

Preservation and Care of Philatelic Materials

Subsidiary Page 1 A Brief History of Paper Manufacturing

Since the focal points of our hobby of philately and postal history are stamps and covers and, although perhaps to somewhat of a lesser extent books, it is worthwhile to consider at least a little of the history of paper.

The term *paper* comes from *papyrus*, a water plant which was used by the ancient Egyptians to make a type of writing paper. The Egyptians crisscrossed thin strips of papyrus stalks and pressed layers of the crossed strips into sheets. Beginning about 200 B.C., parchment paper gradually replaced papyrus as the most commonly used writing material until the introduction of paper from the Middle East in the A.D. 1200's; and by the 1400's in Europe at about the same time printing was being developed, paper had largely replaced parchment.

The Chinese, as early as the second century B.C. used paper. Paper is considered to have been invented in China in 105 A. D. by Ts'ai Lun (sometimes referred to as Cai Lun), who served in the court of Emperor He Di in Hunan. Ts'ai Lun and the paper-production process he invented were featured on two 1962 stamps from People's Republic of China, as shown in **Figure 1**.



Figure 1. The inventor of paper making, Ts'ai Lun, at left, and a depiction of his process, right, on two 1962 stamps issued by People's Republic of China. Stamps courtesy of Dr. Jason H. Manchester.

Originally, the Chinese made paper from such diverse materials as mulberry, assorted inner barks of various plants, bamboo, fish nets, hemp, and rags. The Arabs preferred rags originally, but later began to use flax fibers. Even later, cotton became more commonly used in paper manufacture.

The Chinese art of paper making became established in the mid-East when Arabs captured a group of Chinese paper makers and urged them to carry on with the paper-making process. Baghdad had become a center of the paper-making industry by A.D. 795, from where it spread to Europe in consequence of the Crusades and the conquest of Northern Africa and Spain by the

Moors. The first paper mill in Europe was one built in Sativa, Spain, in 1151. The process of paper-production which Ts'ai Lun invented is essentially the same as that used today. The art of making paper spread to Germany, France, and England in the early 1300's.

On May 12, 1999, the Czech Republic issued a commemorative postal card with imprinted 4 Kc stamp to commemorate 500 years of the production of paper in Czech lands (van Zanten, 1999). The card is shown in **Figure 2**.



Figure 2. Commemorative postal card issued by Czech Republic to commemorate 500 years of the production of paper in Czech lands. Card courtesy of Mr. Ludvik Svoboda.

The stamp image of the Czech Republic card shown in Figure 2 is dominated by the old symbol for wood -- a highly stylized tree -- the raw material for the production of paper. The first written record in connection with the production of paper in Bohemia originates from the era of King Vladislav II and is dated May 4, 1499. On the left side of the postal card is the oldest known illustration of paper production from an engraving by Jost Amman from 1568. To the right of the illustration are the dates 1499/1999 over the coat-of-arms of a Melantrich lion and the quotation "Paper for the Use of the Common People of the Czech Lands" in Czech (van Zanten, 1999).

In the New World, the Mayans in Mexico had devised a method of producing paper as early as A.D. 500. Paper manufacturing centers had flourished during the Aztec period. A major Mayan library was destroyed by the Spanish in 1549.

In North America, the first paper mill was built by William Rittenhouse in Pennsylvania in 1690. The 300th anniversary of the Rittenhouse paper mill was commemorated by the U. S. with a postal card issued in 1990 as shown in **Figure 3**.

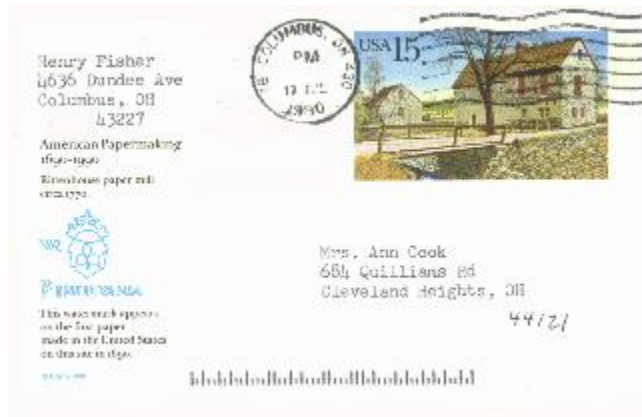


Figure 3. U. S. postal card issued in 1990 to commemorate the 300th anniversary of paper making in the U. S. The card features Rittenhouse paper mill c. 1770. This mill made the first paper in the U. S. in 1690. Card courtesy of Mr. Henry Fisher.

The year 1803 marked the construction of the first paper mill in Canada at St. Andrews, near Lachine, Quebec.

A 1984 study by the Food and Agriculture Organization of the United Nations reported some astonishing facts. In the United States, utilization of paper and paper products amounted to an average of 660 pounds per person. That rate of consumption amounts to nearly 64 million metric tons per year. Japan comes in second with a total annual consumption of 19,344,000 metric tons, and Canada is third with a total consumption of 14,222,000 metric tons. This 1984 statistical study needs to be repeated.

Literally thousands of grades and types of paper are now manufactured. Today, cellulose fibers from numerous sources such as bamboo, cotton, hemp, jute, sugar cane, wheat, rice, and various woods are utilized in paper production; but the major source of paper-making in North America is cellulose from wood.