabula* (America; with the names of *Mare Pacificum* and *Fretum Magaliani*); 46. *Africa Nova*; 47. *India Extrema* (Asia, excepting its westernmost part); 48. *Lacus Constantiensis*.

The maps are tolerably good wood-cuts, but from a cartographical point of view they are by no means comparable to the maps of Schweinheim-Buckinck, Armsheim or Sylvanus. For the longitudes are never indicated in the 'tabulæ novæ' and in most of them there is no graduation at all, neither for longitude nor for latitude. Without the excuse of typographical necessity Münster often deviates from the orientation (north above, east to the right) of Ptolemy. The manner of indicating the variations of the ground is by no means fortunate, and several maps, especially of distant parts of Asia and America, are extremely poor in geographical details. They are instead disfigured by large figures of savages and monsters, entirely foreign to the cartography and also often to the nature of the country, on which they are laid down. But, on the other hand, Münster has the merit of having, in composing his 'tabulæ novæ', not altogether neglected to take notice of the latest geographical discoveries. In this respect his work is in advance of the editions of 1522, 1525 and 1535. Münster is the first to give general maps of the four parts of the earth then known; his new map of 'Anglia' is far more rich in details and more correct, than the new map of Britain in the preceding editions of Ptolemy; and his maps of the territories about the Rhine, of Suabia, Bavaria etc. may to this day be referred to with advantage by students of medieval geography. To Münster the merit is also due of having, in his dedication to the Bishop of Basel PHILIPPUS A GUNDELSHEIM, given references to the sources used by him for his tabulæ novæ: *Proinde viri quorum opera ego in novis meis tabulis usus sum, hi sunt.*

In descriptione Gallie consului Oruntii excellentis mathematici topographiam. In tabula Norvegie, Suecie, Gothie etc. usus sum opera præstantis viri Iacobi Ziegleri, quem et pro magna parte imitatus sum in descriptione terre sancte. Helvetiam et Rhetiam jampridem ministravit eximius vir Aegidius Tschudus. Alsaciam et Brisgoiam ego observavi, usus tamen in quibusdam consilio et subsidio ornatiss. viri Beati Rhenani. Alias duas Rheni tabulas ego quoque descripsi, sed cui non vulgares suppetias tulit illustrissimus princeps D. Ioannes Palatinus Rheni, dux Bavariae et Comes Sponheimensis, omnium bonorum studiorum amator et studiosorum singularis patronus, qui mirabili suo ingenio descripsit Vastum regnum et Hunorum stationem, vulgo Hunesruck dictam. Cooperatus est denique mihi in quarta Rheni tabula humaniss. vir Iohannes Dryander pro sua Hassonia. Quintam Rheni tabulam ministrarunt Brabantini. Angli quoque et Poloni sua suppeditarunt

regna. Franconiam a Sebastiano Rotenhan nobili viro descriptam, ego mea peregrinatione nonnihil auxi. Idem feci in Bavaria, quam primum Iohannes Aventinus omnis vetustatis Germanicæ amator descripsit. Sueviam vero, fontes Danubii et Nigram sylvam ego mea lustratione et observatione in tabulam coegi. Porro lacum Podamicum exhibuerunt Constantinenses, nempe insignes viri Iohannes Zuickius et Thomas Blaurerus.

In his introduction Münster further declares that he changed the old Ptolemaic manner of denoting geographical latitude and longitude, so far as to replace the fractions of degrees by minutes and seconds; as for instance $40^{\circ}\frac{1}{2}$ or $38^{\circ}\frac{1}{2}$, by $40^{\circ}30'$ and $38^{\circ}50'$. This very useful reform had already been introduced for astronomical data in manuscripts of the *Almagest*; but so far as I know, it is first employed for the indication of geographical latitudes and longitudes in the text to the map of Scandinavia of 1427 by CLAUDIUS CLAVUS (N. fig. 27).

23. Lugduni-Viennæ 1541. Fol. *Claudii Ptolemaei Alexandrini Geographica Enarrationis, Libri Octo. Ex Bilibaldi Pirckeymheri tralatione sed ad Græca & prisca exemplaria a Michæle Villanovano secundo recogniti, & locis innumeris denuo castigati. Adiecta insuper ab eodem Scholia, quibus & difficilis ille Primus Liber nunc primum explicatur, & exoleta Urbium nomina ad nostri seculi morem exponuntur. Quinquaginta illæ quoque cum veterum recentium Tabulæ adnectuntur, varique incolentium ritus & mores explicantur. Accedit Index locupletissimus hactenus non visus. Prostant Lugduni apud Hugonem à Porta. MDXLI.*

Colophon printed on separate leaves as well at the end of the whole work as between the maps and the text: *Excudebat Gaspar Trechsel, Viennæ MDXLI.*

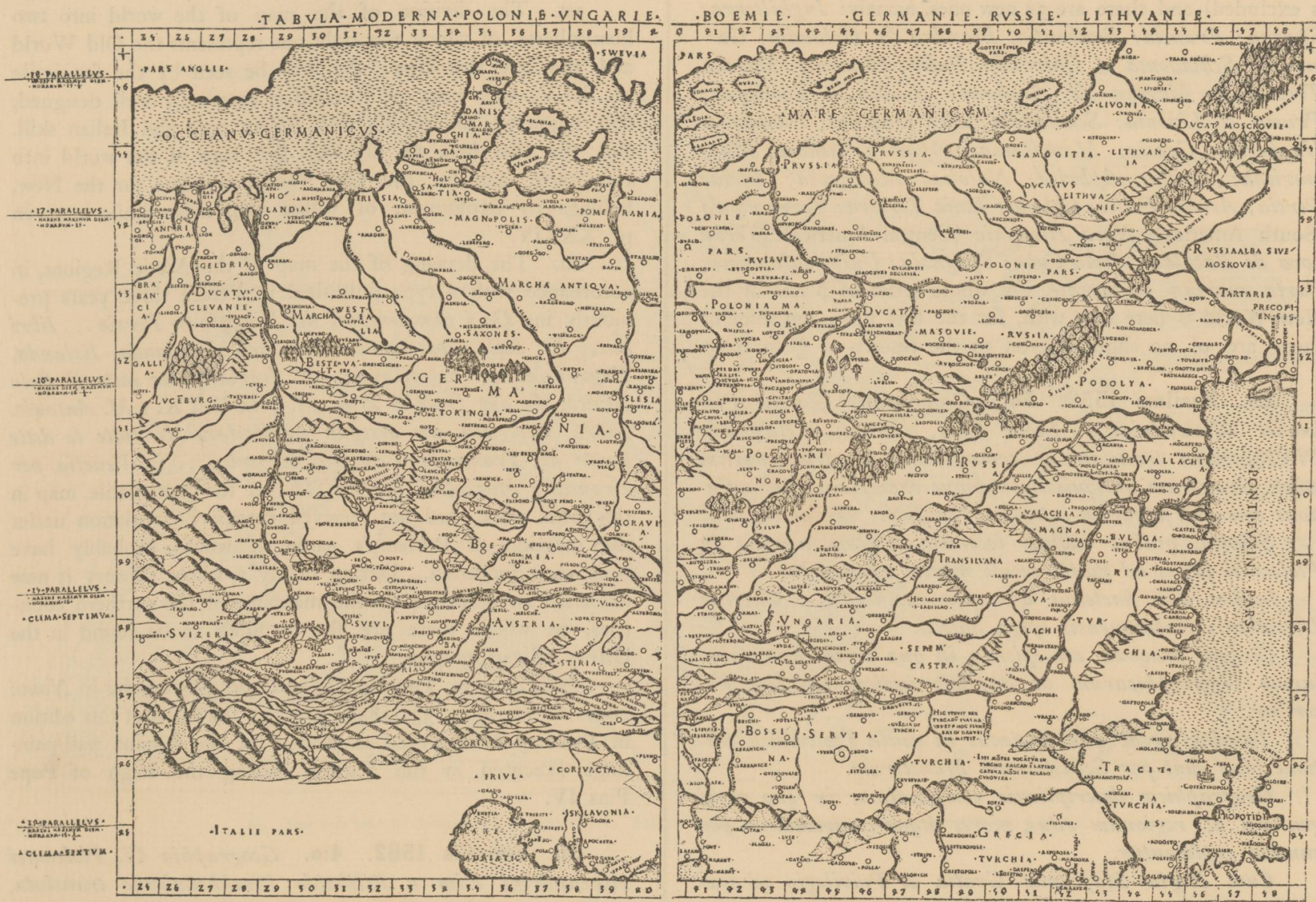
Here we have a new edition of the Ptolemy of SERVETUS, (*Ed. secunda Serveti*) very inferior to the first one, owing to the omission of the interesting, although often offensive legends to the new maps, in the edition of 1535. Text and maps are otherwise unaltered. By *Lugduni* and *Viennæ*, recorded as the places where the book had been printed and the wood-cuts made, is here meant Lyons and Vienne, a small adjacent town on the Rhone. But, although the assertion that the maps had been engraved in *Viennæ MDXLI* constitutes the *alfa* and *omega* of the work, we have here only to deal with reprints from the same blocks which had been used for the editions of 1522, 1525 and 1535. The handsome wood-cuts, which form the borders of the explanations, printed on the reverse of the maps in the editions of 1525 and 1535, have not been employed for this edition.

24. Basileæ 1541. Fol. I have not seen, this Basile edition, but RAIDEL cites (p. 62) an edition of Münsters Ptolemy with a title-page bearing this date.

25. Basileæ 1542. Fol. The long title is the same as that on the title-page of the edition of 1540, excepting that the two last lines (*Mense Martio anno MDXL*) are excluded. The year of printing is here given in the colophon: *Basileæ apud Henricum Petrum Mense Martio, An. MDXLII.* This edition is supposed by Raidel to be the same as the edition of 1540, only provided with a new title-page. But this is not the case. It is a reprint of the edition of 1540, repeated page by page with the utmost care, but with some slight corrections, alterations of the punctuation, of the types in the rubrics, etc. Regarding the editions of 1540 and 1542 it must further be mentioned, that the part of the book paged 1—195, does not only contain Lib. II of Ptolemy, as stated by HARRISSE, but the whole of his geography, excep-

ting the first book, which is printed in the commencement of the volume on unnumbered leaves, and the map-legends of the eighth. It contains also various addenda, for instance an extensive *Appendix Geographicum* (p. 157—195), by Münster; tables (p. 153) for calculating the degrees of longitude at different latitudes; a table for finding the squares etc. The book is often bound in such a manner, that the maps are placed between p. 156 and p. 157. Every map occupies a double folio-sheet, on the reverse of which the legends are printed, surrounded by wood-cut borders often executed in a masterly way, though worn, and probably originally intended for other works. They seem to have been taken at random from the printer's main stock of wood-cuts, and are generally arranged in quite an arbitrary and careless way. Some of them are ascribed to HOLBEIN.

The edition contains 54 maps. Out of these, the 27 of Ptolemy, the new map of the world (*Typus Universalis*) and the maps of *Europa, Anglia, Hispania, Gallia, Germania, Lacus Constantiensis, Suevia et Bavaria, Franconia, Polonia et Ungaria, Italia, Terra Sancta, India, Africa* and *Novæ insula tabula* are printed from the same blocks as the maps of the edition of 1540. The other 12 are either amended maps from Münster's editions, or new ones. Among the former may be mentioned the maps of the Rhine and Switzerland, which had probably been corrected by observations and communications collected since 1540 in Basel, and the map of Scandinavia, clumsily and badly reproduced from Olaus Magnus. The new maps are *Valesia 1:ma; Valesia 2:da; Nigra Sylva; Slesia; Sclavonia; Transylvania; Græcia* and *Bohemia*. The last one (N. fig. 69)



13. The first map of central Europe in copper-print, probably a copy of the map of NICOLAUS A CUSA. From *Ptolemaeus*, Romæ 1507. (Orig. size 515 x 382 m. m.).

26. Basileæ 1545. Fol. Here the long title-page also corresponds perfectly with the title of ed. 1540, with the exception of two additional lines, containing: *Adjectæ sunt huic posteriori editioni novæ quedam tabulæ, quæ hactenus apud nullam Ptolemaicam impressuram visæ sunt*, and the words *Apud Henricum Petrum Mense Martio MDXL*, are changed into *Per Henrichum Petrum Anno MDXLV*. The new edition has a woodcut on the reverse of its title-page, representing Ptolemy occupied with astronomical observations. Münster's letter of dedication to the Bishop of Basel is left out. This edition is moreover a reprint of Münster's former editions, and the reprint is so complete that it generally corresponds page for page and line for line. Even the irregular pagination of ed. 1540 and 1542 is followed.

is of interest as the first map on which the different religious and political conditions of a country are denoted.

27. Parisiis 1546. 4:o. First a Greek title; then: *Claudii Ptolemaei Alexandrini Philosophi cum primis eruditi, de Geographia libri octo, summa cum vigilantia excusi. Parisiis, apud Christianum Wechelum, sub Pegaso, in vico Bellovacensi, Anno MDXLVI*. Reprint of the Greek edition of Erasmus 1533; no maps.

28. Venetiis 1548. 8:o. *Ptolemeo. La Geografia di Claudio Ptolemeo Alessandrino, con alcuni comenti & aggiunte fatteci da Sebastiano munstero Alamanno, Con le tavole non solamente antiche & moderne solite di stamparsi,*

ma altre nuove aggiunte di Messer Iacopo Gastaldo Piemontese cosmographo, ridotta in volgare Italiano da M. Pietro Andrea Mattiolo Senese medico Eccellentissimo. Con l'aggiunta d'infiniti nomi moderni, di Città, Provincie, Castella, et altri luoghi, fatta con grandissima diligenza da esso Messer Iacopo Gastaldo, il che in nissun altro Ptolomeo si ritrova. Opera veramente non meno utile che necessaria. In Venetia, per Gio: Baptista Pedrezano. Co'l privilegio dell' Illustriss. Senato Veneto per anni X. MDXLVIII.

Colophon: In Venetia, ad Instantia di messer Giuanbattista Pedrezano libraro al segno della Torre a pie del ponte di Rialto. Stampato per Nicolo Bascarini nel Anno del Signore, 1547, del mese di Ottobre. A small but very elegant Italian edition with plates, handsomely engraved in copper by the famous cosmographer GASTALDI. They are 60 in number, of which 26 are Ptolemy's (his map of the world is excluded) and there are 34 new ones, namely: *Inghilterra; Spagna; Francia; Brabantia, Fiandra & Holandia; Germania; Schiavonia et Dalmatia; Italia; Piemonte; Marcha Trevisana; Marcha de Anchona; Sicilia et Sardegna; Prusia et Livonia; Scholandia* (after ZIEGLER); *Polonia et Ungheria; Grecia; Mauritania; Aphrica minore; Marmarica; Egitto; Aphrica; Natolia; Moschovia; Soria; Persia; Arabia Felice; Calecut; India Tercera; Terra nuova* (South America); *Nova Hispania* (Central America); *Terra nova de Bacalaos; Isola Cuba; Spagnola; Universale nuovo; Carta marina universale*. A whole series of plates of the New World is here met with, for the first time, and some of them are of no slight interest to the history of geography.

29. Basileæ 1552. Fol. *Geographia Claudii Ptolemaei Alexandrini... Libri VIII, partim a Bilibaldo Pirckheimero translata ac commentario illustrata, partim etiam Græcorum antiquissimorumque exemplariorum collatione emendati atque in integrum restituti. His accesserunt Scholia, quibus exoleta locorum omnium nomina in Ptolemaei libris ad nostri seculi morem exponuntur.*

Indices duo hactenus a multis desiderati... Conradi Lycosthenis Rubeaquensis opera adjecti.

Quibus praevisa est epistola in qua de utilitate tabularum Geographicarum ac duplicis indicis usu late disseritur.

Tabulae novae quae hactenus in nulla Ptolemaica editione visa sunt per Sebastianum Munsterum.

Geographicae descriptionis compendium, in quo variorum gentium ac regionum ritus, mores atque consuetudines per eundem explicantur.

Cum Regiae Majestatis Gratia et Privilegio ad sexennium.

The year and the place when and where the work was printed, are not directly stated, but the introduction by Münster, a letter of licence for six years by the King of France, and a letter by CONRAD LYCOSTHENES to JOANNES FRISIUS *De utilitate tabularum geographicarum*, are dated 1552. Here we have a new edition of MÜNSTER'S Ptolemy, provided with an elaborate index. The plates are the same, and printed from the same blocks as those of the edition of 1545, with the exception of the map of *Lacus Constantinensis* being left out, instead of which a map of *Pomerania* (map 42) is inserted.

30. Venetia 1561. 4:o. *La geografia di Claudio Tolomeo Alessandrino, Nuovamente tradotta da Greco in Italiano da Girolamo Ruscelli... In Venetia, Appresso Vincenzo Valgrisi, MDLXI.* A new translation into Italian with numerous remarks and extensive addenda by RUSCELLI. It is notified on the title-page that the work was to contain

26 old and 36 new maps, but there are in reality 27 old and 37 new plates. The maps are enlarged copies of Gastaldi's maps in the edition of 1548, excepting: *Universale Novo* drawn on a new projection, and called *Orbis descriptio*; the map of Britain, for the northern part of which the author has modified the type hitherto followed of the *Tabula nova Hiberniae, Angliae et Scotiae* in the Ptolemy of 1513; and the map of Central America (*Nueva Hispania*), where Yucatan is drawn as a peninsula, and not separated from the main by a strait as in the map of 1548. Four maps are added, viz: *Toscana, nova tabula*; Leno's map or *Septentrionalium partium tabula nova*; *Brasil, nova tavola*, and the old map of the world by Ptolemy, excluded from the edition of 1548, is here re-inserted.

Two important innovations were introduced by this edition into cartographical literature, or at least into the literature of atlases, viz:

1st. The division of the map of the world into two hemispheres, of which the right one represents the Old World and the left the New. As may be seen by the fac-simile pl. XLV, this map of Ruscelli is extremely well designed, and engraved on copper with Italian taste and Italian skill. But the first idea of dividing the map of the world into two parts, one for the Old World and one for the New, belongs to STOBNICZA, of whose map a fac-simile is given pl. XXXIV.

2d. The drawing of the map of the Arctic Regions, in accordance with a type published in Venice three years previously in: *De i commentariis del Viaggio in Persia... libri due. Et dello scoprimento dell' Isole Frislanda, Eslanda, Engrouelanda, Estotilanda, & Icaria, fatto sotto il Polo Artico, da due fratelli Zeni, M. Nicolò il K. e M. Antonio. Libro uno, con un disegno particolare di tutte le dette parte di Tramontana da lor. scoperte... in Venetia per Francesco Marcolini MDLVIII.* If the remarkable map in this little work, had not received extensive circulation under the sanction of Ptolemy's name, it would probably have been soon forgotten. During nearly a whole century it now exercised an influence on the mapping of the northern countries, to which there are few parallels to be found in the history of cartography.

According to THOMASSY (*Les Papes géographes in Nowv. Ann. de Voyages*, 33, 1853, p. 155), the maps of this edition of Ptolemy have served as models for the famous wall-paintings executed in the Vatican during the reign of Pope Pius IV.

31. Venetiis 1562. 4:o. *Geographia Cl. Ptolemaei Alexandrini olim a Bilibaldo Pirckheimerio translata, at nunc multis codicibus græcis collata, pluribusque in locis ad pristinam veritatem redacta a Iosepho Moletio Mathematico... Venetiis, apud Vincentium Valgrisium MDLXII.*

The maps in this edition are the same in number, and are all printed from the same plates, as those in the edition of 1561.

32. Venetiis 1564. 4:o. I have not seen this edition. According to Winsor it is a new edition of Ruscelli-Gastaldi's Ptolemy of 1561, divided into two separate works: *La Geografia di Claudio Tolomeo tradotta di Greco in Italiano da Ieronimo Ruscelli*, and *Expositioni et introduzioni universali Di Ieronimo Ruscelli sopra tutta la Geografia di Tolomeo*, both of which are printed in Venice, *appresso Giordano Ziletti, al segno della Stella, MDLXIII.* It contains 64 maps, printed from the same plates as the maps in the edition of 1561.

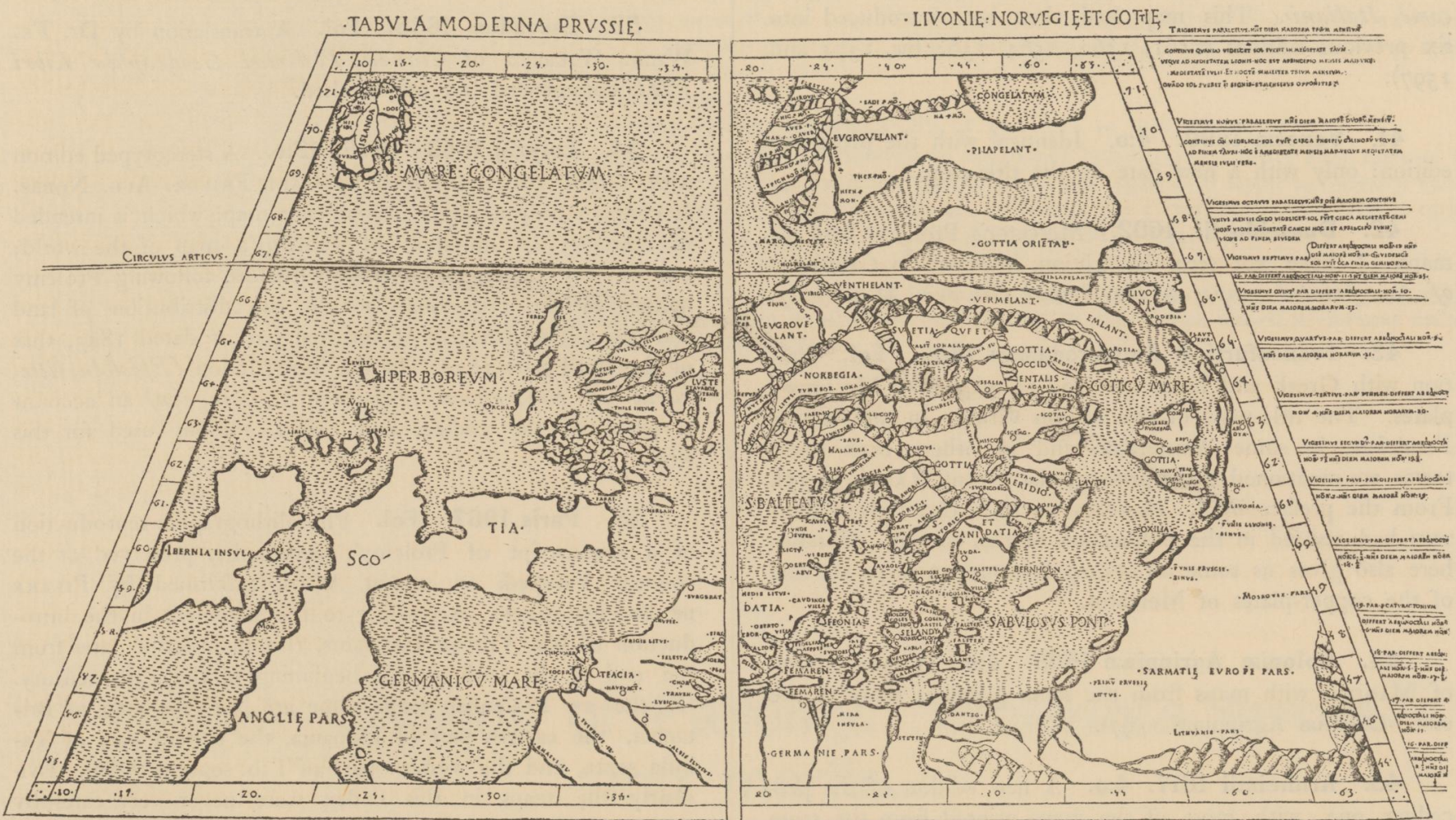
33. Venetiis 1564. 4:o. A re-issue of the Latin edition of 1562. Only the title and the preface are reprinted. On the reverse of the last folio of the introduction (*Aloysio Cornelio Cardinali... Josephus Moletius*) is a woodcut, representing Ptolemy in oriental attire observing the stars.

After 1570, when the first edition of the *Theatrum Orbis terrarum* by Ortelius was published, the new editions of Ptolemy lost their main interest to the history of cartography. I shall, therefore, only give a summary catalogue of them with a few remarks, which suggest themselves from a cartographical point of view.

34. Venetiis 1574. 4:o. A new edition of Ruscelli-Gastaldi's Ptolemy by Gio. MALOMBRA, printed in Venice, *Appresso Giordano Ziletti MDLXXIII*. The maps are

36. Coloniae Agrippinae 1584. Fol. A new edition of MERCATORS Ptolemy, but with the addition of Ptolemy's text. The maps are printed from the same plates as in the foregoing edition.

37. Venetiis 1596. 4:o. *Geographia Universa tum veteris tum novae absolutissimum opus... Auctore Io. Ant. Magino Patavino, Mathematicarum in almo Bononiensi Gymnasio professore*. An extensive geographical work by Io. ANTONIUS MAGINUS, divided into two volumes, with separate title-pages and indexes. Vol. I contains the text of Ptolemy's geography (excepting the map-legends from the VIII Book) and separately paginated commentaries; Vol. II the 27 maps of Ptolemy with his map-legends, and 37 'Tabulae recentiores', all admirably engraved in copper by HIERONYMUS PORRO. The maps are printed on single quarto-leaves, with the exception of a map of the two hemispheres



14. The first map of Scandinavia in copper-print. From Ptolemaeus, Romae 1507. (Orig. size 568 x 312 m. m.).

a reprint from the same plates as those used in the editions of 1561 and 1562, with the exception of Ptolemy's map of the world, for which Malombra had returned to the original conical projection of Ptolemy. Moreover, one map is added: the map of 'Territorio di Roma'.

35. Coloniae Agrippinae 1578. Fol. *Tabula Geographica Cl. Ptolemaei ad mentem auctoris restituta et emendata per Gerardum Mercatorem Illustriss: Ducis Clivia etc. Cosmographum*. This edition, the first with Mercator's series of maps, contains only the 27 old maps of Ptolemy in double folio, and a smaller one of the Delta of Nile. All the maps are printed from plates engraved in a masterly style by Gerard Mercator. This edition does not contain the text of Ptolemy, but extensive explanations of the modifications introduced in the accepted Ptolemaic types are printed on the reverse of the maps. An elaborate index of the 7,000 names in Ptolemy's geography concludes the work.

of the world on a stereographic projection, copied from Mercator's Atlas, and occupying two quarto-leaves. There is also an extensive text for the new maps by Maginus. A mariner's compass with the variation of the needle indicated is inserted in the map of *Forum Iulii et Histria*. Such a drawing had previously been given in 1532, in *Tabula Universalis Palestinae* of Ziegler. In WAGHENAEVS first sea-charts of 1584 no allusion is made to the variation of the compass, but in some of BARENTS' Mediterranean charts of 1595, there is, as shown by fig. 24, a difference made between the *Directorium Nauticum vulgare* (our common magnetic compass) and the *Directorium Nauticum Italicum* (the compass corrected for magnetic variation and consequently giving the true North). Diagrams showing the variation of the compass, but without combination with any map, are found in the *Cosmographia introductio cum quibusdam Geometriae ac Astronomiae principijs ad eam rem necessarijs, Ingolstadii MDXXIX* (at the end MDXXXIII).

38. *Coloniae Agrippinae* 1597. 4:o. A reprint of the preceding edition executed in Cologne. Even the maps are copied with extreme care from the edition Venetiis 1596 without any additions or alterations. Two somewhat dissimilar title-pages, with the same printer and year of printing, seem to exist for this edition.

39. *Venetia* 1598. Fol. A handsomely illuminated translation into Italian of the Ptolemy of MAGINUS (Nr 37) printed by GIO. BATTISTA & GIORGIO GALIGNANI FRATELLI. The maps (by PORRO) are of the same number and printed from the same plates as those of the Latin original.

40. *Venetia* 1598. 4:o. A new Italian edition by GIOSEFFO ROSACCIO. Most of the maps are faithful copies of the maps in the edition of 1561. Even the map of Zeno is here inserted with the legend of 1561 beginning: *Il disegno, ò la descrizione di questa Tavola Settentrionale, non è stato fin qui in alcuno de gli altri Tolomei, così Latini, come Italiani.* This map had then been introduced into six previous editions (1561, 1562, 1564, 1564 bis, 1574 and 1597).

41. *Venetia* 1599. 4:o. Identical with the preceding edition: only with a new date on the title-page.

42. *Dusseldorfii* 1602. Mercator's Ptolemy with 34 maps. I have not seen this edition, indicated in *Catalogue of the printed maps in the British Museum*, II p. 3403.

43. *Francofurti & Amsterodammi* 1605. Fol. Edition with Greek and Latin text and 28 maps from Mercator's plates. The title-page of this edition varies. In some copies Frankfort, in some Amsterdam and in others both these towns are mentioned as the printing place (conf. RAIDEL p. 35). From the preface by I. HONDIUS we learn that PETRUS BERTIUS had assisted in the publication of this edition. Hondius here also gives us some interesting information as to the sale of the copper-plates of Mercator.

44. *Coloniae Agrippinae* 1608. 4:o. A new edition of MAGINUS with maps from the same plates as those in the edit. *Coloniae Agrippinae* 1597.

45. *Arnheimii* 1617. 4:o. A new edition of the preceding one, with most of the maps printed from the same plates.

46. *Lugduni Batavorum* 1618. Fol. A new edition of the maps of Mercator with Greek and Latin text, published by PETRUS BERTIUS BEVERUS. To this edition are added *Gerardi Mercatoris Rupelmundani in tabulas Ptolemaicas a se delineatas Annotationes; Tabula itineraria ex illustri Peutingerorum bibliotheca, quae Augusta Vindelicorum est, beneficio Marci Velseri Septemviri Augustani in lucem edita; Fragmenta Tabulae itinerariae antiquae* and finally *Abrahami Ortelii Geographiae veteris tabulae aliquot.*

47. *Padua* 1621. 4:o. A reprint, carefully executed by the brothers PAOLO and FRANCESCO GALIGNANI, page for page, from the edition which was published in Venice in 1598 by the brothers GIO. BATTISTA and GIORGIO GALIGNANI and having, like these, maps from the same plates as those already used in the editions Venetiis 1596 and 1598.

48. *Francofurti-Amsterodammi* 1624. Under this date an edition is cited in the catalogue of HENRY C. MURPHY,

with exactly the same title-page as in the edition of 1605; probably only a title-edition.

49. *Franequerae et Trajecti ad Rhenum* 1698 (and 1695?). Fol. A reprint of the maps of Mercator. No text. The year 1695 is given in MURPHY's catalogue; but the difference possibly depends on a printer's error.

50. *Trajecti ad Rhenum* 1704. Fol. Reproduction of the preceding edition. (LELEWEL, II: p. 209).

51. *Amstelædami* 1730. Fol. Reprint of the maps of Mercator without the Ptolemaic text, but with an extensive index.

52. *Paris* 1828. 4:o. French translation of Ptolemy's geography by HALMA. No maps are added to the work, and only the first book of the Greek-French text is published.

53. *Essendiae* 1838. Fol. A translation by DR. FR. WILH. WILBERG of *Claudii Ptolemaei Geographiae Libri VIII*, commenced but not finished.

54. *Leipzig* 1843—1845. 12:o. A stereotyped edition with Greek text, published by CARL FRIEDR. AUG. NOBBE. It contains only a single insignificant map, which is intended to represent an imitation of Ptolemy's map of the world; but in this respect it is entirely useless, following Ptolemy neither in the projection, nor in the distribution of land and sea. The preface of the first part is dated 1843, that of the third part 1845. In the introduction (*Epistola litteraria ad Fridericum Albertum de Langenn*) an account is given of the codices and earlier editions used for this work.

55. *Paris* 1867. Fol. Photolithographic reproduction of a manuscript of Ptolemy's geography, preserved at the convent Vatopedi on mount Athos, published by PIERRE DE SEWASTIANOFF. According to the statement in the introduction of MR. VICTOR LANGLOIS, this manuscript dates from the end of the 12th, or the beginning of the 13th century. Of the 27 Ptolemaic maps some are lost (the map of Britannia, the eastern part of Hispania, the eastern part of Tabula sexta, and the western part of Tab. septima Asiae). Evidently the maps in this codex were never very carefully executed and those now extant are sadly reduced by wear of time. According to present requirements, the reproduction perhaps also leaves something to be desired. But an opportunity is supplied to the enquirer by this edition, of convincing himself, in his own study, how exactly and minutely the fine maps which were published in Ptolemy's name at the end of the 15th century, correspond with manuscript maps from the beginning of the 13th, as regard the main geographical features and the legends.

56. *Parisiis* 1883. The first part of a new, critical, Greek-Latin edition by CARL MÜLLER. At the beginning of the work an *index codicum* is inserted, enumerating thirty-eight manuscripts consulted by the author, without however communicating any further information regarding them. The complete work will consist of text in two volumes and one volume of maps.

According to the above critical catalogue, from which a number of pseudo-editions, enumerated in the next chapter,

are excluded, 56 editions of Ptolemy's geography have hitherto been published, one of them photolithographically and fifty-five by book-print. Many of these editions, however, are not complete; sometimes the maps, sometimes more or less of the text is wanting. Others again are only title-editions. Yet by a careful comparison it will be found that many a supposed title-edition is an actual reprint of a former edition, rigorously following the original, page for page, line for line. In consequence of the cheapness of manual labor during the 15th and 16th centuries the reprint of a ready prepared text, even of such a voluminous work as Pto-

lemy's geography, might not have been connected with very heavy expenses, or difficulties. It was more costly and difficult to prepare new plates or blocks for the printing of the maps. For this reason the copper-plates and wood-cuts were often used for repeated editions, as may be perceived by the accompanying table. With regard to this it must be borne in mind that the old maps are not generally signed, and that it is often difficult to decide whether a name given on the title-page, or in the preface, in connection with the maps, belongs to the editor, to the drawer of the maps, or to the engraver.

Copper-prints and wood-cuts in the editions of Ptolemy's geography.

1. Copper-print by SCHWEINHEIM-BUCKINCK: N:o 4 1478; N:o 7 1490; N:o 8 1507; N:o 9 1508.
 2. Wood-cut by JOHANNES DE ARMSHEIM: N:o 5 1482; N:o 6 1486.
 3. Wood-cut, first published in an edition by AESCHLER and ÜBELIN: N:o 11 1513; N:o 13 1520.¹
 4. Wood-cuts of the preceding maps, reduced into a smaller size by WALDSEEMÜLLER: N:o 14 1522; N:o 15 1525;² N:o 19 1535; N:o 23 1541.
 5. Wood-cut from SEBASTIAN MÜNSTER: N:o 22 1540; N:o 24 1541; N:o 25 1542; N:o 26 1545;³ N:o 29 1552.³
 6. Copper-print first published in an edition by RUSCELLI and MOLETIUS: N:o 30 1561; N:o 31 1562; N:o 32 1564; N:o 33 1564 bis; N:o 34 1574.⁴
 7. Copper-print by MERCATOR: N:o 35 1578; N:o 36 1584; N:o 42 1602; N:o 43 1605; N:o 46 1618; N:o 48 1624; N:o 49 1698; N:o 50 1704; N:o 51 1730.
 8. Copper-print by HIERONYMUS PORRO: N:o 37 1596; N:o 39 1598; N:o 47 1621.
 9. Copper-print in an edition by ROSACCIO: N:o 40 1598; N:o 41 1599.
 10. Copper-print by PETRUS KESCHEDT; exact copies of the previous, executed in Germany: N:o 38 1597; N:o 44 1608; N:o 45 1617.⁴
- Maps only printed once: N:o 1 Maps engraved in copper for the edition of MANFREDUS and PETRUS BONUS 1472 (?); N:o 3 Maps engraved in copper for the edition of BERLINGHIERI 1478 (?); N:o 11 Wood-cut by BERNARDUS SYLVANUS 1511; N:o 28 Maps engraved in copper by GASTALDI 1548; N:o 55 Chromo-lithographe from the Athos-manuscript 1867. Without maps, or with a few only, are the editions N:o 2 1475; N:o 12 1514; N:o 16 1532; N:o 17 1533; N:o 18 1533; N:o 20 1537; N:o 21 1540; N:o 27 1546; N:o 52 1828; N:o 53 1838; N:o 54 1843—1845; N:o 56 1883.

¹ Exception: Tabula nova Eremi Helvetiorum. ² Exception: Tab. V. Asiae. ³ Exception: Some new maps of European countries. The same blocks as those employed in these editions of Ptolemy, have afterwards been used for Münster's Cosmography and for other works, printed in Germany during the latter half of the 16th century. ⁴ Exception: Some maps from other plates.

II.

Pseudo-editions of Ptolemy. Ptolemy's errors and merits.

The catalogue of editions of Ptolemy's geography given above is, as far as I know, *complete*. It contains a few editions never noticed before, and among them one of the oldest and, in a cartographical point of view, most important. But on the other hand I have excluded twenty six works, erroneously enumerated among editions of Ptolemy's geography, viz:

1. *Cracovia 1512*, and
2. *Cracovia 1519*, two different editions of the *Introductio in Ptolomaei cosmographiam* etc. by IOANNES DE STOBNICZA.

I shall further return to this work and to the remarkable map (N. T. XXXIV) in the edition of 1512. It need here only be observed, that the introduction of Stobnicza certainly contains some geographical statements from Ptolemy, but not one single page directly translated from him, nor any Ptolemaic maps. It is mainly composed of extracts from the works of AENEAS SYLVIVS, ISIDORUS, OROSIUS and ANSELMUS.

3. *Lovanii 1597*; 4. *Louvain 1597* (English edition);
5. *Lovanii 1598*; 6. *Duaci 1603*; 7. *Douay 1605*; 8. *Dovay 1607*; 9. *Dovay 1611*. Different editions of a very important

and, as may be conceived by the numerous editions, highly appreciated work by CORNELIUS WYTFLEET, of which the latin title is: *Descriptionis Ptolemaicae Augmentum*. Here, it is true, Ptolemy's name is on the title-page. But the work, does not contain one line of Ptolemy. It describes a part of the globe entirely unknown to the ancients, and this in a manner completely different from the style of the Alexandrian geographer.

Moreover, the following 'editions' will have to be excluded, their insertion in the catalogue evidently being due to a confounding of other works of Ptolemy with his geography, to errors of printing, or to other mistakes. I must especially point out that the contribution of Santarem to Ptolemy's bibliography seems to be so hastily and uncritically written that the statements in his short, but often cited paper, are not deserving of the slightest regard, when not confirmed by more reliable references.

10. *Bologna 1480* (THOMASSY, *Les papes géographes et la cartographie du Vatican*, in *Nouvelles Ann. des Voyages*, T. 32, 1852, p. 57; T. 33, 1853, p. 151; T. 34, 1853, p. 7). Probably identical with the edition Bononiae MCCCCLXII,