

The paper road

For centuries, making paper was a craft kept in Chinese workshops. It took more than a thousand years to travel from there to the mills of Europe.

Every people who learnt it changed the recipe to suit what they had to hand: mulberry bark in China, kozo in Japan, flax and rags in Samarkand and al-Andalus, and wood in the nineteenth century.

In Asia, from the 2nd to the 8th century

105



China. Cai Lun, an official at the Han court, presents the emperor with paper made from mulberry bark, scraps of hemp, rags and old fishing nets. It costs less than silk and weighs far less than strips of bamboo. Archaeologists have found Chinese paper two centuries older, but Cai Lun's is the one copied across the empire.

610



Japan. According to the chronicle *Nihon shoki*, the monk Damjing, from the Korean kingdom of Goguryeo, teaches the court how to make paper and ink. Japanese papermakers turn the bark of the kozo shrub into *washi*, thin and very strong. The Shōsōin in Nara still keeps household registers written on paper in 702.

751



Samarkand. A tradition says that after the Battle of Talas, Chinese prisoners taught the craft in this Silk Road city. Samarkand's papermakers use flax and cotton rags. By about 800, Baghdad has workshops of its own, and paper replaces parchment in the caliph's archives.

How a sheet was made

1. The fibres are chopped and left to soak until they break down into a pulp.
2. The mould, a fine screen on a wooden frame, is dipped into the vat and lifted out full of pulp.
3. The mould is shaken: the water drains away and the fibres lock together in an even layer.
4. The sheet is pressed between felts and hung up to dry.

The wires of the mould leave their print in the sheet: they are the fine lines you see when you hold paper up to the light.



Around the Mediterranean and in Europe, from the 12th to the 19th century

1150



Xàtiva. The geographer al-Idrisi writes that this town of al-Andalus makes a paper with no equal anywhere in the world, sold to East and West. When James I takes the town in 1244, the workshops carry on.

1282



Fabriano. The mills of this Italian town use the river to drive hammers that beat rags to pulp. They size their sheets with gelatine, which stops the ink from spreading, and mark them with a watermark, a design that only shows against the light. By the 14th century, Italian paper is sold across half of Europe.

1844



Saxony. After printing came the newspapers, and there are no longer rags enough for so much paper. In 1798, Louis-Nicolas Robert had built a machine in France that made one continuous sheet, with no mould. In 1844 the weaver Friedrich Gottlob Keller presses spruce logs against a grindstone and gets wood pulp. From then on paper is cheap and plentiful, and a daily paper costs no more than a loaf of bread.