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LOST AND FOUND

This installment of Lost and Found offers a fascinating glimpse into the medical beliefs and practices of three very different nineteenth-century California communities, written by a knowledgeable pioneer physician, Cephas Little Bard. Dr. Bard was born in Pennsylvania in 1843, and served as an army physician during the Civil War; he moved to Ventura in 1868, where he practiced medicine until his death in 1902. He seems to have been an avid collector of Indian artifacts, and was regarded by his contemporaries as an authority on California Indians. The paper presented here was originally given as an address in San Diego in 1894 on the occasion of Bard's retirement as president of the Southern California Medical Society. It was published first in the Southern California Practitioner [9(8):287–313, 1894], and was then privately printed in a limited edition as a pamphlet. In 1930, Bard's paper was reprinted, slightly edited, in Touring Topics [January, 1930, pp. 20–30] as "Medicine and Surgery Among the First Californians." Most of the plants mentioned by Bard are discussed in detail in Jan Timbrook's forthcoming book, Chumash Ethnobotany.

A Contribution to the History of Medicine in Southern California

CEPHAS L. BARD

When in 1542, the north-bound caravels *San Salvador* and *Vitoria* pushed their inquisitive prows into every nook along our southern coast, their intrepid commander, Cabrillo, beheld the shores, islands, and channels, teeming with savage life. The beach close to the water's edge was studded with rancherias or villages. The outlying islands—those drippings from the trowel of nature as she fashioned the western slope of the great continent—were more densely populated than the mainland. The intervening waters, dotted with the canoes of the natives, resembled an immense ferry by means of which daily intercourse was held by the separated inhabitants. Excluding the larger cities now existing in the district represented by this society, the population exceeded that of today and no other portion of the State was so thickly settled.

The presence of the swarming colonies was ascribable to the genial climate and to the abundance of easily obtainable food. Those of the islands were attracted thither by the fine fishing-grounds and the immense beds of steatite, so essential to the manufacture of culinary and other utensils.

The aborigines were of a higher order than those previously or subsequently encountered. The largest skeletons exhumed in California have been those at San Buenaventura and in the passes of the Tehachapi. Physically superior to those of neighboring districts, they were better clad, and their thatched huts reminded the adventurous sailors of those they had left in Mexico. Evidences of a higher civilization were shown in their fine canoes, constructed of planks hewn from the live-oaks with their stone knives, tied together, and pitched with asphaltum. Also in their wooden swords, which Father Palóu informs us cut almost like steel; and in their finely-made mortars, pots, fish-hooks, ornaments and weapons of various designs. One of the greatest improvements in the modern manufacture of wooden-ware consists in the steaming of the material so that it can be bent to almost any desired shape. This process was in use by these enlightened natives for centuries before this important discovery was made by their white brethren. Their "arrow straightener" consisted of a flat piece of steatite (which is susceptible of receiving and retaining an extreme degree of heat) across whose surface a groove was cut. A warped arrow-shaft was readily corrected by soaking it in water for a short time, and then drawing it for a few moments through the red-hot groove of this crude but efficient instrument. Within the recollection of early American settlers now living, these natives have been known to flake off a piece of obsidian with an indescribable motion of their hands, and to so dexterously sharpen its edge that it would almost cut a hair.

Their diet consisted chiefly of fish, seal, and mollusks, but interchange with those of the plains furnished them with game, nuts and fruits. Of the vegetable articles of diet, the acorn was the principal one. It was deprived of its bitter taste by grinding, running through sieves made of interwoven grasses, and frequent washings. Another one was chia, the seeds of *Salvia columbariae*,

which in appearance are somewhat similar to birdseed. They were roasted, ground, and used as a food by being mixed with water. Thus prepared, it soon develops into a mucilaginous mass, larger than its original bulk. Its taste is somewhat like that of linseed meal. It is exceedingly nutritious, and was readily borne by the stomach when that organ refused to tolerate other aliment. An atole, or gruel, of this was one of the peace offerings to the first visiting sailors. One tablespoonful of these seeds was sufficient to sustain for twenty-four hours an Indian on a forced march. Chia was no less prized by the native Californian, and at this late date it frequently commands \$6 or \$8 a pound.

The piñon, the fruit of the pine, was largely used, and until now annual expeditions are made by the few surviving members of the coast tribes to the mountains for a supply. That they cultivated maize in certain localities there can be but little doubt. They intimated to Cabrillo by signs that such was the case, and the supposition is confirmed by the presence at various points of vestiges of irrigating ditches. Ysley, the fruit of the wild cherry, was used as a food, and prepared by fermentation, as an intoxicant. The seeds ground and made into balls were esteemed highly. The fruit of the manzanita, the seeds of burr clover, malva, and alfileri, were also used. Tunas, the fruit of the cactus, and wild blackberries, existed in abundance and were much relished. A sugar was extracted from a certain reed of the tulares.

We possess no medical account of Southern California when its waters were first parted by a foreign keel, for no surgeon trod the decks of the ships of discovery, the commander of which died during the voyage from the effects of a fracture of the arm, which was doubtless cared for by his mate or cook. From the reports of subsequent explorers, from the recorded observations of the missionary fathers, native Californians, and early American settlers, we do know that the Indians of the western coast were, in the knowledge of native herbs and in the treatment of diseases and injuries, far in advance of their dusky congeners of the East.

Cortéz never tired of paying his tribute to the Mexican Indians, who had cured him when his own physicians had failed. The missionaries and native Californians conceded to them their superior skill by constantly applying to them for relief. Slight as was their anatomical knowledge, they had names for all of the

principal organs, and were aware that medicines given to a mother would affect her suckling babe. No one is so close to nature as the Indian. Of an investigating disposition nothing evades his close scrutiny. Curiosity prompts him to examine herbs and plants, and hunger at times compels him to partake of them. In this manner, their varied virtues become familiar to him. Marshall Hall has said, on account of its usefulness in experimentation, that the "frog was God's gift to the physiologist." No less divine to the therapist has been that of the Indian, whose stomach has been the laboratory in which has been demonstrated the action of nearly all of the vegetable medicines in use, leaving nothing for his more erudite white brother to do but to extract their active principles.

Long before the Countess Cinchon presented to a grateful people a specific for ague (quinine), and for lack of which a great portion of the world was unexplored or uninhabited, Peruvian bark had been used by the Indians of the Andes. Columbus and his imitators carried away with them from their new discoveries, the knowledge of Ipecacuanha, Guaiac, and Cebaiba. Jalap and Sarsaparilla were for centuries household remedies of the Aztecs before trampled down by the rough riders of Cortéz. The native Indians of the Atlantic Coast have enriched the world with their contributions of Tobacco, *Veratrum viride*, *Gelsemium*, *Lobelia*, *Podophyllum*, *Senega*, *Spigelia*, *Cimicifuga*, *Sanguinaria*, and *Gaultheria*.

It has been reserved for the California Indian to furnish three of the most valuable vegetable additions which have been made to the Pharmacopoeia during the last twenty years. One, the *Eriodyction glutinosum*, growing profusely in our foothills, was used by them in affections of the respiratory tract, and its worth was so appreciated by the missionaries as to be named Yerba Santa or Holy Plant. The second, the *Rhamnus purshiana*, gathered now for the market in the upper portions of the State, is found scattered through the timbered mountains of Southern California. It was used as a laxative, and on account of the constipating effect of an acorn diet, was doubtless in active demand. So highly was it esteemed by the followers of the Cross that it was christened Cascara Sagrada, or Sacred Bark. The third, *Grindelia robusta* (gum plant), was used in the treatment of pulmonary troubles, and externally in poisoning from *Rhus toxicodendron*, or Poison Oak, and in various skin diseases.

The long list of domestic remedies included Manzanilla, or Chamomile, used as a diaphoretic and analgesic. Romero, a species of rosemary, found in the mountains, was a much extolled aromatic tonic.

Oreja de liebre, a species of *Bupleurum*, the leaves of which resemble in form the ears of the hare, was useful in coughs and colds. Yerba buena, an aromatic species of *Micromeria*, was regarded as an anthelmintic, carminative, emmenagogue, and febrifuge. Yerba tarbadillo, a species of *Eupatorium*, was in use as a febrifuge and stimulant. Yerba de pasmo had a famous reputation, used internally and externally, in the treatment of tetanus, spasms, and all sorts of inflammations. Yerba de jarazo, found on the islands, was used in pulmonary diseases, and as an external application was regarded as a specific in arrow wounds. Yerba de la vibora, *Caucalis microcarpa*, enjoyed a wonderful reputation as a cure for the bite of the rattlesnake, and until this day the native's faith in its marvelous virtues is but little abated. Notwithstanding its vaunted antidotal power, we know that many Indians succumbed to the effects of such bites. That bitten animals have recovered when treated with this plant, I can speak of it authoritatively, for I have witnessed such results. I have known, however, of animals recovering from the effects of the venom without any treatment whatsoever. Chemical analysis has extracted no active principle from this lauded plant, and it is practically inert.

Sacapellota, a shrub whose roots present a resemblance to the bifurcation of the trachea and ramifications of the bronchial tubes, was highly esteemed in the treatment of pulmonary troubles, and was also used externally in sores and ulcers. Estafiate, *Artemisia mexicana*, was employed as a stimulant, anthelmintic, and emmenagogue. Golondrina, the *Euphorbia maculata*, in skin diseases, and as an application to remove corneal opacities and warts. Chucupate, a very bitter root, was chewed as a tonic, and was useful in flatulence, headache, and neuralgia. Poléo, Pennyroyal, combined with sage was used in suppression of the menses. Eschscholtzia, our beautiful poppy, selected as our State flower, possesses analgesic properties, and was used in colic; a hypnotic extract has been made from it. Cañutillo, a species of *Ephedra*, was resorted to in renal and vesical disorders, and as an injection in gonorrhoea and leucorrhoea; it was also used as a styptic.

The root of the Peony was used in menstrual disorders. A decoction of Juniper berries was used in rheumatism and genito-urinary disorders. The native, like the Atlantic Indian, had implicit faith in the curative properties of Sauco, or Elderberry leaves, in colds and fevers. It is said that Dr. Boerhave held the *Sambucus* in such reverence for the multitude of its virtues that he removed his hat whenever he passed the shrub.

Yerba de los Indios, *Aristolochia foetida*, was used as a stimulating application in the treatment of foul sores. Yerba de golpe, *Oenothera pumila* (Primrose), was applied to bruises and sprains. Yerba mansa was very useful as a wash in foul sores, leucorrhoea and gonorrhoea. Moronel was also a famous external application. An oil expressed from the roasted seeds of the Chilicote was used to promote the growth of the hair. There were many other herbs and plants used for remedial purposes:

“Many for many virtues excellent;
None but for some, and yet all different.”

But the list as given comprises the most valuable.

Asphaltum, which at that time was found nowhere else on our continent, was used by the Pacific Coast Indians in the treatment of rheumatism. Sulphur, readily obtained from our mountains, was applied for almost every ill the savage flesh was heir to.

The use of ants in the treatment of disease was in great favor. By tapping on an old log—the home of the red ants—they were driven out and collected in a cloth arranged for that purpose. For dysentery they were administered internally as an infusion, the insects being alive when swallowed. Externally they were applied for the same disease to the bare abdomen, and aroused to anger, so that they would bite more freely. The application was intensely painful, but said to be very effectual. In the treatment of rheumatism, the patient was stripped to the skin, placed upon an ant hill, and confined there until he was thoroughly bitten. The soil surrounding the ant hills, mixed with water, was given internally for the cure of diarrhea and dysentery. Formic acid, the active principle of the ant, and the only known acid which is an ant-acid, was much extolled by the ancients as an aphrodisiac.

Remarkable medicinal virtues were ascribed to lice, to the cultivation of which they devoted much attention. In protracted illness they prepared a cold infusion of the

living vermin, procured from the healthiest resident of the rancheria, and administered it to the patient by the mouth—a rude effort to obtain the results of the modern transfusion of blood.

The most prominent feature of their practice, however, was the use of the temescal. Universal in Mexico, throughout our State, Oregon and Washington, there exists no greater proof of the intercourse existing between the different tribes of the Pacific Coast. In structure, the temescal was dome-shaped, resembling the modern bake-oven, and was composed of interwoven boughs and twigs, covered with mud. When thoroughly heated by burning in it wood or brush, the patient entered and remained until profuse perspiration occurred. He then crawled out and threw himself into the cold waters of the river or brook, on the banks of which it was invariably situated. Not only was it in demand for the sick, but it was resorted to as a hygienic measure by the well and sound. The wide diffusion and persistence of its use are certainly evidences of its utility and benefit. There can be no doubt of its value prior to the advent of the missionaries, with diseases in their train, to which the native heretofore had been a stranger. Since then the result of observation has been that the fatality incidental to the custom has been appalling. So disastrous were its effects that the padres proscribed it, but the natives, loath to relinquish the practice of their forefathers, and, believing that it was “more honorable to fail according to rule than to succeed by innovation,” managed to locate their cherished temescales in secluded spots, free from observation, and a few of them still exist in Southern California. That they resorted to the valuable thermal springs of our section has never been definitely determined. The archaeologist has found no evidences of habitations near them. It is said also that they were deterred from using them by the sulphurous emanations, which, to their untutored minds, was suggestive of the infernal regions. On the other hand, we know that some of them, notably those on the Warner Ranch, are made use of by the surviving members today.

Seal oil, combined with massage, was the chief external remedy in rheumatism. The ashes of burned tules were also used for the same purpose. Flagellation with nettles was the treatment of the different forms of palsies.

Syringes, constructed by attaching a hollow bone of a sea-fowl, or a section of a branch of the elder, to a bladder, were in common use. It is interesting to note in

the history of primitive man how universally prevalent was the administration of enemaia. According to Langius, the introduction of the enema was the result of watching the habits of the Ibis, a bird held sacred by the Egyptians. This bird when sick was wont to inject the waters of the Nile into its rectum by means of its beak.

It is not to be presumed that the exquisitely-formed knives of flint and wood which each native, male at least, carried in his braided hair, were for adornment only. With them, it is very probable, they performed many minor surgical operations. They opened abscesses, drew blood, and amputated fingers and toes, if not in their continuity, at least in their contiguity. Their vocation of fishermen would often necessitate the removal of an imbedded fish-hook. The extraction of arrowheads would be demanded in their occasional conflicts with their neighbors. Sharp stones were used by the Egyptians for the evisceration of dead bodies, preparatory to embalming. They were used on the living also in certain religious rites during the days of Abraham.

Quite a number of the thousands of skeletons which have been exhumed in Southern California show evidences of fractures which have been so nicely adjusted that no deformity resulted. To accomplish this purpose they used splints made of wood or of tules, twined together and smeared with asphaltum. Some of the skulls exhumed show openings which appeared to have been made during life and long before death. It is well established that the Peruvian Indians trephined by removing square and oblong pieces of the cranium by means of their stone knives, and it may be possible that our aborigines practiced the same operation. Dislocations were treated by manipulation and the application of seal oil. Phlebotomy was performed by making a subcutaneous incision, inserting a tube of elder, or the leg-bone of a sea-bird, and making suction through it with the mouth filled with hot water. The Mexican Indians used hair to sew up incised wounds, and from analogy we would infer that it was used here. Foreign bodies were removed from the conjunctiva by placing a seed of Chia under the eyelids.

The most useful article of their crude armamentarium, however, was the stone medicine tube, specimens of which can be seen in the collection of the archaeologist. It was cylindrical in form and about ten inches in length. Its lumen at one extremity was one inch, and tapered down to the other where it was three-quarters of an inch.

Cupping was performed with this instrument as follows: The selected spot being incised with a stone knife, the larger orifice was placed over it, and suction practiced by the mouth placed over the other. In Turkey and other eastern countries, horns are used in a similar manner and for an identical purpose. The stone tube was also used to make a blister or moxa by burning in it punk or dried leaves and holding it over the diseased spot. In the absence of this instrument, resort was made to one of their tobacco pipes.

Snake bites were treated by incision, or excision, followed by suction with the mouth. Their occasional cures were more due to this intelligent treatment than to the famed application of the Yerba de la vibora. The odor of Chucupate is very repugnant to the rattlesnake, and it was the habit of the Indian to carry a piece of the root on his person. Teeth were extracted by the aid of a string made from the fibres of plants, and toothache was relieved by the application of the Flor de guisano, or the milk of the bitch.

For the extraction of arrowheads, the use of the knife was supplemented by the application of the Yerba de jarazo, the action of which resembled that of dittany, as described by Virgil in the cure of Aeneas by Iapis:

“A branch of healing dittany she brought,
Which in the Cretan fields with care she sought;
Well known to wounded goats; a sure relief
To draw the pointed steel and ease the grief.

* * *

The steel, but scarcely touched with tender hand,
Moves up, and follows of its own accord.”

Some of their hygienic customs are not only commendable, but worthy of the considerations of an advanced civilization. Although not of the type portrayed in the fiction of Cooper and Helen Hunt Jackson, they displayed a physical condition superior to that of their less active brethren of the interior. Their liberal miscellaneous diet sufficed to satisfy the demands of omnivorous man. The use of the oar and the pursuit of game, the favorable climate, and comparative exemption from disease, presented every essential conducive to the development and perfection of physical manhood. Notwithstanding the filth of their huts, they resorted, when well, to the temescal, and those in the immediate vicinity of the

sea were in the habit of bathing almost daily. They paid strict attention to their diet, and to the method of eating and drinking. Gluttonous at times and fasting at others, they never partook of hot and cold viands at the same meal. No temptation in after years could induce them to waver from this sanitary custom, to which is ascribable the absolutely perfect condition of their masticatory and digestive apparatus. Fond of meat as they were, they invariably refused to eat pork when offered by their white brethren. Indigestion, the ingratitude of a pampered stomach, with all its evils, was unknown. The use of salt was condemned, as they believed that it was conducive to senile degeneration.

The post-partum care of the squaws was in strict accord with the antiseptic regimen of today. It consisted in heating stones in a pit until they were red hot. On top of these, bundles of aromatic herbs were placed and covered with earth, leaving a small aperture in the center. Over this, the recently-delivered mother was placed astride, and water was placed into the opening, producing an immense volume of steam, which, rising to her genitals, caused her some suffering, but which her confidence in its value enabled her to endure. Is not this rude process equal, if not superior to the use of the germicidal douche of the modern lying-in room? They bathed their infants three times a day for five or six months, beginning when they were five or six days old. When aged one month, they were placed in la cuna, or cradle, slung to the mother's back, and kept there for two or three years, being allowed when able to walk, to run about for a short time each day. In consequence of this hygienic custom, a stooped or bow-legged Indian was seldom seen. Catlin, the highest authority on the North American Indian, states that he never saw an idiotic, lunatic, deformed, rachitic, deaf or dumb Indian, and that deaths from teething, cholera infantum, and other infantile diseases were unknown. We are told that deformed Indians were so rare in Mexico that Montezuma kept a collection of them as curiosities. Nervous diseases were very rare. Chorea was never heard of. Dr. Weir Mitchell has called attention to the fact that this “insanity of muscles” has never been observed in a negro. Van Buren, who as an army surgeon had an extensive experience with Indians, says that he never saw a case of rectal disease amongst them.

The deleterious effects of mouth-breathing were thoroughly appreciated by the aborigines and the

importance of closed lips, especially in their foot-races, was thoroughly inculcated. Their well-developed chests, wide nostrils, quiet respiration, and acuteness of smell, are due to the patulousness of their nasal passages, a result of this observance.

At the first manifestation of menstrual flow the most absolute rest was enjoined upon the Indian maiden. A detail from her sisters or friends attended to her every want. To such a degree of rigidity was this regimen carried that she was not even permitted to pick the omnipresent vermin from her person. It found impossible to prevent her scratching, a shell was placed in her hand for the purpose, for the contact of her finger-nails at such times was regarded as poisonous. The excess of birth-rate to death-rate, as noticed upon the arrival of the missionaries, was indicative of the worth of these hygienic measures.

That they possessed as a race greater longevity than their successors there remains no doubt. The great majority of skulls exhumed are indicative of very advanced age, the cranial sutures being entirely consolidated, with no vestiges of their existence. The records of the missions furnish many instances of death at extreme old age. Those of San Buenaventura give the ages of three Indian women buried there as, respectively, 100, 105, and 114 years. Father Martinez, in charge of the Mission of San Miguel, shortly after its foundation, wrote that it possessed three Indian women, each of whom was more than 100 years old. The records of the other missions reveal the presence now and in the past of numerous Indian centenarians. The ages of Fernando and Placido, who died at Los Angeles, were estimated at 102 and 137. The latter danced at a fandango a short time prior to his decease. Justiniano Roxas, who died at Santa Cruz in 1878, was baptized at that mission in 1792, and his age then was put down by the officiating padre as about forty. Within the last few years there have died in Kern County four Indians, each of whom was undoubtedly over 100 years old. They were Camillo (alcalde of Tejon), Alfonso, Rafael and Francisco. They helped to build the Mission of San Fernando. An Indian named Gabriel died in Monterey some time ago who was reported to have been 140 years of age. Dr. Remondino, in a paper read before the State Medical Society in 1890, gives some interesting instances of prolonged savage life in San Diego County. At the old Mission of San Tomas there then lived an old Indian 140 years old. On the Sweetwater

was an Indian man 115 years old, and one died in the city 109 years old. At Capitán Grande were several Indian women over 100 years old. Warner's Ranch furnishes one 130 years of age. The present chief of the almost extinct local tribe at San Buenaventura, José de Jesús, is an active old centenarian, who can be seen on the streets every day. As an evidence of his virility it may be said that the last of his series of squaws presented him ten years ago with twin papooses. Dr. Fergusson of Bakersfield informs me that an old Indian named Sebastian lives there, who at the age of 90, rides forty to fifty miles a day.

But little sickness prevailed when our shores were first exposed to alien gaze. Of all the diseases which pressed their claims at Gay's "Court of Death" not one was present. What, then, has been the cause, in spite of their superb hygienic customs, of the rapid diminution in numbers and almost extinction of our dark predecessors?

Vizcaino, in 1603, did not find the numerous colonies reported by Cabrillo. Less than 200 years later, the founders of our missions saw at a glance that the work of civilizing the savages would be light compared with what they had expected from the reports of the different explorers. In 1823 there were 100,826 in California. In 1863 they were counted by the Indian Department, and found to number only 29,300. The census of 1890 shows but 12,355 remaining. This rapid disappearance prior to the advent of the missionary has been the historical "X" which has never been determined. One explanation of the extermination, of the islanders at least, to which the bleached and broken skulls found today bear silent testimony, is that they were occasionally visited by more warlike savages from the far north, armed with weapons of bone and iron, with whom our natives, with their stone implements could not cope. A subsequent cause was the diseases, change in diet, and habits, incidental to the establishment of the missions and the occupancy of their lands by strangers. The pack-trains of Junípero Serra, besides the assorted cargo of church-bells, crucifixes, and images, bore also a veritable Pandora's box from which escaped—

"Winged and wan diseases; an array
Numerous as leaves that strew the autumnal gale."

And which to them had been unknown. Useless were their native herbs and efficient temescal! The

zymotic diseases cut them down by the thousands, and the remainder, by contact with the less devout followers of the Cross, were consigned to a worse fate by contamination with syphilis, tuberculosis, and intemperance.

In closing that portion of my subject devoted to the Indian, some mention should be made of their *hechiceros*, or medicine men, to whom supernatural powers were ascribed. Their stock of trade consisted of incantations, dancing and legerdemain. The medicine tube already described was used by them in their sleight-of-hand treatment of disease. After applying it to the body of their patient and resorting to suction, they would shake from its interior a bug, lizard or snake, which they would declare had been removed from the system and had been the cause of the sickness. That much faith was placed in these wizards is evidenced by the marvelous stories narrated of them. Thus Bustamente, in his *History of Mexico*, tells us that a famous medicine man of Michoacán was summoned before the College of Physicians, in Mexico, on the charge of being a quack. In reply to the accusation he asked his judges to smell a certain herb, which quickly produced a severe nosebleed, and then invited them to check it. Seeing that they were unable to do so, he administered a powder, which immediately had the desired effect. "These are my attainments," he exclaimed, "and this the manner in which I cure the ailments of my patients." Whilst the accounts of our local *hechiceros* are less Munchausen in character, their ability was very much over-estimated. A firm belief existed in their power to administer poison to those whom they or others wished to dispose of. I recall several mental and physical wrecks in my community whose downfall has ever been ascribed to potions obtained from these medicine men. In 1801 Fathers Carnicer and Martin at San Miguel were attacked with violent pains in the stomach, supposed to have been the result of poisoning by the Indians. They recovered, but Father Pujol, who came down from San Carlos to relieve the sick missionaries, died from a similar attack believed to have been due to the same cause. This was the opinion of Surgeon Morelos, who claimed to have been unable to make an autopsy on account of the rapid decomposition of the body.

In Mexico today there is a current belief, especially with the peons, who are the direct descendants of the Aztecs, that the unbalanced mind of the miserable Carlotta, widow of the unfortunate Maximilian, was

not due to the misfortunes of her husband, which her Christian faith and resignation would have enabled her to endure, but was caused by a decoction of talavatchi administered by Indian women. The action of this herb, the administration of which was one of the sciences of the Aztecs, is to destroy the mind but not the body. In the Empress' case, although she is possessed of excellent bodily health, outside of an interest shown in flowers, the world to her does not exist. The love of home, country, and friends, passed away after the draught of the old Indian witch's decoction.

In California the evil reputation and sorcery of the medicine men secured the enmity of the missionaries, who used every endeavor to drive them away. The distinguishing dress of the *hechiceros* was their long robes of human hair, which were burned by the padres whenever noticed. Notwithstanding their persecution, they practiced their methods until a very recent date.

But one medical officer stood within the shadow of the Holy Cross, erected on our shores, July 16, 1769, by Father Junípero Serra. He was a Frenchman, Pedro Prat by name, who had accompanied the sea expedition on the *San Carlos*, or *Golden Fleece*, arriving at San Diego about two and a half months before. Of ninety sailors, soldiers, and mechanics, of this vessel and its consort, the *San Antonio*, who succumbed to the scurvy, more than two-thirds died, the only treatment rendered being that of Surgeon Prat, assisted by two friars. This mortality was appalling, considering that the patients were on land, where access could be had, if not to vegetables, to the wild fruits which San Diego at that time afforded. Most probably, owing to this distressing experience, Prat, after accompanying Father Junipero to Monterey, became demented, was unable to assort and label his drugs, which he had brought with him, and died during the following year. The following is a complete list of surgeons comprising the medical staff under missionary and Mexican rule:

Pedro Prat 1769–1771
 Pedro Castran 1773–1774
 José Davila 1774–1783
 Pedro Carbajal 1785–1787
 Pablo Soler 1791–1800
 José Castillo 1792–1818
 Juan de Dios Morelos 1800–1802

Manuel Torres 1802–1803
 José Marie Benites 1803–1807
 Manuel Quijano 1807–1824
 I. Evan Perez de Leon 1829
 Manuel de Alva 1831–1840
 Manuel Crespo 1832
 Edward Bale 1840–1843
 Faustino Moro 1844

At the time of the founding of the Mission of San Diego, the science of surgery had hardly been separated from the trade of barber. In fact, so servile was the position of the military surgeon throughout the world in the early part of the Eighteenth Century that he was required to shave the regimental officers.

Many of the soldiers sent here were enrolled as phlebotomists. They may have been able to use the lancet, but they were deplorably deficient in the other qualifications pertaining to a surgeon, and but little confidence was placed in them. Prior to 1800 their salary was \$450, and never exceeded \$800 per annum.

The long distance from home and the danger incidental to the position may have deterred better men, if they then existed, from coming. Those who did arrive were, with hardly an exception, grossly incompetent and in no respect prepared for the exigencies and emergencies of the service. Father Junípero himself started out on his overland expedition from Mexico without any medical officer, and was content, when his foot became so sore as to compel him to be carried on a litter, to rely upon the services of an *arriero*. To the remonstrances and protestations of inability on the part of the muleteer, who declared that his practice had been confined to animals, the grand old missionary said: "Then, son! Suppose me to be a beast and this ulcer a saddle gall, from which have resulted the swelling of the leg and pains which give me no rest; and make for me the same medicament that thou wouldst apply to a beast!"

The observation of these phlebotomists, masquerading in the role of field surgeons, would have been, if published, insignificant as compared with the recorded observations of other surgeons in other climes a few years later, notably those of our own Rush; of Larrey, during the Napoleonic wars; of Hennen at Waterloo; and of Guthrie during the Crimean campaign. Their reports, if ever made, as well as those of the missionaries,

were sent to the Viceroy of Mexico, by whom they were forwarded to Spain. An investigation of the archives of Seville might throw some light on the subject, but, as it is, we must depend upon the meager reports of some of the missionaries; the writings of our local historians; and the testimony of the early settlers and their descendants. Of the surgeons, Benites seems to have been possessed of the most attainments. In 1804, on account of the alarming mortality at the missions, at the suggestion of the Mexican viceroy, he visited each one and forwarded an able and exhaustive report of the diseases encountered and their treatment. It was Manuel de Alva who embalmed the body of Governor Figueroa in 1835. We learn that ten years later the coffin was opened, and nothing of the gubernatorial remains was found. The failure of the embalming was ascribed by the operator to the quality of the arsenic used in the process.

Strange as it may appear to us, who at the present time are busily engaged in promulgating the contagiousness of tuberculosis and devising methods for its suppression, these ignorant surgeons brought with them from Spain the belief that it was contagious, and were energetic in their efforts to eradicate it. Prior to the discovery of the bacillus tuberculosis and its etiological relationship established, Spain and Italy were the only countries that believed that the disease could be imparted by one to another. The efforts of the pioneer surgeons of California in educating the masses concerning the "white plague" were so successful that until a very recent date their teachings have been observed by them.

When Commandant Sal died, in 1800, at Monterey, the surgeon, Morelos, was vigorous in his attempts to prevent the spread of the disease. He burned the roof, floor, and windows of the adobe in which the consumptive had died. He removed the brick floor and scraped the walls thoroughly. He consigned to the flames the furniture and clothing belonging to the deceased.

Bancroft says: "On one occasion while Governor Pablo Vicente de Sola ruled the Californias, a wealthy Spaniard died, leaving the whole of his property to the *fondo piadoso de las Californias*, but, as he had been a consumptive, his furniture and clothing were burned, and in the excitement of the occasion, his jewelry and money were lost or stolen. When the case was reported to the Viceroy of Mexico, the president of the college of San Fernando, who had been made administrator of

the estate, began suit against the authorities of the then province of the Californias, from whom he claimed full value of the property destroyed.”

All of these surgeons were stationed at Monterey. For more than seventy-five years after the foundation of the first mission, the only aid afforded a sick or injured person residing in Southern California was that of the missionary, the native Indian, and the early American settler. Occasionally, a surgeon may have been summoned from the distant Presidio of Monterey, or the medical officer from some visiting man-of-war may have been induced to offer his services in an emergency. The fathers had some knowledge of medicine and surgery, and were as proficient as the regularly-appointed surgeons. Each mission had its hospital, its single ward being supplied with mats instead of bedsteads. The missionaries had instructions to perform Caesarian section on those women who died undelivered during labor, and two such operations were actually performed—one in San Francisco in 1805, and the other at San José in 1825. In neither case, however, was the child extracted alive.

Father Rubio, in present charge of the Mission of San Buenaventura, informs me that he saw an Indian whose arm had been amputated by a missionary. While they may have performed some of the minor surgical operations, they admitted in the treatment of diseases the superiority of the virtues of the domestic remedies in the hands of the natives, by not only applying to them, but by entrusting them, at times with the care of those in the infirmaries. The alert Indian was quick to notice this lack of confidence on the part of the padres, and soon ceased to report to them when sick.

The military force, which aided in the establishment and protection of the missions was, with the exception of the officers, composed of Mexicans. By the order of the Mexican viceroy, it was required of those desiring to emigrate to the new country, that they should be without blemish, the standard being not less than eighteen nor more than thirty years of age, and, at least, two varas in height. A mark or scar was sufficient to cause the rejection of an applicant. It was also required that the candidate should possess a good moral character. Whilst some of these married women from their old home, others united themselves to native women. Their offspring presented all of the features of a superior physical constitution. So it has ever been when virgin soil has been opened to civilization.

At the grand review of our national armies at the close of the great rebellion, the superior stature and physique of the Western volunteer did not escape the notice of the most careless observer. Bayard Taylor, in 1846, remarks: “The Californians as a race are vastly superior to the Mexicans. They have larger frames, stronger muscles, and a fresh, ruddy complexion.” The purity of the initial immigration, however, was subsequently defiled to a great degree by the importation of convicts and vagabonds.

The vocation of the native Californians was conducive to the fullest development of physical perfection. Paying no attention to agriculture, their bodies were not marred by the stooped shoulders of those whose existence depends upon what they take out of the soil. The care of their herds of cattle and bands of horses was the ideal of a pastoral life. The newcomer was a Crusoe and his man Friday was the mustang. From morn to night, man and horse, mind and muscle, roamed like centaurs over our fertile plains, finding enjoyment rather than work in the slight care which the flocks required. Their adobe homes, barring the imperfect ventilation, met every requirement of the climate, being warm in winter and cool in summer. They fully appreciated the sanitary worth of sunlight. Ever mindful of the adage of their Castilian forefathers, “Where the sunlight enters, the doctor goes out,” they built their adobes on the open plain, with no intervening shrubbery to shut off the genial rays of a southern sun. Their diet consisted of beef, mutton, bread, coffee, chocolate, with but few vegetables. Their flour was universally devoted to the manufacture of tortillas, thin circular pieces of bread, made by rolling a paste of flour on their stone metates, and then baking them. The frijole, or bean, was the chief of the few vegetables used, and today is the ever-present feature of the menu of the native Californian. The dietetic importance of this legumen cannot be overestimated. Its portability, durability, and nutritious worth, render it the most valuable and available constituent of the rations of the armies and navies of the world. Loyalty to my own bean-growing county prompts me to dilate upon the virtues of this prince of seeds. Our soil and climate are peculiarly adapted to the culture of what has contributed so much to the comfort and welfare of the native Californian. An attractive feature of the display of the productions of Southern California at the Columbian Exposition was Ventura’s Pagoda, representing in its construction one hundred and twenty-five different species of beans.

The Macedonian soldiers, who conquered the world, were fed upon the black beans of Sparta. Frederick Field, in a lecture "On the Mineral Resources of the Andes," says: "that in 1851, two large stones, one weighing 356 pounds, and the other 349, representing the richness of the Chili mines, were forwarded to me for exhibition purposes. Both stones had been taken from a depth of more than 300 feet, and had separately been borne on the shoulders of a man, he having to ascend, not by ladders or other aid, but by climbing up the nearly perpendicular slope of the mine; and the food the miner lives upon is an interesting subject for the physiologist. He seldom takes meat, and when he has that luxury, it is simply served out in long thin strips, which have been dried in the sun. His chief diet is the haricot bean, and without this nutritious vegetable he never could perform the work required of him." At the present date the amount of work performed by the California vaquero, or the Basque sheep-herder, whose diet consists almost exclusively of *carne seco*, frijoles, tortillas, with a little coffee, is astonishing.

Like cavalymen and drovers, who spend much of their time in the saddle, the native Californians were inclined to obesity. The embonpoint of Napoleon did not manifest itself until he had passed mounted through several campaigns. The development of the corpulency of Grant and Sheridan was synchronous with the termination of the rebellion. Equitation has generally been regarded as the chief cause of varicocele, haemorrhoids, and hernia. From an intimate association with the vaqueros of Southern California for a quarter of a century, I assert, fully assured of the confirmation of others similarly situated, that these affections with them are extremely infrequent. Nor will our observations corroborate the statement of Dr. William A. Hammond, that the Western Indians, native Californians, and others who spend a great deal of their time in the saddle, possess a lack of virility.

Chotomski states that many Tartars of the Caucasus are rendered impotent by excessive horseback riding. Hippocrates and Lallemand record similar observations. Such statements are not verified by those whose fortune has been thrown in daily contact with the native Californians. The size of an ordinary California family furnishes a complete refutation of these fallacious deductions. The average number was about ten. That of some families was most remarkable. In 1882, at a

dinner party at San Luis Obispo, tendered by three native California gentlemen, to a Bostonian, the guest boastfully remarked that he belonged to a family of thirteen children. One of his entertainers quickly responded that whilst such a family might be regarded as extraordinary in the East, it was not so here. "For example," said he, "my friend on your right belongs to the Dana Family, which has twenty-two children; my *compadre* on my left belongs to the Hartnells, who have twenty-two; and I am one of the twenty-six children claimed by the Castros."

In the county of Ventura there resides today an estimable lady, from whose face the lines of her former beauty have not as yet been effaced, Doña Concepción, wife of Don Francisco de la Guerra, who was closely identified with the early history of our State, who has presented her only husband twenty-one children. Another one, Feodora Olivas, has borne her only spouse twenty-one; and Soledad Yañez, who is still in the prime of life, has given her sole life-companion twenty children. Bayard Taylor says; "A native was pointed out to me as the father of thirty-six children, twenty of whom were by his first wife and sixteen by his second." Segundo Robles got by one wife twenty-nine children. José Marie Martin Ortega, the eldest of twenty-one children, had as many by one wife. Carlos Ruiz, of Santa Barbara, was the father of twenty-five children by one wife.

The large number of aged persons observed by the early American settlers has been frequently commented upon. Whether or not the almost exclusive animal diet and the nature of the drinking water, free as it is from limestone, retard calcareous and other senile degenerations, the fact remains that Southern California has furnished a greater proportion of centenarians to the population than any other region in America. Let me give you a few instances which have been brought to my knowledge and observation: Guadalupe Romero died in 1858 at Los Angeles, aged 115 years. Crisonomo Galindo died in 1876 at the age of 103. Maria Marcelina Dominguez, the owner of the famous grape-vine of Montecito, died in 1865, aged 107. In the procession at the centennial anniversary of the founding of the city of Los Angeles, an interesting feature was a Mexican cart, containing two native California women, aged respectively 103 and 107 years. Eulalia Perez, the noted centenarian of San Gabriel, claimed to be 139 years of age; she was at least 120. Bernard Lugo, mayordomo of

the Nipomo Ranch in San Luis Obispo County, died in 1892, aged 103 years. José de la Rosa, who was the first printer in California, died at San Buenaventura, a few years ago, aged 103 years. Ex-Governor Pio Pico is still living in Los Angeles, aged 93 years. In the same city resides Ygnacio de la Cruz Garcia, who is now 115 years old. At the last celebration of Independence Day in Los Angeles, the last mentioned participated on horseback in the parade. The presence of so many persons of advanced age may be somewhat attributable to the indolence of the natives, incidental to the extreme lightness of their labors, and the sinecure character of their position. Cicero says: "To live long it is necessary to live slowly." Physical activity is conducive to premature death, whilst laziness favors longevity. The biographies of centenarians usually indicate that indolence with them was a prominent characteristic. The number of the aged in our insane asylums where there is no physical wear and tear attracts the attention of every visitor.

A study of the physical life of the native California women would be profitable to the modern society lady. With advancing years they showed an inclination to obesity, but when young they were well formed, with beautiful features, fine teeth, and were endowed with a wealth of hair. At the approach of womanhood they displayed in their personal care a compliance with the hygienic customs of the Indian maiden, or more probably, with those brought by their parents from Mexico. Unrestrained by corsets or stays, their waists were permitted to develop as their Maker designed they should. During menstruation, they sought repose; did not bathe; abstained from fruit and acid drinks; and her touch being regarded as deleterious, she was excused from the performance of household duties.

An impression exists that early marriages of women result in premature death. This is reflected by Herrick in verse:

"Let all chaste matrons, when they chance to see
My num'rous issue, praise and pity me;
Praise me for having such a fruitful womb;
Pity me, too, who found so soon a tomb."

That the opinion is of very long standing is evinced by such epitaphs as the following from one of the ancient cemeteries in England:

"One year I was a maid;
One year I was a wife:
One day I was a mother:
And then I lost my life."

No similar belief existed here, and our graveyards are barren of such inscriptions.

The California women married when very young, usually at the age of 12, 13, 14 and 15 years, and lived very often to fondle their great-grandchildren. At the age of 20, a señorita was regarded as an old maid, and almost unmarriageable.

Concepción, sister of ex-Governor Pio Pico, married José Antonio Carrillo at the age of 12, in fact before she had ever menstruated, bore ten children, and died aged 97. The mother of General Vallejo married when 12 years old, bore sixteen children, and died an octogenarian. Maria Lugo, of Santa Barbara, when aged 13 years, married Pedro Ruiz, had fourteen children, and died at the age of 94. Prisca Olivera, of the same city, married, at the age of 12 years, Miguel Valencia, had several children and died when over 80 years old. The wife of Carlos Ruiz, already mentioned as the mother of twenty-five children, married at the age of 14, and died at the age of 87. Doñas Concepción de la Guerra, Soledad Yañez and Feodora Olivas, also mentioned as the mothers of large families, married at the respective ages of 13, 14 and 15 years. The wife of William Hartnell was aged 15 when she married him, had twenty-six children, and died aged 76.

The fecundity of these women, who literally sprung from their mothers' laps to the bridal couch, is astonishing. In 1828 there were three births to one death. Conforming to the Napoleonic idea, the best woman in the public estimation was she who bore the most children. One prolific señora, Juana Cota, died leaving 500 descendants. At Santa Barbara, in 1805, there existed a couple, who before they had become octogenarians, had welcomed to the world 105 children, grand children and great-grandchildren.

Abortions were discountenanced, and the subject of a miscarriage, innocent as she may have been, was regarded with disfavor. Some missionaries punished women known to have miscarried by shaving their heads, flogging them, and compelling them to sit in the church for several consecutive Sundays with a hideously-painted doll in their arms. In rearing their offspring, recourse to

a wet-nurse was seldom made. Torres says that he never saw the infant of a California mother given to another to be suckled.

The fruitfulness of foreign women after a residence here was so noticeable as to create the belief that the climate or the water may have been its cause. In 1818, there were born in Sonoma, a hamlet consisting of about forty families, no less than nine pairs of twins and one set of triplets. In 1857, Mrs. Carr, the wife of the first hotel-keeper in Ventura, arrived at that place. She had been married twelve years, and was sterile. In less than two years afterwards she presented to her astonished husband five children.

The aid rendered to the parturient woman was usually that of the *partera* or midwife, assisted by the *partero*, or man midwife. The *partero* seems to have been a functionary peculiar to the Mexicans and Native Californians. He was usually some old Don, who, by long service in the lying-in room, had secured some local reputation. The woman in the throes of labor was invariably placed in a kneeling position on the floor, which was covered with a serape or blanket. She supported herself by clinging to a reata or rope attached to the ceiling. During a pain, the *partero* seated behind her held her in his arms, and pressed down with his hands upon her abdomen. The *partera*, or midwife, squatting in front, endeavored to assist her by dilating the os uteri, rupturing the membranes and supporting the perineum. Occasionally, the suspended reata would be passed around her abdomen a number of times, and traction made upon its free end. Many devices were resorted to in order to assist the expulsive pains. A pinch of snuff to evoke sneezing was the most common one. Thrusting an end of her braided hair into her mouth, so as to induce vomiting, was another. Pulverized egg-shells and a decoction of the rattles of the rattlesnake were often administered. For the same purpose, she was frequently compelled to crush salt in her hands. In tedious dilatory cases, an infusion of the dung of a horse, which had been chased until he was foaming with perspiration, was occasionally used to provoke emesis. So also was urine presented to her lips for a similar purpose. These disgusting practices were in strict accord with those prevalent at the time in certain European countries. Martin Luther says: "In Spain, when the Empress was put to bed, four-and-twenty men were flogged till the blood came, to obtain a good time of it

for Her Majesty. Two of the men died from the severe thrashing they received, but with no effect to the lying-in woman. What more monstrous superstition than this were the heathen guilty of I should like to know?"

In cases of transverse presentation, the patient was placed in a horizontal position, and gently rolled from side to side, or over and over, in the hope of the position being corrected. After delivery, the placental cord was tied to the patient's thigh, as it was believed that it might be drawn up into the body. A draught of cold water was supposed to facilitate the expulsion of the placenta. If adherent, the patient was instructed to produce a prolonged and forced expiration by blowing over the wide mouth of a bottle or jar. The umbilical cord was ligated with thread, its raw end seared by the flame of a candle, and wrapped in a scorched and greasy rag. The infant's misshapen head was subjected to gentle manipulation, and the application of a handkerchief bandage. A still existing vestige of our ancient local folk-lore was the superstition respecting the "*caida de la mollera*," or "falling of the palate." This condition was indicated by a depression of the anterior fontanelle with some fancied obstruction of breathing, and was corrected by the finger of the *partera* inserted in the mouth and lifting the *mollera* to its proper position. The delivered woman remained in bed a proper time, paid strict attention to cleanliness, and imposed upon herself a rigid regimen for a period of forty days. Her diet was restricted to broths and porridges. No meat, except chicken, was given her before the twenty-first day. Nothing could induce her to partake of anything acid in character. Excessive precautions existed against taking cold. To such an absurd degree were these conducted that their finger-nails were not trimmed until the expiration of the "*dieta de quarenta dias*," and then only with heated scissors. Immediately after leaving her bed for the first time, sulphur was applied to the feet, hands, temples, and back of the ears. Rest, with but moderate exercise, was enjoined. Notwithstanding the ridiculousness of these customs, the perfect physical condition of the native women as compared with their American sisters is largely due to the sanitary rules observed by them during menstruation and after delivery.

The domestic remedies, which include those of the Indians, were numerous. Some of them were brought from Mexico. The virtues of Jalap and Sarsaparilla were appreciated by all. Yerbo del sapo, *Eryngium*

amethystinum, was diaphoretic and emmenagogue. Yerba del clavo, *Juliana caryophyllata*, in the form of an infusion of the leaves, was a valuable antispasmodic. Yerba del pollo, *Commelyna tuberosa*, was a haemostatic used internally and externally. Culantrillo, *Adiantum capillus veneris*, or maiden's hair, was used in disorders of the blood and in suppression of the menses. An infusion of *Rais colorado* was useful as a gargle in affections of the throat. Gordolobo, or mullein, was used in pulmonary diseases. The leaves of the Verbena in decoction served as a febrifuge. So did the small roots of the willow. Poleo, Pennyroyal, with sage, was demanded in suppression of the menses. The root of the Chilicayote, *Cucurbita lagenaria*, American gourd, American colocynth, was used when a drastic cathartic was indicated. Sulphur, which in later years combined with supplication was the alliterative panacea of John Wesley, was a sovereign remedy locally applied for rheumatism, shock, and skin diseases. The warm hide, stripped from a recently killed calf or sheep, was often used to envelop a patient suffering from a congestive chill. Chickens recently killed and split open were in general use as poultices. Paralytic children were thrust into the warm paunch quickly removed from a slaughtered steer. The limb of a cricket was administered to relieve suppression of the urine. So potent was this remedy regarded that it was supposed that if the entire insect should be swallowed the effect would be fatal. Cataplasms of malva leaves or of the split roasted leaves of the cactus were in daily use. A poultice of melted cheese was used for the bites of scorpions and other insects. Unsalted lard (*manteca sin sal*), was a favorite embrocation in almost every morbid condition. The marrow from beef-bones was also much used. Sliced raw potatoes and leaves of certain plants were applied to the temples for the relief of headache. The lancet was used by those who had obtained local renown as phlebotomists. The horn-cups, which served as table-glasses, were used for cupping purposes. A coin was placed over the affected part; on it rested a lighted paper; and over both, the horn-cup was placed. Syringes were made by attaching tubes of elder to bladders. Nursing bottles were constructed from cow-horns, and furnished with nipples made of buckskin.

Fractures were treated first by cataplasms of poplar bark, and then placed in splints without any provision for extension and counter-extension. Dislocations were treated with embrocations and massage. Bow legs and

deformities of all kinds testified to the worthlessness of these crude efforts in treating these lesions.

Before the advent of the "gringo" but few diseases existed. Typhoid and the malarial fevers were unknown. More deaths were caused by the zymotic diseases than others. Smallpox first appeared in 1798, since which we have had frequent outbreaks; but it seldom has existed as an epidemic throughout Southern California. In 1834, when it ravaged the upper portion of the State, especially Sonoma, and again in 1869, our district, although intercourse with infected sections was intimate, escaped. In 1886, when it prevailed to an alarming extent in Los Angeles, there was no marked extension of it beyond the city limits. The first mention of measles was in 1825, since which it has been a frequent visitor. Scarletina first appeared in the early part of the century, and has repeatedly occurred. Diphtheria was first observed between 1870 and 1880. Cerebro-spinal meningitis has never shown itself as an epidemic. Phthisis and tuberculosis of joints and glands were common. Hypostatic congestion of the lungs, produced by excessive equitation, especially in breaking bucking horses, was occasionally noticed.

Mental depression, followed occasionally by insanity, was a common complaint of the missionaries and native Californians. The emotional character of the people was very marked. Hysteria was not only very common with the females, but was often noticed in the males. Chorea was extremely rare. "Latido" or palpitation of the heart, but which, on account of the strong aortic pulsation, was always referred to the epigastrium, was a prominent ailment. Stone in the bladder, owing, doubtless, to the absence of limestone in the water, was very uncommon. Our perennial sunshine, cloudless skies, and flying dust, favor the development of ophthalmic diseases. One cannot but be impressed with the number of pterygia encountered in his practice. The rarity of diarrhoea and other intestinal disorders was remarkable. It occurred to the writer years ago that this exemption might possibly be due to the daily use of the pickled olive as an article of diet, and the suggestion of its use to those suffering from such disorders, and who are unaccustomed to it as a food, has been followed by the greatest benefit. So much so that in my county it is regarded as an infallible remedy. The ripe olive is rich in oil, laxative in character, but the half-ripe fruit which is used for pickling purposes, contains an astringent principle, and but little oil. Possibly

owing to this feature, constipation and obstruction of the bowels was a common ailment, and the treatment invariably was the administration of pure quicksilver. Intestinal parasites, owing to the non-use of pork and the scarcity of earth-worms, were seldom seen.

The use of the hand, in a state of hyperextension in manufacturing tortillas on the metate, washing clothing on a board, and in ironing where the member was often used instead of a flatiron, was conducive to the formation of ganglions on the palmar surface of the wrist, and these were frequently observed. The "metate-wrist," like the modern housemaid's knee, was the insignia of the lower ranks of society, and sufficient to deny their possessor's entrance to the higher social circles.

The treatment of diseases and injuries was by no means confined to the missionary and Indian. Every one was a self-constituted physician. The existing provincial adage:

"De medico, poeta, y loco
Todos tenemos un poco."

(Of medicine, poetry and insanity,
We all possess a little.)

was the outcome of the prevailing custom of the time. Strangers were applied to in hope that they might possess some sovereign cure. The early American settler, particularly, was pressed into service, whether so inclined or not.

Hugo Reid, in his *Reminiscences*, says: "I know not why, but an Anglo-Saxon in those days was synonymous with an M.D. Many an *estrangero* who never before possessed sufficient confidence in himself to administer even a dose of Epsom salts, after killing, God knows how many, has become at length a tolerable empiric." Many of these enforced practitioners who "took their degrees in crossing the plains," were men of superior intelligence, and the medical aid they rendered was as valuable as that which had already existed. Some of them, relishing their work, devoted themselves to it, and by diligent study and attention to their duties, became not only most useful members of this early society, but successful in fame and fortune.

The early trappers, such as Jim Beckwith, Burton, Sparks, Nidever, Wolfskill and others, who constituted the van of American immigration, possessed some

considerable medical knowledge and surgical skill, the result of the isolation of their lives and the dangers incidental to their pursuit of game and their warfare with the Indians. The recorded observations of these men would be of the greatest interest to us of today. Consider the sublime courage of Kit Carson, the beau-ideal of the American frontiersman, who, when but 18 years old, armed with a razor and a handsaw, successfully amputated the shattered arm of a comrade and seared the blood-vessels with a heated iron bar! (Abbot's *Life of Kit Carson*.) Those who have seen the result of this operation, performed in the wilderness without the aid of an anaesthetic, declare that the stump would have reflected credit upon the modern aseptic surgeon. Contemplate the resolution, nerve, and skill, of Pegleg Smith, who ligated his leg, which had been mangled by an Indian's bullet, with buckskin thongs taken from his hunting coat, and amputated the useless member with his hunting-knife! The arrival of this class of men was a great acquisition, and many injuries were treated by these hardy pioneers. So was that of the American troops, whose surgeons were constantly called to cases of diseases and injuries. Some of these medical officers were so delighted with the country and so pleased with the appreciation of their services, that they immediately arranged for their permanent residence here.

[Several short biographical sketches of early
American physicians have been omitted]

These men, remote from the seat of medical learning and distant from surgical and medical supplies, dependent upon their own resources, acquired an amount of self-reliance which, in these latter days of rapid transit and frequent consultation, is never encountered. Dependent also upon the "bronco" as a means of visiting their patients, they became expert riders. Brought in contact with another race, a knowledge of the Spanish language was indispensable and necessarily acquired. Their lives were full of peril and adventure. But their labors and privations were fully appreciated, and no one stood higher in the esteem of their respective communities than did these early pioneer physicians....

[A portion of Bard's concluding remarks
have been omitted]