The story, told in Part 1, of the text used in the first printed edition of *De medicina* should remind us forcibly that printing did not replace overnight the copying and distribution of both old and new works in manuscript. The scribes did not find themselves suddenly unemployed: rather, in addition to there continuing to be demand for new manuscript copies, new work was available to the scribes since many early printed books were intended to have their mechanically-reproduced text rubricated – that is, embellished with the scribe’s pen and even the illuminator’s brush. Tastes changed only gradually as the reading public expanded to include many of those with more slender purses. Some purchasers of early books expected them to look not unlike the manuscripts already in their libraries and the printers often arranged their pages to be suitable for embellishment by the scribe to complete them. Some owners also had decoration or illumination added and, to allow for this, the printers copied the usual wide margins of manuscripts so that the text blocks are commonly much smaller and the margins much wider in 15th century printed books than in later editions. The early printer was prepared to use more of his most expensive resource, paper, to ensure that his clients could, if they wished, continue to have their books decorated as before. But, in practice, many copies remained unembellished and thus, in fact, incomplete. Our copy of the 1478 *De Medicina* is among these: it lacks the decorated capitals at the beginning of each book and chapter for which the printer has left space and provided in small type the required letter (a ‘guide letter’) which the scribe would then copy as a large capital, in ink, at a size to fill the space left for it, often overwriting the guide-letter in the process (see Figure 1).

**The printing of the book, and our copy**

It is a truism that rarely, if ever, do we find two copies of an early printed book which are completely identical. Bindings, of course are very unlikely to be the same in different copies and the earlier the book the more likely it is to have been re-bound, perhaps several times. Then there are differences due to the depredations of time, such as damaged or missing pages. Torn pages are obvious, but apparently missing pages or sections may – or may not – be evidence of an incomplete copy. For example, our copy of the 1478 *De Medicina* has no title page. But 15th century printed books often had no title pages and the only way to be certain whether there should be one is to examine other copies or, much more easily, to examine catalogues in which copies are described. In this case no copy of the *editio princeps* is reported to have a title page. But there is evidence from a torn stub that something is missing at the beginning of our copy and we find that there should be a single page containing, on one side only, a letter of dedication by the editor – the letter from Bartolomeo Fonzio whose content was described in Part 1. Other than this, our copy appears to be complete, including a table of contents. This is sometimes found at the end, sometimes at the beginning of the book. This is not a difference in printing, just a difference in where the binder chose to position the sheets; in our copy the contents are at the end. In early printing it was not uncommon for copies to contain sheets of paper from several sources (paper mills) and different copies commonly have different mixtures of these. Printers often did not carry large stocks of paper, but ordered it as required. But there was often paper left over from an earlier book and this would be mixed – often apparently indiscriminately – with new paper during a print run. But the format of the book was fixed, that is, the way the pages of type were arranged in their surrounding frame to make the forme which was placed on the press. Forms were worked in pairs with each forme containing the type for one side of an even number of leaves of the book – two, four, eight or more. The 1478 *De Medicina* is in folio format; that is, each sheet of paper carries the type for both sides of two leaves making four printed pages. After printing on both sides, the sheet is folded once through its long side. The folded sheets then have to be collected into bundles and the bundles sewn together to form the book. We need to realise that the way in which the sheets are gathered and how the pages of type are arranged with respect to each other are inextricably linked. Once this arrangement is fixed the sheets must be gathered in just one way.

Instead of printing on a single sheet of paper of a certain size, the printer could use half of a much larger sheet and print on this in just the same way. We can detect if this has been done by the orientation of the lines on the paper made by the wire mesh of the mould on which (handmade) paper is made. It turns out that, for printing in a folio format on whole sheets, these chain-lines run vertically down the printed page, whereas if half-sheets
have been used they run horizontally across the page. The printer of the 1478 De Medicina sometimes used whole sheets and sometimes half-sheets and copies are made up of a mixture of these. As the print run for the book progressed he must have switched between whole and half-sheets several times with the result that in some copies a particular group of pages will be on whole sheets and, in other copies, the same group of pages will be on half-sheets. There are at least two different patterns of these arrangements, so individual copies fall into at least two groups – as we can tell by examining the catalogue descriptions as surrogates for the copies. The result is that the book is described as being a mixture of folio and quarto formats – to my mind a thoroughly confusing description of the result of quite a simple process. The reader would not usually have been aware of these differences since the text is the same whether a whole or a half-sheet of paper was used for a particular group of pages.

However, there are yet further variations between copies. It was standard practice in early printing to make corrections ‘on the press’ of small typographical errors spotted during a print run. When the type had been changed, the uncorrected sheets already printed were not discarded, so some copies contain the uncorrected and some the corrected pages. I do not know of any differences of this kind in copies of this particular book. However, there are differences in the type of some pages between copies of the Celsus: some of the most easily identifiable of these consist of a word being split differently across lines or of differences in capitalisation (see Table 1).

Now these differences mean that at least part of the type for the page must have been reset between the time the two differing pages were printed. Since none of these variations are corrections of errors, this cannot be the reason for the re-setting. At this point one must explain that the early printer rarely had enough type to keep more than a few formes at a time made up. When the required number of copies had been printed, the type was broken down (‘distributed’) and reused. So, it is likely that the variations illustrated above resulted from complete resetting of the type for the page. When this was done, it was rare that the compositor made the effort to ensure that line endings came in quite the same place as they had done in the previous setting – after all, it would not matter to the owner of the book. So, we must speculate that, for some reason, insufficient copies were printed of some parts of the book and the type for these pages had to be reset to print more copies. In a further twist, it turns out, in the two copies in Edinburgh, that the pages affected were printed on whole sheets for the variants in the first column and on half-sheets for those in the second column (see Hargreaves3 for the list of variants). The copy in the Hunterian Library in Glasgow has the same variants as the RCPE copy so copies fall into at least two groups in this respect.
All of this, though interesting because of the light that such details throw on the practice of early printers, would have made no difference to the readers of the 1478 De medicina. But there is one feature of the book which, one imagines, must have been infuriating for the reader. Though many early printed books have neither an index nor a table of contents, in this case the printer did provide a table of the contents (Figure 2) listing books and chapters. Roman numerals are provided which refer to ‘Charta’; what are these? In this context charta can mean a sheet, a leaf or a page of a book. Here, comparing the table against the text shows that the Roman numerals refer to leaves and not pages; the book is foliated not paginated. One would expect to find the corresponding Roman numeral at the top right-hand corner of each recto – the page on the right of each opening. But no leaves at all have a printed number so the reader has no means of finding the desired page from the entry in the contents table without counting leaves from the start of the book each time. As it stands the table is useless to the reader: in some copies an owner has written the numbers on the folia by hand, but this has not been done in our copy. However, in our copy, the first few pages have been numbered with Arabic numerals in now-faded ink at the bottom centre. These numbers stop at 15; perhaps the owner then realised that the numbers in the table refer to leaves and not pages and so stopped. Why the leaves were not numbered by the printer we do not know; possibly the compositors were not instructed – or forgot – to put the numbers in when setting the type; perhaps the table was added as an afterthought. Interestingly, our other 15th century Celsus (Venice 1497) also has a table of contents with folio numbers; however, the first eight folia are not numbered and the printed numbering starts only on folium nine. Printers did certainly sometimes forget to put the numbers in!

The colophon
In the 15th century, even books with title pages did not usually include any information about the producer of the book. But many books, including the 1478 De medicina, did include at the end of the text some information about the book’s production. This was known as the ‘colophon’ and was, like so many features of the early printed book, a continuation of a long-established manuscript practice in which the scribe would note some information at the end of his text. This sometimes included a pious remark thanking God that the work was finished, and usually contained the date of finishing and possibly the place where it was written and, occasionally, the name of the scribe. The early printers adopted the colophon and that in the Celsus (Figure 3) is a typical example. It reads ‘[Here] ends the book De medicina by Cornelius Celsus. Printed in Florence by Nicolaus in the year of salvation 1478.’ The printer was Nicolaus Laurentii who often has Almanus after his name and, indeed, in Italian he was known as Nicolò Tedesco (or Todesco or Todescho) – ‘Nicolò the German’. It seems that he was one of those craftsmen trained in Germany who moved to Italy in the wake of his countrymen who had brought the new craft of printing south across the Alps in the early 1460s. We see, then, that this early edition of De medicina demonstrates many of the distinctive features of early printing and is of considerable interest for this reason as well as being a very important work for the history of medicine.

For all that he was probably not a doctor, Celsus describes medical and surgical practice in circumstantial detail and shows extensive knowledge of Greek medical texts and acquaintance with at least some of the few contemporary Roman medical writings which have survived. He generally approves of the opinions and precepts of the Hippocractic corpus (see Nutton*). For him, the surgeon’s and the physician’s domains are not separate – surgery is just that part of medical practice which, as its name indicated, is carried out by manual intervention – the operations of the hands. His work is still worth reading as a major source of information on the state of ancient medicine before Galen and there is at least one good English translation to make it accessible.

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