

## **City of Mino: An Ideal Environment for Making Paper**

The local environment plays an important role in the production of Mino's paper. The Nagara and Itadori Rivers carve wide valleys through the mountains surrounding the city of Mino. An abundance of water and ready access to raw materials make the area ideal for paper production.

### *Start with clean water*

Water is used at every step of the papermaking process, so paper workshops are located close to rivers and springs. The process begins by peeling the hard outer bark from branches of *kozo* paper mulberry, revealing the white inner bark. The inner bark strips are stripped off and washed and left to soak for several days in the river or a water bath outdoors, where water and sunlight have natural bleaching effects. After boiling the inner bark strips to break down the fiber, the resulting mass is carefully picked over in flowing water to remove impurities. Finally, the pulp is mixed with a natural dispersal agent in a shallow tank of clean water; the slurry is strained through a bamboo screen to form thin sheets of paper. By this method, an experienced artisan can produce around 80 sheets of paper a day.

To create white paper free of discoloration, the water must be clean and free of pollutants and certain types of minerals that can damage the paper. Minerals such as calcium carbonate or magnesium carbonate can affect how the bark fibers bond and result in a paper that is weaker or uneven in thickness. Iron oxide in the water can act against the natural bleaching process and may appear years later as brown oxidation marks on the surface of the paper.

### *In the rays of the sun*

Mino paper is famous for its naturally white appearance, which is enhanced through sun bleaching at both the early and final stages of the papermaking process. Both the inner fibers of the *kozo* bark and the finished sheets of paper are naturally bleached in sunlight. After the fibers are peeled from the white inner bark of the *kozo* shrub, they are spread out in the shallows of the river or a water tank and exposed to sunlight. In other parts of Japan, bleaching is done by laying the *kozo* fibers out on snow-covered fields or in rice paddies after the harvest.

After the fibers have been soaked and exposed to the sun, papermakers pick them over to remove impurities, which are most easily identifiable in natural light. Experienced pickers can process 1 to 2 kilograms of fibers a day. Papermakers also prefer natural light to judge the thickness of the paper as it forms, and paper workshops have large louvered windows that open up to views of the river and mountains. The paper is dried naturally in the sun on large wooden boards, which takes up to an hour in strong sunlight. The sun has a natural bleaching effect on the paper as it dries. Each sheet of Mino paper is thus the product of the natural materials, the surrounding environment, and the skills of the maker.