

Rice Milling around the World; early approaches

Milling journals of the past at The Mills Archive

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A Chinese legend says that rice is the gift of animals rather than the gods. After a series of disastrous floods, all plants had been destroyed and no food was available. People survived through hunting, but it was very difficult, because animals were scarce. One day a dog ran

through the fields with bunches of rice seeds hanging from its tail. The people planted the seeds, rice grew and hunger disappeared.

At the Mills Archive we have in our library numerous journals, books and catalogues, as well as many images, on rice production from all corners of the world. These range from hand winnowing to milling by modern day methods. This article concentrates on the early primitive methods, largely dependent on muscle-power, either from animals or humans. Subsequent articles will look at our coverage of the introduction of water power and the early stages of industrialisation.

One of our journals, *The Miller* (7 August 1882), has many articles on rice milling from different countries. A report from Burma indicates that the paddy was sown in June after the rains had fully set in, first in the higher lands where it was sown on the surface of the water, forming nurseries. After the plants had reached 18 inches they were pulled up by the roots and tied in bundles to be transplanted into fields lower down, which by this time had been ploughed ready to receive them. The transplanting took place in September and was performed by the women and children. It was hard work as it required stooping all day long in ankle deep water. One article suggests that there is no more beautiful sight in the world than the fresh emerald green of the tender young rice plants!

Once transplanting was done no further care was necessary beyond driving off the birds as the crop ripened and seeing to the water supply by opening sluices.

Occasionally, with a late or heavy monsoon, thousands of acres were sometimes submerged and the crops ruined, as happened in 1876 and 1877 when there was great suffering among the populace. The journal issue is well-illustrated, featuring a series of images of different processes from early times to some which are still used today.

Rice milling in China, before the invention of modern machinery, was carried out in local villages by muscle power using millstones or a single large stone. The rice

would be threshed first to remove the husk, then crushed between stones pulled round by an animal, usually donkeys or oxen, or by hand. It must have been heavy work as most illustrations shows two men, one pulling and one pushing the heavy stone round to decorticate or remove the husk.

Unmilled rice, known as paddy (Indonesia and Malaysia: padi; Philippines, palay), was usually harvested when the grains had a moisture content of around 25 percent. In most Asian countries, where rice was almost entirely the product of small farms, harvesting was carried out



Rice winnowing by hand



Winnowing and grinding rice



Winnowing of rice in Japan



Donkey and Chinese women husking rice at the Franciscan Missionary Union, Chan-Tong, China

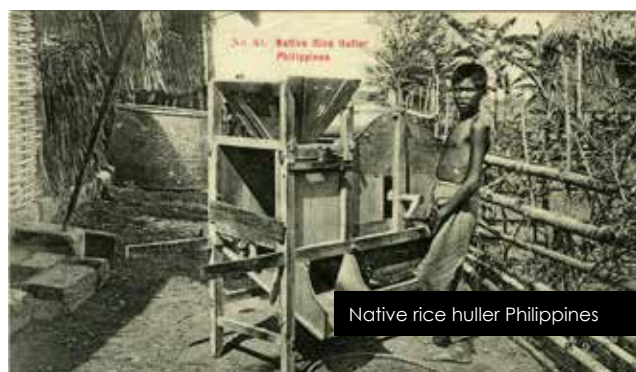
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Mission des Franciscains du Chan-Tong or. (Chine).
Femmes chinoises décortiquant le Riz

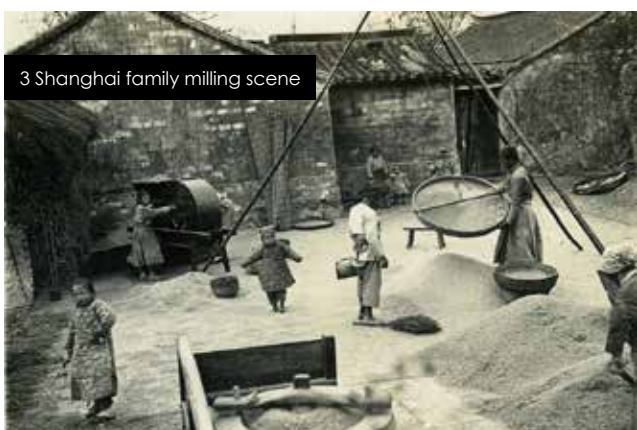


Rice mill in India powered by oxen

VILLAGE RICE MILL



Native rice huller Philippines



3 Shanghai family milling scene

manually. A familiar sight in several Asian countries was paddy laid out to dry along roads in the sun. The drying had to be carried out quickly to avoid the formation of moulds. Harvesting is followed by threshing, either immediately or within a day or two.

The seeds of the rice plant are first milled using a rice huller to remove the chaff (the outer husks of the grain). One illustration shows this process being done by water power using wooden stamps, a topic I'll return to next month. At this point in the process, the product is called

brown rice. The milling may be continued, removing the bran, for example, the rest of the husk and the germ, thereby creating white rice. White rice, which keeps longer, lacks some important nutrients; moreover, in a limited diet which does not supplement the rice, brown rice helps to prevent the disease beriberi.

Raw rice may be ground into flour for many uses, including making many kinds of beverages, such as amazake, horchata, rice milk, and rice wine. Rice flour does not contain gluten, so is suitable for people on a gluten-free diet.

We have many old postcards that show the various processes of rice production in Japan, China, India and the Philippines. Some of these illustrate this article, showing several of the stages in the process to produce polished rice. After initial threshing and winnowing to remove the husk, it would be passed through stones to remove impurities, and then it would be milled again to provide rice that could be used for cooking. To complete the process to obtain polished rice the grains would be put in a rotating drum with perforations to polish the seeds.

These articles only give a brief glimpse of the several million records held by the Mills Archive Trust. If you would like to know more please email me at mills@millsarchive.org