

ABORIGINAL BOTANY*

As employed in this paper the word, "botany" is somewhat loosely comprehensive, and is used for the lack of a better. Under it are included all the forms of the vegetable world which the aborigines use for medicine, food, textile fabrics, ornaments, etc. Among savages, of course, there is no systematic classification of botanical knowledge. Every oak, pine and grass has its separate name; the Indian never groups individuals together, except occasionally, by adding one of the words cha, doo, popo, com, wi, back, (tree, bush, grass, seed, root, leaf) or something of that sort. But it is not for a moment to be supposed that the Indian is a superficial observer; he takes careful note of the forms and qualities of everything that grows on the face of the earth. True, he ascribes marvelous and impossible qualities to some plants--frequently those which do not grow in his neighborhood--but that does not blind him to their real properties. And as his perceptions of individual differentiations is nice and minute, so his nomenclature is remarkably full. I assert without hesitation that an average intelligent Indian, even if not a medicine-man, knows a much greater catalogue of names than nine-tenths of Americans. Nothing escapes him--he has a name for everything. And, indeed, there is reason. In times of great scarcity they are driven by the sore pangs of hunger to test everything that the soil produces, if perchance they may find something that will appease the gnawings of appetite. They therefore know the properties of all herbs, shrubs, roots, leaves, whether they are poisonous or nutritive, whether purgative, astringent, sedative, or what not, or without any active principle. And they have often found out these things by bitter experience in their own persons. It is surprising what a number of roots, leaves, berries, and nuts the squaw will discover. She will go out in the spring with nothing but a fire-hardened stick, and in an hour she will pick a breakfast of green stuff, into which there may enter fifteen or twenty ingredients, though, of course, they are seldom reduced to this extremity nowadays. Her eye will be arrested by a minute plant that will yield her only a bulbous root as large as a large pea, but which the American would have passed unnoticed. The women are generally best acquainted with the edible matters; while the old men are the authority as to the medicines.

There are seventy-three vegetable substances mentioned in this paper. I am indebted to the kindness of Professor H. N. Bolander, who identified for me many plants that I was unable to determine. There are a few specimens which are so scarce, nowadays, owing to the ravages of stock, or so difficult to find in flower, that it was impossible to give their scientific names.

I will take this occasion to say that there are many substances popularly called "Indian medicines" which are humbugs, and which have been fathered upon the aborigines by patent-medicine men. Whatever is set down in this paper has been learned from the Indians themselves.

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In regard to medicinal herbs and plants, their usages are peculiar and sometimes amusing. As the practice of medicine among them is a source of great profit and prestige, it is sought to be invested with mystery. The medicines always are crafty men, keen observers, reticent. An old doctor always clothes his art with a great deal of superstition, secrecy, and pompous solemnity. In answer to impertinent young questioners, he says his simples do not grow anywhere in that neighborhood; he is obliged to purchase them from tribes living at a great distance. I have known an old doctor and his wife, both as full of guile and subtlety as an egg is of meat, who always arose at the dead of night, crept stealthily out of camp, and gathered their potent herbs, roots, etc., then returned before any one was stirring, and concealed them.

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The Indians referred to in this paper are the Neeshenams, of Bear River, and the flora is that of the extreme lower foothills of Placer County. Their general name for "medicine" is weneh, which denotes "good"; but they frequently use the word "medicine," even among themselves.

To begin with the oaks, the species which produces their favorite acorns is the Quercus Gamelii, Indian name, chacow. They generally select those trees which have a free, coarse bark and large acorns. About the middle of October the harvest begins, when the Indian, armed with a long, slender pole, ascends the tree and beats off the nuts. A tree which has been well stripped looks as if it had been scorged in a mighty hail storm. The old men generally assist in carrying them home in their deep, conical baskets, and there the squaw's duties commence. Holding an acorn on a stone, she gives it a slight tap with a stone pestle called sooneh, to crack the shell, which she strips off rapidly. They are then dried and beaten to powder in small hollows on top of some great rock. The flour is soaked a few hours in a large hollow scooped in the sand, the water draining off and carrying away the bitterness; after which it is cooked into a kind of mush in baskets by means of hot stones, or baked as bread underground. The acorn which stands second in favor is that of the burr-oak (Q. lobata-- Indian, lowh). In Placer County this oak seems to be more properly Q. Douglassi, as its branchlets are erect and rigid. There is an oak which they call shuheh, which seems to be something like a cross between the white and burr-oaks, having very white and coarsely rimose bark, and glabrous, shining, deeply sinuate leaves. But Professor Bolander pronouces this also Quercus Gambelii. The live oak is haha; Q. Wislizenia, hammut; the black oak, (Q. Sonomensis) hanchu. The acorns of these last are eaten only when they can procure no others. There is one other very small species called cheepis, found growing in the mountains; but I cannot determine from their description whether it is the chinquapin or the whortleberry oak.

The nut-pine or silver-pine is toan, toanem cha. It is a great favorite with them, the most useful tree they have, and they always regret to see an American cutting one down. The nuts are a choice article of food; and, burned and beaten to powder, or crushed up raw and spread on in a plaster, they form their specific for a burn or a scald. The pitch, and the mistletoe which grows on this pine, are very valuable, in their estimation, for coughs, colds, and rheumatism. They set them

afire, making a dense smudge, and then the patient, wrapped in a blanket, squats over it or stands on all-fours over it, and works and shuffles his blanket, so as to make the smoke circulate all through it, and come in contact with every portion of his body. When an Indian has an arrow-wound, or wound or sore of any kind, he smears it with the pitch of this tree, and renews it when it wears off. In the spring, if food is scarce, they eat the buds on the ends of the limbs, the inner bark, and the core of the cone, (taeh) which is something like a cabbage-stalk when green. The cone-core and bunch-grass are boiled together for a hair-dye. They are as proud of their black hair as the Chinese; and when an old chief who is somewhat vain of his personal appearance, or one of the dandies of the tribe, finds his hair growing gray, he has his squaw boil up a decoction of this kind, and he sops his bleaching locks in it. The tar shindac, which is worn by widows in mourning, is made of hot pitch and burned acorns, powdered; it is removed by means of soap-root and hot water.

(In adding the word for "tree," or "bush," they generally suffix the syllable em, thus: toan, toanem cha; paddit, padditem doo.)

Chippa is the willow, the long twigs of which are used both for arrows and basket-making. In making an arrow, the hunter employs a rude kind of turning-lathe, a couple of sticks held in the hand, between which the twig intended for the arrow is tightly clamped and twisted around, which rubs off the bark and the alburnum, and makes it round. The long, straight shoots of the buckeye, poaloh, poalem doo, are used for the same purpose. For the woof in basket-making they employ the wood of the redbud, (Cercis occidentalis--paddit) which is split up with flints or the finger-nails into fine strings, used substantially as thread. The willow twig is passed round and round the basket, the butt of one lapping the twig of the other, while the redbud strings are sewn over the upper and under the lower.

Cotoh is the manzanita. Its berries are a favorite article of food, and are eaten raw, or pounded into flour in a basket, the seeds separated out, and the flour made into mush, or sacked and laid away for winter. They also make quite an agreeable article of cider from them, by soaking the flour in water several hours, and then draining it off.

Alder is shootoom; poison oak is cheetoc. They are less easily poisoned by the latter than Americans; their children handle it a great deal while little. They eat the leaves, both as a preventive, and as a cure for its effects; though it sometimes poisons them internally. The women use the leaves freely in cooking; they lay them over a pile of roots or a batch of acorn bread, then lay on hot stones and earth. The bright red berries of the California holly (Photinea arbutifolia--yoalus) are eaten with relish; also, the berries of the elder, nock, and wild grapes--peemen. They call a grapevine a bush--Peemenem doo.

Soap-root, howh, is used for poisoning fish. They pound up the root fine, and mix it into pools where the fish and minnows have no way of escape, and at the

same time stir up the bottom until the water becomes muddy. The minnows thrust their heads out of the water stupefied, and are easily scooped up. Buck-eyes are used in the same manner. Soap-root is also used to heal and cleanse old sores, being heated and laid on hot. Both soap-root and buckeyes are eaten in times of great scarcity; they are roasted under ground thirty-six hours or more, to extract the poison.

For toothache, the remedy is the root of the California buckthorn (Frangula Californica--luhum doo). It is heated as hot as can be borne, placed in the mouth against the offending member, and tightly gripped between the teeth. Several sorts of mints, heesuh, are used in a tea or decoction for colds or coughs. Ague is believed to be cured by a decoction of the little mullen, (Eremocarpus setigerus--badah) which grows on black adobe land in autumn. Colic is treated with a tea made from a greenish-gray lichen, (Parmelia saxicola--wahattac) found growing on stones. For rheumatism, they take the leaves and stems of a parasite vine (Galium--sheshem) which grows up in the middle of the chapparal bush, heat or burn them, and clap them hot on the place.

Yellow-dock, heet, is a valuable specific in their pharmacopœia. In case of acute pain of any description, the root is heated hot, and pressed upon the spot. In the spring, the leaf is eaten boiled, for greens, together with clover and many other things.

Bunch-grass, boopuh, is the subject of superstition. They believe that the long, slender stalks of it, discharged as arrows from a little bow against a pregnant woman, will produce a miscarriage; also, that they will hasten the time of maturity in a maiden. There is another thing, which they call wocoamah, probably wild parsnip, which they believe to be a deadly poison. It will produce nose-bleed, and the people who keep it in their houses will surely die. I will here state that I cannot discover that the Indians ever used poisons to any considerable extent to rid themselves of enemies; if they did, it was the old medicine men, and they keep the matter a secret. The Indians profess to stand in great and perpetual dread of being poisoned by one another; and no one will taste anything handed to him by one who is not a member of his family, unless the other tastes it first; but they imagine a hundred cases of poisoning where one actually occurs.

Of grasses, they eat the seed of the wild oat, (tootootem com) but very sparingly. Wild clover, cheewee; alfilleria, battis; and a kind of grass growing in wet places; (Melica--holl) are all eaten raw when young and tender, or boiled for greens.

There are two kinds of mushrooms which they consider edible. The one of which they are fondest is called poolcut, and is a little round ball, from the size of a marble to that of a black walnut, round underground in chaparral and pine thickets. They eat it raw with great relish, or roast it on the ashes. Another kind is the wachuh, which grows in the ordinary form, brown on the upper side, chocolate-colored and deeply ribbed underneath, and easily peeled. It is eaten boiled.

Higher up in the mountains they find a root looking somewhat like a cork, a piece of which they sometimes wear suspended to their clothing as a charm. It is called chook or champoo. Indians of other tribes in the State invest different species of Angelica with talismanic attributes.

Under the popular name of grass-nut there is included a large number of plants with a small, round, bulbous root, all of which, with one exception, the Indians eat with much satisfaction. They are generally pried out of the ground with a sharp stick and eaten raw on the spot; but sometimes the women collect a quantity in a basket and make a roast in the ashes, or boil them. Most of them are by no means disagreeable to the civilized taste. There is the beaver-tail grass-nut, (Cyclobothra--wallic) the turkey-pea, (Sanicula luberosa--tuen) the purple-flowered grass-nut, (Brodioea congesta--oakow) the tule grass-nut, (coah) a small bulb, with a single, wiry, cylindrical stalk, growing in wet places, which I could not identify; the climbing grass-nut, (Brodioea volubilis--oampoom wi) sometimes planted by Americans for ornaments; the little soap-root, (Chlorogalum divaricatum--poyum) the wild garlic, (Allium--cooeeh) the eight-leafed garlic, (shal) the five-leafed garlic, (inshal) and the three-leafed garlic, (wookwe) the yellow-blossom grass-nut (Calliproa lutea--ustuh); the long-leafed grass-nut (Brodioea congesta, although the Indians have a different name for it from that mentioned just above, namely, yoang wi) the white-flowered grass-nut (Hesperoscordium lacteum-yowak wi); and the wild onion (Allium cepa--chan.) There is one other grass-nut, with a black bulb, (Anticlea--haccul) which the Indians consider poison, although it probably contains no more poison than other members of the liliaceous family.

The list of greens which they eat in the spring is also quite extensive. Besides the grasses and the yellow dock above mentioned, there is the mask-flower, (Mimulus luteus--pooshum) two species of the Angelica, (hen and oamshu) which are difficult to determine; the California poppy, (Escholtzia Californica--tapoo) either either boiled or roasted with hot stones, and then laid in water; the rock-lettuce, (Echeveris lanceolata--pittitac) eaten raw; the wild lettuce, (Claytonia perfoliata--yau) and a species of Sanicula, (mancoo) the root of which, long and slightly tuberose, is also eaten. Of the wild lettuce a curious fact is to be noted. The Indians living in the mountains, about at the elevation of Auburn, gather it and lay it in quantities near the nests of certain large red ants, which have the habit of building conical heaps over their holes. After the ants have circulated all through it, they take it up, shake them off, and eat it with relish. They say the ants, in running over it, impart a sour taste to it, and make it as good as if it had vinegar on it. I never witnessed this done, but I have been told of it, at different times, by different Indians whom I have never known to deceive me.

Of seeds, they eat the following: A kind of coarse, wild grass, (Promus virens--dodoh) a species of yellow-blooming, tarry-smelling weed, (Madaria--coamduc) the seeds of which are as rich as butter; the yellow-blossom or crowfoot, (Ranunculus Californicus--tiss) of which the seed is gathered by sweeping through

it a long-handled basket or a gourd; a little weed which grows thick in ravines, (Blennosperma Californicum -- poll) gathered the same way; also a weed (sheeoo) with little white blossoms distributed all along the stalks, which are thickly covered with minute prickles -- I know not what it is. All these seeds are generally parched a little, and then beaten to flour, and eaten without further cooking, or made into bread or mush. The dry, parched flour of the crowfoot seed has that peculiar, rich taste of parched corn.

There is an umbelliferous plant, (shokum) the root of which the Indians esteem very highly for food; more highly than any other, it being their nearest equivalent to potatoes. I know not if it is the true cammas; I think it is at least a species of it. It grows on rocky hill-sides, blossoms in June and July, has an extremely delicate, fringe-like leaf, and a root about an inch long and a quarter as thick, sweetish-pungent and agreeable to the taste. In Penn Valley, Nevada county, they gather large quantities of it.

They are acquainted with the Yerba santa, but attach no particular value to it.

Around old camps and corrals there is found a wild tobacco, (Nicotiana plumbaginifolia - pan) which they smoke with great satisfaction. They gather the leaves and dry them in the sun in a rude fashion, then cut them up fine. It has a pungent peppery taste in the pipe, but is better than nine-tenths of the Chinese-made cigars. It is smoked in a wooden or stone pipe, which is constructed of a single straight piece, the bowl being simply a continuation of the stem, enlarged. I saw one made of soap-stone, about six inches long, five inches of it being the bowl, which was nearly an inch wide at the extremity, so that it would hold enough to last half an hour. It was quite a handsome piece of workmanship, perfectly round and smooth, tapering evenly down to a bulb, which was inserted in the mouth. The tobacco-pipe is called panemcoolah.

There are two plants used for textile purposes. One is a kind of tule-grass, or small bulrush, (Juncun - doccun) which they hatched with flints or with their finger-nails, bleached, and wove into breech-cloths. For strings, cords, and nets, they used the inner bark of the lowland milk-weed (Asclepias - poo). When it is dry, the Indian takes both ends of a stalk in his hands, passes it through his mouth, and crushes it with his teeth, or else passes it over a stone while he gently taps it with another; then strips off the bark and twists it into strands, then into cords. The rock milk-weed, (campoo) has a medicinal value; they use the root for the toothache, the same way the root of the buckthorn is used.

It is necessary to state that most of the medicines above mentioned are of the class which the women are allowed to become acquainted with and to employ. There are several other substances which are more rare and valuable, or at least

they deem them more valuable, and which the medicine-men alone know anything about. They are found far up in the mountains or in other localities, and may be called the medicines of commerce, having a tolerably well-settled value in shell-money. I regret that I was generally unable to secure sufficiently complete specimens to determine them. For instance, there is a root (luhno) which I should call Seneca snake-root, but of which I could procure only a little piece. A root about as large as a pipe-stem, and four inches long, is worth about a dollar. A decoction of it is used for diarrhea, that scourge of aboriginal life; also for venereal diseases. There is a bush (chapum) found in the mountains, with a very pale tea-green bark, and minute golden specks on the small limbs, which is probably California sassafras, and which is very highly esteemed for coughs and colds, a tea of the bark being given. Another root, (pallic) spignet from its appearance, is made into a tea and drunk for diarrhea; this also is very valuable. There is still another, (litway) found on the Truckee, which is good for the dropsy.

Although it is not strictly germane to the topic, I may be permitted to state that the Indians have names for all the internal organs of the human body; and their ideas of their functions, and of the operations of medicine, are at least as respectable as those of the Chinese.