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photo by Frederick B. Essig

Let this sedge give an "edge" to your garden. (See page 16)

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ON THE COVER

This is the season for mangos and other tropical fruits. See pages 10, 11, 12, 20, and 26. (Photo by Kathy Nelson)



photo by Peg Owens

Screen your garden? Why not? (See page 34)

GIANT SEDGES

by Frederick B. Essig

First of all, what is a sedge? Most of the hundreds of species in the sedge family are small, grass-like plants inhabiting moist places. In Florida, many are found as lawn weeds. Like grasses, sedges have small, inconspicuous flowers often sitting on top of an umbrella-like whorl of leaves at the end of a long, leaf-less stalk. Sedges also tend to have triangular stems ("sedges have edges"), as opposed to the generally round stems of grasses. So except for a few extreme botany nerds, who would care about sedges?

Well, one sedge literally changed the history of mankind and is a pretty nice ornamental, too. I'm talking about *Cyperus papyrus*, the giant sedge from

which the first paper was made in ancient Egypt over 6,000 years ago. Surely, the progress of western civilization would have been greatly slowed down if ancient businessmen, court stenographers, and historians had to lug their records around on stone tablets!

Papyrus (from which our word "paper" comes) manufactured in Egypt was exported all over the ancient world, and was a key element in the Greek and Roman civilizations as well. The paper we know today, made from fibers of wood, rags, and other plant material, was in-

vented by the Chinese in 105 AD and spread by Arab traders to Europe about a thousand years later. Being more universally available and cheaper, it gradually replaced papyrus as the writing material of choice, but has never had the durability of papyrus.

Papyrus plants became extinct in Egypt after the decline of the papyrus industry, but were reintroduced from other tropical African areas in recent times. In 1969, papyrus production began again when scientists were able to simulate

ancient techniques that were never documented.

The papyrus plant itself is a botanical marvel. It is a marginal aquatic monocot, with creeping, branching rhizomes growing in the mud below several feet of water. From the rhizomes arise specialized long, smooth, green stems without leaves or nodes. These upright stems are generally 4 to 8 feet tall, but may reach 15 feet and, in fact, have the ability to adjust their height in accordance with the level of the water. Growth of the upright stem comes from its base, where a layer of embryonic cells multiply to push new stem tissues upward. A fireworks-like burst of slender branches is borne



photo by Frederick B. Essig

Papyrus plants add an interesting touch to a warm-climate garden.



photo by Frederick B. Essig

Papyrus in bloom.

at the top of the stem. This spherical mass of branches increases the photosynthetic capacity of the plant, produces the tiny flowers, and can reach a diameter of nearly 2 feet.

The main stems themselves can be an inch thick and are filled with numerous long, straight fibers. The Egyptians harvested these fibrous stems and used them for paper, and also for baskets, ropes, and boats. (The fibers are a bit too stiff and brittle for clothing, for which the Egyptians used cotton.) The infant Moses is said to have floated down the Nile to the palace of the Pharaoh in a papyrus basket. Several thousand years later (1969 in fact), the adventurer Thor Heyerdahl reconstructed a boat made of bundles of papyrus stems in the ancient style, and demonstrated that ancient Egyptians could have ventured across the Atlantic Ocean to the New World.

Accounts vary on exactly how papyrus was made, but they agree on the basics. The green outer "skin" of the papyrus stem was stripped away and the inner white tissue cut into thin strips. The strips were pounded flat and

soaked in water for several days. These were laid side by side, probably overlapping by a millimeter or so. Then a second layer was laid down at right angles to the first. The moist, 2-layered sheets were then placed in a press, probably between sheets of cotton, and pressure was applied until the sheets were dry. (For a complete account of the history and technology of papyrus, see <http://emuseum.mnsu.edu/prehistory/egypt/dailylife/papyrus.html>.)

Papyrus is striking in both warm-climate gardens and dried arrangements. The papyrus motif is found throughout Egyptian and neo-Egyptian art. Although normally found partially submerged, the plants can be grown in ordinary garden soil or large pots if watered well. In fact, any such aquatic plants should not be allowed to escape into natural waterways. The tops are cold-sensitive, but if frozen back will readily re-sprout in the spring.

Two other large sedges are also commonly cultivated in Florida and other warm areas.

One is the umbrella plant, *Cyperus alternifolius*, which comes from Madagascar and other islands of the Indian Ocean. Umbrella plants only grow to about 3 feet in height with slender stalks not suitable for



photo by Frederick B. Essig

Umbrella plant flowers are not very showy.

paper-making. The tops consist of a flat whorl of elongate leaves and a compact cluster of flowers - very different from the large pom-poms of papyrus plants.

The last sedge of horticultural interest is the dwarf papyrus, *Cyperus isocladius*, found in the wild in southern Africa. It resembles its cousin, the Egyptian papyrus, right down to the pom-pom tops, but is much smaller. The stems are only 1 to 2 feet tall and also grow best in damp soil or water.

All 3 species provide an exotic touch to landscapes, pools, or tropical borders - all they require is lots of water. And if you ever run short of paper...



photo by Frederick B. Essig

Umbrella plants will grow in shallow water, but are happy in good garden soil, too.

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