THE SO-CALLED GUTENBERG DOCUMENTS.¹

IT is argued, not unreasonably, that in 1450 Gutenberg must have been able to show a specimen of his work to Fust, and to convince him that it would be profitable, otherwise Fust would not have lent him any money. Some authors contend that already in October, 1448 (see above, Doc. No. XVIII.), two years before Gutenberg's Mainz printing-office was in full (!) operation, his rich relatives had realised the practicability of his plans, as in that year they procured for him his first Mainz loan (Schorbach, 'Festschr.', p. 273). Schwenke ('Centralbl.', 1901, p. 292) thinks that from the beginning of the contract with Fust [that is 1450, when Fust lent him the first 800 guilders] till the commencement of the printing of B⁴² in 1453, Gutenberg made 'experiments' and manufactured his types for this Bible. And Zedler says ('Gutenb.-Forsch.', p. 93) that he can trace Gutenberg's experiments twelve years further back, that is, to 1437. As Zedler derives this year from his interpretation of the Strassburg Law-suit of 1439, which I cannot accept, I leave

¹ Previous articles on this subject were printed in Vol. X. of the Second Series of the 'LIBRARY.'

it out of the question, merely asking what specimen or specimens could Gutenberg have shown to his relatives in or before 1448, and to Fust in 1450?

To facilitate the discussion of this question I give here two lists of the early types and books which have hitherto been attributed, some to Gutenberg, some to Schoeffer, some to Pfister, but which the chief German bibliographers of the present time attribute all to Gutenberg. The first list (A) contains the books printed either in the B³⁶ type, *i.e.*, that of the 36-line Bible, or in type resembling it; the second (B) enumerates the books printed in the B⁴² type, *i.e.*, that of the 42-line Bible, which, for reasons explained below, must be ascribed to Peter Schoeffer, not to Gutenberg.

Gutenberg's types and books according to Schwenke, Zedler, and other German bibliographers.

A.

Type 1a. First phase of the (Gutenberg or) 36-line Bible type, called the Donatus type, which Gutenberg is said to have manufactured before his art of casting type was so far developed that he was able to make the type for B⁴² (Zedler, 'ält. Gutenberg-type,' 1902, pp. 1, 14). Schwenke ('Veröff. der Gutenberg-Gesellsch.,' ii., 2) states that its height (including up- and down-strokes) is slightly over 8 (8-8.3) mm., the body of the *n* measuring about 5 mm., with a little blank space left between the lines.

(i.) Poem on the 'Weltgericht' (Last Judgment); now called, *Extract from the German Sibylline book* ('Veröff.,' v. 1); fragment of one paper leaf, showing eleven lines on both sides. It was discovered at Mainz about 1892, having apparently served as back to some documents presumed to have belonged to the Mainz University Archives. At that time it belonged to Eduard Beck, employé of a Mainz bank, who presented it in 1903 to the Gutenberg Museum. It is presumed to be the oldest product of Mainz typography, and to have been printed c. 1443-7 (Zedler and Wallau in 'Veröffentl.,' iii.; Schwenke in 'Centralbl.,' 1908, p. 75). Prof. Edw. Schröder ('Veröffentl.,' iii., 7 *sqq.*) thinks that the whole poem consisted of fifty-six verses in forty-six lines; that it was written after 1350; that, philologically, the language is against the Mainz idiom; that it was the work of a dilettant, who was not a native of Mainz, but lived not far from it.

(ii.) Donatus, twenty-seven uneven lines; no interpunction; fragments of two rubricated vellum sheets = four leaves (4, 5, 8, 9), recently discovered by Prof. Voulliéme in the Heiligenstadt Gymnasial Library, in the binding of a copy of Joh. Herolt, 'Sermones de tempore et sanctis,' Strassburg (M. Flach), 1488 (Hain *8496), now preserved in the Berlin Royal Library. Schwenke ('Centralbl.,' 1908, p. 71 *sqq.*) states that the leaves belong to an edition differing from the Paris Donatus in the length of its lines (which measure 160-7 mm. against 155-62 mm. in Paris) and in the arrangement of the text. He thinks it is the earliest [German] Donatus hitherto known, and should be placed after the 'Weltgericht,' but before the Paris Donatus.

(iii.) Donatus, twenty-seven lines, small folio; two vellum leaves (5, 10) of an edition of fourteen (?) leaves, preserved in the Paris National Library. It is usually called the Donatus of 1451, this year being written on one of the leaves, though Zedler considers it a forgery

of Prof. Bodmann, who discovered the fragments *c.* 1800 at Mainz (see G. Fischer, 'Typog. Seltenh.', p. 55 *sq.*; *id.* 'Essai sur J. Gutenberg,' p. 68 *sq.*). This Donatus is now placed before the Kalendar of 1447-8. Zedler ('Veröffentl.', i., p. 14 *sq.*, and Facs.) states that it shows 'the same type' as the Kalendar, but in an earlier, more imperfect stage. Schwenke says ('Veröffentl.', ii., p. 24) that its type is in an 'experimental and transitional stage,' and ('Centralbl.', 1901, p. 291) that it shows a *t* which is older, he thinks, than the *t* in the books enumerated below; the new *t* appears already in the 31-line Indulgence, though he is of opinion that the Donatus and Kalendar types are not Gutenberg's first products (see Hessels, 'Gutenberg,' p. 176 *sqq.*; J. E. Hodgkin, 'Rariora,' ii., 1902, p. 28).

(iv.) Donatus of twenty-seven (?) lines in the Berlin Royal Library. Two strips of vellum leaves (40 mm. by 20 mm.), containing the remains of three lines and about thirty (partly mutilated) letters, found in the Heiligenstadt Library, in the binding of a copy of Joh. Herolt ('Sermones de tempore et sanctis,' Strasburg, printer of the 'Vitas Patrum,' *c.* 1485; Hain *8495). Schwenke ('Centralbl.', 1908, p. 75) states that the fragments show the characteristic Donatus type, with the oldest *i*, *s*, and *t*, and the same text, differently arranged, as the Paris leaves (the recto = Par. 5^a, li. 18-20; the verso = Par. 5^b, li. 18-20).

Zedler thinks that many experiments must have preceded the Astronomical Kalendar which follows, and is printed in a new type of the same form as the above type 1 *a*.

Type 1 *b*. Second phase of the above type 1 *a*, also called the Kalendar type, and living on, according to Schwenke ('Centralbl.', 1908, p. 70), from 1448 to 1457; see below, nos. xv., xvi.

Zedler ('Veröff.,' iii., 19) thinks this to be a new type of the same form as type 1 *a*, and ('Veröff.,' i., 16; 'Forsch.,' p. 103) he is of opinion that Alb. Pfister, who understood neither the cutting nor the casting of types, bought it of Gutenberg and continued to use it while still at Mainz.

(v.) Astronomical Kalendar, said to be for the year 1448, therefore supposed to have been printed at the end of 1447. Fragments of two large vellum sheets (49.41 cm. by 18.5 cm.) printed on one side only, discovered in 1901 by Dr. Zedler ('Veröff.,' i.) in the binding of a manuscript bound in, and belonging to, the monastery of Schönau, in Einrich, near Mainz, now preserved in the Landesbibliothek (No. 19) at Wiesbaden. It calculates, for one year, the ephemerides of the phases of the moon, etc., and is thought to have originally consisted of six leaves (33½ by 24 cm.) printed on one side only, one for every two months; the leaves preserved give the calculations for January, February (tenth line cut away), March and April; therefore, the third part, perhaps, of the whole. It is presumed that a Kalendar belonging to it must have been printed on a separate sheet, or that it served as an Appendix to a so-called perpetual Kalendar.

Zedler ('die ält. Gutenberg-type') gives a facsimile of the document, and says that in this faultlessly printed Kalendar we have the types of B³⁰ as they appear in the Turk-kalendar (see below, no. viii.), though some of the types differ, and ('Veröff.,' iii., 19) that many specimens must have preceded this work of 1447, pointing out (pp. 8, 11) that some of the *l*'s and several other letters and combinations of letters have been touched up by hand (see below, p. 200 *sq.*).

Schwenke ('Veröff.,' ii., 1 *sqq.* and p. 24) says that a long interval separated this Kalendar from the 1454 Letter of Indulgence and the Turk-kalendar; and on

p. 28 explains that this Kalendar is a stage in the development of the printing practice of B^u; see Bauschinger, in 'Literar. Centralbl.', 1902, col. 1662, against K. Haebler, *ibid.* col. 1434 *sq.*

(vi.) 31-line Indulgence, beginning 'Vniuersis'; three different issues (A, B, C) with the printed year mccccliiii., and one issue (D) with the printed year mcccclv., all printed on vellum. Of issues A and B no sold copies have yet come to light. But three unsold copies of each are preserved at Brunswick, Wolfenbüttel and Hanover (Culemann collection). Of issue C ten sold copies are known to exist in various libraries, with dates ranging from 22nd October, 1454, to April, 1455, besides three unused copies. Of issue D ten sold copies, with dates from 7th March, 1455, to 30th April, 1455, and four unused copies are known.

The Church-type used in this Document for the distinguishing words has always been thought to be identical with that of B^u. But minute differences show that this cannot be the case. The type (ii.) used for the text is bastard Roman, for which see below. See Hessels, 'Gutenberg,' p. 150; Schwenke, in 'Veröff., ii., 10. Zedler ('Forsch.,' pp. 58, 77, 78) ascribes this Indulgence type (its small size presupposing a deal of training) to Schoeffer, though he must have manufactured it in Gutenberg's office, basing this opinion on peculiarities in the type, which he regards as Schoeffer peculiarities, and on Schoeffer's colophon, in which he alludes to Peter and the two Johannes.

(vii.) Donatus, twenty-six lines, two rubricated sheets (= four leaves, 1, 2 + 9, 10) of an edition of eighteen leaves, placed between 1447 and 1450, preserved in the Berlin Royal Library ('Centralbl.' xxvii., p. 65 *sqq.*).

(viii.) 'Manung widder die Durken' (Turk-kalendar). Almanac for January, 1455 (therefore printed in December, 1454) in 4°. Five (six) paper leaves, twenty and twenty-one uneven lines on a page (5b and 6 blank).

A copy discovered in 1806 in the Jesuit Library at Augsburg, now preserved in the Munich Hof-Library. According to Zedler ('Veröff., i., 16, 118) printed with the types of the 1448 Kalendar, but when already somewhat worn. He also thinks that this and the numbers xi. and xii. were printed at Bamberg. Cf. Hessels, 'Gutenberg,' p. 157; Schwenke, in 'Veröff.,' ii., 11.

(ix.) A German translation of the Bull of Pope Calixtus III., dated xii. Kal. July (= 20th June), 1456. Fourteen rubricated paper leaves, 4° (13^b and 14 blank), in the Kalendar type, though two of the capital E's belong to the Bst type ('Centralbl.,' xxvii., 73). Preserved in the Berlin Royal Library. Not to be ascribed to P. Schoeffer.

(x.) Donatus, twenty-seven (or thirty?) lines, which seems to have consisted of twelve vellum leaves, of which the leaves (imperfect) 1, 2, 8, 11, 12 have been preserved. One fragment of a leaf (11?) showing twenty-five lines, a second of a leaf (12?) showing twenty-six lines, in the British Museum (C. 18 e l. No. 5). Leaves 1 and 2 are in the Bodleian Library (Auct 2. Q infra I. 50. No. 5 from the Kloss collection), and leaf 8 in the Mainz Town Library. See Hessels, 'Gutenberg,' p. 159, No. 6, 7. Zedler, in 'Veröff.,' i., 41, gives (reduced) facsimiles (Plates ix. and x.) of the fragments, and says that it is an edition of thirty lines; Schwenke (*ibid.*, ii., 21, with facsimiles and p. 29) places this Donatus between the Turk- and Laxier-Kalendars.

(xi.) *Conjunctiones et Oppositiones Solis et Lunae* (now called by German bibliographers Laxier- or Aderlass-Kalendar). A calendar for 1457, therefore printed at end or 1456; a broadside paper sheet, apparently without a watermark, printed on one side, of which the upper half (the months January to June, that is nineteen lines and traces of the twentieth, *i.e.*, second line for July) of the only copy known, discovered in the Mainz Archives (by G. Fischer, in 1803), is in the Paris Library. Originally
 13 it seems to have consisted of thirty-six lines of text with

three lines as heading. See Schwenke, in 'Veröff.,' ii., 13, Zedler, 'Gutenberg-Forsch.,' p. 96 *sqq.*, and in 'Veröff.,' i., 37, where he gives a facsimile of it on Taf. v. The document measures 18.5 by 26.6 cm.

(xii.) *Der Cisianus* (not *Cislanus*) zu Dutsche. A folio paper sheet, printed on one side, thirty-six lines, with separate headline. It is thought to be a *Kalendar* for 1457 (= end of 1456), or for 1456 (= end of 1455); see Zedler, 'Gutenberg-Forsch.,' p. 96 *sqq.*, and in 'Veröff.,' i., 16, 48. Schwenke, 'Veröff.,' ii., 15; Wyss, in 'Centralbl.,' 1901, p. 145; K. Haebler, 'Le soi-disant *Cisianus* de 1443,' Besançon, 1902 (also in 'Le Bibliographe moderne,' An. 6, 1902, pp. 5-40, 188-210); Edw. Schröder, in 'Centralbl.,' 1902, p. 437 *sqq.* The Tross copy mentioned in Suppl. to Brunet's 'Manuel' (1878, s. v. *Cislanus*) was bought in 1870 for the Cambridge University Library.

(xiii.) *Donatus*, twenty-seven lines; fourteen (?) vellum leaves (in a quire of seven sheets). The British Museum (pressmark C 18 e i. No. 2) acquired the leaves 4, 10, and 11 (entire), with fragments of ll. 2, 6-9 and 13, from the Kloss collection. A fragment of six and a half lines in the Bodleian Library may belong to this edition, as also two small fragments of the leaves 1 and 14 (?) discovered in the Gymnasial Library at Heiligenstadt in the binding of a volume (perhaps bound at Erfurt). See Schwenke, in 'Centralbl.,' 1908, p. 75; *id.*, in 'Veröff.,' ii., 17; Zedler, in 'Veröff.,' i., 15, 18, 41, who gives facsimiles (reduced) on plates vi. to viii.; Hessels, 'Gutenberg,' p. 158, No. 5.

(xiv.) *Donatus*, twenty-seven lines (length 150 and 157 mm.). Schwenke, 'Centralbl.,' 1906, p. 449 *sqq.*, calculates this edition to have consisted of one quire of seven vellum sheets (= fourteen leaves), of which the two rubricated centre sheets (leaves 6 to 9) have come to the Berlin Royal Library from the collection of Gust. v. Emich (No. 195, 196) at Vienna. He adds (1) that they are printed in the *Kalendar* type; (2) the arrange-

ment of the text deviates from that in the London Donatus, wherefore he places it after that edition, but before the Bamberg-Oxford fragments; (3) the form of the types is the same as that of the London fragments, and sharply distinct both from the oldest form of the Donatus type and the B³⁶ type.

(xv.) Donatus, twenty-seven uneven lines (150-4 mm.). Three strips of a rubricated leaf (5), discovered in the binding of a copy of 'Aen. Sylvius Familiares Epp.' (Nürnberg, 1481) preserved in the Karlsruhe Hof- u. Landesbibl. Schwenke ('Centralbl.', 1907, p. 112) states that the present fragments can belong neither to the London nor to the Berlin Donatus, though he failed to ascertain whether they could belong to the Munich or to the Oxford-Bamberg D⁷, and thinks that they may be part of a fifth edition of twenty-seven lines in this type. It shows some similarities with the London D⁷, the 'Cisianus' and the Laxier-Kalendar, but has an *a* which he has not found anywhere else.

(xvi.) Donatus, twenty-seven lines, one rubricated vellum leaf (6), in the Kalendar type, from Erfurt, in the Berlin Royal Library ('Centralbl.', 1910, xxvii., 62).

(xvii.) Donatus, twenty-seven, twenty-eight, or thirty (?) lines. Fragments of a vellum sheet (two leaves) of this edition discovered in the binding of a copy of Pauli Veneti 'Summa Naturalium,' Mediol. 1476, in fol. which from the Episcopal Library at Salzburg was transferred to the Munich Hofbibl. (pressmark, Rara, 103, 1 m.). Schwenke, describing the fragments ('Centralbl.', 1906, p. 452 sqq.), calculates that they may be the fourth and ninth of an edition of twelve leaves, though certain circumstances lead him to think that it might have consisted of thirteen (12 + 1) leaves of twenty-eight lines. The impression, he says, is good and clear, resembling that of the Munich Donatus of twenty-seven lines.

(xviii.) Donatus, twenty-seven lines. Fragment of a vellum leaf (3 ?) discovered in the binding of the Latin

MS. 24,510 of the Munich Hofbibliothek. Schwenke, in 'Veröff., II., 19, No. 8 (Facs. Taf. 3), points out some additions to the type of this edition.

(xix.) Donatus, twenty-seven lines, which presumably also consisted of seven vellum sheets, but is only known from two vellum fragments of the leaves 6 + 9, the upper part of which is preserved in the Bodl. Library (Auct. 2 Q infra I. 50, No. 6), the lower part in the Bamberg Royal Library (vi., F. 1). Schwenke ('Veröff.,' ii., 20, and Taf. iv. facs.) says that the two fragments were found in the binding of a Bamberg Act-book, and that one of them belonged to Kloss before it came to Oxford; cf. Zedler, Veröff., i., 42 sq., and Taf. xi. (facs.).

(xx.) Donatus, twenty-eight (?) lines. One defective vellum leaf, showing twenty-five lines, formerly in the possession of Jacq. Rosenthal (Incun. typ. ii., No. 2154), afterwards in the Amherst Collection (Sotheby's Sale Catal., No. 288. Seymour de Ricci's Handlist, No. 5).

Another leaf (apparently the corresponding half of the sheet) in the Mainz Gutenberg Museum. Schwenke ('Veröff.,' ii., p. 23, and Taf. vii., and 'Centralbl.,' 1907, p. 114) ascribes this edition to Pfister of Bamberg.

1 c. New fount of types 1a and 1b, with various stamps and matrices modified, according to Zedler (in 'Veröff.,' i., 18, 45 sqq.), who points out several differences between the types of B³⁶ and the smaller works described above. On these differences see also Schwenke, in 'Centralbl.,' 1901, p. 289 sqq. Zedler (in 'Veröff., i., 48) thinks that Albrecht Pfister, while still at Mainz, obtained this type from Gutenberg, but printed B³⁶ at Bamberg, not before 1457 (*ibid.*, pp. 37, 48). Schwenke (in 'Veröff.,' ii., 1) regards the type of B³⁶ as a 'continuation' of the Donatus and Kalendar type, and calculates that, in this way, this type has had a life

of nearly twenty years, that is, from about 1443 (the supposed date of the 'Weltgericht') till about 1462 (the last known date of Pfister).

(xxi.) Bible of thirty-six lines. Two volumes, folio, 882 leaves, with two columns of thirty-six lines each on a page. Some bibliographers, assuming that Pfister printed it, call it the Pfister Bible. A paper copy is in the Paris Library, and also a separate copy of the last leaf (Apocalypse), which bears the rubricator's manuscript date 1461. Other copies are preserved in the Rylands-Spencer library, in the British Museum, at Jena, Leipzig, Antwerp, etc. (Hessels, 'Gutenberg,' p. 160; Bernard, 'Origine,' ii., 31). Schwenke ('Untersuch.,' p. 75 *sqq.*) is of opinion that the leaves 1 to 4 recto of vol. i., and the leaves 1 and 2 recto of vol. ii., were printed from a manuscript, but that the remainder of the book is a careless reprint of B⁴². Zedler ('Forsch.,' p. 104) thinks that Pfister began B³⁶ before B⁴² was finished, but after having printed the first nine pages, laid the work aside, to take it up again after the publication of B⁴². He calculates that eighty copies were printed on paper and twenty on parchment (*l. c.*, 106). See Hessels, 'Gutenberg,' p. 160.

Of the small text- or brief-type ii. of the 31-line Indulgence of 1454 (the manufacture of which Zedler ascribes to Peter Schoeffer, though working in Gutenberg's office; see 'Veröff.,' i., 49; 'Gutenberg-Forsch.,' p. 76, and Schwenke, in 'Veröff.,' ii. 10) no further trace has been found.

[For types iii. and iv., see List B of Schoeffer's books.]

(xxii.) Type v. The 'first stage' of type vii., supposed by Otto Hupp ('Ein Missale Spec.,' 1898) and others to have served for printing

(1) A 'Missale speciale,' in the possession of Herr Ludw. Rosenthal at Munich; (2) a 'Missale Abbreviatum,' discovered in 1900 in the Benedictine Church of St. Paul, in the Lavantthale. Most German bibliographers agree that these Missals could not have been printed before 1480.

(xxiii.) Type vi. The large type of the Psalter of 1457.

(xxiv.) Type vii. The small type for the same Psalter (said to be the 'second stage' of type v.). Both vi. and vii. were also used for the 'Canon Missae' of 1458, a copy of which is preserved in the Oxford Bodleian Library. See H. Wallau, in 'Veröff.,' iii., 37 *sqq.*

(xxv.) Type viii. used for

(1) Joannes de Balbis, 'Catholicon' of 1460, folio, 373 leaves, two columns of sixty-six lines each; (2) Matth. de Cracovia, 'Fractatus rationis,' twenty-two leaves, thirty lines to a page, 4°; (3 and 4) Thomas de Aquino, 'Summa de articulis fidei'; two 4° editions, one of thirteen leaves, with thirty-four lines to the page; the second of twelve leaves, with thirty-six lines to the page; (5) An Indulgence of 1461 of fifteen lines.

B.

Printer of the B42 (Peter Schoeffer).

Types iii. and iv.

(i.) 30-line Indulgence; one issue (A) with the printed year mccccliiii., and two issues (B, C) with the printed year mccccl. quinto. All printed on vellum. Of issue A only one copy has been discovered (now in the Rylands-Spencer Library) which was sold at Cologne on 27th

February, 1455, the printed year mccccli. having been altered with the pen to mccccliij. Of issue B two sold copies, with dates Apr. 11 and 29, 1455, are in the Berlin Royal Library and the British Museum. Of issue C a sold copy with date Apr. 24, 1455, is at Wolfenbüttel.

Type iii. (Church type) has hitherto always been regarded as identical with that of B⁴², but recent researches have brought out the fact that this is not the case (see 'Veröff.', i., 49; Schwenke, 'Untersuch.', p. 58).

Type iii. continued :

(ii.) Bible of forty-two lines (also called the Mazarine Bible), printed before 15th August, 1456, as the binder of the paper copy of vol. ii. in the Paris Library states that he finished its rubrication on that day, and that of vol. i. on the 24th of the same month. Two volumes, folio, 641 leaves of two columns of forty-two lines each, but in some copies the columns of pp. 1-9 contain forty lines only, while the tenth page has two columns of forty-one lines each, though the difference in the number of lines makes no difference in the space which they occupy. For other copies see Hessels, 'Gutenberg,' p. 170; Dziatzko, 'Beitr. zur Gutenbergfrage,' Berlin, 1889. Schwenke, 'Festschr.,' has drawn up a list of all the copies known to be still in existence, and on p. 67 suggests that Gutenberg may have printed some small books before 1453 with this type, before it was filed down. No trace of them has as yet been found. In 'Centralbl.,' 1905, p. 259, he declares that with this type Gutenberg created his first, perhaps his only, great work. In the copy known as the Klemm copy, bought by the Saxon Government in 1886, and presented to the Deutsches Buchgewerbemuseum at Leipzig, the year '1453' is written in small Arabic numerals of fifteenth century form, at the bottom

of the last leaf of the second volume. But this date is highly suspicious, for Klemm, who must have known the importance and high value of such an early date if genuine, never mentioned it, though he described his copy three times, in 1883 and 1884 (see Hessels, in 'THE LIBRARY,' July, 1908). But Schwenke ('Veröff.,' ii., 1, 26; 'Gutenberg-Feier,' 1900; 'Centralbl.,' 1901, p. 289 *sqq.*) and Zedler ('Veröff.,' i., 8, etc.; 'Centralbl.,' 1907, p. 207) accept it as genuine.

(iii.) Donatus of thirty-three lines (125-30 mm.). Vellum fragment in the Bodleian Library. No printed initials.

(iv.) Donatus, thirty-three lines (132-5 mm.). Vellum fragment at Paris, without printed initials; three rubricated leaves (5, 6, 8) in the Berlin Royal Library ('Centralbl.,' xxvii., 68).

(v.) Donatus, thirty-five lines, printed, according to the colophon, 'per Petrum de Gernssheym, in urbe moguntina cum suis capitalibus.' It is ornamented with the initials and uncials of the 1457 Psalter. See Hessels, 'Gutenberg,' p. 171, No. 8. Schwenke would place it between 1467 and 1469 (p. 68). Copy in the Paris National Library (Vél. 1038), and one leaf in the Cambridge University Library.

(vi.) Donatus of twenty-six lines (long 110 mm.). One defective (nearly unimpaired text) vellum leaf, discovered in a Munich private library, in the binding of a volume printed at Cologne in the early sixteenth century. It is now in the Mainz Gutenberg Museum. Schwenke ('Centralbl.,' 1905, p. 531) thinks that this leaf may belong to the same edition as that in the British Museum.

(vii.) Donatus of twenty-six lines (long 105 mm.). One vellum leaf at Mainz, another at Hanover, a third in the British Museum (Schwenke in 'Centralbl.,' 1905, pp. 529, 531). The uncials of the 1457 Psalter are used for the initials of the chapters; see Hessels, 'Gutenberg,' p. 168, No. 3.

(viii.) Donatus, thirty-three lines (125-8 mm.) One defective vellum leaf (the first), in 1903 announced for sale in Ludw. Rosenthal's Cat. 105, No. 3, with facs., and purchased by the Berlin Royal Library (Libri in membr. impr. 64¹). The uncials of the large Psalter type are used for the initials of the chapters; for the first initial (P) room was reserved, but it has not been filled in. Schwenke, in 'Centralbl.', 1905, p. 529 *sq.*

(ix.) Donatus, thirty-three lines. One vellum leaf (the first), in the Berlin Royal Library (pressmark, Libri in membr. impri. 64, 2), discovered in the binding of a volume which formerly belonged to the Abbey of Ochsenhausen, and contained various incunabula of Pforzheim, Spire, Cologne till 1508. Its text differs slightly from the preceding edition; the first initial is filled in (red) by the rubricator; the other initials (of chapters) are the Psalter uncials. Schwenke, in 'Centralbl.', 1905, p. 530 *sq.*

(x.) Donatus, thirty-three(?) lines. Small fragment of a vellum leaf (*ca.* 12 by 7 cm.) discovered in the binding of Incun. V33000 in the University Library at Giessen. Schwenke ('Centralbl.', 1905, p. 532) calculates that it may be leaf 10 of a rubricated copy, and tells us that although it has (in ch. 33) wrongly 'audiuntur' for 'audiuntor,' just like the 35-line edition with Schoeffer's name, its text differs from the latter edition, nor can it belong to the 33-line Paris edition.

(xi.) Cantica ad Matutinas; only known from one vellum leaf (the first) in the Paris Nat. Library, considered to be the remains of a Psalterium (perhaps of thirty-eight leaves) for the printing of which Humery (!) may have furnished the type (Schwenke, 'Untersuch.', p. 72 *sqq.*). Judging from the leaf preserved, the work corresponded in every respect to the 42-line Bible, having double columns, forty-two lines, etc.

(xii.) Donatus, twenty-four lines, printed, according to Schwenke ('Gutenberg-Feier,' p. 70), between 1470 and

1477. See Hessels, 'Gutenberg,' p. 168, No. 3; Leop. Delisle, in 'Journ. des Savants,' 1894, p. 140; Zedler, 'Forsch.,' p. 114.

Of the small text or brief type (iv.) of the thirty-line Indulgence of 1454, which Zedler (in 'Veröff.,' i., 49, and 'Gutenberg-Forsch.,' p. 76) ascribes to Gutenberg, no further trace has yet been found.

In 1840, before the fragment of the Weltgericht (No. 1) had become known, Eug. Duverger ('Hist. de l'invention de l'imprimerie') pointed to the 27-line Donatus (No. 2) as Gutenberg's 'specimen,' and published a facsimile of one of its pages, which Van der Linde copied ('Geschichte,' p. 813).

Both authors told us (see my 'Haarlem, the Birthplace of Printing,' p. 60) that

'the first nine lines of this page were printed with too soft types of lead, and show the rapid wearing out of the types by printing; the types of the next nine lines are less worn; the types of the lines 19 to 24 are still less worn, while the types of the last three lines, manufactured with the same punches, were cast of better metal, similar to those of the 36-line Bible.'

The Donatus, however, does not bear out this description, otherwise it would, as Zedler rightly remarks ('Forsch.,' p. 51), be a caricature and forgery, in the same way as he regards the notes and the date 1451 written on the leaves, forgeries of the well-known Prof. Bodmann. According to Zedler ('Veröff.,' i., 15 *sqq.*) it was printed with 'the earliest variety of the B36 type,' that is, the 'first phase' of the 'Gutenberg' (or Donatus) type, which also, he says, served for the 'Weltgericht'

[No 1], which latter, he thinks ('Veröff.,' iii., p. 2 *sqq.*), preceded the Paris Donatus, and was printed *c.* 1444-7, when Gutenberg had not yet brought his art to that height which he reached in the Astronomical Kalendar [No. v.] printed for 1448 [therefore at the end of 1447],¹ so masterly [with Gutenberg's *second* phase of the B³⁶ type = the Kalendar-type] that it must have been preceded by many experiments. Zedler tells us that in this 'masterly' printed broadside several letters have been touched up by hand with writing ink, for the purpose of linking them on to the letters which follow them. *Exx. gr.*, wherever *f* is followed by *o* (8th January, 9th February, etc.), or *i* (7th, 9th February, etc.), or *u* (1st March); *t* by *s* (8th February, 7th March, etc.), or *e* (1st April), or *u* (3rd April); *st* by *e* (3rd, 5th January, etc.); *c* by *o* (5th, 11th January, etc.) or *u* (13th January), etc., the strokes through the *f* and *t* and the top of the *c* have been, he says, broadened out by ink by hand, so as to combine them with the letter following. As the types of the Kalendar, he adds,

'are freshly cast, with sharp and expressive outlines, and the fine bows over the *i*'s, the hair-strokes of the *e*'s being nowhere wanting, they required no further touching up. Hence, as several letters are linked together with ink by hand after the printing had been done, this operation cannot have been necessary on account of any defective printing tools; it rather proves that Gutenberg endeavoured to

¹ Zedler ('Veröff.,' i., 14) declares that the dates assigned by him to these three works fill up the gap between Gutenberg's residence at Strassburg (12th March, 1444) and his first appearance in Mainz (17th October, 1448).

satisfy, even in minute details, the public eye accustomed to manuscripts; it was not worth while to manufacture special ligatures for such combinations, wherefore they are also wanting in B⁴.

These manipulations, Zedler says, are plainly visible in the original, but not in the photograph, because the ink used for the purpose has everywhere become pale. Therefore, without seeing the original, we cannot test this particular point, on which he lays such stress. As far as I know, such manipulations are not improbable, for I have myself observed somewhat similar operations in copies of the '*Speculum humane salutis*,' not, however, effected for the purpose of linking certain letters together, but for giving them readable forms when they had come out badly through defective types or printing. If, therefore, Gutenberg printed only this one copy, he might have touched it up with his own hand, or have it touched up by others in his printing-office; in such a case, however, he was not consulting the 'public eye.' But if, as is probable, he printed more copies than one, and had felt anxious to give his work the appearance of manuscript, or to avoid all eye-sore to the public accustomed to combined letters, he could, with little extra trouble or time, have cast these special ligatures while he was making or had already cast others of the same kind. Ligatures, combined letters, and letters with signs of contractions over them occur in the '*Weltgericht*' and the Paris Donatus, both printed according to Zedler by Gutenberg in an 'earlier phase' of the same type, so that these characteristic types were not unknown to

him. They appear also in the later Turk-Kalendar, in the Sanitary- or Laxier-Kalendar, and in B3⁶, all printed, says Zedler, in a third phase of Gutenberg's type. In fact, we may feel sure that the early printers, before engraving or casting any types, first ascertained from their manuscript models what letters, combinations of letters, signs of interpunction, and contractions were required. Yet we are invited to assume that Gutenberg's anxiety and care for the public taste did not arise till he had cast this new (second) type for the Astronomical Kalendar.¹ But suppose the three works just mentioned, or even one of them, had been printed by Gutenberg, in the years attributed to them, that is, 1443 to 1447, therefore long before he borrowed money from Fust in 1450, in such a case he must have been fully equipped during that time, for printing; that is, he must have possessed not only types and the instruments (patrices and matrices) for making them, but a workshop, a press, and other necessities for printing not only this, but any other work, great or small, otherwise he could not have printed anything, nor shown any specimen of his work.

And yet, the Helmasperger document of 1455, if we are to take it as genuine, reveals Gutenberg to us as a beginner, not so early as 1447 or 1443, but so late as 1450, when he had not only to make his 'tools,' but even to borrow the money for

¹ An examination of the Kalendar, on 16th August, 1910, convinced me that the faded spots here and there visible in the document are owing to the fading of the printing ink, and not to attempts to remedy, by writing ink, the imperfections of defective types.

making them, and, in addition, required to be supplied with everything necessary for printing, parchment, paper, ink, etc., and with money for keeping a workshop going, and maintaining himself.

It is, however, now contended that the researches of the late Dr. Karl Dziatzko ('Gutenberg's früheste Druckerpraxis,' 1890) have shown

(1) that (from the tenth page onwards) B³⁶ is a reprint of B⁴²; (2) that as the type of B³⁶ was already used in 1454 to distinguish two lines and two or three words in the 31-line Letter of Indulgence from its smaller text type, it follows (3) that B⁴² (which was finished before the 15th August, 1456) must have been printed by Gutenberg during his partnership with Fust (1450-55), and that for this Bible he manufactured the 'tools' (— new type) with the first 800 guilders which the latter advanced to him in 1450, after he had spent four or more years in experimental labours, of which not only the above named three, but other small works no longer preserved to us, were the result.

In 1882 I explained in my 'Gutenberg' (pp. 164-8, 171), the bibliographical and typographical reasons which then induced me (and the late Mr. Bradshaw) to ascribe B⁴² to Schoeffer, and

¹ Dziatzko ascribed the types of B³⁶ to Gutenberg, but the printing of it to him in combination with Pfister. Accordingly Prof. Hartwig explained ('Festschr.,' 1900, Introd., p. 19) that B³⁶ was the 'work' which Gutenberg had to 'finish' for the 800 guilders advanced by Fust. But, while occupied with it, he saw that it was planned on too large a scale, and could not be executed for the money at his disposal. He applied, therefore, for further help, and Fust lent him another 800 guilders, whereupon he cut new types, and printed B⁴² with them.

I am not aware of anything having since occurred or been said to show this to be wrong.

On the first opportunity that offered itself again to me, in 'THE LIBRARY' of 1908 (p. 296 *sqq.*), I endeavoured to point out how Dr. Dziatzko—struck by a 'resemblance' between the types of B³⁶ and B⁴², and overlooking the fact that the earliest printers did not imitate each other's types, but engraved and cast their types after the manuscripts of their time and respective localities—had come to the rather hasty conclusion that the two Bibles were printed in one and the same office, by one and the same printer, that is, Gutenberg.

But Dziatzko's results had already then been accepted and elaborated by Gottfr. Zedler ('Gutenberg-Forsch,' 1901, p. 27 *sqq.*) and Paul Schwenke, who describes in a valuable monograph on B⁴² ('Festschr. zur Gutenberg-Feier,' Berlin, 1900) thirty-eight copies (complete or known only from fragments) of this Bible preserved in public and private libraries, mentioning eight others which cannot now be traced.

Both these learned librarians examined B³⁶ and B⁴² from the same point of view as Dziatzko, and while professing to approach the question regarding the printer with an open mind, made it clear from the beginning that they were sure that it was Gutenberg. Like Dziatzko they saw that the types, especially the capitals of the two Bibles, differ from each other not only in size (those of B³⁶ being taller and broader than those of B⁴²), but also in form; yet they regard these two different types as in principle the same (Schwenke, 'Festschr.,' p. 78).

Nor do they differ from Dziatzko in their inimitably thorough and microscopic examination of the Bibles, telling us that they made it according to a 'method,' the initiation and perfection of which they ascribe to Dziatzko.

'Our present method of investigation,' says Schwenke ('Veröff.,' ii., 5), 'as it was perfected by Dziatzko, is not content with merely stating the component parts and the forms of a type, but extends the research to the practice of using it, that is, the employment of parallel chief and secondary or by-forms of letters, the use of abbreviations, orthography, interpunction, endings of lines, the treatment of the beginnings and ends of chapters, and similar things.'

It is necessary to mention some details of this 'method,' as it has produced results which cannot, I regret to say, be called satisfactory with regard to bibliography in general, and the controversy on the invention of printing in particular. In accordance with the 'method,' Dziatzko, Schwenke, Zedler, and other German scholars, have minutely examined the books and types included in the above lists. Every letter, every combination of letters on one type, their chief and secondary¹ forms, all the signs

¹ The chief form of the type called 'the Gutenberg type' (for which 'Gothic' is a general and better name), is angular, ornamented above and below with minute projecting spikes or teeth. For instance, an ordinary *u*, as used after *q* (que, quod), or *f* (super, suf-), or *l* (-fluor), or *v* (vul-), consists of two perpendicular strokes or limbs, each having on its top as ornament a kind of arrow-head, forming an integral part of these limbs (1), but projecting slightly on the right and left of the perpendicular strokes of the letter. At the foot of the two strokes the same arrow-head appears in an inverted position (2), but connected together in the centre by a fine link, while on the top they are separated. This form is, *mutatis*

of contraction above the letters or through their up-and-down strokes, all marks of interpunction, hyphens, etc., are scrutinized, measured and described; the *i*'s with strokes, bows, or dots above them, are counted;¹ likewise the *t*'s with or without cross-strokes and with bows over them; and each of them is called a living symbol of 'Gutenberg's inventive genius,' or of his 'unique conception of beauty and symmetry.' The use of a particular letter, a stroke or a bow over the *i*, a stroke through a *t*, or attached to a *p* (for *per*), allow us, they say, to detect Gutenberg's 'elementary rules' (Schwenke, p. 81), or his 'care and solicitude for harmony' between every stroke, be it a right or a left, an up or a down one.

mutandis, the normal one for all letters. These ornaments differ from the modern 'serifs.'

The 'secondary,' or 'by-form,' has no such arrow-heads on its top, and the two strokes of the *u* are straight up to their top, where they slope slightly leftwards, while at the foot there is no other difference than that the left stroke is rounded off, and has, therefore, no projecting point on its left. This secondary *u* is used after *t*, *c*, *f*, *g*, *r*, *e*, or *a*, etc. Somewhat similar truncated 'by-forms' have *p* (after *e*), *i* (after *g*, *c*, or *r*), *h* (after *t* or *c*), *n* (after *g* or *c*), *m* (after *e*), *l* (after *e*), etc., etc. The 'by-forms' have no projecting arrow-heads, because the latter would interfere with the more or less projecting points on the right of the letters which precede them. Schwenke ('Veröff.,' ii., 4) feels doubtful as to whether this secondary form was obtained by filing down the 'chief' form, or from special patrices and matrices. See also Dziatzko's 'Gutenberg's Druckerpraxis,' p. 51, and at the end; Schwenke's 'Festschrift,' etc.

¹ Sometimes it is not without interest to count how often contractions are used or omitted on a page (see Zedler, in 'Veröff.,' i., 18). The same use or absence of certain contractions may be noticed on several pages of the editions of the 'Speculum humane salutacionis.'

On the other hand, the absence of the same strokes or bows, or the wrong use of chief, instead of secondary forms of types, and *vice versa*, is to them a sign that the book under examination belongs to a later or earlier period of Gutenberg's activity, or that the book was not printed by him at all ('Veröff.' i., 20); sometimes he or some compositor is presumed to have trimmed up his types for apparently no plausible reason ('Veröff.' i., p. 17). In this way Schwenke deals (in his 'Festschrift' and in 'Veröff.' ii., p. 1 *sqq.*; 'Centralbl.', 1901, p. 289 *sqq.*) with all the types ascribed to Gutenberg. Abandoning his opinion, expressed a year before, that the B⁴² type was Gutenberg's *first*, he describes (in 'Veröff.') those of the Paris Donatus (List A, No. 2) as the *earliest* phase or stage of the 'Gutenberg' type, which is said to reappear, recast with some alterations, as a *second* 'phase' or stage, in the Astronomical Kalendar for 1448 (1447), and as a *third* phase or stage (again recast with alterations) in B³⁶ and the Pfister-Bamberg books.

Schwenke himself points out ('Centralbl.', p. 290) cardinal differences between some of the letters of B³⁶ (*exx.gr.* the *A*, *E*, *R*, *t*, *ct*) and the smaller Pfister (?) books (see List A) which are said to have been printed with an earlier phase of these 'Gutenberg' types. Yet, on account of the many and striking agreements between the other letters, we cannot speak, he says, of two different types, but only of 'two stages of development' of one and the same type, and he feels certain ('Veröff.' ii., 1) that 'most of these letters were manufactured from the same stamps (patrices), probably even

from the same matrices.' He regards the types of B³⁶ as the latest ('Centralbl.', p. 290), because they are identical with those used afterwards by Pfister. The older phase, he says, is still employed in the Laxier-Kalendar of 1457 (end of 1456), so that the printing of B³⁶ 'cannot have commenced before 1457, and must have been finished before 1461.' He is still uncertain as to whether this Bible was printed at Mainz or Bamberg, but in the watermark of B³⁶ he found nothing connected with Mainz, except once the 'scales,' which mark was identical with Dziatzko's *a*, and

'the supposition that the copies of the Bible were sold from Bamberg gains strength by the Stuttgart copy having been bound in a Bamberg binding-office; the Jena and Greifswald copies were probably also bound there; at Bamberg are preserved fragments of two (paper and vellum) copies (see Wetter, 'Gesch.', p. 457), while the monastery Ilmbach, where the Wurzburg copy was originally preserved, is situated only about fifty kilometers from Bamberg.'

On p. 18 of his monograph on B⁴² he says:

'It is astonishing that the first large printed work which we possess is a typographic masterpiece, and it must have taken Gutenberg, even after he had created(!) the moveable type, many years of trial to produce this regular print on strong paper, the brilliant blackness and sharpness of the lines, etc.'

Speaking of the trellis or lattice-like book-writing (*gegitterte Buchschrift*) which Gutenberg used as model, he expresses his surprise and admiration at Gutenberg's dexterity and genius

in manufacturing his B4² type, and presumes that Gutenberg,

‘when his observations and experiments had taught him to bring each letter on one type—that is, enclose it in a rectangular space—he must have started with *i*, *n*, *u*, *m*, which oftener occur than the other letters, and have the most simple form. He could have had no difficulty in making these letters in such a way that when they came together their perpendicular strokes would always remain at an equal distance; in this way *in* would take up the same space as *m*; a similar system could be applied to *i*, *l*, *f* (with one stroke); *a*, *b*, *d*, *h*, *k*, *n*, *o*, *p*, *q*, (final) *o*, *u*, *v* (with two strokes); *m*, *w* (with three strokes). But difficulties would present themselves in manufacturing letters like *c*, *e*, *f*, *g*, *r*, *t*, *x*, *y*, which have on the right side of their perpendicular stroke an additional part, which had to be confined in the same space when brought together with other letters. In such cases the scribes made a shift, no doubt unconsciously, and from a natural feeling for symmetry, by closely connecting with such letters the perpendicular stroke following, and omitting the usual point on the left, where the two letters would touch each other. At the foot of the letters, or wherever an up-stroke is found, where the space on the left is free, the points remained unaltered. In this respect, however, Gutenberg could not follow them.’

He then explains Gutenberg’s contrivances for making his types square with each other, which, he says, we should not undervalue, though Gutenberg had conceived the first (!) idea of making a distinction between chief and secondary forms, by examining the customs of the scribes. And then adds,

‘earlier authors on printing had observed hardly anything

of these contrivances, and had merely wondered about the differences in types. Wetter had noted something of it ('Gesch. der Buchdruckerk.,' Mainz, p. 358), but Duverger had explained the whole system in his 'Hist. de l'invention de l'imprimerie,' Paris, 1840, p. 6, though only with regard to B³⁶. It was then forgotten again, and even Faulmann, the technicus, was not clear about it. Latterly Dziatzko has shown the differences between the chief and secondary forms of the letters, and the systematic difference in their usage. O. Hupp ('Ein Missale speciale,' München, 1898, p. 18 *sq.*) had recognized the reason for this usage, but looked upon it as an art or subtilty of Peter Schoeffer, so that he regarded the almost entire absence of this usage in the Rosenthal 'Missale speciale' as a criterion of its great age, whereas it is the strongest proof against the supposed early date of this work.

I have quoted Dr. Schwenke thus far, in order that the reader may form some idea of the nature and bearing of the 'method,' and because, incidentally, his last remark about the 'Missale speciale' tersely exposes the error of judgment, which recently caused this work and the 'Missale Abbreviatum,' which bear every mark of having been printed about 1480, to be advertized and described as a work printed by Gutenberg even before 1450.

Dr. Zedler also observed differences between the capitals of B³⁶ and B⁴², and sees no reason why 'Gutenberg, the manufacturer of the B³⁶ type, should imitate his own B⁴² type, in cutting his small letters for B³⁶, and work independently with regard to its capitals' ('Gutenberg-Forsch,' p. 31 *sqq.*, and 'Veröff.,' i., 27). But, clinging to the

idea that Gutenberg must have manufactured the two types, he argues that

‘Gutenberg, in the first instance, contemplated printing a Missal, as it would be more easy for him to cut its large letters on the stamps (*patrices*). For such a book he required two kinds of letters, one smaller than the other, but cut on stamps of the same size of body (*Kegel*).’

He illustrates this theory by a facsimile of two passages in a manuscript Missal, one of which is written, as is customary in Missals, in larger letters than the other, though the larger letters occupy no more space than the smaller ones, and he tells us that

‘Gutenberg, after years (!) or experiments, succeeded in engraving the B³⁶ and B⁴² types, which both have a height of 8.1 mm. But, beginning to print, he found that he could not overcome the difficulty of printing the numerous *rubrics* required in a Missal together with the black work. (This difficulty still hampered him while he was printing the copies of B⁴² belonging to the first impression.) He then decided on printing a Bible, for which he selected the smaller letters of B⁴², with which he first printed some pages with two columns of forty lines each; but finding that space could be saved by reducing the body of the types, he filed them down so as to bring forty-one lines in a column (on p. 10), and then seeing that still more space could be saved he filed the types further down, to the size now found in the remaining part of B⁴², where the columns have forty-two lines, though he had found it necessary to recast portions of his types on this reduced body.’

Again (‘Gutenberg-Forsch.,’ p. 81),

‘Gutenberg created with Fust’s money the enormous type-apparatus for the contemplated Missal, and also the

apparatus for B³⁶ and B⁴². The form of the letters he could not take straight from his manuscript model; its creation was rather the result of long thought and numerous experiments, by which the inventor produced that system of artistically limbed letters which we see in B⁴², which it is Schwenke's great merit to have revealed to us. The manufacture of all these types must have required several years. Composition and printing could only have begun in earnest after the completion of this labour. After many unsuccessful trials, which had to be made in a comparatively short time, Gutenberg became convinced that he would not succeed in creating, in the contemplated Missal, such a masterpiece of his new art as hovered before his ambitious mind.'

The only difference between Zedler and Schwenke seems to be this: the latter thinks that an unknown printer, in manufacturing the B³⁶ type, 'roughly imitated' that of B⁴², but under Gutenberg's eye; while Zedler regards the B⁴² and B³⁶ types as Gutenberg's creation, though Schoeffer manufactured some of the capitals of B⁴² ('Forsch.,' p. 45; *id.*, 'ält. Gutenberg-type,' p. 9); he even endeavours to prove ('Forsch.,' p. 34) that in the letters of B³⁶ we have the 'firstlings of the most blessed and far-reaching gift of intellect ever devised by the mind of men.'

It is impossible to discuss all the details and hypotheses published by Dziatzko, Schwenke, Zedler, etc., regarding the types and books ascribed to Gutenberg, as such a discussion would require special types, and far more space than they themselves had at their disposal.

J. H. HESSELS.

(To be continued.)