(Hans Glim), Paris (first printers the three partners Ulrich Gering, Michael Friburger, Martin Krantz); 1471 at Spires, Bologna, Ferrara, Florence, Milan, Naples, Pavia, Treviso, Savigliano (?) ;

1472 at Esslingen, Cremona, Mantua, Padua, Brescia, Parma, Monreale (Mondovi), Fivizzano, Verona, Iesi (?), St Ursino (?) ;

1473 at Lauingen, Ulm (perhaps as early as 1469), Merseburg, Alost, Utrecht, Lyons, Messina, Buda ; 1474 at Louvain, Genoa, Como, Savona, Turin, Vicenza, Valencia (?) ; 1475 at Lübeck, Breslau, Blaubeuren, Burgdorf, Trent, Cracow (?), Modena, Reggio (in Calabria), Cagli, Caselle or Casale, Pieve ( Piove) di Sacco, Perugia, Piacenza, Saragossa ; 1476 at Rostock, Bruges, Brussels, Angers, Toulouse, Polliano (Pogliano) ; 1477 at Reichenstein, Deventer, Gouda, Delft, Westminster, Lucca, Ascoli, Palermo, Seville ; 1478 at Oxford, St Maartensdyk, Colle, Schussenried (in Würtemberg), Eichstädt, Geneva, Vienne, Trogen (?), Chablis, Cosenza, Prague, Barcelona ; 1479 at Erfurt, Würzburg, Nimeguen, Zwolle, Poitiers, Toscolano, Pinerolo, Novi, Lerida, Segorbe ; 1480 at London, St Albans (or in 1479), Oudenarde, Hasselt, Reggio (in Modena), Salamanca, Toledo, Nonantola, Friuli (?), Caen ; 1481 at Passau, Leipsic, Magdeburg, Treves, Urach, Casale di San Vaso, Saluzzo, Albi, Rougemont (?) ; 1482 at Reutlingen, Memmingen, Metz, Pisa, Aquila, Antwerp, Promentour, Zamora, Odense ; 1483 at Leyden, Kuilenburg (Culenborg), Ghent, Chartres, Chalons-sur-Marne (?), Troyes, Gerona, Stockholm ; 1484 at Bois-le-Duc, Siena, Udine, Soncino, Winterberg, Klosterneuburg, Rennes, Loudéac ; 1485 at Heidelberg, Ratisbon, Pescia, Vercelli, Tréguier or Lautreguet, Salins, Burgos, Palma, Xeres ; 1486 at Münster, Stuttgart, Chia- vasco, Voghera, Casal Maggiore, Abbeville, Brünn, Schleswig ; 1487 at Ingolstadt, Gaeta, Rouen, Murcia ; 1488 at Stendal, Viterbo, Gradisca, Besançon, Constantinople ; 1489 at Hagenau, San Cucufat (near Barcelona), Coria, Pamplona, Tolosa, Lisbon ; 1490 at Orleans, Grenoble, Dole ; 1491 at Hamburg, Nozzano, Goupillières, Angou­lême, Dijon, Lantenac ; 1492 at Zinna, Valladolid, Leiria ; 1493 at Lüneburg, Cagliari, Freiburg (in Breisgau), Urbino, Acqui ; 1494 at Oppenheim, Monterey, Braga ; 1495 at Freisingen, Freiberg, Scandiano, Forli, Limoges, Schoonhoven (monastery Den Hern), Wadstena, Cettinje ; 1496 at Offenburg, Provins, Granada ; 1497 at Munich, Barco, Carmagnola, Avignon; 1498 at Tübingen, Perigueux, Schiedam, Tarragona; 1499 at Montserrat, Madrid; 1500 at Olmütz, Pforzheim, Sursée, Perpignan, Valenciennes, Jaen. Printing was introduced into Scotland in 1505 by the establishment of Andrew Millar at Edinburgh,@@1 and into Ireland, at Dublin, in 1551. As for non-European countries and towns, printing was established in Mexico in 1544, at Goa about 1550, at Tranquebar in 1569, Terceira in the Azores 1583, Lima 1585, Manila and Macao (China) 1590, in Hayti in the beginning of the 17th century, at Puebla in 1612, Cambridge (Mass.) 1638, Batavia 1668, Tiflis 1701, German­town 1735, Ceylon 1737, Halifax (Nova Scotia) 1766, Madras 1772, Calcutta 1778, Buenos Ayres 1789, Bombay 1792, in Egypt (at Alexandria, Cairo, and Gizeh) in 1798, at Sydney 1802, Cape Town 1806, Montevideo 1807, Sarepta 1808, Valparaiso 1810, Astrakhan 1815, in Sumatra and at Hobart Town and Santiago (in Chili) in 1818, in Persia (at Teheran) in 1820, and at Chios about 1821.@@2

Till the moment (say 1477) that printing spread to almost all the chief towns of Germany, Italy, Switzerland, France, the Nether­lands, Spain, England, not a single printer carried away with him a set of types or a set of punches or moulds from the master who had taught him, but, in setting up his printing office, each man cast a set of types for his own use, always imitating as closely as possible the handwriting of some particular manuscript which he or his patron desired to publish. When we compare Schoeffer's 30-line indulgence of 1454 with a manuscript copy of the same indulgence dated 10th April 1454, now in the hands of a private collector at Wiesbaden, we see that the types used in printing that document were specially cast for the purpose after the model of the handwriting employed for the written copies. We know also that the types of the 36-line and 42-line Bibles and those of the psalter of 1457 are the closest possible imitations of the ornamental church handwriting customary at the time of their production. Also, when we compare the 31-line indulgence of 1454 with the German block­book called the *Enndtchrist,* and both in their turn with the German MSS. of that period (especially the manuscript portions in the printed copies of the indulgences), we see that the cutter of the text type of the indulgence, as well as the engraver of the block­book, formed his characters according to some German handwriting (book hand) of the period. This imitation extended, not only to the shape of the letters, but likewise to all those combinations of letters (double *p,* double *f,* double *s, st, ti, tu, re, cu, cl, si, de, co, ci, te, ce, or, ve, po, fa, he, be,* &c.) and contractions (for *pro, -urn, -em, -en, the-, uer, -bus, -bis, sed, am, tur, qui, quæ, quod, secundum,* &c. ) which were then, and had been for many centuries, in use by scribes. In most, if not all cases, the MSS. which the printers

imitated were indigenous to the place where they settled. Thus the first printers of Subiaco, though they were Germans and had most probably learned the art of casting types and printing at Mainz, clearly cut their types after the model of some Italian MS. which was free from any Gothic influence, but written in a pure Caroline minuscle hand, differing but slightly from the Caroline minuscles which the same printers adopted two years afterwards at Rome. The first Paris printers started in 1470 with a type cast in the most exact manner, on the model of the Caroline minuscle handwriting then in vogue at Paris. John de Westphalia, who introduced printing into Belgium, used from the beginning a type which he calls Venetian. Where therefore there is a great simi­larity, but no absolute identity, between the types of two printers *(e.g.,* Schoeffer and Ulr. Zell), it should be attributed to the simi­larity of the handwritings which the printers followed rather than to any attempt on their part to imitate each other’s types. To this universal system (clearly discernible in the first twenty-five years of printing) of each printer setting up business with a new type cast by himself, there are, according to the conjectures of a good many bibliographers, only two exceptions. One is Albrecht Pfister (see above) ; the other is the Bechtermunczes of Eltville (see above).

Another most important feature in the earliest books is that the printers imitated, not only the handwriting, with all its contrac­tions, combined letters, &c., but all the other peculiarities of the MSS. they copied. There is in the first place the unevenness of the lines, which very often serves as a guide to the approximate date of a book, especially when we deal with the works of the same printer, since each commenced with uneven lines, and gradually made them less uneven, and finally even. This unevenness was unavoidable in manuscripts as well as in block-books ; but in the earliest printed books it is regarded as evidence of the inability of the printers to space out their lines. If this theory be correct, this inability was perhaps owing to the types being perforated and connected with each other by a thread, or to some other cause which has not yet been clearly ascertained. But it is not impos­sible that the unevenness was simply part and parcel of the system of imitating MSS., and that only gradually (about 1473 or 1474, but in some cases later) printers began to see that even lines looked better than uneven. This seems clear when we observe that the imitation of MSS. was carried so far that sometimes things which deviated from the work of the scribe, but had accidentally been printed in, were afterwards erased and altered in conformity with the MS. The Paris library, for instance, possesses two copies of the *Liber Epistolarum* of Gasparinus Pergamensis (printed at Paris in 1470) in both of which the initial G of the first line and the initial M of the fourth line were printed in, and, whilst they have been allowed to remain in one of the copies, in the other they were regarded as a fault and replaced by a rubricated L and Μ.

In the second place the initials of books or the chapters of books in MSS., and again in block-books and the earliest products of ]>rinting, were always, or at least in most cases (they are printed in the indulgences of 1454), omitted by the scribe and the printer, and afterwards filled in by the rubricator. As the latter artists were sometimes illiterate and very often filled up the gap by a wrong initial, we find in a good many MSS. as well as early printed books small letters written either in the margin or in the blank left for the initial, to guide the rubricator. In most cases where these letters (which are now called initial directors) were written in the margin, they were placed as much as possible on the edges of the pages in order that they might be cut away by the binder as unsightly ; but in a vast number of incunabula they have remained till the present day.@@3 After a few years these initial directors were in a good many books printed in (in lower-case type) with the text. In all cases, whether written or printed, they were meant to be covered by the illuminated initial ; but, as a matter of fact, the latter very seldom covers the initial director so completely as to make it invisible, and in a good many cases the intended illu­mination was never carried into effect.

With respect to the hyphens, which were used in the 1454 indulgences and the 36-line and 42-line Bibles, always outside the printed margin, some of the earliest printers did not employ them at the moment that they started their presses, and in the case of some printers the non-use or use of hyphens, and their position outside or inside the printed margin, serve as a guide to the dating, of their products. After about 1472 they become more uniform in their shape and more generally used.

The use of signatures is confined in MSS. mostly to mark the quires, and in block-books to mark each sheet or page ; they do not occur in printed books before 1472 (at least in no earlier book with a date), when they appear in Joh. Nider’s *Præceptorium Divinæ Legis,* published by Johan Koelhoff at Cologne.

Catchwords (*custodes)* were used for the first time about 1469 by Johannes of Spires, at Venice, in the first edition of Tacitus.

@@@1 See Rob. Dickson, *Intrοd. of Art of Print. into Scotl.,* Aberdeen, 1885.

- On the introduction of printing in various towns, consult Henry Cotton, *A Tyρog. Gazet.,* 8vo, Oxford, 1831 and (second series, 8vo, Oxford) 1866 ; (P. Deschamps) *Dict. tie Géogr. à l'Usage du Libraire,* 8vo, Paris, 1870; R. C. Hawkins, *Titles of the First Books from the Earliest Presses Established in Different Cities in Europe,* 4to, New York, 1884.

@@@3 The university library of Basel possesses a collection of the earliest Paris books still bound in their original binding, in which these initial directors are written not only on the outer edges but on the inner sides of the pages, and so close to the back that they can only be seen by stretching the books wide open.