

BEYOND THE COMMON HIBISCUS

by Frederick B. Essig

Is there any flower more extravagant than the common tropical hibiscus? Perhaps "common" doesn't really apply to a plant that is sometimes referred to as the "Queen of the Tropics," except to express its ubiquitous presence throughout the tropics and subtropics. The large, plate-like blossoms have been bred in nearly every conceivable hue and color combination; only true blue continues to elude breeders. These easy-to-grow shrubs, mostly derived from the Asian species *Hibiscus rosa-sinensis* and some related species, bloom as long as the weather is warm. Flowers picked in the morning will remain open and fresh all day without water, making them ideal for decorating everything from hair to banquet tables.

There is much diversity to be found in the Hibiscus or Mallow family, Malvaceae. The genus *Hibiscus* contains at least

250 species distributed around the world. Seven are native to Florida, including the spectacular *Hibiscus coccineus* that is found in swampy locations from central Florida into Georgia. African native *H. acetosella*, a coarse semi-shrub with deep red foliage, needs to be pruned back nearly to the ground each year. For colder parts of the state, there's the shrubby *H. syriacus*, also known as althea

or rose-of-Sharon (some even have blue flowers!), and the perennial herbaceous species, *H.*

moscheutos, from which a number of hybrids have been derived with huge flowers (e.g., 'Southern Belle' and 'Disco Belle').

The abundance of hibiscus species may be due to their unusual flower structure and how they are pollinated. The "busi-

ness end" of the hibiscus flower, consisting of the stamens that produce pollen and the stigma that receives pollen, is elevated well above the rest of the flower; while nectar, a common attractant for pollinating animals, is produced at the base of the flower. The stamens are actually attached to a slender tube that surrounds the long style. When pollen arrives from another flower, pollen tubes grow down through the style, carrying the sperm cells from the stigma to the ovary nestled at the base of the flower. In *Hibiscus schizopetalus*, the flowers hang upside-down, and the reproduc-



photo by Frederick B. Essig

The swamp-dwelling *H. coccineus* is one of Florida's most spectacular wildflowers.

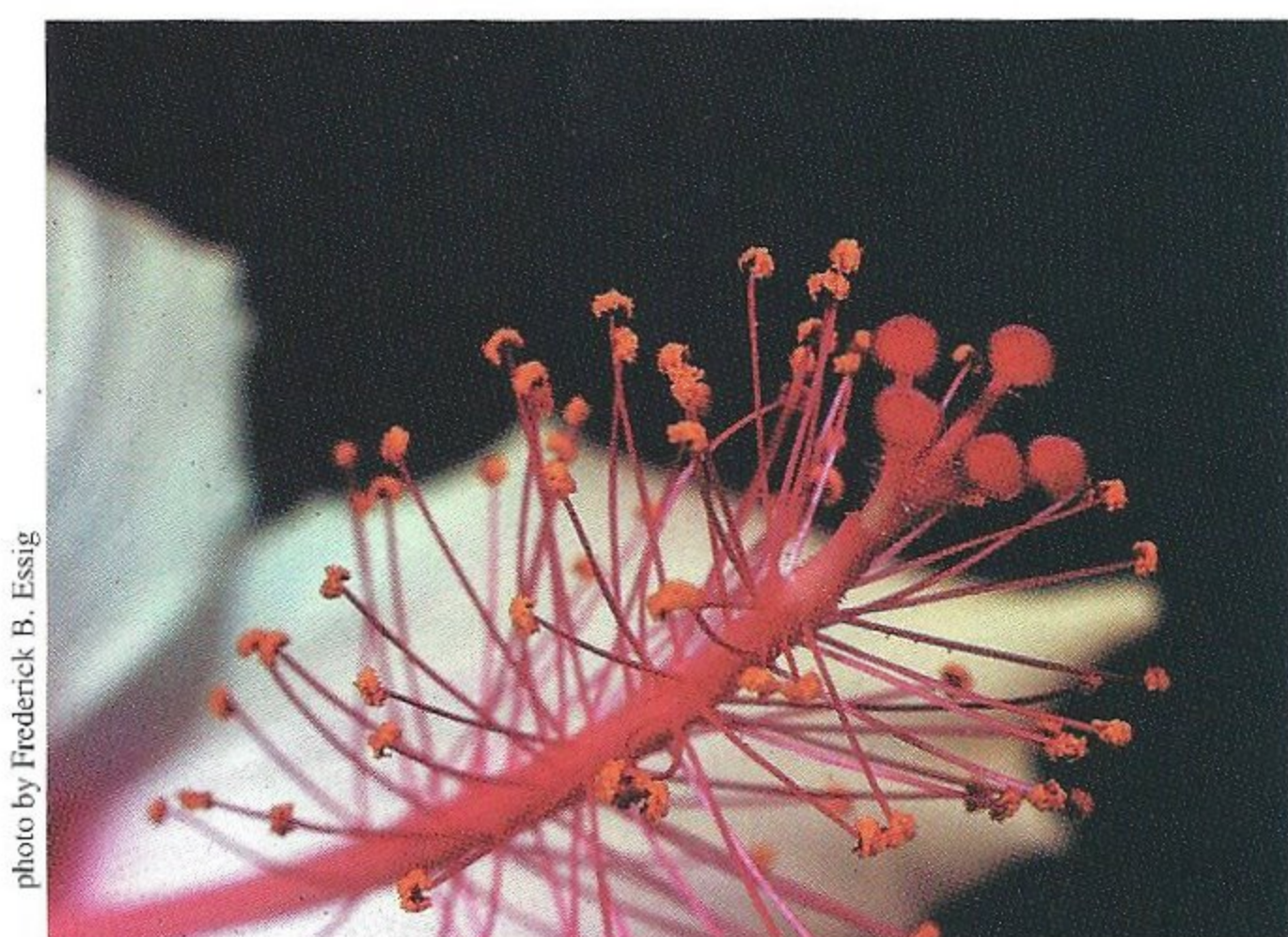


photo by Frederick B. Essig

Stamens and stigma are lifted far above the flower base by the long style and staminal tube.



Poppy mallow (Callirhoe involucrata) is a low-growing member of the Mallow family.

tive structures dangle several inches below the rest of the flower, making us wonder what animal could simultaneously feed on the nectar and pick up pollen for delivery to another flower.

The large size of the flowers and the frequency of red and pink coloration suggest that the natural pollinators are relatively large animals with good color vision - namely, birds. In the New World, that would be hummingbirds. They are very sensitive to red and can hover in the air. While feeding on nectar, their bodies rub up against the stamens or the stigma, and can thus carry pollen from one flower to another. In the Old World there are no birds that can hover, so flower-feeding birds must perch on an adjacent branch to dine. Nectar-feeding hawk moths

and sphinx moths also have the hovering ability, and may pollinate some species of hibiscus. Other species hold their reproductive parts close to the petals so that insects like bumble bees will get covered with pollen as they crawl into the center of the flower.

Moving beyond hibiscus, we find that the family Malvaceae contains at least another 100 genera. All have a similar flower form, but vary in the nature of their fruits and other characteristics. Many have smaller

flowers pollinated by bees and other insects. Many will not grow well in Florida. The genus *Alyogyne*, for example, prefers dry climates. I've seen spectacular deep-purple specimens in California. Hollyhocks (*Alcea rosea*) prefer cooler climates, but reportedly can be grown in parts of Florida if you know the right incantations.

Several genera that do well in Florida are *Abelmoschus*, *Callirhoe*, *Gossypium*, *Abutilon*, and *Malvaviscus*. *Abutilon* includes species with maple-

like leaves (called flowering maples), as well as the attractive Chinese lantern plant, *A. hybridum*. *Malvaviscus* includes *M. penduliflorus*, the colorful Turk's cap. *Callirhoe* species are mostly low-growing perennial herbs with poppy-like flowers often called poppy mallows.

The hibiscus garden at the University of South Florida Botanical Garden in Tampa is tended by Richard Batty. In a recent interview, Richard told of the many ways the members of this family have contributed to human economic culture as well as to horticulture. Cotton, for example, is derived from several Old and New World species of the genus *Gossypium*. The cotton fiber itself forms as fluffy masses on the surface of the seeds and aids in seed dispersal



H. radiatus from Asia, has deep red flowers and self-seeds readily.



Althea or rose-of-Sharon (*H. syriacus*) is hardy from Florida to Ontario.

by wind and water. Cotton has been the cloth of choice for thousands of years, while the seeds are a valuable source of vegetable oil.

Okra is the fruit of

Abelmoschus esculentus (also called *Hibiscus esculentus*). Many other members of this family provide edible greens and flower buds. Roselle, also called Florida cranberry or sorrel (*Hibiscus sabdariffa*),

has fleshy, fruit-like calyces. Various species of hibiscus produce a black pigment used in dyeing hair and polishing shoes in Asia and the Caribbean. *Hibiscus cannabinus* is a source of strong, jute-like fiber. Other species have medicinal uses, such as *Hibiscus aculeatus*, a swamp-dweller known as comfort root. Dakota Indians used the dried roots of *Callirhoe papaver* for pain



Abelmoschus rigosus is called flowering okra.

relief.

A common name for many members of the Malvaceae is "mallow." I asked Richard if there was a connection with the sugary confection we call marshmallow, and apparently there is. The original marshmallows were made from a combination of sugar, egg white, and the mucilaginous extract obtained by boiling the tuberous roots of a European mallow, *Althea officinalis*, which as you might guess, grows in marshes.

Frederick B. Essig wrote about papyrus and other "Giant Sedges" in the last issue of Florida Gardening. He is an Associate Professor of Biology at the University of South Florida in Tampa.

SUGGESTED READING

The Tropical Hibiscus Handbook

American Hibiscus Society (2003)

<http://americanhibiscus.org>

(To order, see page 41)

Hibiscus

Jacqueline Walker

Firefly Books (2001)

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