

Lan Su Garden Plant Talks
Edgeworthia chrysantha 邊緣菊花 (biānyuán júhuā)
Elizabeth Cha Smith (March 15, 2018)



“Had I been born Chinese, I would have been a calligrapher, not a painter.”
- Pablo Picasso (1965)

Edgeworthia in Lan Su

In our garden, volunteers know *Edgeworthia chrysantha* as the “Chinese paper bush” or just “paper bush.” Starting in early January, we start to notice its button-like green buds in Bed #20S behind the gift shop, and by early February we see them turning into golden yellow flower heads dangling at the tips of ternate (three-pronged) branches that extend from naked base branches. Edgeworthia is also known as “yellow daphne” because these plants belong to the same family and have similar fragrances and flowers. The combination of edgeworthia’s small, delicate yellow flower clusters and their gentle fragrance is a delightful surprise for our visitors, and it is really nice to know that the blooming will continue for several more weeks while we are still in winter mode.

Although the symbolic value of edgeworthia in Chinese culture is not clear to me, I did read about how its flowers, bark, and roots have been used in folk medicine for their anti-inflammatory and analgesic properties and to treat ocular diseases as well as insomnia and depression.

Chasing a Paper Trail

Because of edgeworthia’s most common name, “paper bush”, I was interested in learning more about how the Chinese and other cultures used it to make paper. Imagine my surprise when I read *The Paper Trail* (a highly regarded monograph on the history of paper) and found that the author, Alexander Monro, does not mention edgeworthia once in his almost 400 page book!

Despite my difficulty in finding out more about whether or how Chinese used edgeworthia in paper-making, archeologists/historians have known for a long time that the Chinese first invented more primitive forms of paper during the second century BCE using hemp (European paper-making dates to the 16th century). Today, hemp is abundant in China which provides 70% of the world production.

Although it’s unclear when Chinese used edgeworthia to make paper, they probably did so through the same process of “maceration” that it used to make paper out of other materials (like hemp, rags, linen, and cotton). Maceration starts with the rigorous and time consuming work of separating the outer layer of the stalk by hand, soaking the inner fibers (which can be 3-6 feet long in hemp and much shorter in edgeworthia), pounding them with a mallet to loosen them, cooking them into a sludge-like ‘soup’, collecting the fine pulp through a sieve-like mesh frame (an ingenious Chinese invention), and finally spreading out and air drying the pulp into sheets of paper.

Besides hemp, there are other paper products made from various plants in China and Taiwan. Paper mulberry (*Broussonetia papyrifera*) became an important fiber for making paper currency during the Tang dynasty (618-907 CE) and eventually took the place of copper coins that had square holes in their centers. Xuan or Shuenzi paper (宣纸) is known as “rice paper” in China but is actually made from *Tetrapanax papyrifer*, not rice; Chinese calligraphers and artists, like our own Frances Lee, treasure this expensive paper for its soft, smooth surface and for its durability, insect resistance, and ink absorption.

While China invented paper and mostly used hemp and other plant materials, it was Japan who cultivated and mastered the art of producing high quality handmade paper with edgeworthia known as “mitsumata.” After edgeworthia was introduced to Japan in the Momoyama period (1573-1600), it was widely cultivated and recognized as especially suitable for making banknotes and for other fine or delicate arts because its short fibers “create a smooth surface highly suitable for writing small, thin letters and characters in India ink.”

Edgeworthia Outside of China

Although several prominent European plant collectors wrote about edgeworthia in China and in Japan in the 16th and 17th centuries, edgeworthia did not become a gardenable species until quite recently.

Edgeworthia made its way to the U.S. through David Fairchild who served as head of the USDA Office of Seed and Plant Introduction for many years in the early 1900s. Fairchild was a renowned botanist and plant hunter who brought over 200,000 plants from all over the world into the U.S. including the edgeworthia he introduced from Japan to America in 1902. Fairchild also hired well-known plant hunter Frank Meyer who introduced other plants from abroad (like persimmons). If you look at a map of the U.S. that shows the distribution of edgeworthia, you will see that Georgia is the only state where edgeworthia has been growing in wild for more than 100 years! There is a long, fascinating story about how edgeworthia traveled to the Blue Ridge Mountains in Georgia all the way from Chico, California (the main point of entry in the early 1900s for imported plants from overseas).

Today, the owners of the Paper Museum in Brookline, Massachusetts grow edgeworthia in their own garden to use in their paper-making studio for high quality handmade papers.

Botanical

Common Name: Edgeworthia is known as Chinese paper bush, Yellow Daphne, or False Winter Daphne, but It doesn't have an officially known common name yet. A North Carolina nursery owner once wrote: “Plants get common names once they become common!”

Family: Thymelaeaceae (resembling leaves of thyme). This family also includes the genera Daphne.

Genus: *Edgeworthia*. Its scientific name is *Edgeworthia papyrifera*, *papyrifera* (paper bearing), named after Michael Pakenham Edgeworth (1812-1881).

Species: *chrysantha* (golden flowers). Plant writer, Daniel Hinkley captured the confusion about edgeworthia taxonomy when he said, “there is one thing I know for certain about Edgeworthia: no one

seems to know what species they have, and few seem to know if more than one species actually exists." However, I believe the edgeworthia we have in Bed #4, #NW, and #20S all belong to one species, *chrysantha*.

Bark/stems/trunk: The unique part of the stems of edgeworthia is that the compound branches are ternate, that is a branch is continuously divided into three branches. The other interesting part of its branch is its flexibility. I have tried to tie a knot with three young branches from my own garden and was surprised that my twisting and bending didn't break the branches.

Flowers: Each flowerhead (1"-2" wide) has about 25 to 40 little flowers with long slender tubes with four recurved lobes/petals, and, in each flower tube, there are eight stamens. The outside of the buds and flowers are covered with silky hairs that make them look frosty on sunny days.

Fruits: The purplish fruits are hardly noticeable as they are covered by the flowers.

Leaves: The leaves (6" long and 2" wide) are covered with silky hairs. They appear as soon as the flowers have bloomed and are narrowly oblanceolate (lance-shaped with a tapering base). Our edgeworthia is deciduous so its leaves turn yellow and drop in late fall.

Cultivation: Edgeworthia grows well in full sun or in partial shade. It does well in well drained soil that is humus rich and slightly acidic. It suckers a lot so one should clip off the new growth in order to have one or three strong main trunks.

Conclusion

There are countless books on the history of papermaking and how papers have been used worldwide. In researching edgeworthia, I got to know what is real paper is what is not. For example, papyrus, parchment, vellum, and even seal skins have been used like paper but, in a strict sense, they are not considered "paper" because they are not made from vegetative plant species from the natural world.

I also have new appreciation for how integral paper is to our lives and the development of culture as I have learned much more about the role of paper in bridging East and West through currency, documents, books, art supplies, and other traded materials. It has also been an invaluable medium for preserving historical records and written histories. China's Imperial Library had 300,000 volumes during the Sui Dynasty (581-618 CE) at a time when Europe was just entering into its early Medieval period and was still five to six hundred years away from its own paper production and printing. The Chinese were also the first to make sanitary paper around 9th CE, and Marco Polo was impressed to see China's paper banknotes when he visited Beijing in the 13th century. It is also interesting to wonder what Dutch painter Rembrandt (1606-1669) thought about the Chinese rice paper and Japanese Mitsumata he imported and how he thought they compared to the paper he imported from Germany and Italy.

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