

SYMBIOSIS in Nature

Part 3: Yucca & “Yucca Moth”

YUCCA (*Soapweed, Great Plains Yucca*)

Yucca glauca Nutt. • Liliaceae • LILY FAMILY

INDIAN NAMES:

Crow: *u'uxizbatzuaakizze*

Northern Cheyenne: *HEST AH PAN' E STSE*

Blackfeet: *ek-siso-ke*

Sioux: *hupe'stola* (Lakota), *hupestula* (Dakota)

Elnora A.
Old Coyote

*Small moth creature,
you are not daunted
by my sharpened bayonets.
I must depend on you to thrust
my own pollen down my throat;
But without my womb, small one,
where would you hatch your young?
We exist in living harmony—
one plant, one moth
—symbiotically.*

DESCRIPTION

Yucca or soapweed is a shrubby, perennial evergreen plant that grows from 1 1/2 to 4 feet tall, depending on the environment. You will know yucca by its stiff, straight, narrow and rigidly pointed leaves, 12 to 14 inches long, like sharp bayonets. Hence, yucca is sometimes called the Spanish bayonet. The stout, erect flower stalk reaches as high as 4 feet with its flowers of 1 1/2 to 3 inches in terminal clusters, drooping downward. The three sepals are white, tinged with purple or pink, and the 3 petals are more delicate, greenish-white, and oval lanceolate. There are 6 stamens attached above the petals in the center of the flower (hypogenous, i.e., above the spot where the flower attaches to the stem); the filaments are enlarged above; the ovary is 3-celled and also hypogenous, enlarged, bulbous, and with a 3-part stigma atop. When dry, the seed pod is dehiscent, flinging its numerous, thin and flat seeds far and wide. The base of the plant below the rosette of needle-like leaves is woody, as is the underground rootstock.

ECOLOGY

Yucca is one of the evergreen plants that grows in semi-arid to desert-like areas on dry hillsides of the foothills in the rainshadow (dry areas) to the east of the Rocky Mountains, as well as the higher and lower hills and treeless plains sweeping away from the mountains out into the Great Plains. Often it grows on soils derived from limestone, but also does well in areas of good



A female yucca moth (*Tegeticula yuccasella*) pushing pollen into the stigma tube of the yucca flower while visiting the flower to deposit her eggs.

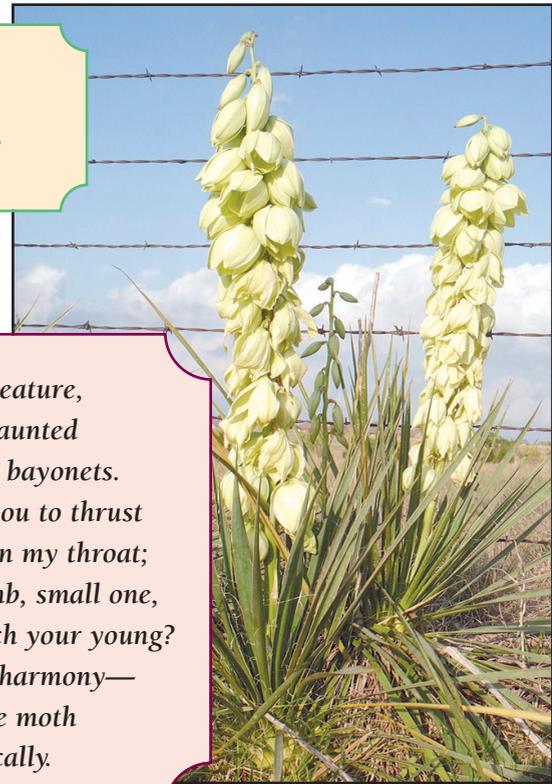
drainage and sandy-loam soils on areas well exposed to sunlight. It also grows up to the forest edge, especially at the feet of yellow pine forests. Where yucca grows, so do other shrubs, like snakeweed, rabbitbrush, sagebrush and skunkbrush (sumac).

The stiff pointed leaves are succulent and retain moisture for longer periods during the summer. In raw road cuts, yucca may survive, hanging to the hillsides with tough roots as rejuvenators, holding back erosion of the scarp.

Although yucca is an evergreen, keeping its leaves all winter, it does have different aspects in different seasons. In winter, the leaves are dry and less green.

Then very early in spring, after winter snows and first early rains, even as early as the end of January in the northern areas, yucca begins to green up, heralding the coming season. By Memorial Day, the blossoms appear. Other early spring flowers include the Easter lily, larkspur, phlox and yellowbells, arriving long before the chokecherry shrubs bloom and when the grasses are only beginning to come out of the boot.

Yucca plants have been much enjoyed as ornamentals in landscaping, as it can be easily dug up and replanted in the yard. It can be propagated from seed, offsets, cuttings from stems, rhizomes or roots. While growing well in dry conditions, when watered sensibly, yucca will grow more lush, taller and with greener leaves.





SYMBIOSIS

Yucca flowers have a special living arrangement with certain small, white moths of the genus *Tegeticula alba*. Both yucca and these moths are dependent upon each other for the perpetuation of their species. Yucca flowers are not self-pollinated. At night, the female moth flies from flower to flower, collected pollen from each, then lands on the stigma of a yucca blossom and lays her eggs in the seed-producing ovary. Then the moth clammers up to the style (the stalk of the pistil), the seed producing organ, and thrusts her pollen ball down the stigmatic tube, thus pollinating the yucca. In return, the moth's eggs hatch in the ovary of the yucca. I have observed that yucca flowers open at night for these moths. Without each other in this symbiotic relationship, neither could exist. If something happens to one, the tragedy occurs to both.

FOOD & SOAP

The flowers of yucca are edible for sheep and cattle. Cattle and deer sometimes also eat the young, succulent leaves and lower portions of the flower stalks in spring. The flowers, buds and young stalks may be peeled and eaten raw, or boiled or roasted. The tiny seeds are edible, too.

According to research, the yucca plant's roots contain large amounts of saponins, which when cut into small pieces, mashed and rubbed vigorously with water, make a soapy lather, hence the name soapweed. As shampoo they make the hair very shiny. The Lakota soaked their hair in a root solution

to kill head lice and to make their hair grow. Many Plains Indians, Crow and Blackfeet, used the roots for shampoo, and the Crow made a soapy bath for washing hides.

Shampoo: Use one cup of the yucca root, either chopped fresh or dried and boiled in two cups of water to produce a good shampoo for dry hair. The root may be dug up at any time of year, cleaned, split lengthwise, dried and stored. Include the bark for shampoo.

MEDICINE

When using the yucca root for medicinal use, remove the bark. Steep a quarter ounce of the inner root in a pint of water for 15 minutes and drink 3 to 4 times a day to help relieve joint inflammations and arthritic pain. Decrease amount taken if a strong laxative effect occurs with abdominal cramping. If there are no painful effects, the amount can be increased by 1/2 ounce a day. The tea has also demonstrated value for urethral and prostate inflammations.



The yucca moth deposits its eggs in what will later be the yucca seed pod. The seeds grow and the larvae emerge from the eggs. They feed upon the seeds that mother moth made sure would be there when she pollinated the flowers. There always appear to be sufficient seeds for the moth larvae and with some left over to fall and produce another generation of yucca plants.

The Lakota Sioux crushed the roots, mixed them in lukewarm water and drank for stomachache. The Blackfeet boiled and grated the roots to apply to bone breaks and sprains. Inflammation from any injury was reduced by holding the injured part in steam rising from the boiling roots. Blackfeet also put small soapweed roots on cuts to stop bleeding.

OTHER USES

Yucca leaves were crushed until the fibers could be removed then twined into thread with the hard point of the leaf still attached to be used as a needle. The tough, fibrous leaves were in the weaving of mats, baskets, etc. The sharp leaves were also bound together with sinews along with the stems for fire-making apparatus. ■

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