THE ACORN, A POSSIBLY NEGLECTED SOURCE OF FOOD

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In view of the present pressure on the food supply of the United States, and with special reference to the universal effort to reduce the consumption of wheat by the substitution of corn meal, bran, and other cereal products, it may be worth while to call attention to the high nutritive value of a wholly neglected food of wide distribution. I refer to the acorn.

There are in the United States more than 50 species of oaks, of which 30 occur in the Eastern States and about 15 in the single State of California.

To the native Indians of that State the acorn is, and always has been, the staff of life, furnishing the material for their daily mush and bread. And when it is remembered that the Indian population of California at the time of its discovery numbered probably not less than 300,000 persons, and that from the Oregon boundary to the Mexican line, except in the desert region, where oaks do not grow, acorns were universally eaten, and in most cases were the principal article of diet, some idea may be had of the vast quantity and high food value of those annually consumed.

In the fall, when the acorns are ripe, the Indians gather them and spread them out to dry in the sun, and when thoroughly dried store them in large baskets and wickerwork caches, sometimes in trees, but usually on rocks or poles. These receptacles are built to shed the rain and to keep out rats and mice, but are sufficiently open to permit the circulation of air, thus avoiding the danger of molding.

Another and very different way of preserving acorns, practiced by the Indians of Round Valley, California, sometimes practice another method of getting rid of the bitter element, namely, by burying the acorns with grass, ashes, and charcoal in a sandy place and afterward soaking them in water from time to time until they become sweet.

When preserved dry in the usual way, the acorns are stored as needed, and the dry meats, each splitting naturally in two parts, are pounded in stone mortars until reduced to a fine meal or flour. This at first is disagreeably bitter, but the bitter element is removed by leaching with warm water, which in settling through and acquiring the color of coffee and the bitterness of quinine. The meal is then dried and stored to be used as required, for mush or bread.

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Boiled in baskets by use of hot stones

The ordinary method of cooking is by boiling in baskets by means of hot stones, the result being a thick jelly-like mush or porridge. Acorn flour makes a rich, glutinous food and contains a surprisingly large quantity (18 to 25 per cent) of nut oil of obvious nutritive value.

Mrs. Merriam tells me that it is easy to work, bein what cooks call a "good binder," which means that it holds together well even when mixed with several times its bulk of corn meal or other coarse or granular materials.

Mush and bread made wholly of acorn flour are not pleasing to our taste, but...
Photograph by H. W. Henshaw, from C. Hart Merriam

DIGENO INDIAN WOMAN POUNDING CORNS AT SANTA BARBARA,
SOUTHERN CALIFORNIA

The picture shows plainly the ring of partly ground acorns which always rises about the rims of these mortar holes in the solid rock. It shows also the method of holding the heavy stone pestle, and some of the acorn baskets.

Photograph by C. Hart Merriam

INDIAN WOMAN OF THE CHUCHANSY TRIBE, NEAR FRESNO FLAT, CALIFORNIA,
SHUCKING CORNS

Note the newly gathered acorns of the black oak in the carrying basket, the flat stone upon which the acorn is poised, and the small stone in the right hand with which it is split. The picture shows also one of the flat, circular winnowing baskets in which the acorn meal is agitated to separate the fine from the coarse, and a bowl-shaped basket in which the acorn mush is cooked. The work is done in a small opening in the manzanita bushes adjacent to the Indian's home.

The picture shows plainly the ring of partly ground acorns which always rises about the rims of these mortar holes in the solid rock. It shows also the method of holding the heavy black as jet, and while still fresh has the consistency of rather soft cheese. In the course of a few days it becomes hard. It is remarkable for being sweet, for the original meal, and even the soup, are rather insipid. The sweet taste is very evident, and is due in great measure to the prolonged and gentle cooking, which, favored by the moisture of the dough, gradually converts some constituent of the meal into sugar.

Chesnut tells us that this kind of bread usually contains a red clay which is mixed with the dough before baking, in the proportion of one part clay to 20 of acorn dough. It is then embedded in leaves and baked overnight on hot stones, either in the cooking hole in the ground or covered with earth and hot stones.

“...When removed the next morning the bread, if previously mixed with clay, is as leached acorn meal mixed with corn meal in the proportion of one part acorn to four parts corn makes excellent corn bread and pones, and mixed with white flour or whole-wheat flour in the same proportion makes palatable bread and muffins, adding to the cereal value the value of a fat nut product.

I have often eaten the pure acorn mush and bread as made by the Indians, but prefer the mixed product above mentioned. John Muir, during his arduous tramps in the mountains of California, often carried the hard, dry acorn bread of the Indians and declared it the most compact and strength-giving food he had ever used.

Another kind of bread was made by the Indians of Sacramento Valley. The eminent geologist, James D. Dana, who traversed the valley with the Wilkes Expedition in 1841, said: “Throughout the Sacramento plains the Indians live mostly on a kind of bread or cake made of acorns ... kneaded into a loaf about two inches thick, and baked. It has a black color, and a consistency like that of cheese, but a little softer; the taste, though not very pleasing, is not positively disagreeable.”

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The action of the cold water, curiously enough, causes the leaves to contract and harden. They are then placed on rocks to drain, and in the course of a few days become dry and hard and may be carried to drain, and in the course of a few days enough, causes the loaves to contract and harden. They

In some parts of California the Indians husk the acorns as soon as ripe, without waiting for them to dry. The shells, being at that time somewhat flexible, cannot be easily cracked with the cracking stone, but are torn open with the teeth.

INDIANS ESTABLISH ACORN CAMPS IN AUTUMN

A very intelligent full-blood woman named Che-na-wah Weitch-ah-wah, belonging to the Pa-lik-lah or lower Klamath tribe, writes that in her country when the acorns ripen, in late October and in November, the families establish acorn camps in favorite localities, gathering and bringing in the nuts in the large burden baskets. In the evening, when the evening meal is finished, all the family—men, women, and children—engage in removing the hulls with their teeth, an occupation at which they are very expert. The hulled green acorns are put into large, flattish circular receptacles of basket work, which are placed on top of a high frame over the fire in the house, so that the heat in rising dries them.

All acorns are not equally desirable from the food standpoint. Of the edible qualities of the numerous eastern species I have no personal knowledge, though it is well known that acorns of several species were eaten by various eastern tribes from Canada to the Gulf of Mexico.

It is known that the Algonkin tribes made use of acorns for food, apparently favoring the sweet kinds, as those of the white and chestnut oaks, but in times of necessity resorted to the bitter acorns of the black and red species.

The Iroquois of the State of New York, according to F. W. Waugh, commonly made use of acorns for food, apparently favoring the sweet kinds, as those of the white and chestnut oaks, but in times of necessity resorted to the bitter acorns of the black and red species.

Waugh states further that nut meats (presumably including acorns) were pounded, boiled slowly in water, and the oil skimmed off into a bowl; the oil was boiled again and seasoned with salt, to be used with bread, potatoes, pumpkins, squashes, and other foods, and nut oil was often added to mush. The meats left after skimming off the oil were seasoned and mixed with mashed potatoes, and nut meats were crushed and added to hominy and corn soup to make it rich.

And the Hurons of eastern Canada, according to the Jesuit Relations, prepared the acorns by “first boiling them in a lye made from ashes, in order to take from them their excessive bitterness.” Another way was by boiling them in several waters.

During the famine winter of 1649–1650, after the Hurons, defeated by the Iroquois, had taken refuge on the Island of Saint Joseph, at the north end of Lake Huron, the Jesuits of the Mission at that place “were compelled to behold dying skeletons eking out a miserable life: ... the acorn was to them for the most part what the choicest viands are in France.”

The Jesuits, before the snow had covered the ground, had bought 500 or 600 bushels of acorns, and had dispatched several canoes to procure a supply of fish from the Algonkin tribes 60 to 100
Beyond the leach is the fire, covered with stones which are being heated to cook the mush in the baskets on the left. The leach is a low, concave mound of dry debris gathered under the manzanita and lilac bushes, consisting mainly of dead and broken leaves and bark, which together form a porous bedding through which the water easily finds its way. The leach is lined with a fiber mat, or cloth, and the branch of an evergreen tree is laid on the meal to catch and spread the water so that it will not dig into the meal. Used by the Mewuk Indians of the Sierra foothills region, California.

Leagues away. But the quantity of food obtained proved insufficient, and early in March the famished Hurons were compelled "to go in search of acorns on the summits of mountains which were divesting themselves of their snow." These poor Indians were drowned by the sudden breaking up of the ice on the lake (Jesuit Relations).

Use of Acorns in Southern States

The Choctaw, of Louisiana, according to David Bushnell, used to make flour by pounding the acorns of the water oak in a wooden mortar, when the meal was leached, by putting it into an openwork basket and pouring water through several times. It was then boiled or used as corn meal.

In the Southern States, where more than 20 species of oaks occur, and in parts of Mexico, acorns are sometimes eaten by the people, and they are relied upon to supply the principal food of the countless thousands of hogs that roam at will through the glades and forests; thus contributing materially, albeit indirectly, to the support of the population.

And there is every reason to believe that a fair proportion of the species might be utilized with advantage to vary or supplement the daily diet of the people. This would be especially desirable in the case of the ill-nourished poorer classes—those subject to the inroads of hook-worm and pellagra.

In California the relative merits of the different kinds are well known. At middle elevations in the interior of the State the fruit of the black oak is the favorite, while in the humid coast belt that of the tanoak is most prized. Besides these, the fat acorns of the blue oak of the dry foothills and the elongate ones of the valley oak of the bottomlands and adjacent slopes are gathered and consumed in large quantities; and in years when the nut crop of the favorite species fails, most, if not all, of the others are turned to account.

Even at the present time hundreds of bushels of acorns are annually gathered and eaten by California Indians; but the quantity consumed by the white population is negligible, the main part of the crop (amounting to thousands of bushels) being devoured by hogs, bear, deer, squirrels, and other animals or allowed to go to waste on the ground.

Acorns as a Bread Substitute in Europe

In the old world the utilization of acorn food for man and beast dates from
ACORN CACHES IN YOSEMITE VALLEY

The outer covering is of branches of fir, cedar, and pine, closely appressed, with the tips directed downward to keep out the rain and the native rats, mice, and squirrels. The interior lining is mainly of the long, slender branches of Hemiba or Lotus.

While on the subject of Indian foods, it may be mentioned that the nutritious nuts of the sugar pine and digger pine and the berries of certain species of manzanita are much used by California Indians; that the seeds, roots, and fruits of numerous other plants form valued additions to the diet, and that in times of scarcity the nuts of the California laurel and buckeye, of which hundreds of bushels may be had, are so treated as to be edible.

In the arid mountains of the desert region east of the Sierra the rich oily nut of the pinyon or nut pine takes the place of the acorn as the dominant element of the food supply; and in certain canyons bordering the Colorado desert the same may be said of the native date, while in the open deserts the mesquite bean is the staple commodity.