

CHAPTER IV

THE ACORN AS HUMAN FOOD AND SOME OTHER WILD NUTS

Happy age to which the ancients gave the name of golden. . . None found it needful, in order to obtain sustenance, to resort to other labor than to stretch out his hand and take it from the sturdy live-oak, which liberally invited him.

Don Quixote.

CERTAIN nuts growing wild in the United States, such as the chestnut, the hickories, the pecan, the beech-nut and the walnuts, have secured so firm a place in our civilized dietary that every one knows them, and they need not be discussed here. Perhaps, though, we have not exhausted all their culinary possibilities. For instance, William Bartram tells us that the Creek Indians in his day pounded the shellbark nuts, cast, them into boiling water and then passed the mass through a very fine strainer. The thicker, oily part of the liquid thus preserved was rich like fresh cream, and was called by a name signifying "hickory milk." It formed an ingredient in much of their cookery, especially in

USEFUL WILD PLANTS

hominy and corn cakes. Peter Kalm speaks of a similar practice observed by him with hickory nuts and black walnuts. A cooking oil is also said to have been obtained from acorns by some Eastern tribes, the nuts being pounded, boiled in water containing maple-wood ashes, and the oil skimmed off.

Of the nuts of our country unregarded by the white population from the standpoint of human food value, the noble genus of oaks supplies the most important. Every farmer realizes the worth of acorns for fattening hogs, but in America only the Indians, I believe, have taken seriously to utilizing them for human consumption; and it is significant that among the fattest of all Indians are those—the Californians—whose staple diet from prehistoric times has been acorn meal. There is, to be sure, a difference in acorns. All are not bitter. Several species of oak produce nuts whose sweetness and edibility in the raw state make it easy to believe the acorn's cousinship to the chestnut and beechnut. In this class are the different sorts of Chestnut Oaks, easily recognized by the resemblance of their leaves to the foliage of the chestnut tree; and of these perhaps the best, in respect of acorns, is *Quercus Michauxii*, Nutt.—commonly known as Basket Oak or Cow Oak. It is a large tree, indigenous to the Southern Atlantic

THE ACORN AS HUMAN FOOD

States in situations near streams and swamps, and ripening in September or October plump, sweet nuts an inch and a half long.

Oddly enough it is not the sweet acorns but the bitter that have played the really noteworthy part in aboriginal history. The Indians of the Pacific Coast did not become maize growers until after the white occupation of their country, preferring to accept from the hand of indulgent Nature such nutrients as came ready made, among which the abounding fruitage of extensive oak forests formed, and still forms a conspicuous part. The acorns of all species of oaks indigenous to that coast are more or less stored with tannin, which imparts to the taste an unwholesome bitterness and astringency as disagreeable to red men as to white. Some inventive Indian—and doubtless it was a woman, the aboriginal harvester as well as cook—long ago hit upon a simple but effective way of extracting the deleterious principle; that is, washing the finely ground acorns in water. The process of preparing the acorn for human use, as still practiced in some parts of California, is as follows :

In autumn when the nuts are ripe but not yet fallen, they are gathered in baskets and barley sacks, brought home and laid in the sun to dry. Some are

USEFUL WILD PLANTS

then stored away for future use in the house or in huge storage baskets set outdoors on platforms that are raised on legs above the reach of rodents, and form a picturesque feature of primitive rancherias. The acorns for immediate consumption are divested of the shells by cracking, and the kernels then reduced to the finest possible powder by grinding in the stone mortar, it having been found that digestibility depends upon thorough grinding.

The next step is to get rid of the bitterness, which persists through all the milling.

Every acorn-eating family maintains beside the nearest water a primitive leaching plant, varying more or less in the details of its make-up, but consisting primarily of a loose, concave nest of twigs, leaves or pine needles raised a foot or two above the ground and ensuring perfect drainage. Over this is stretched a piece of porous cloth—a clean burlap will do—sagging, basin-like, in the middle, upon which the meal is spread evenly about half an inch thick. Water, warm or cold, is then poured carefully over this and allowed to filter through, more being added from time to time until the bitterness is entirely leached away. The length of time required for this differs according to the variety of acorns used, some being less bitter than others.



Indian woman shelling acorns, to be ground into meal. (See page 70.)



A Western mountain Indian's storage baskets for preserving acorns and pine-nuts. They are elevated to forestall the depredations of rodents.

THE ACORN AS HUMAN FOOD

Two or three hours usually suffice. The result is a doughy mass, which is then transferred to a pot with water added, and boiled up for mush. It swells in cooking to about twice its original bulk, and when done is a pale chocolate color. In taste it is rather flat but with a suggestion of nuttiness that becomes distinctly agreeable even to some white palates. Judging from my own experience with it, I should pronounce it about as good as an average breakfast-food mush. Cream and sugar and a pinch of salt are considered needful concomitants by most white consumers. Formerly the Indians baked a sort of bread from acorn dough in their primitive fireless cooker—that is, in shallow pits first lined with thoroughly heated rocks. For this purpose the dough was usually, though not always, mixed with red clay in proportion of about five per cent., according to Mr. Chesnut, from whose valuable monograph, "Plants Used by the Indians of Mendocino Co., California," I have drawn for this statement,—the purpose of the clay being apparently to remove the last trace of tannin remaining in the dough. Upon a bed of green leaves placed at the bottom of the pit the dough was laid, covered with another layer of leaves, upon which a super-layer of heated stones was put, and all then covered with dirt, to

USEFUL WILD PLANTS

remain over night. When removed after about twelve hours of slow cooking, the bread was coal black if the admixture of clay had been used or reddish brown otherwise, and of the consistency of soft cheese, hardening, however, with exposure. Such bread is oily and heavy, but noticeably sweet in taste. The latter characteristic is doubtless due to sugar developed by the prolonged, slow steaming.

Dr. C. Hart Merriam, in the "National Geographic Magazine" for August, 1918, tells of a simpler way of making acorn bread as observed by him. The hot acorn-mush is dipped, a small quantity at a time, from the general stock and plunged into cold water, which causes the lumps to contract and stiffen. The "loaves" so made are then placed on a rock to harden and dry out, after which they may be kept for weeks until consumed. The same authority speaks of the excellence of a bread made from a mixture of acorn-flour and corn-meal, in the proportion of one of the former to four of the latter.

While the acorns of any species may be utilized for human need, there is a distinct choice exercised by the Indians, the preference being based apparently on relative richness in oil and lowness in tannin. The best liked, according to my observation, are

THE ACORN AS HUMAN FOOD

the Kellogg or California Black oak (*Quercus Californica*, [Torr.] Cooper), the Coast Live oak (*Q. agrifolia*, Nee), the Valparaiso or Canyon Live oak (*Q. chrysolepis*, Lieb), and the colossal Valley White oak (*Q. lobata*, Nee). An analysis of acorn meal made from the last named species is quoted by Chesnut as showing in percentage 5.7 protein, 18.6 fat, 65 carbohydrates (starch, sugar, etc.). Though the Californians are regarded as among the lowest of our North American aborigines in native culture, their self-devised treatment of the acorn to make of it a wholesome food staple is entitled to the greatest respect. Stephen Powers, in his classic work on the Tribes of California, finds in one use of acorn mush an aboriginal discovery of the principle of the Prussian pea-sausage; and quotes the practice of a central California tribe, who, upon starting a journey, would pack in their burden baskets a quantity of the mush. When stopping for refreshment, it was only necessary to dilute a portion of this with water and dinner was ready. A squaw, the traditional burden-bearer, could carry thirty pounds, enough to last two persons perhaps a fortnight. Naturally so important an element as the acorn in the tribal life became associated with religious ceremonial as well as incorporated in native poetry; and the approach

USEFUL WILD PLANTS

of the autumnal gathering of the nuts was celebrated with dances and songs of thanksgiving and rejoicing. One of these songs, quoted by Powers, is Englished thus :

“The acorns come down from heaven;
I plant the short acorns in the valley;
I plant the long acorns in the valley;
I sprout, I, the black acorn sprout;
I sprout”

Such dances (and they still have some vogue in the remoter parts of the State) were night affairs in the open, stamped out in the glow of blazing log fires to the accompaniment of minor melodies of fascinating appeal, the words of the songs repeated endlessly and emphasized with dramatic gestures, until the morning star appeared in the east. To this day the oak groves in those parts of California where any considerable Indian population still lingers are invested with traditional acorn rights, and recognized by general consent as the harvest grounds of particular communities, none poaching upon the preserves of another.

Traveling in mountainous regions of the West where coniferous forests prevail, one sometimes comes upon the remains of large camp-fires strewn roundabout with charred pine-cones and twig ends.

THE ACORN AS HUMAN FOOD

These are associated with another sort of nut¹ harvest, that of the Piñon or Pine-nut, the plump, oily seed of certain species of the Far Western pines. The most esteemed nut-pines are the Two-leaved Pine (*Pinus edulis* Engelm.), a low, round-topped tree, generally known by its Spanish name piñon and common from Southern Colorado to Texas and westward to Arizona and Utah; the closely related One-leaved Pine (*P. monophylla*, Torr.), the piñon of the Great Basin region and desert slopes of the California Sierras ; the Digger Pine (*P. Sabiniana*, Dougl.), a widely distributed species of the California foothills and lower mountain slopes; and the stately Sugar Pine (*P. Lambertiana*, Dougl.), whose huge cones are frequently a foot and a half long or more. The "nuts" of these species vary from one-half to three-quarters of an inch in length, with thin shells easy but rather tedious to crack. The meat is delicious in flavor even to white people, tender, sweet, and highly nutritious. They are, moreover, of easiest digestibility, so that even delicate stomachs are undisturbed by them. Under the name of *piñons* they are sold in towns throughout the Southwest as well as Mexico, where another

¹ The word "nut" is used in this chapter in its popular sense rather than with botanical accuracy.

USEFUL WILD PLANTS

species of nut-pine (*Pinus cembroides*, Zucc.) is indigenous. The Parry Pine (*P. quadrifolia*, Sudw.) is another good nut-pine, abundant in some parts of lower California, but only sparingly found on the United States side of the border. John Muir, in his picturesque way, characterizes the nut-pine forests as "the bountiful orchards of the red man."

Pine seeds are ripe in autumn, and the Indian method of gathering them is to cut or knock the unopened cones from the trees and then roast them in a camp fire. This serves to dry out the pitch and open the cones, from which the nuts are then easily extracted. The *piñon* harvest among the Southwestern Indians is a joyous time, and what they do not themselves consume is readily turned into money at the traders'. Dr. Edward Palmer, a veteran botanical collector whose notes are enlivened by many a human touch, describes a scene of this kind which he witnessed among the Cocopahs of Lower California. "It was an interesting sight to see these children of nature with their dirty, laughing faces, parching and eating the pine nuts . . . by the handful. . . . At last we had the privilege of seeing primitive Americans gathering their uncultivated crop from primeval groves." Though edible raw, the nuts are preferably toasted, which may be done very

THE ACORN AS HUMAN FOOD

comfortably in a vessel kept in motion over a slow fire, as peanuts are heated. Not only is the flavor improved thereby, but the sweetness of the kernel is ensured for a longer time.

The value of the piñon was quickly reeognized by the Spanish conquerors of New Mexico, and Fray Alonzo de Benavides in his famous Memorial to the King of Spain (1630) makes particular mention of the Piñon trees, marvelous to him "because of their nuts so large and tender to crack and the trees and cones so small and the quantity so interminable." It seems that at that early day there was trade in New Mexico piñons with the Mexican capital, a thousand miles away, where, Benavides tells us, they were worth at wholesale twenty-three to twenty-four pesos the fanega. They retail today in city shops of our Southwest at about twenty cents per pound.

In taking leave of the pines, a word should be said about the fruits of their cousins, the Junipers of familiar habit. Although reckoned as a conifer, the Juniper bears seed vessels that are not cones in the popular acceptance of that word, but berry-like, due to the growing together of the fleshy cone-scales, with a compact pulp around the seeds. The resinous quality of these "berries" in most species renders them repugnant to the human palate, but in

USEFUL WILD PLANTS

a few cases this feature is much reduced and the "berries " are relished because of the sweet flavor of their mealy pulp. In this edible class are the fruits of the California Juniper (*Juniperus Californica*, Carr.), the Utah Juniper (*J. Utahensis*, Lem.), and the Check-barked or Alligator Juniper (*J. deppeana*, Torr.). The first two are stunted trees or shrubs of arid regions of pure desert. The last is a tree attaining sometimes a height of fifty feet or more, abundant at rather high elevations in Arizona, New Mexico and Southwestern Texas, and remarkable for its thick, hard bark, deeply furrowed and checked in squares. The "berries" of all these species have been approved by Indian palates, and are eaten either raw or dried and ground into a meal and prepared as mush or cakes. Under necessity they might serve to keep body and soul together, those of the Alligator Juniper being considered the best. Cakes made from these are said on good authority to be palatable even to whites, and to have the merit of easy digestibility.

Little known to Americans but possessing a fascination all its own is the so-called Wild Hazel, Goat-nut or Sheep-nut, the fruit of a non-deciduous, grayish-green shrub, *Simmondsia Californica*, Nutt., locally abundant along the mountain borders of the



JOJOBA
(*Simmondsia Californica*)

USEFUL WILD PLANTS

desert in Southern California and extending into Arizona and northern Mexico. It is a distant cousin to the beloved boxwood of old gardens, though none but a botanist would suspect the relationship. The plant is dioecious, so that not every individual is seed-bearing—only those possessing pistillate flowers. The capsules are mature in early autumn, and, gaping open, disgorge upon the ground the oily, chocolate-brown seeds, which are of about the size and appearance of hazelnut kernels. These, too, they somewhat resemble in taste, but are much easier of consumption because nature does the cracking for you. They are eaten with avidity by children, Indians, sheep and goats. Mexicans call them *jojobas*, and in Los Angeles I have seen them in the Spanish quarter in the shops of druggists, who find a steady sale for them for use in promoting the growth of deficient eyebrows! For this purpose, it seems, they are boiled, the oil extracted and this applied externally. The seed's reputation as a hair restorer, indeed, is rather extended in the Southwest. Mexicans in Lower California put it to still another use, which will be mentioned in the chapter on Beverage Plants.

According to M. Leon Dieguet in "Revue des Sciences Naturelles Appliquées" (October, 1895),

THE ACORN AS HUMAN FOOD

“an analysis of the fire-dried seeds shows them to contain 48.30% of fatty matter. The oil solidifies at 5°, is suitable for food and of good quality, and possesses the immense advantage of not turning rancid.” The shrub has been recommended for culture in the desert regions of the French Colonies of North Africa.

There is a beautiful little tree called the California Buckeye (*Aesculus Californica*, Nutt.) which whitens with its fine thyrses of bloom the hillsides of spring near streams in central and northern California. In summer and autumn it acquires another sort of conspicuousness due to the early dropping of its foliage, baring the limbs even in August. It then becomes a very skeleton of a tree upon which the fruits, hanging thick, look like so many dry, plump figs. The leathery rind of the latter encloses one or two thin-shelled nuts, shiny and reddish brown like those of the tree's cousins, the Buckeyes of the Middle West. To white folk these nuts, attractive as they appear, seem nevertheless devoid of food possibilities; indeed, in their raw state, they are known to be poisonous. That the Indian should have discovered how to turn them into fuel for the human machine seems, therefore, even more remarkable than the conversion of the acorn into an edible

USEFUL WILD PLANTS

ration. Yet that is what the Indian did, by a method that consists essentially in roasting the nuts and then washing out the poison. One wonders how many prehistoric Californians died martyrs in the perfecting of the process. Mr. Chesnut, in his treatise already quoted on California Indian uses of plants, records in detail how the transformation into edibility is accomplished: The Buckeyes are placed in the conventional stone-lined baking pit which has been first made hot with a fire; they are then covered over with earth and allowed to steam for several hours, until the nuts have acquired the consistency of boiled potatoes. They may then be either sliced, placed in a basket and soaked in running water for from two to five days (depending upon the thinness of the slices), or mashed and rubbed up with water into a paste (the thin skin being incidentally separated by this process) and afterwards soaked from one to ten hours in a sand filter, the water as it drains away conveying with it the noxious principle. It was customary to eat the resultant mass cold and without salt. I have encountered no record of the similar use of the eastern Buckeye. The Californians' treatment of the Pacific Coast species is an interesting instance, I think, of what may be done with the most unpromising material.