

The Jesuit Missionary in the Role of Physician

Perhaps more important than any of the Jesuit missionary's other non-religious functions was his performance in the rôle of physician to the Spaniards and Indians who resided in his mission district.¹ Father Pfefferkorn's observations about the care of the sick and about the sicknesses found among Sonorans, reveal him to have been a man who combined in varying proportions a pseudo-scientific knowledge of illnesses and their cures with an eminently "common sense" practicality.

The plant and mineral kingdoms of Sonora were believed to contain countless healing materials and antidotes for a wide variety of maladies and poisons. There is at least the implication in Pfefferkorn's description of these medicaments that in Sonora God had been particularly beneficent in compensating for the lack of "doctors, surgeons, and apothecaries" with a plentiful supply of health promoting agencies.

The juice of *mescal* leaves was considered an infallible anti-scorbutic; the root of the same plant healed wounds, while spirits distilled from the root were used as a stomach tonic. With *mescal* spirits Pfefferkorn cured his own stomach, which had been unsettled for six months. Spaniards who had the equipment for the distillation of *mescal* spirits charged an exorbitant price for the liquid.

The *chicamilla*, a small, beet-like root, possessed a skin, or bark, which could be used both as a laxative and as an emetic, depending, it was said, on whether the bark was stripped up or down the plant. Excessive effects were mitigated by a dose of cold maize porridge. The *peonilla* or *peonia*, a very small root, boiled in water or pulverized served as a stomach tonic. Still another root, the *jaramatracá*, was revered as a "miracle root" and applied in various ways constituted a cure for such assorted maladies as stomach ailments, ague, diarrhoea, nose bleed, and

¹ Unless otherwise indicated by footnote this account is derived from Ignaz Pfefferkorn, S. J., *Beschreibung der Landschaft Sonora samt andern merkwürdigen Nachrichten von den inneren Theilen Neu-Spaniens und Reise aus Amerika bis in Deutschland, nebst einer Landcharte von Sonora*, Köln am Rheine, 1794-1795, 2 vols. For a more complete description of this work see my "Father Pfefferkorn and His Description of Sonora," *MIN-AMERICA*, XX (October 1938), 229-252. The missionary labored in the land below the Gila and Colorado rivers for the eleven years preceding the expulsion of the Jesuits in 1767.

toothache. It was employed also as an antidote for poisons, either from stings and bites of noxious animals or from poisoned arrows. Pfefferkorn doubted the more extravagant claims made for the *jaramatracá* but writes that probably no household was without its supply of this root, regarded almost as a holy relic. A firm believer in the healing powers of the *jaramatracá* was Juan de Mendoza, Governor of Sonora, 1755 to 1760. Pfefferkorn says of him:

There was no better way to gain [Mendoza's] favor than to tell him, or deceive him, about some cure this root had worked. The good man believed everything without question. He was later [probably 1760]² shot by the Seri with a poisoned arrow, and died from the wound. . . . So at that time his "miracle root" must either have been powerless or very ungrateful to its zealous encomiast.

The *contra-yerba* was noted as an uncommonly effective antidote for the bites and stings of poisonous animals; the *mataduras* or wound-herb, healed saddle burns. The *toloache* was made use of a poultice or as a habit-forming drug. In its latter effect the Sonora natives utilized this plant for vanquishing their enemies. The *pasmo* herb cured nervous twitchings; the *anis* herb moderated fevers, and so made bleeding unnecessary. A kind of field-rose, the *chayotillo* flower, was applied as an emetic, though because of its extreme efficacy *chayotillo* decoctions were given in very small quantities. Other plants and herbs mentioned by Pfefferkorn served purposes similar to those mentioned above.

One of the more interesting remedies was Sonora gum, or rubber, the effectiveness of which as a remedy for hematemesis was apparently discovered by Pfefferkorn, in the 1760's.³ Pfefferkorn describes the gum as a "transparent, reddish-yellow resin, which is exuded from the twigs of a common bush." Since the gum was soluble in water, it had to be collected before the beginning of the rainy season in July. "Sonora gum" was so called

² Hubert Howe Bancroft, *History of the North Mexican States, 1531-1880*, San Francisco, 1884, I, 556 and footnote 10. Bancroft states that the only details of the governor's death are given in Alegre, *Hist. Comp. Jesus*, III, 298, wherein it is explained that on November 25, 1760, Mendoza with a hundred men cornered a band of nineteen Seri Indians near Saracachi, and that the governor was struck by an arrow "discharged by the dying [Seri] chieftain." Pfefferkorn says that in 1761 the governor and some soldiers were attempting to capture a band of Seri horse thieves, that the Seri Indians greatly outnumbered the Spaniards, routed the latter, and that the governor, though only superficially wounded by an arrow later died from the terrible Seri poison.

³ Pfefferkorn calls Sonora gum, *gomilla de Sonora*.

because it was found only in Sonora, and there, only in the southwest section.⁴ Pfefferkorn states, further:

It was still unknown in Mexico City in 1764. I sent the first report of it there, and sent at the same time some of the rubber. The approval which it gained for itself in that city is evident from the fact that in the following year I was urgently requested to send as much as I could possibly get.

When it is dissolved in water and swallowed, this rubber is an excellent remedy for hemorrhages and bleeding. Even after the first swallow the patient is sometimes comforted, and the illness must be very stubborn if it proves necessary to take this drink three or four times. Here I refer in part to trustworthy testimony of very credible people, and in part to my own experience. After my return from America, while in Spain I made the last test with it. A friend of mine, an officer of a Swiss regiment, had such a severe hemorrhage that the skilled doctor in the port of Santa María at Cádiz seven times prescribed opening a vein for him. But this terrible butchery could not stop the hematemesis. I sent him a small piece of this rubber which one of my traveling companions had brought along. The officer took it on my recommendation and was well on the same day.

Here, Pfefferkorn takes occasion to criticize the Spaniards for failing to exploit the medicinal properties of herbs found in Sonora. He remarks:

It is in truth to be regretted that this remedy [Sonora gum], as well as many other very valuable ones, with which Sonora is enriched by nature, is not made known more widely in the world. This is no work for a missionary, who, far from having the time to undertake such labor, is kept busy almost beyond his strength with the care of the bodies and souls of his Indians. Skilled men, well-versed in this branch of learning, must be commissioned to write a detailed description of all such healing remedies after industrious investigation and exact observation. However, that is too much to ask of the Spaniards.

Sonora gum was useful also as a remedy for hydrophobia, though a draught of monks' rhubarb was even better in such cases. The rather indefinite description of monks' rhubarb given

⁴ See also *Aus dem Tagebuch des mexicanischen Missionarius Gottfr. Bernh. Middendorff, 1754-1776* (edited in scrap-book form, in the library of the *Ignatiushaus*, Bonn, Germany). Middendorff states: "Sonora gum is a sap which issues through the bark of a particular shrub which is called *torote*, as I remember it. The gum becomes as hard if not harder than resin; when it is crumbled it assumes the hardness of other gum. It is brown in color. If it is dissolved in water, the water becomes reddish in color. A piece the size of a thumb dissolved in water and drunk is a remedy for hematemesis, and I freed myself of this evil with the drink."

in the *Description* suggests inevitably that here the missionary is referring not to a plant or herb but to human excrement.⁵ One of Father Pfefferkorn's Indians alone, besides himself, knew the secret of preparing the rhubarb potion. Pfefferkorn states that one time this Indian was saved from madness by partaking of the rhubarb "although he well knew the ingredients of the draught."

Finally, under healing plants and herbs are mentioned *remolino* [probably a kind of moss], which was burned to produce an incense or vapor for the curing of head colds and for purposes of fumigation, and the Puebla herb, used as a laxative. The latter, so named because found in the vicinity of Puebla de los Angeles, was also employed by stockmen to poison predatory animals. The dried plant was grated, mixed with ox-flesh, and hung in the sun for a couple of days. When ready, the preparation was sprinkled in the fields where marauding animals would encounter it. "Once," says Pfefferkorn, "I counted two hundred or more coyotes, two bears, and five wolves, which had thus swallowed death."

The mineral kingdom of Sonora, too, yielded remedies for various ailments. The Seri stone, a green pebble called *chiquiquite* by the Seri Indians, was believed by Sonora Spaniards to aid in arresting hemorrhages. Sonora was deemed fortunate also in that it provided the right conditions for the production of the famous bezoar "stone," a concretion found in the stomach and intestines of certain animals. In Sonora, bezoar was used with happy results "in virulent epidemics, in treating melancholia, and for other things."

Pfefferkorn himself discovered in Sonora a special type of stone known in Spain as the *piedra cuadrada* because of its cubical shape. This stone was prescribed for checking diarrhoea, and even for easing a woman in childbed. While in Spain Pfefferkorn had first learned of the quadrangle stones and had later with diffi-

⁵ See also Don Francisco Javier Clavigero, S. J., *The History of [Lower] California*, translated and edited by Sara E. Lake and A. A. Gray, Stanford University Press, 1937, 393, Appendix A. "Experiments and observations which Father Inamma, a German Jesuit missionary in that peninsula, made on the snakes of that peninsula." P. Clavigero, in a discussion of remedies used in California for snake bite, says that "The most usual and efficacious internal one is *teriac humana*, or human excrement, which they make the bitten person drink, when it is fresh and dissolved in water. This drink, although loathsome, is taken without repugnance because of love of life; besides, since the people bitten are almost frantic because of confusion and fear, they are not accustomed to notice what is given them, as an Indian bitten by a snake confessed to Father Inamma after his recovery."

culty located some such in Mexico City at the shop of an apothecary who, "out of kindness," sold him one at a reduced price of eight rix-dollars. The stones he subsequently discovered in Sonora were just like the costly stone he had purchased in Mexico and were, as experiments convinced him, fully as efficacious. These native Sonora vegetable and mineral remedies were supplemented for the missionary by medicines sent to him from Mexico City. Medicines are among the items listed by Pfefferkorn in his expense account of purchases made annually by all the Sonora Jesuits through the Jesuit factor, or purchasing agent, who resided in Mexico City.⁶

Final adjunct to the priest's dispensary was a book written by a Moravian Jesuit named Johann Steinefer. This Jesuit lay-brother had been sent from the Bohemian Province to Mexico in 1697. During some nineteen years service in the Mexican missions culminating in his death in Sonora in 1716, he acquired great fame as a surgeon and apothecary. He wrote a medical anthology which he dedicated to all his brother Jesuits, particularly to those who were missionaries in the "provincias remotas." The work, a quarto volume of five hundred and twenty-two pages was first published in Mexico in 1712. Other editions appeared in 1719, 1729, 1732, and 1755; a final edition was printed in 1888.⁷ The work dealt specifically with diseases which were endemic to New Spain. Its prescription of household remedies for such maladies made it especially practicable.

To the modern reader it appears that in his description of Sonora illnesses Pfefferkorn does not differentiate between the symptoms and the illnesses themselves. Headache, chills and fever, and sore-throat, are listed in the same category with smallpox and other contagious sicknesses. The most common Sonora ailments Pfefferkorn asserts to be inflammatory fever and ague. The former was believed to be caused by the heat of the sun; hence, foreigners were deemed especially susceptible to it. Ague resulted from drinking unhealthful water; that is, water

⁶ See Theodore E. Treutlein, "The Economic Regime of the Jesuit Missions in Eighteenth Century Sonora," *Pacific Historical Review*, VIII (September 1939), 289-300.

⁷ Juan de Esteyneffer, S. J., *Florilegio medicinal de todas las enfermedades, sacado de varios, y clasicos autores, para bien de los pobres, y de los que tienen falta de medicos, en particular para las provincias remotas, en donde administran los RR. PP. misioneros de la Compañia de Jesús, Mexico, 1712.* Anton Huonder, S. J., *Deutsche Jesuitenmissionäre des 17. und 18. Jahrhunderts*, Freiburg i. Breisgau, 1899, 116. Huonder speaks of Esteyneffer as Brother Johann Steinefer, a native of Iglau, Moravia, whose medical handbook was printed in Madrid and in Amsterdam, as well as in Mexico.

taken from brooks flowing in swampy ground. There was no ague in southern Sonora where the brooks flowed over gravel and stones, thus purifying themselves. One could contract ague also by allowing rain-soaked clothes to dry on him or by getting his feet wet. Pfefferkorn allowed his feet to hang in the water while crossing a stream and was stricken with ague as a consequence. An ague of long duration sometimes degenerated into consumption (*Auszehrung*).

Among other Sonora sicknesses noted was sore-throat, called by the Spaniards *garrotillo* (quinsy). Lacking timely treatment the afflicted one might choke from this evil. *Empacho* was also much dreaded by the Sonorans. Its cause was indigestion which attacked a stomach weakened by excessive drinking of water during the hot season. The weakened organ then "lacked the strength and warmth necessary to digest foods." The illness progressed from a continuous stomach-ache, accompanied by nausea, to severe diarrhoea.

Inflammatory fevers were frequently accompanied by *pasmo* [convulsions] often in recurrent seizures. Death ensued in severe cases. Sudden attacks of palsy and sometimes blindness resulted from cold air penetrating pores opened by perspiration. This malady, known as *mal aire*, was thought by Pfefferkorn to be the result not so much of the penetration of bad air into one's pores as of the combination of such circumstance with an already weakened condition in the afflicted person. "Otherwise," he adds, "almost no day would pass without revealing one of these tragedies, since in such a warm country one can so easily and quickly expose oneself to this misfortune."

The Sonora natives were apparently a pretty healthy lot. Pfefferkorn writes:

The Spaniards are much more subject to all these sicknesses and misfortunes than are the Indians. The latter have much sturdier bodies than the Spaniards because they have been hardened against wind and weather from childhood. For the most part, they have clean blood and healthy humors, and because of this they suffer from fewer diseases.

Another circumstance contributing not a little to the Indians' lack of susceptibility to disease is the fact that they are in general free of *lues venerea*, which is very common and widely distributed among all the other classes of people in America.⁸ However, this contagion does

⁸ Carl Sauer, "Aboriginal Population of Northwestern Mexico," *Ibero-Americana*: 10, University of California Press, 1935, 3, footnote 5. In speaking of sedentary agricultural populations Sauer says: "The only reference

not cause the mischief in America that it does in Europe. Many of those afflicted with it in America are assisted by the mildness of the climate and live for a long time despite their ailing circumstances, unless they are at some time attacked by another serious illness which their weakened constitution and sickly bodies cannot then withstand.

But there were exceptions to the generalization that Indians had greater natural immunity to disease than Spaniards. In 1760, for example, there appeared in Sonora a contagion which seized Indians and Spaniards without distinction. Pfefferkorn describes the course of this sickness in the following words:

The victim at first felt an extraordinary bodily lassitude and a particular decline in spirit. There followed very severe pains in all members and in the head, besides an almost unbearable heaviness and an uncomfortable giddiness. Though fortunately accompanied by only a slight fever this dizziness was such that it was hardly possible for the victim to stand up. All desire to eat and drink departed. It was noticed besides that people who did not give in to the malady but forced themselves to stay on their feet were rid of it in three or four days. Those, on the other hand, who were too soft or too weak to bear up under the indisposition and went to bed had the malady much more severely; they were plagued by it for ten or twelve days or even longer, and were left in such a miserable condition that they did not completely recover for a long time. The number of fatalities, however, was not great; only people who were already weakened either by great age or by some other sickness died.

In 1765 occurred another contagion which spread into Sonora from the "southern part of New Spain." Because the disease appeared in the month of June when the south winds blow, the winds were blamed for its spread.

The contagion announced itself by such severe head and body pains that even the strongest man was unresistingly laid low. There followed a very high fever which in most cases caused delirium. If the patient began to vomit, all hope for his recovery was lost. It was an infallible sign of approaching recovery when blood began to drip from his nose and ears. Those, however, to whom nature denied this outlet were in the most extreme danger, and few such were saved.

I have seen is a remark by Father Pfefferkorn, missionary among the Pima in the mid-eighteenth century, that these Indians had little venereal infection." Pfefferkorn's generalization is interesting in comparison with S. F. Cook's conclusion about venereal disease in Baja California. See "The Extent and Significance of Disease among the Indians of Baja California, 1697-1773," *Ibero-Americana*: 12, University of California Press, 1937, 30. "On the whole it is probably safe to conclude that syphilis did not achieve menacing proportions before 1740, after which time it rapidly attracted the attention of the missionaries."

This contagion caused the death of many people in Sonora; whole families were exterminated, and some villages were almost depopulated.

I was particularly fortunate in that this horrible contagion killed only eighteen persons in my mission. I had the happy thought of refreshing the sick with lemon or orange juice mixed with sugar and water. My idea was prompted by the following incident, which I heard of in 1756 in the city of Mexico. In the capital and surrounding areas there had been some years before such a fearful epidemic that it had in two or three months destroyed eighty thousand people. The doctors did not recognize the sickness; all their knowledge was exhausted, and no remedy had been found to prevent mortality. Finally, they performed an autopsy on one of the deceased and found a fairly large, thick worm in his stomach. They believed they had discovered in this worm the origin of the sickness. Different medicines were poured on the worm, but none killed it. At length a lemon was squeezed on it, and it died in a few moments. Lemon juice was immediately used with the sick, and all recovered. That is the story told me in Mexico. Because I found some similarities in the cases of the two epidemics I was prompted to use the same remedy for my patients, with the assurance that at least it would not be injurious to them. And with my simple remedy I really had the pleasure of curing most of them and finally of curing myself, since I, too, was overcome by the same illness.

Recovery from the foregoing disease was a very slow process accompanied oftentimes by distressing relapses.

The plague most greatly feared was smallpox. Nine or ten years might elapse between visitations of the dread epidemic, but when it arrived the population in general, but especially the Indian population, suffered a terrible mortality. The Indians suffered most, it was believed, because the toughness and thickness of their skins hindered the irruption of the pustules and hence caused the retention of poison in the body. Aside from smallpox, inflammatory fever, and ague, Pfefferkorn says "other sicknesses which cause so many deaths in Europe are unknown in Sonora. In the eleven years I knew only one Spaniard to die of dropsy, and he had perhaps brought the basis for the illness with him into the country. No one in Sonora has any idea what gout, sciatica, and apoplexy are."

Various native remedies were prescribed for the above-mentioned sicknesses. Pfefferkorn cured himself of a six months' siege of ague by consuming a large watermelon. Eating of the melon was followed by repeated vomiting and then by recovery. The jaramatracá root was also prescribed as a remedy for ague.

Inflammatory sicknesses were relieved by the anis herb, and also Pfefferkorn records that he cured a Spanish woman of a terrible fever by permitting her to eat a watermelon. His observations are not without scientific caution.

As I sat at her bedside to hear her confession, the almost burning heat which was enervating her became unbearable to me and made it necessary for me to move my chair somewhat from her bed. At the end of the confession I learned from her that an old woman to whom much knowledge about healing the sick was ascribed had brought various hot drinks to her, just as though one would wish to extinguish fire with oil. Certainly, it was a wonder that the poor sick woman still lived.

By chance I saw a splendid watermelon in the room and asked her if she did not wish to eat some of it. With a fervent sigh she expressed her desire for it, at the same time her fear of cooling things. I relieved her of the fear the old quack had instilled in her and gave her just as much of the melon as she wished. After she had eaten with relish somewhat more than half of it, she was cheerful and felt that the terrible fever was broken. Some days later the fever disappeared and the outcome showed that my advice had not been harmful. However, it is not my purpose to mention the watermelon as a trustworthy remedy for fevers. I would only make myself ridiculous in the eyes of the doctors. Yet this incident does prove that melons are cooling, an effect which is beneficial in many sicknesses.

Sore-throat was cured by the use of a thick maize poultice. *Empacho* was "driven away" by partaking a draught composed of a small amount of indigo dissolved in urine. For convulsions, a decoction of the *yerba del pasmo* was prescribed. *Mal aire* was treated by placing the patient in a well-protected room where no draughts could reach him. Then a perspiration was induced in him by warming the room, covering him heavily with warm covers, and forcing him to drink large amounts of a tea made of pasmo roots. Meanwhile, the room was fumigated with *remolino*. The *hedionda* or stinking herb, noted for its vile odor, was used for worming children.

The effort expended by the missionaries in healing sick Indians was considered by them to be almost as important a part of their duties as looking after the Indians' souls. The priest in the rôle of physician was in a wider sense a civilizing force, intent upon healing, intent also upon inducing in the callous native a feeling of sympathy for those made miserable by sickness or injury.

From all descriptions the plight of a sick Indian must indeed

have been a pitiable one. We feel the priest's sense of profound disquietude when he writes:

One cannot imagine more distressing circumstances than those surrounding a sick Sonoran. His bed is the hard earth. There he lies, completely abandoned to his fate. No one attends him. What is more, sometimes no one even gives him food or drink. His wife places at his side a *corita* [a small, tightly-woven basket] filled with water, and another with *atole*, leaves him and often does not go to him for half a day. The husband treats his wife in the same way, as does the mother her children and they their parents. Sonorans are without affection, and are insensitive to the suffering of those with whom nature has so closely allied them.

Certain comments made by Pfefferkorn about the Sonora natives should be cited here.⁹ He states that

in Sonora, as everywhere, there are large, medium-sized, and small people, but the latter are in the minority. Most Sonora men could appear honorably among the grenadiers in Europe. As a rule they possess healthy, strong, sturdily-built, and finely-shaped bodies. During my eleven years stay in Sonora I cannot remember having seen a single cripple, and this was the more surprising to me, because of the carelessness of mothers in raising their children. All grew up beautiful and straight. Sonorans always walk with erect bodies, and carry their heads high, a habit which they retain in their old age. . . . Their bodily constitution is strong, enduring, and free from the many defects and weaknesses to which we Europeans are so often subject. Hence, a life of one hundred years or even longer is not rare among them. The main reason for this longevity seems to me to be the continual use of simple and natural nourishment. We Europeans, on the other hand, weaken our health with our artificial and always varying foods, prepared with hot spices.

The Sonora natives did not exert themselves in caring for their health, though they apparently knew of certain remedies which they made use of upon occasion. Headaches were treated with cold water or wet clay plastered on the head. A more drastic cure was blood-letting, effected by tearing the skin at the temples with an arrow point. An aching tooth was forced out

⁹ Pfefferkorn does not tell the reader the name or names of the Sonora natives to which his generalizations apply. His eleven missionary years were spent at mission Ati, among the Pima, and at mission Cucurpe, among the Opata. However, at Ati were considerable numbers of Papago; while among the Opata at Cucurpe lived large numbers of the Eudebe tribe. It is probable, therefore, that though he meant his generalizations to include all of the above-named, one is at least safe in allowing them to apply to the Opata and Pima Indians.

of the head by holding a notched stick against it and pounding on the end of the stick with a stone. This method of tooth extraction was as effective though not so speedy a one as that devised by a Sonora Spaniard who, according to Pfefferkorn, shot an aching tooth out of his head by tying one end of a string around the tooth, the other end to a musket ball, and discharging the musket.

Though the Sonorans generally allowed nature to take its course in matters of health and sickness there were Indian medicine men upon whom many natives relied for help. These native physicians were angrily termed "quacks" and "wicked impostors" by the missionaries. The medicine men claimed to understand the art of curing all sicknesses but demanded payment in advance for their services. Since they were paid in food stuffs, they catered to those Indians whose stores of grain were the most plentiful.

The medicine men used various remedies, sometimes bringing real relief through administering native herbs. But generally they resorted to hocus-pocus methods to exorcise the evil. Sucking and blowing on the afflicted part of the body through a tube was a favorite procedure. Sometimes smoke from the Sonora tobacco was blown through reeds on ulcers or wounds. Any accidental cures which the Indian medicine men might achieve were resented by the missionaries, for the latter strove constantly to weaken the prestige of these so-called quacks. The animosity of the missionaries toward the medicine men was heightened by the latter's claim that they enjoyed the aid of *Muhaptura* [the murderer], a kind of a devil-dog. To combat the evil influence of the medicine men missionaries at times found opportunities to have them publicly punished.

There were quacks among the Sonora Spaniards, as well as among the Indians, however. Pfefferkorn recalls with horror the suffering he experienced at the hands of a masseur who was said to be skilled in curing *empacho* by massaging the patient's stomach. "Hardly, however, had the quack begun his operations than I became certain that under his hands I would give up the ghost. I thanked him for his services and sought milder remedies, by means of which I recovered."

It is evident that such a priest as Father Pfefferkorn had to overcome many serious obstacles in striving to cure his Indians and Spanish charges from the variety of sicknesses to which Sonorans were subject. He had to compete with the medicine men and prove that his medicine was better than theirs. He had

to exercise his ingenuity and use his "common sense" to supplement his own meager medical knowledge. Perhaps, above all, he had to come with a natural indifference to matters of health on the part of the natives. Pfefferkorn tells more than once of the coaxing wheedling, and insisting necessary to overcome the reluctance of the natives toward taking his remedies.

He had also to respond without fail when summoned to the bedside of a sick Indian. Day or night, no matter what the weather, the priest would swing into the saddle and start off on his errand of mercy. On one occasion Pfefferkorn was called to an Indian who lay prostrate. Only the native's feeble pulse gave evidence that he still lived. In this crisis the priest's knowledge of Sonora habits of living came to his rescue. He explains that it was *pechita* time in Sonora; that is, June, when the Indians gorged themselves on *pechita*, the fruit of the mesquite tree.

I suspected that the Indian's condition had resulted from excessive indulgence, especially since I observed that his stomach was stretched like a drum. I, therefore, tickled his throat with a small feather until he made a movement to vomit, which he proceeded to do so vigorously, throwing up such a quantity of still undigested *pechita* that I could not understand how the stomach could have contained such a tremendous mass. The sick one recovered consciousness immediately and when he saw me and some Indians about him he was so ashamed that without saving a word he ran away immediately.

In spite of his success in curing the sick there was at least one prescription which only the iron perseverance of the priest succeeded in forcing upon the natives. This horror was the enema. Pfefferkorn states:

Nothing, however, was so distasteful and unbearable to them as the use of an enema. This I discovered myself when for the first time I prescribed the cure for a sick Indian. I sent to him a Spaniard who had volunteered his services for this work and who had been trained for it. Hardly had the Indian perceived the Spaniard's intention when he began to yell at the top of his voice and to resist with might and main. I was finally called to the sick person myself and tried at the greatest length to prevail upon him. All persuasion was in vain. At last I had to call upon four strong Indians to hold him down until the operation was completed. The results were so good that the sick person soon entirely recovered his health. The success of this treatment on the one mentioned and other similar occasions did away with my Indians' adhorrence of this cure and gave them such faith in it that many of them came to me and requested enemas for headaches and other pains.

When a sick person was visited the priest had to leave nourishment at the patient's bedside and make arrangements for someone to attend him, since the traditional practice was for even his closest of kin to shun him during his illness. In the villages the priests attempted to change this barbaric custom by appointing special Indian officers, one of whose duties it was to look after the sick. These officers were known as *mayoris (sic)*, Indians whose reputations were such that they could be expected to be faithful and diligent. The *mayori* made daily rounds, visiting each house in the village to see if anyone were ill. Sickness was immediately reported to the priest who then acted as the needs of the situation prompted.

Besides laboring with the Indians in his mission district, each Sonora missionary watched over Spaniards who lived scattered throughout Sonora. Pfefferkorn reports that the Sonora Spaniards were the parishioners of a single parson, whose usual place of residence was the presidio of San Miguel, headquarters also of the governor of Sonora. This single clergyman's parish embraced in circuit over two hundred Spanish miles. "Pity the poor sick ones," says Pfefferkorn, "if they had had to await his assistance." Thus, in addition to ministering to the physical and spiritual wants of his Indians, the missionary watched over the garrisons and the *reales de mines* lying nearest his mission. There is a note of bitterness in Pfefferkorn's reference to the Spanish pastor when he writes: "The only thing which the Spaniards' own pastor did was to travel annually through Sonora, visit his fellow parishioners, and collect the surplice fees which the missionaries had earned during the year." But he has a kinder word for the *criollo* womenfolk, many of whom made it "their duty to look after the sick, even those who were not their kinsmen, with the greatest possible care and love."

Father Pfefferkorn's interest in improving the physical as well as the spiritual life of the Indians under his care moved him to record in his *Description* various observations about native life and population statistics which are valuable as anthropological data. His remarks concerning marriage and the rearing of children, death and burial, though fragmentary, provide us with some idea of the life cycle of the Sonora native as seen through the eyes of the "physician" priest.

The Sonorans married "as soon as they were able to do so." To the Sonora woman, pregnancy and child-bearing were a routine matter. Let the Jesuit missionary speak on these subjects.

From pregnancy to the last days before giving birth the Sonora women have not the least anxiety about their unborn. They avoid neither danger nor heavy exertions, yet very rarely does an unfortunate birth occur. The birth of a dead or deformed child is extremely rare. When childbirth approaches, Sonora women look for an isolated place. This they do because of a kind of superstition, for they imagine that the proximity of child-bearing women will cause misfortune to their men, and also bring harm to the sick and wounded.¹⁰ The birth is accomplished easily and happily without the help of anyone. After the child is born the mother bathes herself and the child in the nearest water, fetches wood from the forest, and as before performs all the usual work. With all this, the mother remains healthy and well.

Sonora babies were never pampered.

The cradle of Sonora children is the hard earth. On it the completely naked infants lie or roll about like puppies. When the mother goes to the forest, into the field, or elsewhere, she ties the child fast to her back with an old rag or a leather strap. She walks with it this way and goes about everything she has to do without the least anxiety for the child. Only when it has screamed and cried long enough to make known its needs does she untie it and give it milk. Some mothers do this with the greatest convenience by throwing their extremely long breast over the shoulder to the child. Despite the fact that with this treatment the children endure much bumping and pushing, and must suffer much discomfort, the Sonorans are in general well built, strong people, and there is scarcely to be seen among them a feeble or a deformed person.

Of great concern to the missionaries was the Indian practice of tattooing children, especially girl babies, when they reached the age of one year. The mother performed the operation, piercing with a thorn the child's skin on the forehead, cheeks, lips, around the eyes, and sometimes also on the arms and the chest. The thorn pricks, rubbed with charcoal dust, were arranged in close rows, representing various figures. Since tattooing endangered the lives of infants the priests spared no effort to abolish the custom, especially among their new converts, but it still existed at the time of the expulsion.

Children were cared for by the mother—the father disregarded their very existence—until they could get around and gather food for themselves. From that day on they were left to their own devices. His comments indicate that Pfefferkorn was

¹⁰ Pfefferkorn also speaks of a "superstition" (*sic*) that "the women must remain in an isolated place away from the company of other people during their menstrual period. In various places in the fields there were little huts designed for this sojourn. I had some of them destroyed."

not so censorious of the parental neglect as he was of the bad examples which the elders by their actions set for the children in whom they had ceased to be interested. But his expostulations on this subject are those of spiritual guide, not "physician."

During his eleven years in Sonora Pfefferkorn many times had the experience of being at the side of a Sonoran who closed his Christian life in an edifying way leaving the priest with confident hope for the eternal salvation of the deceased. However, most of the Indians, Christian or heathen, died as they lived, tranquilly and indifferently. Again it is the spiritual guide rather than the "physician" who is oppressed by such indifference and finds its source in "a lifelong animal-like manner of existence which causes the mind to become so obdurate that even death, floating before their eyes, makes no impression on them" or in a "coarse and criminal ignorance which suppresses the reason and bars entrance of all wholesome ideas."

After a death, women lamenters among the relatives of the deceased assembled about the body of the corpse and emitted a low-toned piteous howling, "hau, hau," which resembled "bellowing more than weeping." But of tears there was not a trace, neither among the lamenters nor among other relatives. Indeed, the appearance of grief or of stimulated grief was apparently utterly absent whether at the time of death, during the bewailing ceremony, or at burial. The corpse was buried in a grave which was about "two ells square and about three ells deep."

The body was lowered into this grave in an upright sitting position. The tomb was not filled with earth, but covered with a roof, and the inner grave left unfilled. The roof consisted of thick pieces of wood placed one alongside the other, the spaces between being tightly filled with twigs. The covering was then heaped over with earth, forming a sort of mound. Inside the pit, beside the body, were placed a vessel full of *pinole*, a jug of water, weapons, and whatever else the deceased had used during his life—just as if these things could still serve him in the other world. I find no other reason which could have misled the Sonoras to such a custom. It seems to me to be a strong proof that they had some notion of the immortality of the soul, although this idea was obscure and mixed with absurdity.

The death and burial of a Sonora native suggests another subject which has always been of the greatest interest to students of aboriginal populations; namely, the relationship existing between the advent of the white man and the diminution in numbers of the native stock. That there exists a relationship is, of course, indisputable, but quantitative studies are very diffi-

cult to make and at best lead only to tentative conclusions. It is, therefore, of importance to notice the conjectures provided by Father Pfefferkorn on the subject of the causes for the decline in Indian population since the coming of the Spaniards to Sonora.

The reader will be interested to learn whether the number of Indians in Sonora has increased or decreased since the establishment of the missions. Concerning this subject I tell what I have learned from my own experience and what I know from the testimony of missionaries who lived in Sonora during my time, and some of whom spent twenty, thirty, and more years in the spiritual care of the Indians. All of them agree unanimously with me that the number of Indians was growing ever smaller. The general opinion was that during a period of sixty or seventy years Sonora had lost more than half of its population.

Of the name and the existence of the Guayma, who once inhabited three or four villages on the sea coast, only a memory remains. Concerning the apostate Seri, Father Nicolas Perera, who with three other missionaries had administered to the spiritual care of this people and who in my time still lived in the mission of Aconzi, reckoned the number of this nation before their revolt at from nine to ten thousand souls.

Father Kino, Agustín de Campos, and other earlier missionaries testify that the Upper Pimas were so numerous at the end of the last century that all their villages were well-populated. However, by the year 1760 there was noticeable everywhere a considerable decline in population. This was seen very clearly by the baptismal and death lists which were prepared every year in each mission. The number of deaths was always greater than the number baptized. The villages of the Opata, the Eudebe, and the Lower Pima were also no longer as populous as they had been in former times. Regarding the still unconverted Indians inhabiting the banks of the Gila and Colorado rivers, both Father Kino in former times, and Father Sedelmayr in recent times, have assured us that these tribes also show a declining population.

There is no doubt that frequent wars of long duration have destroyed large numbers of people among the various Sonora nations. Likewise, their ranks are thinned by small-pox and other epidemics which at times rage in Sonora. Such scourges almost completely depopulated Ocuca, Dolores, Tupo, Remedios, and other formerly pleasant and populous villages.

However, the decline in Indian population is not ascribable alone to the above-named causes. The Opata and Eudebe, and Upper and Lower Pima as well, were for a long time at peace. In the skirmishes which occurred between the converted and the wild Indians, the loss of life was seldom great, because all immediately took to their heels

as soon as one or more fell. Moreover, sometimes many years passed without the occurrence of a contagious epidemic. Yet it was clear that the population not only did not increase but, on the contrary, slowly decreased. The conjugal fertility of these Indians was, to be sure, generally not exceptional.¹¹ Whether their gradual decline in numbers resulted from infertility or from other causes, I do not know.¹²

Pfefferkorn has left notes on various insect, spider, and reptile pests of Sonora, as well as on plants, which, in one way or another, were considered harmful to man. His description of injuries attributed to all such pests is balanced with a list of remedies. It is reassuring in considering the usefulness of Pfefferkorn's *Description* to notice that he frequently "debunks" fantastic yarns about "dangers found on every hand" among the flora and fauna of Sonora, and that when he does accept an implausible story he attempts to give its source.

Among the insect pests of Sonora were the *garrapatas*, of large and small variety. The small *garrapata*, *poux de bois*, in French, was a wood tick which bored into the skin and had to be dislodged whole lest the head of the animal remain in the flesh and cause infection. This tick could be removed by rubbing the afflicted part with olive oil or grease, or by administering warm applications until the borer loosed its hold. The large *garrapata*, resembling a bedbug in appearance, was found indoors and caused trouble by getting into a person's ear and fastening itself to the outer ear passage as a blood-sucker. Easy and safe removal was effected by filling the ear with olive oil and floating the *garrapata* to within reach of a pair of tweezers.

Another skin borer was the *animalito vermejo*, the little red bug, a tiny flea-like insect, which infested the grassy meadows usually during the rainy season. Its presence was startlingly noted because "at the place where it has buried itself, one feels a fierce burning as if caused by a glowing coal." Scratching the point of irritation aggravated it; the remedy suggested by Pfefferkorn for getting rid of this borer was repeated vinegar applications.

¹¹ Pfefferkorn's *description* contains no reference to the size of Indian families. Sauer, "Aboriginal Population," *loc. cit.*, 2, takes an average of six to the aboriginal family.

¹² According to Cook, "The Extent of Disease," *loc. cit.*, 38-39, in Baja California "at least one-third and possibly one-half the population decline [i.e., 1697-1773] can be attributed to disease." Without a comparable study for Sonora it would be impossible to say whether the population decline spoken of by Pfefferkorn was to such a high percentage attributable to diseases introduced by the European as was evidently the case in Baja California.

Mosquito-netting was recommended for the large variety of mosquitoes and gnats which were especially troublesome at night.¹³ For the bite of the red ant which caused "inflammation, swelling, numbing, and great pain," he prescribes no remedy but states that "these effects diminish slowly after some hours."

As an introduction to his description of snakes of Sonora, Pfefferkorn states:

Hot countries are particularly plagued by poisonous animals. In Sonora they are so numerous that it can almost be said that hidden murderers sit under every stone in the field, among the tree branches and shrubs in the forest, and in nearly every nook in the house. It would hardly be possible to live in a land so full of horrors, if the benign foresight of the Creator did not give warning of the dangers in all kinds of ways and had He not provided the country with excellent herbs and plants for antidotes. Besides, a poisonous animal seldom harms a person unless it has first been injured by that person and is provoked to vengeance. Also, most of these animals are sluggish by nature and slow in their movements. Consequently, they are unable to turn speedily and to inflict a quick bite. Therefore, the danger of being harmed by them is not so immediate and unavoidable as one might imagine.

The poisonous snakes listed in the *Description* are the rattlesnake, coral snake, silent snake (*vibora sorda*) and the *vejucos* or *cuareques* snake (called thus from its resemblance to the trailing *vejucos* or *cuareques* plant which hangs down from trees, a feat which the snake duplicates).

Poisonous "insects" named by Pfefferkorn are the *escorpion*, *alacran* [scorpion], centipede, *salamanqueza*, *pinacate* beetle, *uvari* spider, tarantula, and the chameleon. The *escorpion* is described as a lizard of greenish-yellow color, its head, tail, and feet being marked with narrow black stripes. This animal had the reputation for being very poisonous, but Pfefferkorn says he never heard of a fatality caused by an *escorpion* during the eleven years he was missionary in Sonora. There were four varieties of *scorpion* in Sonora, a black, dark red, brown, and yellow variety. These, especially the red *scorpion*, Pfefferkorn credits with being quite harmful to man, though he cites but one instance of a fatal sting ascribable to a *scorpion*, and that occurred in Durango, not in Sonora. He doubts the potency of centipede poison, stating: "In Sonora all who are bitten by the centipede are given up. I have never observed that so stern a judgment

¹³ Pfefferkorn names mosquitoes, *zancudos*, *gegenes*, and *mantas blancas*.

was warranted; neither have I ever heard of a person's being bitten by a centipede." His judgment is the same for the salamaqueza, a lizard with white belly, dark green upper body, white dotted back and tail, and scale-encrusted feet.

The inhabitants of Sonora had an especial horror of the pinacate beetle, which resembled a dor-beetle in shape and color, though somewhat longer and thinner. Generally, it lived in houses, where in the Sonora manner, floors were neither wood nor stone, but bare, uncovered earth, or "where the broom stands untouched and dirt prevails." The pinacate's bite, according to the inhabitants, was not only poisonous but is also incurable.

I cannot believe the pinacate is as murderous as this. If it were one would see a corpse almost every day in Sonora, for in the pretty dwellings of Indians, as well as in the abodes of Spaniards (which are almost as filthy) there are almost always some of these little black animals promenading about. There would be ample opportunity for them to administer their fatal bite since Indians walk about bare-foot and naked. Hence, I believe that more blame is attached to the pinacate than it really merits.

However, Pfefferkorn gave the pinacate credit for raising its back when molested and releasing a disagreeable odor.

He calls the uvari spider "a coal-black, very ugly little animal," extremely dangerous company, and admonishes one to sweep it out of the house at first sight.¹⁴ The tarantula, the most common variety brownish-black in color, others dark yellow, sprinkled with black spots, was repulsive to Pfefferkorn because it was "the most horribly ugly animal which one can possibly imagine." He considers it to belong to a different species from the "notorious Neopolitan tarantula." "At least," he says, "no one in Sonora, as a result of being bitten by this spider, has been known to have danced himself to death, which strange

¹⁴ See also Middendorff, *Aus dem Tagebuch*. "The uvari is a very small black spider; its sting is deadly if one does not quickly use an antidote. The body becomes paralyzed, one is struck speechless, and bodily warmth is replaced by the cold of death. Once I saw a man who had been stung by such a spider. As they were on the verge of burying the victim, a woman who had an understanding about the effects of such spider bites noticed that the victim's heart was beating, even though no one had noticed any breathing, either on a mirror or in any other way. The woman covered the man's body with slices of fresh cheese, the slices having first been well toasted on a fire until they were very hot. The hot cheese raised many blisters and pustules [on the victim], and when the cheese cooled fresh hot slices were applied. Finally the man began to revive. He opened his eyes, but stammered in his speech and spoke unintelligibly, like an intoxicated person. However, after two or three hours he regained his natural warmth, speech, and powers."

effect is widely attributed to the sting of the Apulian tarantulas."

The last-named "insect" is the chameleon, not a chameleon at all, says the priest, but misnamed by the Spaniards and also falsely accused by them of being a "murderer" though completely non-poisonous.¹⁵

Of the large number of antidotes and remedies which were considered efficacious in cases of bites and stings from poisonous animals Pfefferkorn mentions particularly the *jaramatracá*, *contra yerba*, Sonora rubber, the *pedra de ponzona*,¹⁶ cauterization, monks' rhubarb, and tobacco smoke.

Pfefferkorn's mention of tobacco smoke refers us to what appears to be a neat bit of rationalization on his part. He says:

Tobacco smoke is the best preventive antidote for all poisonous animals. It drives small ones from the room; it stuns larger ones so that they lie motionless and can do no harm. I learned this remedy from a Spaniard who persuaded even me to smoke every night before going to sleep. Faithfully and diligently I followed this advice, which was many times very useful to me. I was never attacked by a poisonous animal, even though once one of the most poisonous snakes, and another time a centipede, kept me company in bed. I ascribe this boon to tobacco, and still thank the honest Spaniard who gave me the wholesome advice.

Even with this rationalization, if such it was, Pfefferkorn reveals a certain scientific curiosity, for he describes an experiment which proved to him that scorpions could not tolerate tobacco smoke. He filled an inverted tumbler with tobacco smoke, placed the scorpion inside, and had the satisfaction of seeing the animal sting itself with the point of its own tail rather than endure the tobacco.

Pfefferkorn includes also in his *Description* notes on the poison used by the Seri Indians for preparing their arrows. He states that poisoned arrows made the Seri much feared, despite a reputation which the Indians had for being as timid as hares. The poison, as described by the missionary, was so deadly that the smallest wound from an arrow caused quick death. "At the

¹⁵ From notes in the *Description* it is likely that the "chameleon" here referred to is the familiar "horned-toad." The herdsmen of Sonora told Pfefferkorn that this lizard, if swallowed by a snake, had the remarkable ability of cutting its way out of the reptile by raising its horny collar and using it as a saw.

¹⁶ "Poison stone" anyone could prepare, according to Pfefferkorn "by placing a piece of hart's-horn in a new earthen pot over a low fire and roasting it slowly until it is all black and shiny. This is the so-called poison stone of Sonora. If it is applied immediately to a fresh wound, it draws out the poison and frees the patient from danger."

most," writes Pfefferkorn, "two days may elapse before the wounded person is a corpse." The flesh became coal-black, and fell from the bones in pieces, as though decayed. "The only method of preventing this horrible calamity, as far as is known, is to burn out the wound promptly with a fire brand, or red hot iron, before the venom has entered the body." This painful cure constituted the only hope of saving one's life.

The manner in which this death-dealing salve is prepared by the Seri is quite unusual. I describe it as it was told to me by my Indians, and by some Seri themselves. First they collect most painstakingly a large quantity of the poisonous juices from all kinds of the most malignant snakes, toads, scorpions, spiders, centipedes, and similar poisonous insects [*sic*]. To this are added some of the poisonous herbs known to the barbarians. Then, after all these horrible things are gathered in a large earthen vessel, the container is well covered and the cover carefully sealed all around with a glue, so that none of the strength of the inclosed brew may evaporate. The pot thus cautiously made ready is placed on a fire under the open sky, and the materials are cooked until it is thought that they have the strength necessary for use. Care of this murderous concoction devolves upon the oldest woman. Chosen for this purpose, she must sit by the fire, tending it diligently, and finally, when the salve is supposed to be sufficiently cooked, she must remove the pot from the fire and uncover it. The unfortunate old one who has surrendered herself cheerfully to her fate, hereupon becomes a sacrifice to her countrymen, for when the dish is uncovered the poisonous vapor which rises invariably kills her.

When the vapor has entirely dispersed, the pot become cold, and the danger passed, one of the Seri makes a test to determine whether or not the poison has the requisite strength. He makes a small cut in his hand and then holds near to the incision an arrow freshly smeared with the salve, being careful, however, not to let it touch the cut. If the blood oozing forth draws back, then the hellish brew is as it should be, and each Seri takes a part of it home with him to poison his arrows. Should this test fail, the vessel must again be placed on the fire, and another old crone procured to cook it again, and finally, when uncovering the vessel, she like the first must give up her life. However, this is very seldom necessary, and moreover, each time there is enough prepared to last for a long time.

Pfefferkorn names but few Sonora plants which to his knowledge were harmful to man. To be sure, he implies there were such, "poisonous herbs known to the barbarians," in speaking about the Seri poison, but specifically he names only the fruit of the *tuna* cactus, mescal root, and *yedra*. Tuna fruit, according to Pfefferkorn, had the evil reputation in Sonora for causing

ague. "I do not know whether one does it justice or injustice in believing this," he states. The priest probably considered the charge unjust for he describes tuna fruit as "sweet tasting, very juicy, and good to eat." Mescal root, pit roasted, was "very tender and as sweet as the best honey" and also "not only a pleasant but also a nourishing food." When one first ate the root, it caused "a somewhat troublesome diarrhoea," but "one has only to continue eating it boldly and the stomach becomes accustomed to it." Regarding *yedra*, however, Pfefferkorn states:

I never troubled myself particularly with acquiring information about poisonous plants. However, I wish here to mention a plant, which is well known to me, and whose very shadow seems to be poisonous. It is a kind of ivy, which is very similar to that which we know in Europe, and hence it is called ivy, *yedra*, in Spanish. It is found on old dead trees, to which it clings all over twined about branches and trunks. Accidental contact with this plant causes that part which has touched it to begin to swell immediately and to become greatly inflamed. Soon thereafter, unless it is treated in time with cooling packs, the poison spreads itself through the rest of the body. Yes, it is enough if one but sits beneath a tree and is shaded by it to contract the same effects from its poison, and it is even generally affirmed in Sonora that he who tarries under this shadow for too long will endanger his very life. This opinion is supported by examples of people who have been found dead under such trees. For this, then, the *yedra* is believed to be responsible; as if death could not have resulted from many other causes.

The details given above of Father Pfefferkorn's work as a "physician" among the Sonora natives, and of his notes on Sonora native life and plant and animal pests cannot properly be generalized to apply to Jesuit missionaries working in various other mission regions in the Americas. Yet, there is the fact that Pfefferkorn frequently uses a non-editorial "we" in speaking of the missionaries' efforts to heal the sick. He generalizes, too, concerning missionary expenditures for medicines, affirms the wide use made of Steinefer's anthology, and records the general agreement among Sonora Jesuits about the decline of Indian populations. Perhaps, then, we may consider his labors, conditioned by his individual mentality and particulars of his own mission existence, as conforming to a general pattern characteristic of the Jesuit missionary as a frontier civilizing force.

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