Fig. 1214. Making paper clothing (kamiwasa) in Japan, c. 1750. From Seki Yoshikuni (3).

(Figs. 1087, 1214) made directly of specially treated sheets of paper, and 木版, made from thread spun out of paper strips. The former, which originated among Buddhist monks for ritualistic reasons, was most likely an idea imported from China, and its use was recorded first in the +11th century. The weaving of 木版 is recorded only from 1712.4

Chinese books were introduced to Japan at an early date, as discussed above. Following the Taika reform of +645, the institution of the Taiho code in +701, and the spread of Buddhism at the same time, Chinese influence at the court was paramount, and as a result, fifteen official missions travelled to the Theang from +670 to +854, and many monks and students went to China for study, often staying there for many years. With such close cultural and religious contacts between the two countries, it is not surprising that it was during this period that printing appeared in Japan.5 The earliest extant Japanese printing is certainly the famous 'one million 木版' (Fig. 1215), which consists of four different versions of Sanskrit charms transliterated into Chinese characters, and was probably printed between +764 and +770. Each charm, printed on yellowish hemp paper varying in size from 12 to 22 inches long and a little over 2 inches wide, was inserted into a small wooden pagoda. The pagodas were equally divided among ten leading Buddhist temples of the time, seven of which were in Nara.6 Each of the four versions consists of a text of from 71 to a little more than 200 characters, with fifteen to forty lines to each text. Making copies of 木版 was a popular means of gaining religious merit; in this case the crisis of a revolt was the occasion for the good work, carried out by the Empress Shōtoku. Contemporary records do not refer to printing, but it has been determined from examination that the 木版 were in fact printed, either from wooden blocks or possibly from stone, porcelain, or copper plates.7 The characters are uneven and crudely formed when compared with earlier printing found in Korea or the Diamond Sutra of 868 from Dunhuang. Despite the early date of this

4. Iwai Kitao (3), pp. 6–8; Seki Yoshikuni (3), pp. 91–7; Teishi Waki Tochon, 3, pp. 14–16; Seki (4), vol. 4, pp. 37, 38; Iwai Tokuharu (4), p. 33.5, notes that the original may date to the +10th century.

5. Cf. Kitao Yuishiki (4), pp. 13–14, 16–24; the monks took back to Japan many books, mostly religious, though some were on secular subjects. According to a catalogue of +865, two dictionaries taken back by monk Shosha were printed editions; see above, pp. 131ff.


7. Cf. Gers (4), pp. 3–12 and frontispiece; Nagasawa Kinkai (4), 2, pp. 2–3. General opinion leans to wood blocks, while one leading scholar, Kamio Katsunori, favours copper plates; see further discussion on pp. 150ff. above.
example, there seems to be no question that the technique for printing came from China. \(^{9}\)

The first known printing of complete books in Japan did not occur until some two centuries after this incident. One stimulus at that time was the importation to Japan of the Chinese imperial Khai-Pao edition of the Tripitaka, which was presented by the Sung Emperor Tsung to the Japanese monk Chosen in +983. \(^{10}\) Another was the Buddhist custom of making a large number of copies of a sutra as a pious work, often to commemorate a deceased person. As these copies were not meant to be read, there was no need for care in their preparation, and many copies were turned out efficiently by printing. Contemporary records state that one thousand copies of the Lotus Sutra were printed in 1009 and again in 1014; these are the earliest examples of such works, which are known as sūryyo \(^ {11} \) (folded or printed sutra). \(^ {12} \) The earliest specimen of this type still in existence is a copy of the Lotus Sutra bearing a handwritten date of 1018; it must have been printed in or before that year. \(^ {12} \) Such books are characterised by light ink, and are sometimes almost illegible.

The sūtras read by monks and others were originally reproduced by handwriting in the monasteries, and this work continued to be important even after the development of printing. Following the examples of the Sung Tripitaka and the sūryyo, however, printing began to be used to reproduce sūtras for reading, and the earliest extant example is a Chinese text, Ch'eng Wei Shih Luan \(^ {13} \) (The Doctrine of Mere Consciousness), printed in 1088 by the Kofukujō in Nara (Fig. 1210). \(^ {14} \) From the 11th century through to the end of the Kamakura period (+1192-1333), the printing of sutras was concentrated in the great Buddhist temples of Nara and Kyoto. Though these were almost all reissues of Chinese books in Japan, the calligraphic style followed that of the handwritten copies of sutra rather than the square and formalised printing style developed in China during the Sung. \(^ {15} \)

During the Kamakura period Zen Buddhism and Neo-Confucianism were introduced from China to Japan where they became very influential. One result was that from the +13th to the 16th centuries, the major efforts in Japanese printing were carried out in parallel groups of Zen temples in Kyoto and Kamakura, known as the Gozan-ji. \(^ {16} \) The books published by these temples are known as Gozansyu \(^ {4} \) and represented several new developments in Japanese printing. First, the calligraphic style of these works made a break with the past; in place of the earlier styles of handwriting, these copied closely the forms of Sung editions, including their square characters. \(^ {6} \) Secondly, secular works were published for the first time in Japan, and significantly these were all reprints of Chinese books. First among them was the poetry of Han-Shan \(^ {17} \) printed in 1325, while a milestone in the study of Confucian classics was reached with the publication of the Anlue of Confucianism (Fig. 1211) in 1314. \(^ {18} \) Altogether the Gozan temples are known to have published seventy-nine secular Chinese works in addition to almost two hundred editions of religious writings. Over half of the secular works were the collected literary writings of Chinese authors, and the Gozan-ji also included the earliest medical works printed in Japan. \(^ {19} \) Thirdly, it was during the fourteenth century that the Japanese script (kana) was used for the

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\(^ {9} \) See Kimura Yasuhiro (2), pp. 17-29.
\(^ {10} \) Cf. ibid. pp. 307-4, 397.
\(^ {11} \) Cf. Kawai Kazuma (1), pp. 6-7(2), pp. 10-23; Kimura Yasuhiro (2), pp. 307-6, and (2), pp. 54-7; both give the same convenient table of sūryyo editions described in contemporary records.
\(^ {12} \) See Kawai Kazuma (1), No. 2, which illustrates this work; Chūbei (1), p. 79, refers to a similar book with a handwritten date of +1018. Set Nagano Kiyoto (1), n. 6, pp. 29-40, points out that since the date is on the reverse side of the paper from the printing, it is not acceptable as a date for the printing of the book.
\(^ {13} \) Kawai Kazuma (1), No. 5.
\(^ {15} \) 禅常
\(^ {16} \) 禅常
\(^ {17} \) 梵書
\(^ {18} \) 五冊
\(^ {19} \) 参考
first time in printed books; the first example came out in 1221, followed from 1387 to 1599 by its use in a number of calendars.5

In the second half of the 14th century, during the unsettled conditions at the end of the Yuan, many Chinese block carvers migrated to Japan and worked on the Gazanbara. One group of eight carvers arrived in 1567 and may have included Chien Meng-Tshih6 and Chien Po-Shou,7 both of whom came from Nan-thai, a suburb of Fuchow.8 The first book printed by them came out in 1567, and we know that more than thirty Chinese printers were active in Japan for approximately the next thirty years.9 The names appearing most often in colophons and book margins were Chien Meng-Jung10 from Chiang-nan and Yu Liang-Fu11 from Phu-thien; indeed, the name Yu Liang-Fu appears in seventeen books, indicating that he was by far the most productive of the carvers.12 This work by Chinese carvers was significant because it accompanied a rise in the quality and quantity of printing in Japan. It was also associated with the adoption of the Chinese format in printing, and served to introduce many Chinese works to Japan.

Until the end of the 16th century Japanese printing was entirely dominated by the presses in the Buddhist temples, and the spread of printing outside Buddhist circles only began during the brief flourishing of movable-type printing. From 1592 to 1605 the Japanese warlord Toyotomi Hideyoshi unsuccessfully attempted to conquer Korea, and among the booty he brought back was equipment for movable-type printing; it was used until about 1650, being popular among the court, individuals, and the temples.13 The most noteworthy examples produced by it were the Sogobon,14 fine editions of famous classical works of Japanese literature,15 for example, the "Shogai-sen" (Fig. 1218). This was the first time such works had been printed in Japan, and use was made of an important technical innovation, linked type, which represented more than one kanji symbol.16 The movable type brought back from Korea was bronze, but bronze type was used only rarely in Japan, wooden type being the more usual.17 Printing of many secular works in Chinese continued and though an impressive number of editions were published in

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5 Cf. Kawai Katsumi (5), pp. 31-2; (4), pp. 179-80.
7 Cf. Kawai Katsumi (5), pp. 147-53; Kinni Yuashiki (7), pp. 48-86. The number of Yuan printers and the exactness of their activities may have sometimes been exaggerated, for in some copies the Japanese simply copied the original printers' marks from the Chinese editions.
8 Kawai Katsumi (3), pp. 143-4, 52-5.
9 陳文才 陳伯壽 程云昌 金氏岳
10 伊勢谷書
11 伊勢谷書
12 伊勢谷書
a short period with movable type, from 1630 block printing once again became ascendant. A

During the same period that movable type was introduced from Korea, the Jesuits brought a printing press from Europe to Japan. The press reached Japan in 1590, accompanied by two Japanese brothers who had been trained in typecasting and printing in Portugal, but because Christianity was already proscribed at this time, the press was moved about among various locations in western Japan, and in 1614 it was sent to Macao. Thirty complete editions in Japanese, romanised Japanese, and European languages published by this Japanese Mission Press are extant; they include religious tracts, dictionaries and aids to language study, as well as works of literature. Yet because of the increasingly strict interdiction on Christianity, the influence of these missionary efforts on Japanese printing was limited. A

Beginning in the 17th century wood block prints developed into one of the great arts of Japan. In its early stages this development was related to the importation of Ming books with wood-block illustrations, as is especially evident in the work of Moronobu Hishikawa (c. +1618-1644), sometimes considered the founder of ukiyoe, or 'Pictures of the Floating Life'. He first made black and white prints, with colours often applied by hand, a practice continued by his successors. Moronobu not only studied Chinese prints but also reproduced Chinese art books, and an album of erotic colour prints, Feng Liu Chun Cheh Chuang Thu, published in China in 1606, was copied and published in Japan in the late 17th century by him or his followers and under the same title. Reproduction of other Chinese colour prints followed later. Among many masters of the late 18th century, the work of such artists as Suzuki Harunobu (+1725-70) and Ando Hiroshige (+1797-1858) (see Fig. 1219) was especially noted. Although ukiyoe soon surpassed the artistic level reached in China by wood block prints and became famous for realistic portrayal of contemporary subjects and Japanese life, some elements of Chinese stylistic influence are clear in its formative stages. The technique of perspective was perhaps not derived from Dutch paintings, as has been frequently been asserted, but learned indirectly through acquaintance with Chinese block prints influenced by Western works.

* Compared with earlier accomplishments, the results in this period were spectacular. In only about twenty years 400 editions were published, and also it was at this period that the Tripitaka was printed in Japan for the first time; this was done with movable type; see Kawase Kanuma (2), p. 327; appendices, pp. 1-33.


* See the list in Hibbard (1), pp. 34-5.


* See works of Harunobu and his age by Waterhouse (1).

* See Shih Hsiao-Yen (1), p. 39, who says Chinese influence on certain elements such as iconographic types, stylistic considerations, and internal architectural settings can be discerned; see also Shiyou Fujikake (2), Chih Hsi-Min (3), pp. 143-7.

* Shiyou Fujikake (3), in Kobo, No. 489, pp. 115-17.

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* Shiyou Fujikake (3), in Kobo, No. 489, pp. 115-17.

During the Edo period (+1603-1867), as the Japanese economy prospered, more and more books were printed to fulfill the demands of the increasingly sophisticated townspeople. Particularly popular were numerous illustrated stories and novels, for though book illustrations had been used to some degree in earlier periods, it was at this time that they began to reflect the contemporary culture (Fig. 1220). Publishing became increasingly the domain of commercial establishments in the large cities; Tokyo displaced Kyoto as the major publishing centre, even though the latter continued to be important, and Osaka also became active in printing at this time.

Despite these new trends, Chinese classical books and Buddhist works continued to be important elements in publishing during the early part of this period. The government supported Neo-Confucianism and issued many Chinese books for use in schools; while with support of the Shogunate, several temples engaged in large-scale printings of the Buddhist Tripitaka, and at least two ambitious projects were completed in the 17th century. One is a complete set of the Daizokyo in 6323 dhan, printed with wooden movable type by the Tendai monk Tenkai of the Kan'ei Temple from 1657 to 1668. It was probably the first Tripitaka ever printed with movable type. Some thirty years later, another set of the Tripitaka was printed with some 60,000 cherry wood blocks from 1669 to 1681 by the monk Tetsugen, a disciple of the Chinese Zen priest Yin-Yian in Japanese Ingen) who founded the
Mampakuji, in Mount Obaku, Kyoto, where the entire set of blocks survives intact today.

Close to both China and Japan are the Liu-Chihia (Ryukyu) Islands, the people of which had their own line of kings, even though they became a tributary of China, from the +14th century on. In 1332 the king sent a son to China to study, and at about the same time the first Ming emperor sent thirty-six Fukienese families of boatmen and artisans to Liu-Chihiu to serve the tribute missions. These Chinese settled in a special village called Thang-yin, or Chinese Camp, which also became the site of a Confucian and Chinese temples. Descendants of these Chinese families played important roles in Liu-Chihia government, in education, and culture, and in 1381 they, rather than native Liu-Chihiu people, provided the students regularly sent to China. From the 13th century the Liu-Chihiu people began to use paper. Before this time, diplomatic documents sent to the Yuan court were written on wooden tablets.

During the 14th century Chinese envoys wrote about Liu-Chihiu paper; and one described various kinds of paper made there from paper mulberry bark. The two best-known Liu-Chihiu papers were called hua shou chih (paper of longevity) and nang shou chih (screen mounting paper), the latter a decorated paper used for windows and walls. From 1273 to 1277 these and one other kind, tsan hsin shih (purple cloud paper), were presented as tribute to China on several occasions. It seems then that paper production must have begun in Liu-Chihiu by the 17th century and possibly earlier.

The date when printing began in Liu-Chihiu is unknown, but was probably around 1500. An 18th-century Chinese official teacher of Liu-Chihiu students, Phan Hanxiong, recorded valuable notes on printing in Liu-Chihua (Fig. 1221), and according to these it was during the Cheng-te period (+1506–21) that the king arranged for the printing of the Four Books, the Five Classics, as well as works on philology, Neo-Confucianism, and literature; the printing blocks were stored in the palace. As aids in reading, some of these books had printed punctuation marks and

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1. According to a brochure given to Joseph Needham when he visited the collection, known as the Oubon edition, housed in a new building in the Mampakuji Temple in 1972.
2. The most important collection of documents on Chinese-Liu-Chihua relations is the Li Tai Pin Act, which contains 239 chapters of official papers from 1272 years of the tributary period from 1272 to 1279. A copy of mine is now kept in the Taiwan University Library, an edition by Wu Fu-Yin (1).
4. See ibid., pp. 147–52.
commissioned the blocks for the *Lia Yü Ten*, the Six Maxims in Colloquial Chinese, for use as a language text in Liu-Chhiu.9

The calendar used in Liu-Chhiu was issued annually by the Chinese government, but because of delay in transportation, temporary calendars were printed in Liu-Chhiu.10 Yet, despite the development of Liu-Chhiu handicrafts, Chinese envoys in 1808 still found it necessary to take with them to Liu-Chhiu block carvers, as well as barbers and tailors.11 This suggests that Liu-Chhiu printing must have remained quite limited, and that as late as the early 19th century was still dependent on Chinese craftsmen.

(3) DEVELOPMENT OF PAPERMAKING AND PRINTING IN VIETNAM

Like Korea and Japan, Vietnam has been within the cultural sphere of East Asian civilization, although it is located on the southeastern tip of the Asian continent. The northern part of modern Vietnam, Tongking, known in Chinese history as Chiao-Chou,12 Chiao-Chih,13 or Nho-Yieh,14 was ruled directly by China as a tributary state from the late second to the early 10th century. Its territory later extended to include Champa or Chan-Chheng15 in the southern part of the peninsula. For over two thousand years, Vietnam followed Chinese patterns of life and thought, practised Chinese bureaucratic and family systems, adopted Confucian learning as well as Buddhism from China, and used Chinese writing for serious literature. The Vietnamese created their own system of writing, called *nôm*, in the 14th century, by combining parts of Chinese characters, and adopted a 'national writing' by transcribing their language into Latin letters, from 1600 [Fig. 1222]. But the primary system of writing, used in government, scholarship, and religion, consisted of Chinese characters, and this continued up to the early 20th century.

Because of its geographical proximity and its political ties with China, Vietnam must have been introduced to paper and printing very early, and several references in early Chinese literature imply that paper may have been made in Vietnam in the 3rd century. Some 30,000 rolls of a kind of 'honey fragrance paper' (*tu hong chih*)16 are reported to have been brought to China in 5784 from *Ta Chhinh*,17 and scholars believe this must have been made of garbo bark in Vietnam and shipped to

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9 See *Liu-Chhiu Hu Yung Chou Wen Lu*, pp. 81–85.
10 See *ibid.*, pp. 81–85.
11 See *ibid.*, pp. 78–81.
12 See *ibid.*, pp. 85–93.
13 See *ibid.*, pp. 78–81.
14 See *ibid.*, pp. 85–93.
15 See *ibid.*, pp. 78–81.
16 See *ibid.*, pp. 85–93.
17 See *ibid.*, pp. 85–93.
China by Alexandrian merchants. During the period from +265 to +280, a tribute of more than 10,000 rolls of an 'intricate filament paper' (the & chih) made of fern or seaweed was recorded as sent by Nan-Yieh to China, while another source from the +3rd century says that paper was made by the people of Chiang-Nan by pounding the bark of the paper mulberry tree, which was called kuma in Ching, Yang, Chiao, and Kuang. Chiao here corresponds to modern Vietnam. From these early sources we may assume that paper could have been produced in the northern part of Vietnam by the +3rd century. This assumption seems to contradict a later reference that says paper was not made in Vietnam even as late as the first part of the 15th century. The Chau Fan Chih, a record of foreign nations and products written by Chao Ju-Kung in +1225, says: "In Chiao-Chih they do not know how to manufacture paper and writing brushes, so those from our provinces are in demand." Since this book was based on oral information from Chinese and foreign oversea traders, the above statement may have referred to the central and southern part of Vietnam along the sea coast, while the earlier source perhaps applied to the northern part bordering China. This theory seems to be supported by the fact that, at about this time, the method of papermaking also crossed Chinese borders to both the northeast and the northwest overland, not by the sea route. Even in modern times the Chinese method of papermaking is said to have been closely followed by the papermakers in north Vietnam. According to Dard Hunter, who visited the Tongking area in +1904, all the techniques used by papermakers in the Tongking area early in this century were more closely related to those of China than to those of any other country of Asia.

Chinese sources of later date record that paper and paper products continued to be exported to China from Vietnam, for their tributary relations were maintained after Vietnam's independence in the +10th century. It is said that paper fans were presented to the Chinese emperors by a Vietnamese envoy in +1799, and that an annual tribute of 10,000 paper fans was sent to China from the six provinces of Vietnam.

Fig. 122: Evolution of writing system in Vietnam, showing stages in which the Chinese, sanskrit forms were adopted or replaced. From DeFranco (3).

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\* See, for example, Tsao Mu-Chang (WFT), ch. 3, p. 62; authorship and doping of this work are controversial. In any event, the historical incident appears also in several other sources, which are not discussed here. For the Vietnamese origin of this paper, see Hirsh (1), pp. 235-5; Hirsh & Rockhill (1), pp. 205-6. n. 3; Tien (1), pp. 149-7; also discussion on pp. 418-9 above.

\* See also Tien (1), ch. 3, p. 73; Tien (3), p. 73; also discussion on pp. 44, 60 ff., above.

\* See also Tien (1), ch. 3, p. 73; Tien (3), p. 73; also discussion on pp. 44, 60 ff., above.

\* See also Tien (1), ch. 3, p. 73; Tien (3), p. 73; also discussion on pp. 44, 60 ff., above.

\* Hirsh & Rockhill (1), 873, p. 45.

\* See discussion in Huang Sheng-Chang (1), pp. 124-5.

northern Vietnam for more than a decade after 1470. One record says that under the Chinh dynasty some 200 sheets of yellow paper with a golden dragon design, along with inkstones, ink sticks, and brushes, were sent to China in 1730 in return for gifts of books, silk, and jade vessels from the Chinese emperor. Papermaking in Vietnam was unquestionably a direct transmission from China; its materials, tools, and methods are found to be almost the same. Besides the bark of the daphne tree (viếnh xà, Daphne involucrata, Wall.), which is a native product, the raw materials included bamboo, rice straw, and seaweed, and as far as techniques were concerned, not only the woven mould, but also the maceration of paper stock, the construction of vats, and the actual procedures were similar to those used in China. Even the same mucilaginous material used by Chinese women as pomade for the hair was also used as a sizing substance by the Vietnamese papermakers.

While paper was introduced to Vietnam very early, the Vietnamese must also have been exposed to Chinese books at about the same time. Yet the earliest record of access is of the +11th century, when they acquired various kinds of Chinese books—excepting, of course, those whose export was prohibited—and paid for them with their native products and spices. Within eight years after its independence, Vietnam received a gift of three copies of the printed Tripitaka and one set of the Taoist canon as a gift from the Sung court. Printing probably began in Vietnam by the 13th century, for the earliest known reference to it concerns population registers printed during the period from 1251 to 1258. In the Trân dynasty (+1255-1400) a copy of the Tripitaka was received from the Yuan court in 1295, to replace one destroyed during the Mongol invasion, and its printing is said to have been arranged, though, apparently, it was not carried out. Four years later, however, a Buddhist liturgy and manuals of writing for official documents are known to have been printed.

Under the Le dynasty (+1418-1802), when Chinese institutions were followed closely, the Confucian Classics were printed in Vietnam for the first time. An edition of the Four Books (Sắc Sáu Tạ Chênh) was published in 1467 and blocks for the Five Classics (Ưu Chống) were carved in the same year. Printing flourished especially during the second half of the 15th century, when printing blocks became so numerous that a special house was built at the Confucian temple to store them.

In later periods many more government editions of the Confucian Classics, histories, poetry collections, and dictionaries were printed, primarily for the civil service examinations.

The Vietnamese government attempted on certain occasions to control both printing and distribution of books. In 1734 scholars were prohibited from buying Chinese editions of Confucian classics and were restricted to the use of Vietnamese editions, and at various times there were regulations concerning the distribution of government publications. In 1796 official editions of the Five Classics and the Four Books printed at Hanoi were ordered to be distributed throughout the country.

On the basis of a calendrical work obtained in China in 1806, the Vietnamese calendar was formally inaugurated and the government began issuing an annual calendar, following exactly the format and content of the Chinese. The official editions included those printed by the National Academy, the Institute of Worthy Scholars, the Palace, and the Institute of History, which were similar to the central publishing agencies in China. Book publishing was concentrated in the capitals, Hanoi and later Hoi, and in Nam-dinh.

Private printings in Vietnam included books similar to the official publications; Confucian classics, histories, and readers primarily for candidates for the civil service examination. In addition, literary collections, genealogies, fiction, and medical works were published, while such Chinese novels as the Romance of the Three Kingdoms were especially popular. Besides Chinese literature, there were many original books by Vietnamese authors, including some women. The private publishers and printers came mostly from a single county, Gia-loe in Hai-duong province, and the block carvers in particular tended to come from two villages there.

All the earlier Vietnamese editions are of three types: those entirely in Chinese, those in Vietnamese characters or nôm (Fig. 1223), and those having Chinese text with nôm annotation as an aid to pronunciation. Some idea of these publications may be derived from the catalogue of books in the library of the former Ecole Française d'Extrême-Orient, which contains 2238 works in Chinese by Vietnamese, 1361 works in nôm, and 334 Vietnamese editions of Chinese books.

Most of the Vietnamese editions of Chinese works are Buddhist and Taoist writings, with smaller numbers of Confucian classics, literary works, histories, medical books, and miscellaneous writings. Although no complete edition of the Tripitaka was ever printed in Vietnam, many Buddhist works were published and more than 300 printed nôm dating from 1662 to 1764 are still preserved in Hanoi, among them more than twenty written by Vietnamese.

Although the majority of books were printed from wooden blocks, some were printed with movable type, an early example dating from 1712. Two large sets are known to have been printed with wooden movable type, which were acquired in China. A collection of administrative codes was printed in ninety-eight volumes with this type in 1855, and a collection of imperial poetry and prose was printed in

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12 Ibid. pp. 53-4
13 越南志略
14 越南實錄
15 西域大全
16 三朝
sixty-eight volumes in 1877. Bronze movable type may also have been used. Vietnam has also had a flourishing wood block colour print industry, especially for New Year pictures with subjects and methods of production similar to those in China (Fig. 1224).6

(4) INTRODUCTION OF PAPER AND PRINTING TO SOUTH AND SOUTHEAST ASIA

The region of the Asian continent and archipelago beyond Vietnam contains a heterogeneous mixture of racial and cultural elements at all stages of their development, and has been culturally dominated or at least strongly influenced by India through the waves of Hinduism, Buddhism, and Mohammedanism before the coming of European Christians. Moreover, communication between India and

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  ** See a report on modern Vietnamese New Year pictures in Shang (1), pp. 39-41.
southeast Asia resulted in the mass migration of Indian population and ideas eastward into Burma, Malaysia, Siam (Thailand), Indonesia, and Indochina (modern Vietnam, Cambodia, and Laos) where the Indian and Chinese cultures met and mingled. Generally speaking, the people in the area beyond Vietnam were outside the sphere of East Asian civilisation, although some Chinese influence through trade and migration was felt in some of these countries during various periods.

Despite the cultural divergences, however, one common factor for all lands and peoples in this area seems to have been the lack of a written tradition such as characterised the Chinese culture. Since the sacred texts of India were transmitted primarily through oral tradition and memorisation, written texts were not normally used by the learned men. For the various nations of southeast Asia, few native written records from early times are known, and most of their histories depend upon oral tradition or the records in Chinese and occasionally in Arabic and Persian sources. For this reason, the need of paper and printing for transmission of ideas was negligible in this region, and though paper might have been introduced to this area at an early date, printing was not known until after the coming of Europeans in the 16th century.

In India, before the advent of paper, materials used for writing included tree bark, leaves, wooden boards, leather, cloth, bones, clay, stone, and metal, especially copper—indeed a copper plate of the 9th century bearing Sanskrit inscriptions on both sides was found in 1780 in Eastern India (Fig. 1225). But in Bengal and southern India, the commonest were palm leaves while birch bark was used in Kashmir and the northern parts of the country. The palm leaf (Fig. 1226) was cut in a standard shape and written on with an iron stylus, the incisions being filled with a dye; holes were pierced through the leaves, and cords were inserted to hold the pile of leaves together. Although paper production began in India by the 14th century or earlier, palm leaves continued in use even as late as the 19th century, while they were also used in Ceylon (Sri Lanka), Burma, and Siam. In Indonesia both palm leaves and birch bark were used; in the Philippines bamboo, leaves, and bark were all employed, and according to Chinese sources, in Champa (Chin-Chheng) and Cambodia (Cheen-Lin) parchment made of deer and sheep skins was blackened by smoking and written on with bamboo stylus and white powder. Also, in many parts of southeast Asia where true paper was not produced, a kind of quasi-paper called tapa was manufactured. In Indonesia, the Philippines, Malaysia, and many Pacific islands, it was made by pounding the inner bark of the paper mulberry, first into small pieces, which were later combined into large sheets

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similar to paper. It was used primarily for clothing and occasionally for writing by people in some of these areas. Paper appears to have been known and used in India in the second part of the + 7th century, as is attested in the writings of a Chinese Buddhist pilgrim, I-Ching, who travelled to India from +671 to 695. In the messages he sent home he said: "The priests and laymen in India make Guas, or images with earth, or impress the Bodhis image on silk or paper, and worship it with offerings wherever they go." He also referred to the use of discarded paper for toilet paper and to reinforcing umbrellas or hats with paper, and included the Sanskrit word laka for paper in his one-thousand-character lexicon. Apparently paper was not yet manufactured in this area, for when he was in Sumatra, he requested that paper and ink be sent from China for copying ārāmas. Because previous records, including the detailed account by that earlier pilgrim to India, Hsian-Tsang, who was back in China by +695, make no mention of paper, it is believed that it must have entered India between +645 and 671.

It seems that paper and papermaking were introduced to India over more than one route and at different times. One way it came was probably from China through Tibet and Nepal to the Bengal region, because we know that papermaking was introduced to Tibet in about +650, when the Tibetan king asked the Thang court to send him silkworms for breeding, and craftsmen for making wine, mills, paper, and ink. Since Nepal was then under Tibetan suzerainty and Nepal-Indian relations were very close, it is likely that paper also entered India at this time. Another route to India was perhaps through Kashmir, for the Muslims, who established power in west India in the 8th century and in north India in the 12th, very likely first imported paper into the country and then fostered its manufacture. Early paper manuscripts from India date from the 11th to the 14th century, while skilled artisans, including papermakers and bookbinders, were brought by a future sultan for Samarkand to Kashmir at the beginning of the 15th century. During the same period, Ma Huan, a Chinese in the mission of Cheng Ho who visited Bengal in 1406, mentioned the manufacture there of paper from bark, which was glossy like deer skin. Clearly, paper was being manufactured in both Kashmir and Bengal no later than about 1400 and possibly as early as the 11th century.

Printing in south and southeast Asia, with the exception of Vietnam, was mostly introduced by Europeans from the 16th century onwards and was used primarily by missionaries, colonial governments, and European residents. The first printing by European techniques in Asia began in the middle of the 16th century, by a press said to have been bound for Ethiopia, but brought to and used in Goa by Jesuit missionaries for printing religious tracts and other literature. The Portuguese published works in many other Indian cities besides Goa in the 16th and 17th centuries. The first work in a local language was a translation into Malayalam of Xavier’s catechism, probably printed in Cochin in 1557, and printing in Tamil began in Panikkar in +1587. However, because the native languages were replaced by Portuguese in Goa in the late 17th century, printing ceased there until 1821. Danish missionaries began printing at Tranquebar on the

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6 A new trade route from China to Tibet and Tibet to Nepal opened for the first time in +650, as a result of the marriage of the Tibetan king to a Nepalese princess in 653 and in a Chinese princess in 659. Cf. Huang (5), pp. 114 ff.
7 Cf. Gode (2), p. 5, which lists a number of old Indian manuscripts dating from +689 to +735.
8 Cf. Gode and Rahnov (3), pp. 135-6, which says that Kashmir paper earned a reputation for excellence and was presented to other rulers by the sultan.
10 The first printing of these verses was the Globalis de Antiquis de Quadrivio in 1579; the first printed book was the Jornada Cristiana de Francis Xavier published in 1552; cf. Rhodes (1), p. 11 ff.
11 The emperor of Ethiopia had requested a press from the Portuguese king in 1516, but it never reached Ethiopia because of strained relations between the empire and the missionaries.
east coast of India about 1719, but the British did not begin regular printing until 1758 in Bengal and Hoogly, though an earlier attempt had been made at Bombay in 1724 or 1725 and something may have been printed at that time.\footnote{Cf. Rhedae (i), pp. 11-29; Prickler (i), pp. 1-27, 36-37; for early Indian prints, see Diehl (i).}

Printing was introduced to the Philippines in the 16th century, but in the 10th century, before the Spanish conquest, trade relations had already been established between China and the islands. Envoys and tribute from Luzon and Mindanao were sent to the Ming court in the 14th and 15th centuries. However, it was in the 16th century that numerous books were brought by Dominican friars to Manila,\footnote{Cf. Borer (i), p. 209; also discussion on pp. 30f. above.} where a large Chinese community helped not only in their translation but also in introducing wood-block and movable-type printing. Indeed, Chinese printers monopolised the printing industry in the Philippines for over fifteen years before native craftsmen participated in the trade. The earliest extant printing there includes two editions of the "Doctrina Christiana" by the Dominican friar Juan Cobo, one in Spanish and Tagalog, the other in Chinese, entitled "Wu Chi Tien Chu Cheng Chiao Chen Chiao Shih Leh" (Veritable Record of the Authentic Tradition of the True Faith in the Infinite God) (Fig. 1227). Both were printed in 1593 from wood blocks,\footnote{Cf. Bernard-Matte (16), p. 34; Van der Loos (i), pp. 1-8; Fang Hao (5), pp. 26-29. The only known copy of the book, containing sixty-two leaves, is kept in the Biblioteca Nacional in Madrid.} and both the technique and the Chinese style of the illustrations indicate that these books must have been cured by Chinese. Typography was first used in 1604, when two books were printed with locally-made metal types by a Chinese printer named Juan de Vera, whose achievement in cutting punches and striking matrices has been called a 'semi-invention' of typography.\footnote{Cf. Van der Loos (i), p. 26-29.} His brother, Pedro de Vera, and another Chinese named Keng Yong, also printed several books during the following few years. Between 1593 and 1630, there were eight Chinese printers whose names are known,\footnote{Cf. Borer (i), p. 439.} and among fifteen titles printed in Manila between 1593 and 1604, at least five are in Chinese.\footnote{Cf. McMurrich (i).}

The 17th century witnessed the rise of the Dutch at the expense of the Portuguese as the major European power in Asia. The Dutch gradually extended their power over Indonesia, establishing Batavia in 1619, and they took Malacca and Ceylon from the Portuguese in 1641 and 1658. The first Dutch printing in Asia was at Batavia, probably in 1659, but there is more definite evidence of printing under government auspices from 1668. The former may have been an almanac or chronicle, the latter was certainly a peace treaty between the Dutch and the prince of Macau.\footnote{De Graaf (ii), pp. 11-40; McMurrich (i).} Malay vocabularies appeared in the early 18th century, and about 1739 a Malay Bible in Arabic letters was published by a short-lived semiinary press. Over the years a variety of presses were set up, government, private, and religious, and the first newspaper appeared in 1744, but was suppressed within two years.\footnote{無極天主正教真傳實錄章} In
general, the authorities of the various European colonies in Asia kept close control over the press, in order to prevent criticism of the government and to guard against rousing antagonism among the local peoples, due to missionary printing activities. In Ceylon, Dutch missionaries began printing in 1737, beginning with a Sinhalese Prayer Book, and between 1737 and 1767 thirty-four titles are known to have been
printed there. Most were religious works and almost all in Sinhalese or Tamil. Although the British began trade and settlement on a limited scale in Asia in the early 17th century, they did not become the dominant colonial power of the area until the late 18th century. But after they established control of the Straits Settlements in Malaya, they began printing at Penang in 1806, at Malacca in 1815, and at Singapore in 1822. The earliest printing in Penang was commercial and also served government needs, while in the other two cities printing was started by the Baptist missionaries of the London Missionary Society, who had first started their printing activities in the Danish colony of Serampore near Calcutta in 1801. American Baptist counterparts of the British missionaries initiated printing in Burma and Siam, printing in Burmese beginning at Rangoon in 1815, in Siamese at Bangkok in 1826, with some earlier works for the Baptist having been printed at Singapore. In these, as in earlier cases, the main products of missionary presses were religious tracts and Bibles in local languages, but they also published such other works as dictionaries, grammars, and introductions to European knowledge. These missionary presses represented an important step in the early diffusion of printing in this area.

(j) CONTRIBUTION OF PAPER AND PRINTING TO WORLD CIVILISATION

The advent of paper and printing reflected a stage of maturity in the progress of civilisation; every step in their development has been a milestone in the history of humanity. Paper may have been discovered by accident, but when it evolved it became the most convenient and cheapest material for writing, and showed its supremacy over every other material wherever it had been used. Eventually it replaced writing materials that were more cumbersome or expensive, and penetrated into the fabric of society as an indispensable article of daily life. It was certainly one of the most important prerequisites for printing, which originally served as a mechanical extension of handwriting. But as soon as the printed word multiplied, it had an impact on all aspects of the political, social, economic, and cultural life of mankind. This was especially evident in the transformation of typography to Europe from the medieval to the modern age, for the introduction of typography to Europe in the middle of the 15th century has generally been recognised as the turning point in this great transition.

(i) THE ROLE OF PAPER IN CHINESE AND WESTERN CULTURES

Little was written about paper in the West until after its extensive application to printing in the late 15th and 16th centuries. Before that time, however, paper is

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* Rhodes (1), pp. 67-72; McMurrich (4); Priollet (1), pp. 105-99.
* C.E. Byrd (1), pp. 4-7; Rhodes (1), p. 29.
* About 400–1000 printing presses were operating in France in the 16th century and paper mills had to supply some 3000–5000 reams a day, or 45,000 to 60,000 reams a year; see Fellows & Martin (1), p. 49, p. 50.

known to have been used primarily for writing, wrapping, and certain other non-literary purposes, in both Europe as well as the Arab world. Since the latter part of the 18th century, paper became increasingly popular and patented for use in the building of houses, ships, carriages, chairs, tables, and bookcases. By the end of the 19th century, it was being converted into material for almost every conceivable item of personal wear and belongings, for some kitchen utensils, and as a household furnishing; indeed, by then it had become so widely used that a song entitled "The Age of Paper" (Fig. 1228) was popularly performed in London music halls.

It is now clear that many similar applications of paper and paper products occurred in China at least a thousand years earlier than in Europe. Besides its use for writing, books, and documents from the +1st century onwards, paper was employed extensively for many other purposes. As we have seen, it was made in different colours and designs for stationery and cut or folded into patterns for amusement or for decoration; it was used as a daily necessity for wrapping, for sanitary and medical purposes, and for making such everyday articles as cups, fans, umbrellas, flags, lanterns, kites, and toys. Yet all these uses were developed in China before the close of the 6th century.

Paper is also known to have been used in making hats, turbans, coats, trousers, belts, shoes, bed sheets, mosquito nets, curtains, screens, tiles, together with other household furnishings and appliances, and even for coffins and armour. The symbolic use of paper images in ceremonies and festivals, which consumed a large part of its production, satisfied both the living and the dead without the expense of having to use real objects for sacrifice or burial. The adoption of paper as a medium of exchange in the early 9th century, and its earlier use for business records and transactions brought about a great revolution in economics. All these applications for literary and nonliterary purposes were accomplished before the end of the 9th century, when paper first began to be known to Europeans.

Among numerous uses of paper, its most important contribution to Chinese culture is perhaps its unique role as a medium for Chinese art. Unlike Western art which stresses such forms as sculpture or architecture, the highest form of Chinese art is calligraphy and painting; it has developed primarily through the application of brush and ink on paper. Paper provided the best surface for the free expression by the artists of China, and this has also been true of the mainstream of fine art throughout the nations of the East Asian civilisation.

Chinese calligraphy as an art began probably as early as the +2nd century

* Paper was reported to have been used for wrapping vegetables, spices, and hardware in Cairo in 1093, and for wrapping groceries in food markets in Baghdad in 1246; see Hunter (6), p. 347. It was used in Europe by such tradesmen as box-makers, playing-card makers, and billposters; see Fellows & Martin (1), pp. 53-59.
* The first use of paper in Europe for furniture is dated 1372; an English patent for use of paper in building houses, etc., is dated 1384; see Hunter (6), p. 513. It was used in Europe by such tradesmen as box-makers, playing-card makers, and billposters; see Fellows & Martin (1), p. 53.
* By 1869 paper was used for such articles as spools, collars, cuffs, handkerchiefs, hats, petticoats, rickets, shirts, slips, vests, hose, caps, muffins, plasters, towels, bowls, carpets, curtains, table tops, roof coverings, and window blinds; see Hunter (6), p. 518.
* For the various uses of paper and paper products, see detailed discussion on pp. 34 ff above.
during the Later Han. It was not developed into a special form of art until the +3rd or 4th century, after paper had been greatly improved and was extensively used for writing. The basic calligraphic styles — the cursive or running, and standard or regular — which are still prevalent today, were all evolved during this period. The superiority of paper for such art is obvious, for neither bamboo nor wood nor stone has such a smooth and receptive surface. Without paper, the various calligraphic styles could not have developed so perfectly throughout the ages.

Early paintings were made on walls but in the Thang dynasty artists began to paint on paper. By the Sung, calligraphy and painting developed side by side into one art, exemplified by the typical brush works of such influential artists as Su Shih (1036-1110) and Mi Fu (1051-1125). The so-called School of Literati in painting, which used brush strokes freely in movement and rapidly in execution, flourished from this time, and it was primarily the use of the whitish, smooth, soft, and absorbent surface of the paper that resulted in such subtle and free expressiveness (Fig. 1225). Although silk has some of these qualities, expense and its other limitations prevented it becoming as popular a medium for art, while some of the tonal effects available on paper such as washing, splashing, or graduations of ink, could not be easily achieved on a silk surface. Most Western artists habitually paint on canvas with oil paint, but the Chinese, as well as all the peoples of East Asia, have found paper the ideal medium for their artistic expression.

Paper is not only preferred for fine arts, but has also been used in applied and decorative arts in the East as well as in the West. The most popular such item is probably wallpaper, which found its way from China to Europe as early as the 16th century and to America in the early part of the 18th. The introduction of this most welcome product of China, which eventually replaced wall hangings of expensive silk, leather, and tapestry in European homes, has enriched the living conditions of ordinary people as well those of wealthy and royal households. Other popular uses of paper in decorating Chinese houses include folding screens, hanging scrolls, household posters, and New Year pictures, which have made Chinese living quarters more attractive and enjoyable.

The wonders of paper have been attested by a multitude of literary references which commend its origin, nature, and appearance, as well as utility. The earliest such praise of paper, by the scholar Fu Hsiens (+295-353), is expressed in rhymed-

* It is usually considered to have been in the time of T'ai-Ho Yang (+137-191) that the aesthetic discussion of Chinese writing became prevalent in China.

* The earliest examples of Chinese calligraphy on paper surviving today include such specimens as those of Lu Ch'ao (+295-374) and Wang Hsi-Chih (+306-391) of the Chin period.

* Specimens of old wallpapers are said to be still preserved in some of the old colonial mansions of America; see Larder (48), p. 31.

* See discussion on pp. 116 ff. above.

* Mounted scrolls of painting and calligraphy were laid flat on tables for examination in early Thang, but later were hung on walls; see van Goll (59), pp. 149 ff.

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prose entitled Chi k'uei (On Paper), the text of which is transcribed in Fig. 1230 and may be translated as follows:¹

For order the world requires
Both cruelty and elegance,
With politeness to balance deficiency and abundance;
So the tool and the substance after
To meet in the changing times.

As the Book of Changes used incised symbols
To substitute for the knotted cords,
So paper was invented to replace bamboo slips.
For convenience even plain and thrifty,
To adapt to changes as time advances.

Lovely and precious is this material,
Luxury but at a small price;
Matter immaculate and pure in its nature
Embodied in beauty with elegance incarnate,
Truly it pleases men of letters.

It makes new substance out of rags,
Open it stretches,
Closed it rolls up,
Contracting, expanding,
Secreting, expounding.

To kinship and friendship scattered afar,
When you are lonely and no one is by,
You take brush to write on paper
And the fish and the wild goose²
Carry your affection
Ten thousand miles...
And your thoughts on a corner.³

After a lapse of more than a millennium, the first poem on papermaking in a European language appeared in a book about trades by Hani Sachs (+1494–1576), whose verses mainly describe the technical procedures involved in converting rags to the finished product.⁴ It was published in 1588, accompanying a block engraving by Jost Amman, and this picture is the earliest illustration depicting a papermaker at work with his essential tools (Fig. 1199). A little later, in 1588, an account of papermaking in verse form appeared in English. This work, by Thomas Churchyard (c. +1520–1604), expresses in its 353 lines an interest in the

¹ This dyed prose has been rendered into English by E. H. Tiesen and Ming Sun Poon and paraphrased in verse form by Howard W. Winger; part of the verse in a different translation is cited in Tiesen (c), p. 73d.
² This verse has been translated into English by E. H. Tiesen and Ming Sun Poon in verse form by Howard W. Winger; part of the verse in a different translation is cited in Tiesen (c), p. 73d.