

## THE CALIFORNIA INDIANS: THEIR MEDICAL PRACTICES AND THEIR DRUGS.\*

BY JOHN CULLEY.

The California Indians are perhaps the least known of the aborigines of North America. They and those of the entire Western and Pacific slope are racially different in many ways, in their general characteristics, habits and modes of living from those of the Atlantic Coast and the Great Plains.

The California Indians can be traced to three distinct geographical migrations which account for the wide variance in their culture. Those of Northern California entered the state from the North Pacific coast and brought with them the beliefs, habits, practices, traditions and culture of the northwest. The Indians of Central California came from the western plains of the Rocky Mountains. The Shoshones and the Piutes' ancestors have been traced to the Aztecs of Mexico. The Indians of Southern California migrated into the state from Northern Mexico, Arizona, New Mexico along the Colorado River Basin.

There are about forty-five Nations or Tribes of Indians in California representing twenty-one entirely distinct linguistic families, or one-fourth of the total number for North America. California is regarded by anthropologists as the region of the greatest linguistic diversity in the world.

The climate of California and of the entire Pacific Coast is very mild, in some parts tropical and sub-tropical. The land is very fertile and all kinds of food and game grow in abundance. Conditions were generally conducive to easy living. The Pacific Coast Indians show the effect of living in such a climate. They were non-nomadic and inclined to remain in their respective districts. Food was easy to obtain so they were not cultivators of the soil, nor were they big game hunters, their hunting being confined to the smaller game and fishing.

The Indians of California and those of the West do not have the highly aquiline nose and coppery complexion of the Eastern Indians. In stature, they are shorter, inclined to stoutness, and short headed. They do not dress their persons with gaudy colored and gorgeous ornaments.

Their complexions are darker and when they did paint their bodies it was with dark colors. They were not war-like; in fact, they were the least war-like of all the American Indians. They had their various tribal wars, usually not wars of conquest, but wars to protect their own districts from invasion. They did not use tomahawks, neither did they scalp their enemies or burn them at the stake.

California Indians, not being nomadically inclined, regarded themselves as originating at the place in which they lived. The word "Pomo" occurs in various forms in many of their languages and signifies "Earth people" and refers to their belief that their first ancestors were created directly from the soil of their respective dwelling places.

The general intelligence of the California Indians is of a very low order, perhaps the lowest of all Indians of North America. Culturally they are no doubt the simplest and crudest of all American Indians. The climatic conditions and easy living were seemingly not conducive to much original thought.

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## GENERAL MEDICAL THEORY OF THE CALIFORNIA INDIANS.

Medicine is said to be the art of restoring and preserving health. It is the agent or influence used to prevent, alleviate, influence or cure disease or its symptoms. The American Indians, including those of California, used a wide and very extensive scope of agents in their endeavor to produce such results.

Of the questions that all mankind, civilized and uncivilized, propound to themselves and to High Heaven, there can be in our present state of intelligence no answer to the most important, except answers supplied by religion and faith.

The California Indians were intensively religious and had a very pronounced faith in their practices of healing the sick. The practice of magic combined with some form of hypnotic appeal was their chief instrument in the art of healing. The use of drugs was mostly incidental.

The fundamental law of magic has been stated to be: "Whatever mankind naturally imagines to be, will be." When a person is deeply in earnest and believes that a thing can be done, it very often is done. Many wild and uncivilized people when ill and willingly disposed have a certain faith that they are going to be cured, yield readily to some form of suggestion and they are cured. That practice is not confined to the uncivilized. The California Indians used faith, prayer, magic, suggestion, hypnotism and psychology, symbolic and empiric means, songs, incantations, fetishes, rituals and superstition combined with various mechanical devices and the use of a few drugs to effect a cure for disease.

Dr. Agard of Oakland, California, in speaking of the White Races says:

"Man, an animal which takes pills for what ails him, and is never cured."

It applied equally well to the California Indians. The Indians merely change their methods of drug consumption. The term "Medicine" to the Indians covers a great deal more ground than it does to the educated white man; to the Indians of California and to all Indians it means anything under the sun, manner or agency, either supernatural or temporal, magical or therapeutical, symbolical or physical that could be invoked as an aid not only in curing disease, but to insure success of tribal undertakings or the success of individuals in overcoming obstacles. Any ritual, ceremony, article from persons or animals, roots and herbs that could be invoked or imbued with a supernatural or mystical quality to eradicate bad influences, moral or physical, were referred to as being "Good Medicine." Generally speaking, all evil or bad influences either supernatural or material were referred to as being "Bad Medicine."

The theory of disease among the California Indians was that all diseases reside in the blood and the proof of this belief is that blood collects under a bruise and that the blood coagulates. All illness not connected with a visible wound or caused by an accident was considered as an entrance into the body of an evil spirit, or even something more tangible. To get rid of these invasions was the intent and practice of the various rites and ceremonies accompanied with the use of drugs and medicines.

The American Indian was content in the belief that he was placed upon this earth to conquer his enemies, have good hunting and plenty of food and eventually pass on to the Happy Hunting Grounds where he could continue to hunt buffaloes and wild game to his heart's content. The Happy Hunting Grounds under

the jurisdiction of the Great Father had a somewhat different meaning to the California Indians. It was a place where they could continue on with the same manner of living with all earthy troubles eliminated, no hard work, no wild hunting but an eternal existence of ease and contentment.

#### DISEASES OF THE INDIANS.

The written history of California and of the West Coast began about 1770 with the advent of the Spanish and Mexican missionaries and they made very few records of the Indians and their life, being more interested in their religious conquests rather than in the history and habits of the Indians.

Many of the California Indian tribes were not known until the discovery of gold about 1848. Hence, there is little evidence to show what diseases were prevalent among the Indians previous to the advent of the white men, and what evidence we have shows that the California Indians were subject to various diseases and were not racially immune to any type. Many diseases common to the white race were unknown to the California Indians, and actual knowledge regarding the causes, nature and rational treatment of diseases was not known at all. The culture and medical practice of the California Indians remained in a rudimentary stage. In no way did their medical practice compare with the Indians of neighboring states, especially those of the south.

Smallpox, tuberculosis, cholera, typhoid, scarlet fever, measles, whooping-cough were not known to exist. Syphilis and gonorrhœa were introduced by the white men and are not considered Indian diseases. Some Indians actually sought these diseases so that they could revenge themselves on their enemies. They also thought that by passing it on to others they got rid of their own trouble. Cancer, neoplasms and malignant growths are not Indian diseases and no evidence is known of their existence among California Indians. There was but little insanity, idiocy, cretinism, paresis and liver, heart and kidney troubles were very rare.

The most common type of diseases were gastritis due to periods of starvation, irregularity of eating, over-indulgence during periods of plenty, and the consumption of raw and unclean food. Dysentery prevailed in the summer. Eye diseases were frequent due to living in unventilated tepees filled with wood smoke. Coughs, colds and pneumonia were common owing to the outdoor life and exposure to all kinds of weather. Rheumatism and neuralgia were a source of great trouble. Malaria and fevers were prevalent as the Indians lived close to water courses. However, they seemed to sense that dampness was the cause of this complaint and in wet seasons they moved up to the hills and around the valleys which served as a sort of sanitary measure. Naturally, their outdoor life was a source of many fractures, cuts, wounds, sores and they suffered a great deal from the bites of insects and snakes. Itch and vermin caused great suffering.

#### MEDICINE MEN OF THE INDIANS.

The medical practitioner of the Indians of California and of Northern America was generally alluded to as Shaman, the medicine man of the tribe. He was very powerful in his influence for good or for evil and his powers were exercised over a wide sphere of action. He was supposed to have some supernatural or occult power that was passed into him by the Gods. He was the possessor of some sacred formula that helped him accomplish his various deeds. He healed the sick and ailing by invoking these powers. He had the ability to perform certain types of magic which we now know to have been ordinary sleight-of-hand tricks. He could subject others to his will by a type of hypnotism. He was supposed to have the power of enlisting the Gods to his aid to bring forth rain, prosperity and a plentiful supply of food.

While each and every medicine man had his own specially developed method of performing his various rites, and no two worked alike, yet there is a certain sameness in all of the methods of the Shamans. Curative medicine or medical practice usually combined all of the various powers of the Shamans and reliance for the cure was based more upon the mental effect of the ceremonies rather than upon the therapeutical effect of the drugs used.

The Shamans were shrewd, accomplished and experienced in their arts; they had the full confidence of their people and were unusually well paid for their services. Next in importance to the supernatural and ritualistic methods of healing the sick was the general use of sweating. It was universally used by all tribal Shaman as an adjunct to other methods in almost all types of diseases, especially so in elimination of painful complaints such as rheumatism and neuralgia. The use of this sudorific method of treatment was one of the most important principles of the Shaman's medical practice. Its use embodied the same principle in all cases. The methods only changed with each tribe. The patient was placed in lodges, tepees, earth mounds, pits or trenches, and sweating was induced by the heat produced from the dense steam emanating from heated stones drenched with water or covered with wet earth or wet grasses.

#### SURGERY OF THE CALIFORNIA INDIANS.

Surgery, as modern practitioners understand it, was not practiced by the California Indians, yet they were rather expert in many ways in this branch of healing.

Broken bones were skilfully set with splints of wood or in some instances with strips of fresh hide which when dried would harden into a cast comparable with the plaster of Paris bandage. Cutting out abscesses, blood letting by cutting for local inflammations, cuts between the eyes for headache, blistering by sucking the skin and the blisters opened for the relief of rheumatism, cauterizing with hot ashes to control bleeding, bandaging fresh cuts and wounds were but a few of the various surgical operations that the Indians seem to be quite capable of handling. Dentistry was confined to teeth pulling with punch or mallet or by prying. A favorite method of treatment by the medicine men consisted of sucking the affected part until the blood flowed, by which means they pretended to extract the cause of disease.

Childbirth was particularly well understood and their practices in that line were much better than the average of their contemporary whites, although some of their methods while successful, were rather crude and bizarre. No doubt the success in this line was greatly due to the smallness of the Indian baby and the general good health and habits of the Indian woman.

Many diseases and abnormal defects of the system were treated with a sort of massage or rubbing the parts affected. They knew nothing of bacterial diseases and the causes of diseases. Antiseptic treatment was unknown and yet the Indians were remarkably immune from infection in open and fresh wounds. They recovered from such hurts much faster than did the whites and from wounds that would have proved fatal to the white men. Perhaps they may have some racial immunity from such septic conditions but a more reasonable explanation is on account of the cleanly manner used by the Indians in washing and treating open wounds.

Anesthetics, either general or local, were unknown as such although some medicine men employed a decoction of *Datura* both on their patients and themselves, which produced a narcotic frenzy and which may have acted as a general anesthetic, but not so designed.

History shows that the California Indians were not subject to many contagious diseases until they were introduced by white men, so quarantining was not a part of their original medical procedure.

Smallpox was the most terrible and fatal of the diseases introduced to the Indians by the advent of the white men. It was foreign to their nature and so very fatal that it completely terrorized them. They developed several methods of their own to combat the spreading of this disease. When a family of the Piute Tribe became afflicted the entire family, together with all of their belongings quietly disappeared forever. It seemed to be a very effective way of combating the spread of this disease. Other tribes burned all of the belongings of the patient, including the huts or tepees, clothing and personal effects, and buried the body. Other tribes spread the belongings of the afflicted one out to the air in the sunlight for several days as a method of disinfection. Other tribes flew a flag at the top of the tepee to warn others to keep away.

California Indians usually cremated their dead. Only bad Indians, those who came in contact with the white men and inherited some of their bad traits and diseases, were buried. It was a grave indignity and an insult to the tribe to "hole" any of its dead.

#### THERAPEUTICAL PRACTICE OF THE CALIFORNIA INDIANS.

The drugs used by the California Indians consisted of roots, barks, leaves, herbs, a very few fruits and blossoms and but few animal and mineral substances.

The women of the tribe were allowed to use and prescribe only those drugs easily accessible and the very common types of plants. Those drugs that were difficult to obtain; those that grew in the mountains, in out of the way places were deemed more valuable and therefore only tribal medicine men were allowed to handle that type of drug.

Hollowed out stones were used as mortars to pound the drugs and food to a powder or to a paste. Mortars and pestles variously decorated were used by some tribes, however, they were prehistoric and not made by the Indians themselves. They, were no doubt, brought into California by the Spanish and Mexican missionaries.

The drugs used by the Indians can naturally be classed into three divisions according to the methods of use in their tribal practices.

1. Those drugs and methods that were absolutely noneffective, having no action on the body and used only in a superstitious manner and for supernatural effect.
2. Those drugs that resemble a part of the body or the disease and supposed to cure because of that resemblance.
3. Those drugs that actually produced a therapeutical effect.

*Class 1.*—Drugs and methods used for superstitious effect. The father of a Mohave Indian refrained from drinking tea to cure his children of whooping-cough. Ashes of various plants and effigies were scattered over the patient accompanied with incantations and appropriate music to drive away the disease. The Tatu Indians used a method of tying down the patient with bent branches of small trees, believing that the tension will actually pull out the disease. The Tatu Shaman used dried rabbit bladders filled with stones and beat himself and the patient with them, accompanied with the proper chants, music and motions. The Yokaia Indians placed great confidence in a stuffed lizard used as a charm or panacea to ward off many diseases.

Angelica Root was attributed with great talismanic properties by the Hupas and other tribes. Tobacco smoke was blown over the patient to drive out the evil spirit of disease. An infusion of *Datura* was used to produce exhilaration and religious frenzy in some of their ritualistic methods. Wild parsnip was believed to be a deadly poison and would cause nose bleed of those carrying it, and those keeping it in their homes would surely die.

There is no record of any California Indians using poison to take human life, for murder or to kill off their enemies. The poisonous effects of drugs were well known, but the drugs were never used for that purpose. Bunch Grass in the form of small bows and arrows were shot against a pregnant woman to cause miscarriage, or to hasten maturity of a young maiden.

Central California Indian men practiced a very unique custom, which is also used in other parts of the world. The father of a prospective child remained at home for two weeks and abstained from various luxuries such as meat, fish, tobacco, hunting, gambling and work. Sometimes he went to bed and grunted and groaned and implied that he suffered all of the agonies of childbirth.

It was the custom in many tribes for the Shamans to lecture to the young people entering upon manhood and womanhood, on the subjects of morals and the physiology of those entering upon this period of life. They lectured upon the wisdom of right living according to their standards, prosperity, long life and agility. They frequently gave doses of *Datura* at this time to create a receptive mood from the narcotic or hypnotic effect upon the young people.

*Class 2.*—Those drugs used because of the resemblance to the disease or to a part of the body. Hot ashes of burned plants or hot coals were placed on the inflamed part. The so-called Moxie Cure, the application of hot mud packs to relieve inflammation. A species of Clematis, resembling hair, was used as a hair tonic. A twisted piece of wood was placed on a person suffering from convulsions. A splint made from the wood of a tree struck by lightning was used on a broken limb. Parts of the same rattlesnake were applied to the bitten portion of the body. A stem resembling a worm was used as a vermifuge. The Yokuts of Central California used scrapings from bear claws as an infusion to bring about childbirth. Some tribes produced counter-irritation to cure stomachache by allowing ants to roam over the abdomen.

*Class 3.*—Drugs used for their therapeutical effect. Drugs were usually prepared into a decoction or infusion and consisted generally of but one drug and given in one large dose, preferably in the morning. The dose was seldom repeated and if satisfactory results were not obtained the Indians then resorted to the ritualistic method of cure.

*Datura*, a species of Jimson Weed, known by the south California Indians as Toloache, was perhaps the most universally used drug by the Indians. It was employed for nearly all diseases, therapeutically and ritually. The pounded root was used as an application for cuts, wounds and bruises. A decoction of the blossoms and root was given to produce a narcotic effect. It was employed for paralysis and general debility. Medicine men used it themselves to produce a narcotic and religious frenzy. It was given to the patient during the setting of broken bones, for its anesthetic effect. It was taken in large doses as an aphrodisiac and known to be effective. An infusion was used to give luck to the gambling Indian. In case of an overdose an emetic of hot water was given. If the patient passed on to the Happy Hunting Grounds after an overdose, it was an indication that his bowels were in a very poor condition.

*Acorns* of various species of *Quercus* were used both for food and medicine. The acorn was dried, ground and beaten to a flour. Prepared as a food it was macerated several hours with water to remove the bitter principle.

*Silver Pine* (*Pinus edulis*)—the Pine nuts were used for food. The nuts were crushed and beaten raw and used as a plaster for burns and scalds.

*Pitch of the Silver Pine*, the natural oleoresin, was employed internally for coughs and colds; externally as an application for rheumatism. It was applied as a plaster to sores and wounds and renewed as it wore away. The soot from burning pitch was used in tattooing. *Pine Cone Core* mixed with Bunch Grass was boiled into a strong decoction and used as a black hair dye. The Indians were very proud of their black hair. *Tar from the Pitch of the Silver Pine* was mixed with burnt acorns and used by widows as a mourning skin powder or cosmetic.

*Mistletoe*, growing on the Silver Pine, was administered as a remedy for colds, coughs and rheumatism. One of the methods of use was by inhalation of the smoke from the burning drug.

*Soap Root* (*Chlorogalum pomeridianum*) had many uses. A decoction of it was used to remove the mourning paint or powder of the widow. It was used to kill fish in the manner that other Indians used *Cocculus Indicus*. As a medicine it was used to expel gas from the stomach caused by overeating. The powdered root was applied hot to old sores. It was used as a purge in constipation. During scarcity of food, it was mixed with a species Buckeye, roasted underground for thirty-six hours to remove poison and then used as a food.

*Willow* was little used as a medicine, but made into arrows for supernatural effects.

*Poison Oak*—California Indians seemed to be less affected by this drug than were the whites. Early in life the young Indians were fed small doses of this drug which evidently produced immunization against its effects. It was also given in the form of an infusion to cure the effects of Poison Oak.

*Buckthorn*, *Frangula Californica*, was ground, heated and placed hot in the mouth against an aching tooth.

*Peppermint* and *Spearmint* were used for coughs and colds.

*Mullein*, a species of small mullein, was used for fever and ague.

*Lichens*, of a greenish gray type (*Parmelia Saxicula*), was used as a cure for colic.

*A Paracitic Vine*, a species of *Gallium*, was heated or burned and placed hot over rheumatic pains.

*Yellow Dock* (*Rumex crispus*) was employed as a dry hot plaster applied over any painful part.

*Wild Parsnips* were applied to induce nose bleeding.

*Mushrooms*—two varieties were used for food.

*Angelica* was used as a cough remedy, and in ritualistic procedures.

*Yerba Santa* leaves were used to a limited extent for stomach troubles.

*Cascara Sagrada* and other species of *Rhamnus* were employed by the Indians of Northern California as a general tonic and cathartic. They were familiar with the poisonous qualities of the fresh bark.

*Quaking Aspen Bark* (*Populus tremuloides*) was used by the Mohave Indians of Southern California as a febrifuge.

*Senega Root* (*Polygala Senega*) was administered in infusion form for dysentery and diarrhoea, which were very prevalent among all tribes of Indians.

*Euphorbia* was applied for rattlesnake bite.

*Croton Californica* was used for abortion. This was not a general practice and only after the Indian women came in contact with white men.

*Nut Gall* in decoction form was applied for sore eyes, fresh wounds and other sores.

*Solanum Douglasii*—the juice of the seeds was used as an application for sore eyes.

*Peyote, Mescal*, was introduced by the Mexican Indians to the south California Indians.

*Pennyroyal* and *Sage* were used as febrifuges and diuretics.

*Grindelia Robusta* was given for bronchial troubles.

*Berberis Aquafolium* was used as a tonic.

*Sassafras*, as a decoction, was valued for respiratory affections from which the Indians suffered greatly.

*Balm of Gilead buds* were applied for rheumatism.

*Shepherd's Purse* was introduced by the Mexican Indians to the Southern Indians. A non-alcoholic beverage was made of it. Intoxication from alcoholic beverages was unknown by California Indians until introduced by the white men.

*Tobacco*—a species of wild growing tobacco, *Nicotiana*, sometimes mixed with Manzanita leaves was smoked for pleasure, for ritualistic purposes and for inhalation in nasal troubles. It was used as a wet plaster for cuts and fresh wounds. Swallowed to produce sleep. A decoction was used as an emetic. The smoke was blown over an affected part as a cure.

*Sambucus* flowers were used as a female remedy.

*Wild Clover Blossoms* were eaten as food. Its use produced an excess of gas in the stomach which was then relieved with a dose of Soap Root.

*Alum* in the form of a crude native salt leached or shaken from the roots of several plants served as a condiment.

*Wild Lettuce* (*Claytonia perfoliata*) was used by the Northern Indians like a modern-day salad. The fresh plant was gathered in large quantities and placed beside a red ant hill and the ants allowed to circulate in and over the lettuce for some time and then shaken off. Thereby a sour taste was imparted to the plant; it was eaten with a relish.

Only few animal drugs were used:

*Red Ants* were boiled to a thick syrupy consistency and taken for bowel complaints.

*Lice* taken from animals were given in infusion form for chronic diseases.

*Horned Toads* and other varieties were used as medicine for stomach troubles.

*Ring Snakes*, dried and powdered, were employed by the Central California Indians for various internal troubles.

*Whale Bone*, found along the shores of the North Pacific, was dried, powdered and used as a specific for dyspepsia.

#### CONCLUSIONS.

1. California Indians practiced sleight-of-hand, magic psychology, hypnotism.
2. They knew but very little of physiology and anatomy.
3. They practiced surgery to a limited extent.
4. They knew how to set broken bones.
5. They knew nothing of dentistry, other than extraction of teeth.

6. They used blood letting to relieve swellings and pain.
7. They were familiar with the pharmaceutical processes of percolation or leaching, extraction, torrefaction, destructive distillation, decoctions and infusions.
8. They practiced immunization and later quarantine.
9. They knew as much about the therapeutical effect of the drugs used by them as did their contemporary white men.
10. The California Indians evidently did not contribute anything of value to modern surgical, dental, medical and pharmaceutical practice, nor did they introduce anything of very great value to modern materia medica.
11. The history of California Indians is therefore more of a subject of interest than of any material value.

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## THE WORK OF THE RED CROSS.

The disastrous floods which recently swept through broad paths in fourteen or more states are probably the worst in the history of this country as far as property loss is concerned. As every one expected, the Red Cross organized immediately for relief work. The after-effects of the flood, as every one knows, are extremely dangerous, because of sickness and disease. Slime covers the wide area from which the waters have receded and provides breeding places for carriers of disease.

The Red Cross, before the coming of the flood, was about ready to institute its chain of first-aid emergency stations along important highways. These are to be established in wayside stores, gasoline service stations, tourists' camps. Standard kits of first-aid supplies are to be placed in the hands of persons who have been given a general course in first-aid treatment. The treatment before the arrival of the doctor will be purely emergency in character and, doubtless, those who have the matter in charge realize the danger of assigning such responsibilities.

The subject of First-Aid was discussed by Pittsburgh Branch, A. P. H. A., several years ago (see April JOURNAL for 1931, page 397), and it may be well for all Branches to invite physicians and Red Cross workers to join in a program for such study and discussion. The aftermath of the flood emphasizes the importance of public health matters.