PLATE XXI Commercial printing of fiction.
Two Yuan editions of ‘San-kuo chih P’ing-huah’
are published by the Yu family of Chien-an, ‘Newly printed in the Chih-ch’ih period’ (1321–23)
are a reprint of the same work by the Chien-an Shu-t'ang
probably from 1354.

Note the deterioration in the illustration resulting from copying.
The title-page calls the work ‘completely illustrated’ (Ch’ien-hsiang).
This term is used for books, mostly fiction and plays,
printed in Chien-an from Yuan to late Ming times in this format
with a wood-block illustration at the head of the page
PLATE XXII  Ming printed fiction. Frontispiece of the 'Chien-t'ung hsin-hua' printed by the Ch'ing-chiang shu-t'ang of the Yang family in 1511. Editions by the same publisher of the rhyme dictionary Kuang-yin, the encyclopaedia Yu-pien and other fictional works survive.

PLATE XXIII  An early household encyclopaedia. The 'Hsien-pien shih-wen t'ao-yao ch'i-ta ch'ing-ch'ien', a large and very detailed practical encyclopaedia for everyday use printed in 1324 by the shih-hsin t'ang of the Liu family in Chien-an. The page shown gives instruction on drawing up a mortgage.
THE STATE AND PRINTING

Faced with this enormous proliferation of books, the Chinese government under the Sung made constant efforts to regulate publication. The state attempted to maintain its own monopoly in some categories of literature. Calendars and astronomical or astrological charts, whose possession had been forbidden to commoners in the law codes since the seventh century, but for which nevertheless there was a brisk demand, were in Sung times printed by government agencies and sold at fixed prices, heavy penalties being imposed on private printers. Collections of state documents and legal works printed by private publishers were also repeatedly forbidden, but the prohibitions proved ineffective. National histories were also a government monopoly and strict laws forbade their export to neighbouring states whose rulers might use them as a source of intelligence. These laws too were constantly flouted. Equally ineffectual were attempts to control the proliferation of collections of model examination essays, which were in great demand as the examination system slowly became the sole method of entry into official employment. There were constant complaints about the publication of model essays, many of them of poor quality, which had not received official approval, and also about the sale of miniature editions that could easily be smuggled into the examination halls.

Other types of literature were strictly censored. Heterodox Taoist, Buddhist and Manichaean texts were proscribed. During the virulent political struggles of the eleventh and twelfth centuries writings offensive to those for the moment in power were repeatedly banned. Particular attention was given to writings dealing with defence issues. The Sung state was constantly at war with its powerful northern neighbours, and the government was paranoid about the leaking of state secrets or military information, real or imaginary, to its enemies. After 1006 the export of all books except for the Confucian classics was banned. All works on border defence published in China were subjected to close scrutiny and regularly proscribed, the printing blocks for offending works being destroyed and the publishers heavily punished. Such laws were issued again and again, but failed to halt the export of books, which fetched very high prices abroad.

The Sung government also made determined efforts to subject books to examination by the authorities before permitting their printing and sale to the public. The first such edict was issued in 1009, and in 1090 the court issued a full set of regulations on the printing and circulation of books. This imposed a full-scale scrutiny of the manuscript before official approval for publication was granted, and also banned all frivolous and licentious publications. As publishing rapidly grew more widespread in the twelfth and thirteenth centuries, the imposition of state control became all but impossible.

But attempts to control the printers continued. In 1159 the government attempted to prohibit the publication of any work that had not received the sanction of the Directorate of Education in the capital. A special 'depository copy' of each approved work was required to be printed on special yellow paper and sent to the Directorate. Between 1195 and 1201 these rules were codified in a set of laws which allowed censorship not only for unorthodox ideas, but even on the grounds of unacceptable style.

A book that was accepted received a warrant for publication, which was sometimes printed as a colophon to the book, sometimes inserted in the title page. To judge from preserved examples the warrant certified that the publisher had submitted it for examination in accordance with the law, gave the precise number of words in the text, and might list the number of blocks, the cost of making an impression for a single copy, and the retail price.

Private publishers did not only issue books of which they themselves owned the blocks. It was common practice for government offices which possessed printing blocks of books to permit private individuals or publishers to print impressions from them in return for payment of a fee.
Another interesting feature of publishing with government permission is that the official imprimatur gradually developed into a concept of the author's and publisher's rights in a book. The current image of Taiwan as the Spanish Main of book pirates should not blind us to the fact that the first book including a claim to copyright under government protection was printed in Szechwan between 1190 and 1194 (plate xxiv). Similar warrants are found in a number of books printed in the early thirteenth century. Such publishers' warrants not only claimed protection against unauthorized reprints, but also sometimes attempted to reserve the author's right against unauthorized abridgements and alterations of his text. We very often read of publishers making quick profits by producing butchered summaries of well-known works, and even of publishing fraudulent and frivolous writings under the name of well-known authors.

These publishers' warrants appear only in a few of the Sung prints that survive, but the primitive idea of copyright survived into the Mongol period, though probably without the force of law. However, copyright proved impossible to enforce, and during the Ming (1368–1644) the very concept disappeared, together with the practice of reviewing books before granting permission to publish. It was not to appear in China again until 1910, and even since then its status has proved very unsure.
ECONOMICS OF PRINTING UNDER THE SUNG

From the Sung period we get some rare information about the economics of publishing and the cost of books to the buyer. The 1147 edition of the collected writings of Wang Yü-ch'eng, a large book in 30 chapters which required the cutting of 440 double-page printing blocks, sold for 5000 cash. We are told the costs of some items in striking a single impression: 206 cash for the blue wrapper-papers; 550 cash for printing ink; and 430 cash for “food for the printers and binders”, but no cost is given either for the paper for printing or the costs of cutting or renting the blocks. In 1176 a work on the Confucian classic The Book of Changes by Tseng T'ung was printed, and we have rather more detail. The book was a large one comprising 1300 double pages, each printed from a single block. The printer/bookseller hired the blocks, perhaps since this was a commentary on a canonical book from a government office, for 1200 cash. The actual cost of printing an impression, “ink, paper, paste and labour” was 1500 cash—remarkably cheap at little more than one copper cash per sheet, and much less than even the partial costs given for Wang Yü-ch’eng’s book. The selling price was 8000 cash per copy—books, even printed books, were still an expensive luxury. Assuming that the printer took three impressions from the blocks while he had access to them, at least 6000 cash per copy was clear profit. Even if the hire of the blocks only entitled him to take a single impression, he still made 5300 cash (plate xxv). These figures would suggest that a Sung publisher worked on rather comfortable profit margins, even when he needed to hire the blocks for a book. A commercial printer producing a long run from blocks of his own would have done even better.

PLATE XXV This certifies that the book, amounting in all to 163,848 characters, has been examined in accordance with the Statutes of the Shao-hsing period (1131–62) demanding that all private publications be submitted to the authorities for scrutiny, has been found “advantageous to learning”, and given permission for distribution. It also adds that the book will be printed from 452 woodblocks and lists some items of production costs, together with the published price of 5 strings of 1000 cash. The permit is dated seventh month 1147 and issued by the head of the postal relay service in Huang-chou. It ends with a long list (not shown in full) of those responsible for editing the text and overseeing the cutting of the blocks.

PLATE XXVI (overleaf) Copper-plate printing. Two pages from the ‘K’eng-chih t’u’, an illustrated work on agriculture and sericulture printed by the central government in Peking in 1692. Engraved by Chu Kuei, a famous printer from the Yangtze Delta region.
WOOD-BLOCK PRINTING

All the printing mentioned so far was block printing from wooden blocks, or in rare cases from clay, horn or metal (plate i, plate xxvi) blocks. The earliest books were printed as separate sheets which were trimmed and assembled together into scrolls, just as earlier manuscripts had been. Under the Sung, although the Buddhist scriptures continued to be assembled together to form a continuous text, at first in scroll form, later as accordion-bound booklets, secular literature and official printing evolved a new form of book, which was to remain standard until the coming of Western-style books in this century. Each printing block carried the text of a double page. This was surrounded by a rectangular frame and divided in half by a panel down the middle, which often but not always carried the title of the book, the page number, and sometimes the name of the printer or block-cutter.

A rare feature of this book is a page listing all the copyists, block cutters (some of whom were local men, others from Soochow, Chiu-hua, Wuchin and Chiang-yin, and no less than 12 of whom were from one family) and even the binders. Printing the book took more than six months.

CKPITL, plates 420-1.
The page was printed on one side only of rather thin paper. The printer inked the block with one end of a double-headed brush, laid the paper on the inked face of the block, and took an impression by rubbing over the paper with the other end of his brush. After it was dry, the page was folded along the central panel, which usually had fish-tail patterns to guide the binder (plate xxvii), with the blank side inward. The central panel formed the fore-edge of the finished book, and remained uncut. The inner edges of the sheets were sewn together to bind the double pages into a volume, which was often given a cover of stiffer paper. This fascicle or volume was termed a t'au, a term which in ancient times had meant a bundle of bamboo writing slips strung together to form a continuous text. A large book would consist of a number of these thin fascicles, which were stored for protection in a cloth-bound case, rather like a folding slip-case, called a t'ao, or held between thin wooden boards.

This method of printing and of book production remained standard until modern times. It had many merits, not least its flexibility. The blocks for fine printing were made from a hard close-grained wood, usually pear or jujube. The surface was prepared with a sort of size. The copy for the page to be printed was written by a copyist on a very thin paper, and this was laid face down on the surface of the block while the size was still wet. The engraver then cut the block around the characters. A page printed in this way could thus reproduce any style of calligraphy, or any mixture of styles, any size or variety of sizes of character, and could equally easily accommodate both text and illustrations. The blocks could be corrected by recutting, by inserting plugs into the block and recutting over them, and by minor trimming. Once made, the block would take a great many impressions before wear became serious; no press was used and pressure on the block was thus minimal. Moreover, once the block was cut it could be stored, and the book could remain ‘in print’ indefinitely. The material of the wooden blocks was cheap, so that storage did not tie up expensive...

PLATE XXVIII  The earliest surviving example of two-colour printing.
A shown here red printing only.
B (overleaf) shows red and black printed together. The large lettering on the right is also printed in red.

‘Diamond Sutra’ with commentary printed by the T'ou-fu-ssu temple in Chung-hsing Circuit (modern Hupeh) in 1341. Printed from multiple blocks (t'ao-pan), in this case two. The text of the ‘sutra’ (in large bold characters) and the illustration and top and bottom margins are printed in red, the commentary (in smaller characters) in black. Nagasawa plate 89.
普回向真言

.Material as did metal type. If it was no longer needed, the block could be planed down and used again. Moreover, multiple blocks could be used to print in more than one colour, the earliest surviving examples of which appeared in the fourteenth century (plate xxviii).
PRINTING FROM MOVABLE TYPE

This form of book production proved eminently practical, and was almost universal. But during the Sung period Chinese printers also developed movable-type printing, and I would like to end this account with a brief description of this invention, and discuss the reasons why it never became the normal method of printing in China as it did with us in Europe.

Superficially, the use of movable type for printing Chinese was a logical and straightforward development. In Chinese calligraphy and typography each character is considered to occupy a square space of equal size, the characters being arranged in vertical columns, usually separated in traditional printing by a fine line. The Chinese compositor was thus faced with none of the complexities of spacing and layout that confront the Western typographer.

The vast scale of the state publishing projects undertaken in the ninth and tenth centuries must have raised enormous problems for the nascent printing industry, for any one of the major histories, collections of canonical texts, encyclopaedias or anthologies required the cutting and subsequent storage of tens of thousands of large wooden blocks. As we have seen, the first printed edition of the Buddhist scriptures required 130,000 blocks, which had to be housed in a special storehouse. The blocks for a Korean edition still exist today, and give evidence of the sheer physical problems such large-scale block printing presented. Any alternative method of printing must have appeared attractive.

The earliest surviving description of movable-type printing was written by Shen Kua (1030–1094), a scholar fascinated by all forms of technology who ascribes the invention to Pi Sheng. In the 1040s Pi had used movable type made of ceramic. These were set in an iron forme which printed the margins and lines separating the columns of each page. Both the forme and the individual type were set in a mixture of heated resin and wax on an iron backing-plate. When the printing had been completed the iron plate was heated to melt the wax and free the forme and type. Pi Sheng used ceramic type partly because it could easily be reused in this way, and partly because he claimed it gave a better impression. We do not know how widely this technique was ever employed, and no samples of Pi Sheng’s printing survive. The great Chinese bibliophile Yeh Te-hui (1864–1927) claimed to possess a book printed from ceramic movable type during the Northern Sung (960–1127) but it has never to my knowledge been reproduced.

The next account of movable-type printing dates from the Mongol Yuan dynasty in 1313, when Wang Chen gave another account of Pi Sheng’s experiments. He adds that subsequently tin type had been used for printing, and that characters had been strung together in an iron forme with wires. But metal type would not readily take the traditional water-based Chinese inks, and the type proved to deteriorate very quickly. It was never widely used. Wang Chen then continues by describing his own experiments with wooden movable type. He claims these were his own idea, but the invention in fact certainly preceded him since at least one surviving Sung book has one of the characters inserted on its side, and must therefore have been printed from movable type, not from a block.

Wang Chen’s wooden type was cut individually by hand. Great numbers of identical type were needed for common characters. He estimated that the font of movable type required would number more than 30,000, but adds that when he printed the official history of Ching-te county in Anhwei using this method he needed to have more than 60,000 type cut, a task which took more than two years. The individual wooden type, each of a standard size, were set in a wooden forme, with the lines between columns consisting of fine strips of bamboo. The type was wedged tight by wooden wedges and plugs.

Wang Chen’s compositor sat between two huge revolving tables divided into a framework of separate compartments for the type (plate xxxix). One table
contained the common characters, the other less usual characters arranged according to their rhyme. The printer, reading from the copy, would call for each character by number, while the compositor selected it from its compartment on the table and placed it in the forme. The type were assembled in columns and then wedged tight with bamboo wedges, and the whole page made absolutely even. The made-up page of type was then laid face up and inked, and an impression taken just as with a block print. After use the type was broken up and redistributed into its proper compartments on the revolving tables.

The basic problem in Chinese typography was, and still remains, the fact that the repertory of Chinese characters is virtually limitless. Even today, after decades of efforts at limiting the number of characters in use, a Chinese printer needs an active stock of more than 8000 characters, while newspapers still use about 5000 common characters. Even with such a large stock, rare characters are often required, especially for proper names, and type needs to be specially cut for them just as Pi Sheng had special additional characters made as he needed them. The largest Chinese dictionaries contain more than 40,000 different characters, although many of these are simply variant forms, and none is exhaustive. No Chinese printer ever had a 'complete' font including every Chinese character.

**PLATE XXIX**  Movable-type printing. Illustration of the revolving table with type arranged in compartments by rhyme, from the ‘Nung-shu’ of Wang Chen (1313). This page is from a Chia-ching (1522-66) block-printed edition published by the provincial government of Shanung. A complete translation of Wang Chen's account of his printing with movable type is in Carter-Goodrich, 'The invention of printing in China', pages 213-17.
PRINTING IN KOREA
In spite of these experiments movable type never really caught on in China, although it was revived from time to time. There was an abundance of cheap block cutters and printers whose skill and speed made block printing more than competitive. Movable type gained a new lease of life in Korea, where the first mention of movable-type printing dates from 1241. In 1392 the Korean government set up a state printing works, which was responsible for the casting of metal type and for printing. In 1403 the government’s type foundry produced a bronze font numbering several hundred thousand characters (plate xxx); new fonts were cast at least seven more times in the fifteenth century alone (plate xxxi) and great numbers of beautiful editions printed with them. The type used was very large. Individual type was about a centimetre square, and half a centimetre thick, with a groove in the back which slotted into an alignment bar in the forme. As with Pi Sheng’s ceramic type, the type was set in a bed of wax, since the edges of the type were not cut precisely enough for them to hold together without. They were cast in sand, using wooden type as models.

PLATE XXX

PLATE XXXI
Korean metal movable-type printing. Commentary to the poetry of Li Po, the ‘P’en-lei pu-chu Li T’ai-po shih’, printed in the ‘kab’in ja’ font cast in 1434.
METAL TYPE

Metal movable type made both from copper and lead were used in China too during the late fifteenth and sixteenth centuries, particularly in the great cities of the Lower Yangtze region, Nanking, Soochow, Wu-hsi and Ch‘ang-chou, which were great centres of literary culture and the arts. Some of the printing done from such metal type was of excellent quality, but books printed with movable type were criticized for the great number of errors they contained (plate xxxii). Their metal type too was very expensive, for it was not cast as in Korea, but cut individually, as in the case of movable wooden type.

Cast bronze type appeared in China only in the late seventeenth and early eighteenth centuries. Perhaps the finest copper font ever made in China was cast to print the enormous imperial encyclopaedia Ku-chin Tu-shu chi-ch‘eng, a work which comprised 800,000 pages and over a hundred million characters. The type face used was a very large one, and when the font was cast, using ceramic moulds made from wooden models, it comprised over a quarter million pieces of type, which took nine years, from 1713 to 1722, to manufacture (plate xxxiv). In terms of metal alone it was enormously expensive, and after the encyclopaedia had been printed the type was melted down in 1744 and used to make copper coin. When later in the century the Ch‘ien-lung emperor commissioned a huge programme of reprinting rare books, his government printer Chin Chien (interestingly a man of Korean descent) advised that the Imperial Printing Office (Wu-ying tien) should revert to the use of wooden movable type rather than metal. The plan was agreed and the font, amounting to 253,000 characters in two sizes, was cut in only six months. Fortunately Chin Chien wrote, and subsequently printed, a very detailed handbook describing the printing methods employed, with fine woodcut illustrations (plate xxxvii). This manual, the Wu-ying-tien chu-chen pan ch‘eng-shih has been completely translated into English and published with its illustrations.**
Compositors setting a book in wooden movable type.
Illustration from the *Wu-ying-tien chu-ch'en pan ch'eng shih*, a manual on movable-type printing written in 1777 by Chin Chien, the Superintendent of the Imperial Printing Office. For a complete translation of this work see Rudolph, *A Chinese Printing Manual*. The facing page from the manual is set in the movable wooden type described.
THE ADVANTAGES OF WOOD-BLOCK PRINTING

Movable type then, although the Chinese perfected all the necessary techniques and processes, failed to catch on. The basic reason was the same as that which bedevils every Chinese printer to this day; a technique which is ideally suited to the needs of an alphabetic writing system with a small number of comparatively simple letters proved enormously costly and cumbersome when it was used to print a script demanding a constant stock of about ten thousand different characters, and the ever present need to cut new characters for which there was no type in stock. Moreover, wooden type was difficult to cut to sufficiently precise size; ceramic type was fragile; neither metal nor ceramic type produced an even impression with Chinese inks; and holding a metal font of a hundred thousand or more massive copper characters required a huge capital outlay in metal alone, in a country which suffered a chronic shortage of copper, even for manufacturing coinage.

The wood block had many advantages. It could reproduce a text written in any style. It could be used to print illustrations, even foreign scripts (Chinese block printers in the Philippines produced copies of works in Latin and Spanish by the same methods). It could be used to print facsimiles of earlier editions or of manuscripts, and was the equivalent of an infinite stock of different typefaces in an infinite number of sizes. Such considerations were not simply of commercial importance. Calligraphy has always been a widely practised and highly esteemed art throughout the Far East, and a block print could cater for individual taste and meet the highest aesthetic demands. Moreover, once made the blocks could be stored indefinitely—blocks of some books cut in the seventeenth century were still being used in this century. Block printing meant that instead of printing large editions a copy or copies could be taken when needed, an early form of that ‘printing on demand’ that we associate with modern techniques of reprography. Since the block-
printed book was made up of individual pages, it was easy to supplement by adding additional matter.

Perhaps the wood block was most flexible in its ability to accommodate together text and illustrations. Illustrations were already included in surviving examples of T'ang printing, and were regularly included in books printed under the Sung and Chin, the Mongols and the Ming (from the thirteenth to the seventeenth centuries) in the major book-producing centres. Even the cheap popular printers of Fukien produced numerous illustrated books—biographies, novels, plays, medical books, popular handbooks on agriculture, botany and handicrafts, popular encyclopaedias and school books. Other printers experimented with multicoloured printing using multiple blocks both for text and illustrations. The technical virtuosity of Chinese block printers reached its peak from the late sixteenth to the eighteenth centuries. The ready availability of a huge pool of such skilled craftsmen made the further development of movable type, with its many inbuilt limitations, both hampering and uneconomical except for very large-scale special printing.

The inherent problems of typesetting in a script with such a large and almost unlimited number of characters, which finally drove movable-type printing from the market in favour of the wood-block printed book, remain with us today. Even in the age of the computer and advanced photo-setting machinery, the problems of storing and efficiently accessing such an enormous font remain difficult of solution. Perhaps in a parallel to the history of printing techniques the Chinese have preferred to use in telecommunications the relatively expensive technique of photo-facsimile transmission (the modern-day equivalent of the block print) rather than attempt to store and retrieve the whole repertory of characters in digitized form (the space-age equivalent of movable type). The problem lay not in any failing of ingenuity or printing technology, but in the fundamental nature of the Chinese written language.
NOTES

1 On the history of paper in China see P’an Chi-hsing, Chung-kuo tsao-chih chi-shu shih-kao (Draft history of the techniques of Chinese paper-making), Peking 1979. This marks a great advance over earlier work in Western languages. It is also copiously illustrated.

2 On the Kyongju dhāraṇī see the Hanguk kōinsoe sa (The history of early printing in Korea), Seoul (Korean Library Science Research Institute) 1976, pages 40–2. The document may be older than the stupa in which it was placed. But the use in it of Empress Wu’s characters, which were officially employed from December 689 until 705 when she abdicated, does not mean that it was printed during those years. The characters were well used into the ninth century as we can see among the Tun-huang documents, especially in cases where making an ‘authentic’ copy was important. In this case the dhāraṇī had been put into Chinese by the Tokharian master Mi-t’o-shan in 704. Its original version would thus have employed the Empress’s characters, and it is not surprising to find them used in later copies. I must express my gratitude to Mr J. Byron of the Gest Library, Princeton for drawing my attention to the Hanguk kōinsoe sa and also for assistance in locating material for the plates.

3 There are two other sets of items which may be older than either the Kyongju dhāraṇī or those printed for Empress Shōtoku. The first is a set of seven leaves from a K’ai-yüan tsa-pao dating from the period 712–741 and once owned by a Mr Yang of Chiang-ling, Hupeh. It was said to be barely decipherable. This claims to be a part of a court gazette, or circular, similar to that described by the late T’ang writer Sun Ch’iao in an essay dated AD 851. Such an official gazette however would hardly have appeared in such a rough form. These fragments are almost certainly a fabrication. See Tokushi Ryūshō, Toyō insatsu shi jōsetsu (Kyoto 1951), pages 37–8; Tokushi Ryūshō, Toyō insatsu shi Kenkyū (Tokyo 1981), p.23; Carter-Goodrich, The invention of printing in China and its spread westward (New York 1955), page 62. The other items are more serious contenders, for they were discovered in Turfan by the Otani expedition between 1912 and 1915. They include, first of all a number of small fragments of a printed copy of the Saddharma puṇḍarīka sūtra in large and elegant characters. The fragments are very small, and there is no way of dating them, but in layout the scroll they came from resembled the ninth-century examples from Tun-huang, in that the text had a printed margin at top and bottom. They are reproduced in Uehara Yoshitarō, ed., Shin Saiki (Tokyo 1937), volume I, unnumbered plate. Also from Turfan were two large fragments of another printed version of part of the same Saddharma puṇḍarīka sūtra. One of these is in the rare-book collection of the Ryūkoku University in Kyoto, the other was, until his death in 1943, in the possession of the Japanese bibliophile Nakamura Fusetsu. According to Tokushi Ryūshō, (1951), these fragments are continuous and together form a scroll comprising 236 lines of text with 24 characters to each line. The characters are very fine; the text is only about four and a half inches deep. Nakamura is said to have published the part in his own collection in 1936, claiming it to have been a Sui (581–617) print, but Tokushi says that his evidence does not stand examination. According to Nagasawa Kikuya, WaKan sho no insatsu to sono rekishi (Tokyo 1952) it is said to use some of the Empress Wu characters in official use from 689 to 705. It might therefore date from the early eighth, or even the late seventh century, but these characters continued to be used until well into the ninth century and this evidence, as with the Kyongju document, is not conclusive. These two sections of the same scroll have a somewhat different form from the dated ninth-century sūtra, in that the text has no printed margin at top and bottom.
4 See Carter-Goodrich, pages 54-9. See L. Giles, *Descriptive Catalogue of the Chinese Manuscripts from Tun-huang in the British Museum* (London 1957) page 279, number 8083, item P.2. This entry mentions what was once incorrectly thought to be a printed notice dated 594, but this has since been shown to be a manuscript. See Carter-Goodrich, pages 40-1.

5 See Giles *Catalogue*, page 279, number 8085, item P.13. See also L. Giles, *Six centuries at Tun-huang* (London 1944) page 45.

6 Fonds Pelliot, Touen-houang Chinois, P.4501 in the Bibliothèque Nationale.

7 Giles *Catalogue*, page 280, number 8102, item P.1; Giles *Six centuries* page 46.

8 Giles *Catalogue*, page 280, number 8099, item P.6.

9 Giles *Catalogue*, page 280, number 8100, item P.10.

10 Giles *Catalogue*, page 280, number 8101, item P.12.

11 Giles *Catalogue*, page 279 numbers 8084, item P.11; 8087, item P.9; Fonds Pelliot, Bibliothèque Nationale, P.4515, P.4516.

12 Giles number 8087 (see note 11).

13 Giles *Catalogue*, page 280, number 8093, item P.8.

14 Giles *Catalogue*, page 279, number 8084, item P.11.

15 See note 3 above; Liu-An, *Chung-kuo tiao-pan yüan-liu k'ao* (Shanghai 1916), pages 2–3.

16 The best account of Sung publication laws is an unpublished paper by Chan Hok-lam ‘Sung laws on publication and circulation’ prepared for the research conference on ‘The transformation of Chinese Law, T'ang through Ming’ held at Bellagio, Italy in 1981. See also Niida Noboru, *Ch'u-goku kōseishi kenkyū* (Tokyo 1964), volume 4, pages 445–91.

17 To give some idea of the value of these sums, the monthly cash stipend of a high-ranking minister such as the President of the Supreme Court of Justice was 45,000 cash. One of the low-ranked assessors in the same court received only 8,000 cash. The magistrate of one of the counties of the metropolitan province earned 30,000 cash a month.

18 According to Giles *Catalogue*, page 280, number 8100, item P.10 was probably printed from clay. See also Giles *Six centuries*, pages 46–7.

19 Wang Chen’s detailed account of his own printing from wooden type is translated in Carter-Goodrich, pages 213–17.

FURTHER READING

To produce a full-scale bibliography of Chinese printing, most of which would necessarily be in Chinese, Japanese, etc., is beyond the scope of this booklet. The following items will allow the Western reader to gather more information about printing and publishing; the items in Chinese and Japanese are standard references. Those marked* contain many examples of various types of printing. There is urgent need for a good and up-to-date study of Chinese printing in English. The excellent works of Carter-Goodrich and of Pelliot (see below) deal only with the early phases of printing, and are seriously out-of-date. Neither deals with the high tide of Chinese printing from late Sung onward in any detail.


- K.K.Klug, Istorii kitaishoi pechatnoi knigi sunskoi epokhi (History of printed books in China during the Sung era), Moscow 1959.


- Paul Pelliot, Les debuts de l'imprimerie en Chine (Oeuvres posthumes de Paul Pelliot IV), edited by Robert des Rotours with additional notes and appendix by Paul Demiéville, Paris 1953.


ON KOREAN PRINTING

- Korean Library Research Institute, Hanguk koinsoe sa (The history of early printing in Korea), Seoul 1976.

- Kim Won-young, Early movable type in Korea, Seoul 1954.

THE FOLLOWING ARE STANDARD REFERENCES IN CHINESE AND JAPANESE

○ Ch'ü Wan-li and Ch'ang Pi-te, T'ı-su pan-pen hsüeh yao-lueh, Taipei 1953.
○ Yeh Te-hui, Shu-lin ch'ing-hua, first edition 1911, revision 1920, many subsequent reprints.
○ Shih Mei-ch'in, Chung-kuo yin-shua fa-ch'ang shih, Taipei 1966.
○ *Chang Ching-lu, Chung-kuo hsien-tai ch'i-pan shih-liao, 4 series, Shanghai 1953–6.
○ Li Shu-hua, Chung-kuo yin-shua shu ch'ı-yuan, Hong Kong 1962.
○ *Chung-kuo pan-k'o t'u-lu, Shanghai 1958, reprint 1960. Referred to as 'ckpkl'.
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