

CHAPTER VIII

VEGETABLE SUBSTITUTES FOR SOAP

To soothe and cleanse, not madden and pollute.

Wordsworth.

AMONG the pleasant pictures of my mental gallery is one of an autumn evening at a Pueblo Indian village in New Mexico, where I chanced to be a few years ago. The sun was near setting, seeking his nightly lodging in the home of his mother, who, according to the ancient Indian idea, lives in the hidden regions of the west; on the house-tops the corn huskers were gathering into baskets the multi-colored ears that represented the day's labor; along the trail from the well some laughing girls were filing, with dripping jars of water on their heads; the village flocks, home from the plain, were crowding bleating into corrals; and from open doors came the steady hum of metates, the fragrance of grinding corn, and the shrill music of the women's mealing songs. Then up the street came pattering a couple of burros loaded with fire-wood and driven by an

USEFUL WILD PLANTS

old Indian man. Immediately three or four women appeared at house doors and called inquiringly "*amole?*" The old man halted his donkeys, lifted from one a sack, out of which he drew several pieces of thick, blackish root, which he distributed impartially among the women, and then proceeded on his way. The root, it transpired, was a sort of vegetable soap and answered to that strange word of the women, *amole*. This, in fact, is the name current throughout our Spanish Southwest for several common wild plants indigenous to that region, and rich enough in saponin to furnish in their roots a natural and satisfactory substitute for commercial soap. Several are species of the familiar Yucca—in particular *Y. baccata*, *Y. angustifolia* and *Y. glauca*. Americans who prefer their own names for things call them soap-root, when they do not say Spanish bayonet, or Adam's Thread-and-Needle or just Yucca. All three species mentioned have large, thick rootstocks firmly and deeply seated in the earth, so that a pick or crow-bar is needed to uproot them. Before the white traders introduced the sale of commercial soap, *amole* was universally used by Mexicans and Indians for washing purposes, and the practice is not yet obsolete by any means. The rootstock is broken up into convenient sizes and

VEGETABLE SUBSTITUTES FOR SOAP

washed free from any adhering dirt and grit. Then, when needed, a piece is mashed with a stone or hammer, dropped into a vessel containing water, cold or warm, and rubbed vigorously up and down until an abundant lather results-and this comes very quickly. After dipping out the fibre and broken fragments, the suds are ready for use. They answer every purpose of soap, and are particularly agreeable in their effect upon the skin, leaving it soft and comfortable. A shampoo of *amole* is, among the long-haired Southwestern Indians, not only a luxury but a prescribed preliminary to ceremonies of the native religious systems. Even whites recognize the efficacy of the root, and an American manufacturer in the Middle West has for years been making a toilet soap with the rootstock of *Yucca baccata* as a basis. It is put upon the market under the name of Amole Soap.

Certain species of Agave, that is, the Century Plant fraternity, are frequent along the Mexican border and contain saponin in greater or less quantity, affording a soap substitute as do the Yuccas. Best known, perhaps, is the species that Spanish-speaking residents call *Lechuguilla* (botanically, *Agave lechuguilla*, Torr.). This is distinguished by a cluster of radical, yellowish-green, spine-tipped,

USEFUL WILD PLANTS

fleshy leaves, few in number (rarely over fifteen) and barely a foot long, the flowers borne in a close panicle almost like a spike. The short trunk of the plant is, I believe, the part usually used for soap; but Dr. J. N. Rose, in his "Notes on Useful Plants of Mexico," quotes Havard as authority for the statement that saponin is found in the leaves of this species. The rootstock of a related Texan species (*A. variegata*, Jacobi) is also soapy, and the paper by Dr. Rose just mentioned quotes a statement by a resident of Brownsville, Texas, to the effect that a piece of the rootstock of the latter species as big as a walnut, grated and mixed with a quart of warm water, will clean a whole suit of clothes. The most used Agave-amoles, however, are plants of Mexico, the discussion of which would not be pertinent here.

Of wide occurrence in California is an *amole* of quite a different appearance. It is the bulbous root of a plant of the Lily family, by botanists fearfully and wonderfully called *Chlorogalum pomeridianum*, Kunth. The average American simplifies this into California Soap-plant. Its first appearance is shortly after the winter rains set in, and for several months all that one sees of it is a cluster of stemless, grass-like, crinkly leaves, lolling weakly on the



CALIFORNIA SOAP-PLANT
(*Chlorogalum pomeridianum*)



CALIFORNIA SOAP-PLANT
(*Chlorogalum pomeridianum*)

VEGETABLE SUBSTITUTES FOR SOAP

ground. Late in the spring, a slender flower stalk puts up and at the height of four or five feet breaks into a widely spreading panicle of white, lily-like but small blossoms, that open a few at a time at evening, shine like stars through the night and wither away the next morning. To the economist the most interesting part of the plant is subterranean. This is a bottle-shaped bulb, rather deep set in the ground, and thickly clad in a coat of coarse, brown fibre. When this fibre is stripped off, a moist heart is disclosed an inch or two in diameter and about twice as long. Crush this, rub it up briskly in water, and a lather results as in the case of *Yucca* and quite as efficacious for cleansing. Indeed, the absence of alkali—an absence that is a characteristic of the amoles—makes the suds especially valuable for washing delicate fabrics. Some users of this California *amole* prefer first to rub the crushed bulb directly upon the material to be washed, just as one would do with a cake of soap, and then manipulate the article in the clear water. The lather is said to be also useful for removing dandruff. However that may be, it unquestionably makes an excellent shampoo and leaves the hair soft and glossy. The bulbs may be used either fresh or after having been kept dry for months. Our knowl-

USEFUL WILD PLANTS

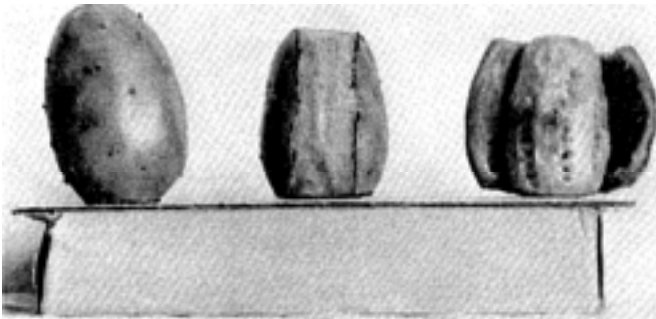
edge of the cleansing property resident in this bulb is a gift from the California Indian, who, in spite of the popular notion to the contrary, has a taste—though not an extravagant taste—for cleanliness.

Another well-known California soap plant is a species of Pig-weed (*Chenopodium Californicum*, Wats.), abundant throughout much of the State in arroyos and on moist hillsides. It is a stout, weedy-looking herb, with inconspicuous, greenish flowers in slender, terminal spikes, and toothed, triangular leaves turning yellow and dying as the dry season advances. The stout stems, a foot or two high, grow numerous from the crown of a very deep-seated, spindle-shaped root which is at times a foot long and requires industrious digging to lift it from its earthy bed. While fresh it is rather brittle and readily crushed with a hammer, when, if agitated in water, it quickly communicates a soapy frothiness to the liquid, and is cleansing like the other suds noted. The roots may be laid away for use when dry, in which state they are as hard almost as stone, and require to be grated or ground in a handmill before using. The saponaceous property in this root was also discovered first by the Indians.¹

¹ The roots of the Southern Buckeye or Horsechestnut (*Aesculus Pavia*, L.) are rich in saponin, and Dr. Percher states that their



A Pacific Coast soap plant (*Chlorogalum pomeridianum*).
The bulb, stripped of its fibrous covering, is highly saponaceous.
The fiber is useful for making coarse brushes and mattresses.



Tunas, fruit of a Southwestern cactus—Showing how it is
opened to secure the meaty pulp. (See page 109.)

VEGETABLE SUBSTITUTES FOR SOAP

The soap plants thus far named must, from the nature of the case, suffer extermination in the fulfilling of their mission, but there are others indigenous to the United States that need not be killed to serve. First among these may be mentioned the genus *Ceanothus*, one species of which-the New Jersey Tea-has already claimed attention in the chapter on Beverage Plants. The genus comprises about thirty-five species, nearly all shrubs or small trees confined to the western United States and northern Mexico. They are particularly abundant on the Pacific Coast, and are popularly known as "wild lilac" and "myrtle" (one or two species as "buck brush"). They are frequently an important element in the chaparral cover of the mountain sides, and in the spring their flowers create beautiful effects in such situations, forming unbroken sheets of white or blue, acres in extent. The fresh blossoms of many species-perhaps of most or even all-are saponaceous, and rubbed in water produce a cleansing lather that is a good substitute for toilet soap. Care must be exercised, however, to pick off any green footstalks that cling to the flowers, as these

suds are preferable to commercial soap for washing and whitening woolens, blankets and dyed cottons, the colors of which are improved by the process.

USEFUL WILD PLANTS

tend to give the suds a greenish tinge and a weedy smell. This floral soap is not only perfectly cleansing but leaves the skin soft and faintly fragrant. It is a poetic sort of ablution, this bathing with a handful of snowy blossoms plucked from a bush and a little water dipped out of the brook, and revives our faith in the Golden Age, when Nature 's friendly outstretched hand was less lightly regarded than nowadays. Similiarly of use are the fresh, green seed-vessels, though these often have a resinous coating that is apt to cause a yellowish stain, if the rinsing is not perfect.

The cherished Balloon vine of our gardens does not include soapiness among its charms, but it can at least claim cousinship with some of the world's most famous soap plants-namely, certain species of the genus *Sapindus*, trees or shrubs native to the warmer regions of both hemispheres. The name *Sapindus* means " soap of the Indies," where, as well as in China and Japan, several species have been drawn upon for detergent material from very early times, and are still in favor for washing the hair and delicate goods, such as silk. Within the limits of the United States, three species are indigenous: *Sapindus saponaria*, L., abundant from Brazil to the West Indies, finds a lodgment on the extreme south-

VEGETABLE SUBSTITUTES FOR SOAP

ern tip of Florida, and besides its soapy possibilities possesses seeds, hard and black, that serve for beads and buttons; *S. marginatus*, Willd., an evergreen tree sometimes sixty feet in height, occurs along our southern Atlantic seaboard from the Carolinas to Florida; *S. Drummondii*, H. & A., ranges from Kansas to Louisiana and westward to Arizona, and is known to Americans as Soap-berry or Wild China tree,² and to the Spanish-speaking people as *jaboncillo* (little soap). All three species are trees with pinnate leaves (non-deciduous in the first two) and small, white flowers borne in terminal panicles; and all produce fleshy berries about the size of cherries and containing one or two seeds. It is in these berries that the soapy property dwells, and this is readily communicated to water in which the berries are rubbed up. In the case of *S. Drummondii*, the clusters of yellow berries (turning black as they dry) are a conspicuous feature of the bare winter branches, for it is their habit to persist on the trees until spring.

Also of the West is a species of gourd occurring in dry soil from Nebraska to Mexico and westward to the Pacific. In some sections it is known as

² From its resemblance to the true China tree (*Melia Azedarach*), extensively planted for ornament and shade in the Southern States.



SOAP-BERRY
(*Sapindus marginatus*)

VEGETABLE SUBSTITUTES FOR SOAP

Missouri Gourd and in California as Mock Orange. Botanically it is *Cucurbita foetidissima*, HBK, and the rank, garlicky odor given off by the crushed leaves makes the specific appellation very apropos. It is a coarse, creeping vine with solitary, showy, yellow flowers and robust, triangular leaves that have a fashion of standing upright in hot weather, like ears; and it spreads so industriously that at the summer's end its tip may be as much as twenty-five feet away from the starting point, which is the crown of a deep-seated, woody, perennial root shaped like a carrot. In the autumn the shriveling leaves reveal numerous, round, yellow gourds, which conspicuously dot the ground and are likely at first glance to deceive one into thinking them spilled oranges—a fact that accounts for one popular name. These gourds are pithy, but such pulp as they contain, as well as in the roots, is saponaceous, and crushed in water both fruit and root yield a cleansing lather. It is, however, apt to leave the skin with a harsh feeling for a few moments, not altogether pleasant. There appears to be saponin in the vine also, since Doctor Edward Palmer has stated that in northern Mexico a *Cucurbita*, that is undoubtedly this species, has been extensively used by laundresses who mash up the vines with the gourds and add all to their



MISSOURI GOURD
(*Cucurbita foetidissima*)

VEGETABLE SUBSTITUTES FOR SOAP

wash water. To wear under-clothes thus washed, one must be indifferent to the prickles of the rough hairs and broken fibre that are of necessity mingled with the water. Among the Spanish-speaking people of the Southwest, this gourd goes by the name *Calabasilla*. In old plants the root is sometimes six feet long and five or six inches in diameter. This, descending perpendicularly into the earth, enables the plant to reach moisture in arid wastes where shallow-rooted plants would perish. The dried gourds, it may be added, may be very conveniently used as darning-balls.

Probably the most widely known of all our American soap plants-though not all who know the plant are aware that it bears soap in its gift-is an herb of the Pink family that used to have a corner in many old-fashioned gardens under the name of Bouncing Bet (*Saponaria officinalis*, L.). It is a smooth, buxom sort of plant with stems a foot or two tall and noticeably swollen at the joints, oval, ribbed leaves set opposite to each other in two's, and dense clusters of white or pink 5-petaled flowers. It is not a native-born American, but came hither from Europe early in the white immigration and has now become naturalized in many parts of the country near the settlements of men, where it is often so

USEFUL WILD PLANTS

common as to be classed as a weed. The juice of the roots is mucilaginous and soapy, producing a



BOUNCING BET
(*Saponaria officinalis*)

lather when agitated in water, and the peasantry in some parts of Europe use it to-day for soap. By the brothers in European monasteries, centuries ago,

VEGETABLE SUBSTITUTES FOR SOAP

its virtue as a capital cleansing agent was well understood, and they employed it for scouring cloth and removing stains. They gave it, in monkish fashion, a Latin name, *herba fullonum*, which in English translation, Fuller's herb, is sometimes still assigned it in books ; but in every-day speech the rustic English name, Soapwort, is more usual. In our Southern States a pretty local name that has come to my notice is "My Lady's Wash-bowl." It was in a *Saponaria*, I believe, that the glucoside saponin-the detergent principle of the soap plants -was first discovered and given its name. That was about a century ago, and since then chemists have identified the same substance existing in varying degrees in several hundred species throughout the world.³ In most plants, however, the quantity is too small to make a serviceable lather.

³ N. Kruskal. "Soaps of the Vegetable Kingdom," in "The Pharmaceutical Era," Vol. XXXI, Nos. 13, 14.