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CHILD HYGIENE AMONG THE AMERICAN INDIANS:

A Chapter in Early American Pediatrics

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When one of the primitive inhabitants of this continent took sick or was ailing or injured, there were many and diverse resources to which he could turn for aid and comfort. The old women of the tribe, with their traditional lore handed down by word of mouth through the years of trials and tribulations, were called upon for aid and advice. Then there were medicine men and shamans available when more erudite help was required or desired. According to Sahagun, the tlamatquiticitl gave advice and care in labor and in the management of infants among the ancient Aztecs of Mexico. As usual with all primeval races, religion and superstition played a large part in the healing ritual, yet much was based upon the empiric knowledge gained by generations of trial and error, the memory of which became engrafted on the phylogenetic mind. The skill of the American Indians in preparing and administering herbs is traditional. Right here in my native city Indian herb doctors still ply their trade, strings of dusty, drying plants prominently displayed in windows and hanging from various points of view. When a child was sick the Indians invoked the same measures as a rule as were generally used for the grownup: herbs, "simples," as they were apt to be called by the early colonists, sweat baths, depletives in the form of emetics, purges, venesection, scarification, sucking, a very common procedure widely used among the American aboriginals of both hemispheres and curiously akin to cupping so popular the world over, and to leeching, too, since the sucking often was continued until blood was drawn. Sacrifices to the spirits of evil for appeasement, or to the benevolent spirits in supplication, and offerings to the various deities differed only in detail but

*Assisted in part by the facilities of the Libraries of the University of Pennsylvania and The University of Texas Medical Branch. Address: 7043 Elmwood Ave., Philadelphia, Pa.

not in primitive ideology from practices of like import among the Greeks, let us say, with their votive offerings or the African savages with their gifts to the spirits that enliven the environment about them.

If there was no specialization of pediatric practice among the Indians, nevertheless there were many facts to be gleaned from the literature which should be of particular interest to those concerned with child welfare.

Concerning the primordial state of the inhabitants of the Western hemisphere it is of course difficult to determine much more than is conjectural. Most of our knowledge about these prehistoric peoples derives from a study of skeletal remains, and students of paleopathology are unhappily lacking in unanimity concerning the interpretation of osseous changes found in pre-Columbian remains. However, such study is not entirely devoid of value, even if at times productive of conflicting opinion. In examining hundreds of skulls of ancient pre-Columbian Peruvians at the National Museum at Lima, Dr. William T. Corlett of Cleveland, Ohio, was amazed at the unusual amount of skull deformation brought about by binding the head in infancy, while the bones were still soft and pliable, until the desired shape was produced (Corlett, 1935). In a cemetery of four hundred mummies spoken of as the "great Necropolis" in the slope of the Cerro Colorado all the skulls were found to have been artificially elongated. This custom of shaping the heads of Indians is, and probably was, done for cosmetic purposes and was widely practiced throughout the world.¹ The belief of the American Indian in the ability to mold and shape the growing body to the desired form is curiously illustrated in the tale of Francisco Chicorana. He

¹I can still remember my mother advising her friends with young infants to mold their skulls gently so that they should have "nice, round heads." The so-called Thessalic method of binding was condemned by Soranus as cruel and burdensome. This method, similar to that of the American Indians, must have been a common primitive one. Thracians and Macedonians also bound the infants to a board.

Hippocrates in Chap. XXI of *Airs, Waters and Places*, describes artificial elongation and molding of the heads of infants and says that in the land of the Macrocephalics, those persons endowed with long heads are classed as belonging to the noblest race. Certain tribes of Solomon Islanders likewise are proud of their artificially produced, gourd shaped heads.

was an Indian captive of the early Spaniards from Chicora (Carolina) in 1521. According to Francisco's fanciful tales, the people of Chicora were governed by a giant king called Datha whose enormous size was not natural but had been produced by softening and stretching his bones. Then again, an evident reference to the practice of moulding the feet of infants occurs in Radisson's account of his third journey in the Great Lakes region about 1658-1660, wherein he stated: "All knowes there one another by their march, for each hath his proper steps, some upon their toes, some on their heele, which is natural to them, for when they are infants the mother warpeth them to their mode."

Among the Songish Indians of British Columbia there is a saying: "Tous o'wana tans KsEtctca'ai,"—"as if no mother had made you look nice." Doctor Boas describes the Indian practice of "making the child look nice" as follows:

"As soon as it is born, the mother rubs it from the mouth toward the ears, so as to press the cheek-bones somewhat upward. The outer corners of the eyes are pulled outward that they may not become round, which is considered ill-looking. The calves of the legs are pressed backward and upward, the knees are tied together to prevent the feet from turning inward, the forehead is pressed down." Among the Nootka Indians, according to the same authority: "Immediately after birth, the eyebrows of the babe are pressed upward, its belly is pressed forward, and the calves of the legs are squeezed from the ankles upward. All these manipulations are believed to improve the appearance of the child. It is believed that the pressing of the eyebrows will give them the peculiar shape that may be noticed in all carvings of the Indians of the North Pacific Coast. The squeezing of the legs is intended to produce slim ankles" (Chamberlain). Even today, the Indians of Oklahoma direct that to shape a baby's head round, press its forehead with the right hand, the back of the head with the left three times a day for four weeks. An infant's nose, they say, may be shaped by pinching it gently several times a day. The so-called Flat head tribes of Vancouver Island and the Chinook,

Nootka and Salishan tribes of the Columbia River country deformed the heads of their infants by strapping them between two boards which met at the top, or else compressed them with pads causing the forehead to slope sharply back from the eyebrows (Darby, 1933). The Coshuttas (Kaosoti) lived about 50 miles up the Trinity River in Texas. Flattening of the head among them was not a religious procedure but rather done for the cosmetic effect. The Coshutta's technique was as follows: The infant, after ten days, was taken from the mother's breast and strapped on a board as a cradle. A small concavity at one end of the board served to hold a lump of wet clay in which the infant's head was imbedded, the infant lying on its back. Another lump of clay was strapped or tightly bandaged over the infant's forehead, the bandage being gradually tightened as the soft skull yielded to the pressure. In 1820, head-flattening was practiced by the Koosoti and a few of the Bidai, but not by the Carancahuas, Coker, Cujanos or Tonkaways (Dyer, 1916). De Soto observed this practice among the Indians of Florida; it was reported among the Choctaws, Chickasaws, the Waksaws of North Carolina, the Creeks, the Muskogees around the Gulf of Mexico, the Natchez, Catawbias, Attacapas of the west bank of the Mississippi, and among the Solkeeks in Northern Louisiana. In Central America the custom was found among the Caribs and upon images on ancient Mayan remains, as well as among the ancient Zapoteks, predecessors of the Aztecs of Central America. It was interdicted by a Synod of 1585 under pain of heavy punishment among the Peruvians (Ploss, 1876). Another reason for this treatment of the skull may have been based upon primitive desire to aid in the closure of the sutures, gathering in the bones of the head, as the Finns expressed it. Among the Lummi Indians of Northwest Washington the head is flattened as a sign of rank (Stern, 1924). The Chinooks, of Oregon, also compressed the head to shape it in a peculiar way, but this was not permitted to the children of their slaves. This practice is also known in other parts of the world. Other forms of binding were practiced; the Kutchins bandaged their feet in order to keep them small and the Flat-heads and Pend d'Oreilles bandaged the waist and legs of

infants with a view to producing broad-shouldered, small-waisted and straight-limbed adults. The Pericuis and Guaicuris fixed sand bags to the chest of their male infants to prevent the breasts from growing like a woman's, which they considered a deformity. Skull deformation was not observed among those Caribs who bound the legs of their children as described by Humboldt. It was common, however, among the Caribs of Parima and French Guiana. In some osteological collections, skulls supposed to be those of Caribs of the island of St. Vincent are in fact skulls shaped by having them pressed between planks. They have belonged to Zambos (black Caribs) who are descended from Negroes and true Caribs. The barbarous habit of flattening the forehead is practiced by several nations, of people not of the same race. Nothing is more vague than the conclusion that some degree of conformity in customs and manners proves identity of origin. Walckener reported head flattening among the Tapoyranas of Guiana and the Solkeeks of Upper Louisiana. The Indians of Cumana, says Gomara, press down the heads of young infants tightly between cushions stuffed with cotton, for the purpose of giving width to their faces, which they regard as beauty. The young girls wear very tight bandages round their knees in order to give thickness to the thighs and calves of the legs (Humboldt, v. 3, p. 85).

Humboldt in his travels met some Caribs of Panapana near the port of Encaramada in Northern South America who were of pure race but, unlike their ancestors from the West Indies whose skulls preserved in the collections of Europe showed evidences of head flattening, these had well rounded foreheads. These women, who were very tall and disgusting from their want of cleanliness carried their infants on their backs. The thighs and legs of the infants were bound at certain distances by broad strips of cotton cloth, and the flesh, strongly compressed beneath the ligatures, was swelled in the interstices. The Caribs attached great importance to certain configurations of the body and a mother would be accused of culpable indifference toward her children if she did not employ artificial

means to shape the calf of the leg after the fashion of the country.

"We observed with pain the torments which the Carib mothers inflict on their infants for the purpose not only of enlarging the calf of the leg but also of raising the flesh in alternate stripes from the ankle to the top of the thigh. Narrow ligatures consisting of bands of leather or of woven cotton, are fixed two or three inches apart from each other and being tightened more and more the muscles between the bands become swollen. I observed, however, with surprise that the manner in which these children are bound, and which seems to obstruct the circulation of the blood, does not operate injuriously on their muscular movements. There is no race of men more robust and swifter in running than the Caribs" (Humboldt, v. 3, p. 84).

In examining the skeletal remains exhibited by the Peruvian collection, Dr. Corlett noted especially the evident high rate of infant mortality. Many of these deaths he thought were due to negligence, improper diet and undue exposure to the elements. Many of the diseases more peculiar to childhood would leave no mark upon the skeleton. Hydrocephalus is suggested by the shape of several ancient infant mummies in South America. In common with the rest of the New World, rickets does not seem to have been present in the Peruvian region, but a disease of which we do have evidence in the bony frame of the individuals, resembling rickets in its tendency to attack the young, is called symmetrical osteoporosis. A theory has been offered that a diet restricted chiefly to corn and lacking such elements as calcium, phosphorus and vitamins C and D, as would be found among a strictly agricultural population, was responsible for the disease. The osseous signs include the formation of honeycomb-like patches in the skull with spongy thickening of the bone layer. The disease is labeled "symmetrical," because it presents itself on both sides of the skull and usually proceeds from the roof of the orbit to the parietal and occipital bones. The individual having survived to adult life, the skull shows a transformation of the outer spongy bone to more compact tissue with sieve-like

evidence of the ravages of the disease (Corlett, 1935). This condition is described by Roy L. Moodie also as occurring among the Ancient Egyptians, and he classes it, too, as a nutritional disturbance, evidently having its inception in infancy or early childhood (Moodie, 1923).

In the "Neanderthal Man," which in reality consists of some portions of a skeleton of extinct species of man found in a cave in the valley of the Neander River in the Rhine Province of Prussia, Rudolph Virchow thought that the condition of the bones indicated rickets. If so this would be the oldest evidence of rickets in man; but Schwalbe restudied the question and decided that there was no evidence of malnutrition and his conclusions are widely accepted (Moodie, 1923). Ruffer, in a study of skeletons of various dates (712 to 550 B.C., and 100 B.C. to 300 A.D.), found two bones showing deformities due to rickets (Moodie, 1923), and the disease was found in the skeleton of an ape of ancient Egypt, yet on the whole, early skeletal remains do not often show evidence of rickets in America or abroad. Even among the skeletal remains of the mound builders of ancient times in the Mississippi Valley there is no definite evidence of rickets. However, in the United States Army Medical Museum there is a deformed radius of a youth aged about 19, which is labeled "probably rickets." The osteologic collection of the United States Medical Museum also contains a skull of a pre-Columbian boy of Peru, age about 5 years, which is typically rachitis, labeled "rickets and probably syphilis" (Foote, 1927). In addition to rickets it is curious to note that there are little clay images found in the graves of children in Tennessee, Arkansas and Missouri which are faithful representations of persons afflicted with Potts disease, and many of the water bottles from the stone graves of Tennessee and from mounds of Missouri represent women with hunchbacks; but since tuberculosis of the spine is seldom indicated in skeletal remains, it is possible that the clay images represent other spinal deformities (Moodie, 1923). Club foot occurred in Peru as shown in Inca huacos, and harelip has been noted in Inca skulls. Thus we see that very few traces of

diseases in prehistoric infants have left their imprint upon the records of time.

There is considerably more information about the medicine of the American aboriginals from the time of the coming of the white man on to the present. Eric Stone, William T. Corlett and others have written extensively on the subject. But no one, so far as I know, has laid any particular emphasis upon the care of the child. It is only from fragmentary passages hit upon by chance reading here and there that we are enabled to piece together the manners and customs of the Indians relevant to the infant and child in health and in disease. The ubiquitous Dr. Benjamin Rush, whom we shall meet often in various fields of our study of the early American Pediatric literature, in writing "An Inquiry into the Natural History of Medicine Among the Indians of North America" which he read before the American Philosophical Society of Philadelphia on the fourth of February, 1774, revealed some of his pediatric beliefs: "I. Of the birth and treatment of their children.

"Much of the future health of the body depends upon its original stamina. A child born of healthy parents always brings into the world a system formed by Nature to resist the causes of diseases. The treatment of children among the Indians tends to secure this hereditary firmness of constitution. Their first food is their mother's milk. To harden them against the action of heat and cold (the natural enemies of health and life among the Indians) they are plunged every day into cold water.² In order to facilitate their being moved from place to place, and at the same time to preserve their shape, they are tied to a board, where they lie on their backs for six, ten or eighteen months. A child generally sucks its mother till it is two years old, and sometimes longer. It is easy to conceive how much vigor their bodies must acquire from this simple, but wholesome nourishment. The appetite we sometimes observe in children for flesh is altogether artificial. The peculiar irritability of the system in infancy forbids stimulating

²Galen censured the Germans who ducked their newborns into ice cold water as an ordeal to eliminate weaklings.

aliment of all kinds. Nature never calls for animal food, 'till she has provided the child with those teeth which are necessary to divide it. I shall not undertake to determine how far the wholesome quality of the mother's milk is increased by her refusing the embrace of her husband during the time of giving suck" (Rush, 1805).

The hardening process of the child, instituted in the new born with its first bath, is frequently mentioned by many observers, and infanticide among the early primitive tribes was not uncommon. Deformed children were not often seen among the Indians, and the inference has been that the weak or congenitally defective were destroyed at birth or soon after. Among the Indians on the Amazon River the child was exposed to a test for the right to survival; all infants immediately after birth were submerged in a stream, but the deformed children were never pulled out again. The primitives everywhere had a horror of malformations (Miller, 1928). Cieza referred rather credulously, though in detail, to the monsters among the Cuzco Indians born from sexual intercourse with monkeys in the case of men, and with dogs in the case of women (Moll, 1944). Among the Santee, Crees, Muscogees and Assiniboin, children deformed or blemished after delivery were killed or received a special name for their peculiar feature. If a deformed child was born to a mother of the Mosquito group of Central America, it would receive a nickname that would be a disgrace to the family. During childbirth the woman remained in seclusion in a hut in the forest where it was easy for her to dispose of a deformed child, and it is believed that this was usually done to avoid such disgrace. Alexander Von Humboldt (*Personal Narrative of Travels to the Equinoctial Regions of America, During the Years 1799-1804*) saw no person among the Chaymas, Caribs, Muyscas, and Mexican and Peruvian Indians during the course of five years who had any natural deformity. Bodily deformities and deviations from nature, he declared, are very rare among certain races of men, especially those who have the epidermis highly colored. He reasoned that among primitives a deformed or very unhealthy woman did not succeed in acquiring a mate and died childless; with copper

colored men, as with whites, he thought, luxury and effeminacy weakened the physical constitution and therefore deformities were more common at Cuzco and Tenochtitlan where Bernal Diaz saw dwarfs and hunchbacks waiting at the tables of Montezuma. In a village of 2000 pure blooded Indians and halfbreeds in the eastern border of Peru, an observer had never seen a deformity in Indian children, nor had Padre Ignacio, the parish priest, during a residence of nine years (Corlett, 1935). Samuel R. Lothrop, connected with the mission among the Valigan and Ona Indians, believes that abortion and the abandonment of children among these South American tribes was of no infrequent occurrence. Thomas Whiffen, writing of the Indian tribes of the Northwest Amazon region found that Bush-deer, as a food, was tabooed to all women after marriage among the Kuretu-language group, because they believed it would make the infant deformed, and no greater disgrace could befall a Kuretu woman than to be the mother of a deformed child. Even twins, which are not in good form among them, can be condoned, but a deformed child cannot be disposed of without exciting gossip. The accidental death of one of the twins is regulated by good usage. Thus the second child, if of the same sex, is considered an interloper with no right to live; if a boy and a girl are born, the girl is sacrificed, regardless of which is born first. Since birth for the most part takes place in the bush with but one trusted female attendant, it is not difficult to cleanse hands thus steeped in human blood (Corlett, 1935). Las Casas tells of a Cuban Indian who had quintuplets in the sixteenth century. What feelings such an event must have stirred up in the primitive minds! Twins usually were regarded as uncanny and were rather feared as possessing occult power. With some Oregon tribes and other West Coast tribes they once were regarded as abnormal and one or both were killed. When twins were born among the Indians of Guiana, in South America, false notions of propriety and family honor required that one of them should be destroyed. "To bring twins into the world," said the Indians, "is to be exposed to public scorn; it is to resemble rats, opossums and the vilest of animals" (Humboldt, v. 2, p. 248).

Nay, more, they affirmed that "two children born at the same time could not belong to the same father." This was an axiom of physiology among the Sulives, a tribe inhabiting the equinoxial regions of South America. To avoid the disturbance of conjugal tranquility the old female relations of the mother took care that when twins were born, one of them should disappear. If a new-born infant, though not a twin, had any physical deformity, the father instantly put it to death. They would have none but robust and well made children, for deformities indicated to them some influence of the evil spirit Ioloquiamo, or the bird Tikitiki, the enemy of the human race. Sometimes children of a feeble constitution had to undergo the same fate. While the action would be disavowed by the perpetrator, it was not considered criminal. These primitives killed their children to avoid ridicule or avoid inconvenience. These acts of cruelty were less frequent, however, than these accounts would lead us to believe.

The Paraguayan Indians defended their right to kill the newly born whenever they willed it. They claimed the right to the life which they had given. In the Chaco of Paraguay, the child was simply burned, there were no rites and no mourning beyond the death-wail of the mother. When a mother of a young infant died among the more backward Amazon natives, they threw such a child to wild dogs or buried it alive with its mother. The Malamutes, a tribe of Esquimos inhabiting the region of Norton Sound, prize boy babies, but frequently kill the girls, taking them out into the wilderness, stuffing grass into their mouths and abandoning them; yet children were highly esteemed, and the barren woman was a reproach among her people. Simpson affirmed that the Loncheux mothers originally had a custom of casting away their female children, but later it was done only by the Mountain Indians. Abortion and infanticide were not uncommon among the Haidah Indians of British Columbia, the Chinooks and others, especially if illegitimate. With the Pend d'Oreilles, another of these Columbian tribes, it was not uncommon for them to bury alive the very old and the very young, because they said, "These cannot take care of themselves, and we cannot

take care of them, and they had better die" (Bancroft, 1882). The Pericuis and Guacuris also have been known to abandon or kill their children when food was scarce. There was a tradition among the Indians of South America that a tribe of Amazons inhabited the Rio Cuchivero in Guiana. They were called Aiklambenanos which signifies "women living alone." Once a year they admitted men of the neighboring nation of Voklaros into their society and sent them back with presents. All the male children born in this horde of children were killed in their infancy (Humboldt, v. 2, p. 401). Several tribes in Guatemala were strictly opposed to marriage outside the tribe and would destroy the progeny left by a stranger. According to Hugo Reid, who derived his information from traditions, the natives of the region of Los Angeles were greatly terrified at the first sight of the Spaniards. Women used by the soldiers were obliged to undergo a long purification and for a long time every child with white blood in its veins was strangled (Bancroft, v. 18, p. 180). Among the Nishinain of California, custom provided that the relatives destroy the very young infant on the death of the mother. Some of the peoples of Central America also practiced such customs. When a mother died while suckling her infant, the living child was placed at her breast and buried with her in order that in her future state she might continue to nourish it with her milk. Among the Chiloctin Indians of Canada, the death of a mother during delivery led to burying the child in its cradle with the mother. In the Paraguayan Chaco, infants were murdered if either father or mother died at time of birth (Miller, 1928). Sacrificial burial of wives and children was also widely practiced. Blair Niles saw the mummy of an old man in an Ancient Peruvian cemetery with which had been buried five children, three of them babies, sacrificed evidently in honor of the exalted rank of the dead man. Samuel Lee observed that the Indian women in New England often poisoned themselves and their children if their husbands would not "owne" them (Publications of the Colonial Society of Massachusetts, 1913). During the siege of Mexico City by Cortes in 1521, it is stated by Indian authorities that among the besieged Aztecs

many a mother, in her agony, devoured the offspring which she no longer had the means of supporting due to the famished condition of the doomed inhabitants. This is recorded of more than one siege in history.

The initial cold bath was considered by some to be also a weeding out process, for only the hardiest babies were presumed able to survive the rigors of the cold bath. In writing home to the Society of Free Traders in England in 1683, William Penn also mentioned this custom: "I will begin with the children. So soon as they are born, they wash them in water, and while very young, and in cold weather to chuse, they plunge them in the rivers to harden and embolden them. Having wrapt them in a clout, they lay them on a straight thin board, a little more than the length and breadth of the child, and swaddle it fast upon the board to make it straight; wherefore all Indians have flat heads; and thus they carry them at their backs. The children will go very young, at nine months commonly; they wear only a small clout round their waist till they are big" (Meyers, 1912). That the Aborigines were as kindly concerned about their young as any others of the human race is shown when he writes further: "In sickness impatient to be cured, and for it they give anything, especially for their children, to whom they are extremely natural." As a rule, both parents were alike equally devoted to their children and bestowed upon them the fullest expression of affection and solicitude. Lewis and Clarke stated that Indian children were never flogged as it was thought to break their spirit.

While two early American travellers were in the house of some Indians, a little naked child fell from its mother's lap and received a cut in its head, whereupon all who sat around that fire and belonged to that household, husband, wife, young and old, began to cry and scream more than the child, and as if they themselves had suffered serious injury (Dankers, 1867). Pastorius, writing of the same tribes in 1697, stated: "They love their children passionately. They bind them on shingles as soon as they are born. When they cry the mothers move them rapidly to and fro, and so quiet them, and although

they are still young they plunge them into the warm rivers that they may so much sooner grow strong. In their infancy they are made to catch fish with their hooks; afterwards, when they grow stronger, they train themselves in the hunt" (Meyers, 1912). He also mentioned that they frequently greased their children with a fat of bears and other animals, so as to make their skin dark, he thought. An even earlier description of the swaddling of Indian infants was written by Peter Lindestroem in 1653:

"As soon as the children are born to the world the savage female takes the child and binds it to a piece of board, which is just as long as the child, with three long braids, and does not place the smallest particle of clothing under or above the child. The first braid she wraps over the forehead and around the board, the second braid, right over the arms and the board, the third braid right over the knees and the board, tying it right strongly to the board. The savage female never loosens it from the board, while it is quite young, except when she must do so for sanitary reasons. Nor do we ever hear their children cry or whine like the Christian children, but they are very patient. But when some illness attacks them then they lament so miserably and quietly with a soft sound. However, they show themselves very tender towards their children. When now the children finally get out of this swaddle, they carry their children with them on their backs just like the gypsies do" (Johnson, 1925).

Young Indian mothers sang to their babies to put them to sleep and had many stories which they told to children a little older with the same purpose. The tales were usually about small animals; about the mice, the little squirrels or the chipmunks.

The Indian infant's education began at an early age, its mother teaching it first to keep quiet. Crying babies were hushed, or, if they did not cease their noise, were taken out of the lodge and off into the brush where their screams would not annoy anyone. If older children were talking and a tiny child entered the lodge and began to talk to its mother, she held up

her finger warningly and it ceased to talk or else whispered its wants to her. Thus the first lesson that the child learned was one of self control; self effacement in the presence of its elders. It remembered this all through life.

Children, as well as women, were universally exchanged, adopted, bartered or sold into slavery, frequently for trivial amounts. Among the Utahs, great numbers of children were sold to the Navajos for blankets. An act was passed by Utah in 1852 legalizing slavery, which set forth that from time immemorial slavery had been a customary traffic among the Indians; that it was a common practice among them to gamble away their wives and children into slavery, to sell them into slavery to other nations, and that slaves thus obtained were barbarously treated by their masters; that they were packed from place to place on mules; that these unfortunate human beings were staked out to grass and roots like cattle, their limbs mutilated and swollen from being bound with thongs; that they were frozen, starved, and killed by their inhuman owners; that families and tribes living at peace would steal each other's wives and children and sell them as slaves. In view of these abuses it was made lawful for a probate judge, or selectmen, to bind out native captive women and children to suitable white persons for a term not to exceed twenty years (Bancroft, 1882). The Comanches, too, were notorious for their traffic in children. They not only stole children from other tribes and sold them, but carried on a most unnatural traffic in their own offspring.

The care of the newborn among the early New England Indians was described by the observant Rev. Lee as follows: "They wash them and put up their heeles to their nates and tye ym downe to a board and tis thought is ye cause they never are bursten; and when fowle wipe ym with mosse and tye them up againe and carry ym at yr backs" (Publications of the Colonial Society of Massachusetts, 1913).

George J. Engleman, whose book on Labor among Primitive People is a prerequisite in the study of the mother and child among the American Indians, gives a very full account

of the care of the new born. From an "Early History of Virginia" the initial bath and swaddling of the baby is described as follows: "The manner in which they treat their young children is very strange, for instead of keeping them warm at their first entry into the world, and wrapping them up in I don't know how many cloths, according to our fond custom, the first thing they do is to dip the child over head and ears in cold water, and then bind it naked to a convenient board, having a hole fitly placed for evacuation, but they always put cotton, wool, or other soft things for the body to rest on between the child and the board. In this posture they keep it several months, till the bones begin to harden, the joints to knit, and the limbs grow strong. Then they loosen it from the board, and suffer it to crawl about, except when they are feeding or playing with it. While the child is thus on the board, they either lay it flat on its back, set it leaning on one end, or hang it up by a string fastened to the upper end of the board, the child and board being all the while carried about together. As our women undress their children to clean and wash their linen, so they do theirs to wash and grease them. The method the women have of carrying their children after they are suffered to crawl about is very particular. They carry them at their backs in summer, taking one leg of the child under their arm and the counterarm of the child in their hand over the shoulder, the other leg hangs down, and the child all the while holding fast with its other hand. But in winter they carry them in the hollow of their match-coat at their back, leaving nothing but the child's head out." This is reminiscent of the picture of the Esquimo squaw and child, with which everyone is so familiar. Simpson stated that the Esquimo women carry their infants between their reindeer-skin jackets and their naked backs (Bancroft, 1882). This would, of course, afford the child the warmth of its mother's body, a most effective means of doing so. Many of the other North American mothers also carried their children about in somewhat similar fashion, either bound in a blanket or slung in some kind of basket bag. The child was tucked away in an equally peculiar manner by some of the Polar tribes of Russia; until it begins to crawl it is placed in a

fur sack and carried by a strap about the mother's forehead. Later it is sewn up in a fur garment of one piece; for the sake of cleanliness a doorway is left in the posterior portion which is opened as necessity demands, but the garment is not once removed or changed until outgrown by the child. With such a practice in vogue one can readily believe that lice and typhus were common concomitants in afflicting these poor youngsters. Indeed the universal prevalence of the body louse among the American Indians leads me to believe that many of the devastating epidemics of measles that killed off so many of the natives of all ages were in fact typhus fever.

In Chile, the Araucanian Indians wrapped their children after birth in a woolen cloth, and a box bedded with the same material formed their crib. This the mother slung over her back. Little care was given to the rearing of children by these Indians and the death rate was high (Corlett, 1935). Old people of the Cheyennes told Grinnell that in earlier days when the tribe lived in lodges and moved about over the prairie, a large proportion of the children born in winter died. It can readily be understood that while living this nomadic life, it might have been very difficult to protect newborn children from the cold.

Father De Smet, a Jesuit missionary who travelled among the Western Indians of the United States in the 1840's gave the following picture of the care of the child. "In general great attention is paid to the physical development of the children and they are prepared from their tenderest infancy for the hardest kind of life. As soon as the child is born, in whatever season, regardless of the severest cold or the greatest heat they at once plunge it several times into water. Then, suitably wrapped up it is placed and entrusted in the hands of some other nurse than its mother. After the first week, its parents take it back and it is put into the cradle or berceau, a machine that deserves to be patented and which the little individual does not leave until he is able to walk. This is the simple construction of it; a small hide covered board about a foot longer than its little occupant. The child is placed upon it and tied tightly with bandages beginning with the legs and covering

it to the shoulders; they are made tightest about the loins and the pit of the stomach, in order to force out the chest as much as possible. Neatly arranged in this style, the little party occupies a place in the lodge out of harm's way. When the weather is fine, he is set in the doorway of the lodge. If the nurse goes away she hangs the cradle to the branch of a tree where the baby warms himself tranquilly in the sun, or on hot days is in the shade, and is in no danger from dogs, wolves or snakes which are often plentiful in the neighborhood. When they travel, the cradle is hung from the saddlebow where it is out of the rider's way and offers no danger to the little prisoner."

In 1863, Dr. W. P. Melandy, describing the Indian obstetrical procedure as observed at the Round Valley Reservation of California, reported that the new born baby seldom was washed, but after being wiped he was wrapped in a blanket then placed in a specially formed basket in which he was carried about on his mother's back for five or six months. The Indians of Southern California were aware that medicine given to a mother would affect her suckling babe. They bathed their infants three times a day for five or six months, beginning when it was five or six days old. When it was aged one month, it was 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 or run about for a short time each day. In consequence of this hygienic custom, a stooped or bowlegged Indian seldom was seen. Chorea was never heard of among them, he averred (Bard, 1894). However, many Indians, especially of the more Northern families, were described as being bow-legged, but this usually was attributed to the manner of squatting while riding in their canoes. An anonymous writer who lived among the Indians of the central plains just after the time of the Civil War gave the following description of the Indians: "The love of an Indian mother for her child is made plain to us by the care and labor which she often expends upon the cradle: The choicest production of her skill in grass and woolen weaving, the neatest needlework, and the richest bead embroidery that she can devise and bestow are

lavished upon the quaint-looking cribs in which the savage mothers nurse and carry their little ones around. The governing principle of a papoose cradle is an unyielding board upon which the baby can be firmly lashed at full length on its back. This board is usually covered by softly dressed buckskin, with flaps and pouches in which to envelop the baby; other tribes, not rich or fortunate enough to procure this material, have recourse to a neat combination of shrub-wood poles, reed splints, grass matting and the soft and fragrant ribbons of the bass or linden tree bark. Sweet grass is here used as a bed for the youngster's tender back, or else clean, dry moss plucked from the bended limbs of the swamp firs; then, with buckskin thongs or cords of plaited grass the baby is bound down tight and secure.

"Indian babies, as a rule, are not kept in their cradles more than twenty to twenty-four consecutive hours at any one time; they are usually unlimbered for an hour or two every day, and allowed to roll and tumble at will on a blanket, or in the grass or sand if the sun shines warm and bright. The moment a baby begins to fret or whimper the mother claps it back into its cradle, where it rests with emphasis, for it can there move nothing save its head.

"When the papoose is put away in its cradle the mother has little or no more concern with it other than to keep within sight or hearing. If she is engaged about the wigwam or in the village, she stands it up in the lodge corner, or hangs it to some convenient tree, taking it down at irregular intervals to nurse. When she retires at night, the baby is brought and suspended at some point within easy reaching; if the baby is ill, it is kept at her side, or she sits up all night with it in the most orthodox fashion. When the women travel, the cradles, with the babies therein are slung upon the mothers' backs, and carried, no matter how far, how rough the road, or how dismal the weather" (Wild Babies, Harper's New Monthly Mag., 1878). An interesting and familiar device was used by some of the Indians living about Vancouver Sound. Infants, properly bound up with the necessary apparatus for head-flattening, were tied to the cradle or to a piece of bark and hung by a

cord to the end of a springy pole kept in motion by a string attached to the mother's great toe (Bancroft, 1882).

The Jivaro mothers along the Amazon and the Camacans in Brazil always carried the child on their arms. Among the extinct Incas of Peru the mothers were forbidden to carry their infants out of fear that this would soften them, the little child was set in a hole in the ground or placed in a cradle, but never allowed in the arms of its mother; even the prince royal was never carried about in arms. Among some of the Indians of California as soon as the child saw the light of day, it never got any other bedding than the hard ground, or the mother placed it in a turtle shell which was harder yet, and in this shell carried it around. However, in order not to deprive it of the freedom of its limbs, when the mother went out upon the fields she turned the child over to an old woman who often left the poor creature without any care for more than ten hours. When the child was a few months old the mother placed it, naked, astride her shoulders with its legs hanging down in front of her; thus the child learned to ride before it could even stand on its legs (Ploss, 1876).

Richard Matthews Hallett, in a delightful and adventurous book called "Michael Beam," a story of the early settlements of the middle west, described a cradle-board or baby frame as being perhaps two feet long, with a curved piece of board at one end to hold the child's feet, and a hoop at right angles above the other end. This hoop would serve as a support for a blanket in winter or a cloth in summer. A sort of spider web of red cords was hung on the hoop to catch evils that might threaten the child. The board was painted in brilliant reds and blues. This cradle was lovingly prepared by the expectant mother long before her baby was born.

The expectant Indian mother also gathered moss of the sort that grew in cranberry marshes; she dried it over a fire to destroy any insects, and then rubbed and pulled it apart until it was soft and light. When the weather grew cold, she would wrap her baby's feet in rabbit-skin with the hair inside, or in the soft down of cat-tails. The moss would be used to cleanse the infant. According to F. W. Hodge (1907), among some

tribes, notably those of the North American plains, in anticipation of the new arrival, the father prepares the wooden frame of the cradle which is to be its portable bed until it is able to walk. The body of the cradle, with its ornamentation of bead or quill design, fringes and bangles, is made either by the grandmother or by some woman noted in the tribe for her superior skill. One cradle often was used for successive infants in the same family.

The parts of the cradle as enumerated by Hodge, are the body, the bed, the covering, the pillow and other appliances for the head, including those for head flattening, the lashing, the foot rest, the bow, the awning, the devices for suspension, and the trinkets and amulets such as dewclaws, serving for rattles and moving attractions as well as for keeping away evil spirits. Cradles differed in form, technic and decoration, differing with the demands of the indigenous culture and environment. The Canadian and Alaskan Indians used birch bark while the Pacific Coast Indians were borne in wooden cradles or baskets of woven bark on beds of the shredded bast. In the Southwest, the baby-board had a cover of matting. The bark cradles of the interior of Alaska and the Mackenzie River basin were made of a single piece of birch or other bark bent into the form of a trough, with a hood and tastefully adorned with quill work. The bed was of soft fur, the lashing of babiche, thongs of skin, particularly of eel skin. They were carried on the mother's back by means of a forehead band.

Skin cradles were adapted in the areas of the buffalo and other great mammals. The hide, with the hair on, was rolled up, instead of the bark and in much the same way, to hold the infant; when composed of hide only they were seldom decorated. On the plains, cradles were made of dressed skins lashed to a lattice of flat sticks, especially among the Kiowa, Comanche and others. Over the face was bent a flat bow adorned with pendants or amulets. The whole upper surface of the hide was a field of beadwork, quill work or other decoration, in which symbolic and heraldic decorations were wrought. The frame was supported and carried on the mother's back

or swung from the pommel of a saddle by means of bands attached to the lattice frame in the rear. Among some tribes, the upper ends of the frame projected upward and were decorated. Among the Iriquoian and Algonquian tribes of the East, a thin, rectangular board took the place of the lattice. It was frequently carved and gorgeously painted, and had a projecting footrest. The bowl was also bent to a right angle and decorated. The infant, after swaddling, was laid upon the board and lashed fast by means of a long band. The tree for the Pawnee cradle-board was carefully selected, and the middle taken out so that the heart or life should be preserved, or else the child would die. Equal care was taken that the head of the cradle should follow the grain. The spots in the wildcat skin used for a cover symbolized the stars, the bow the sky and the crooked furrow cut thereon signified the lightning whose power was typified by the arrows tied to the bow. All the parts were symbolic.

On the North Pacific coast the infant was placed in a little box of cedar; the region furnished the material and the *adz* habit, acquired in canoe excavation, made the manufacture easy. Interesting peculiarities of these cradles are the method of suspending them horizontally, as in Siberia, the pads of shredded bark for head flattening, and the relaxation of the child's body in place of straight lacing. Decorative features were almost wanting. Closely allied to these dugout cradles and similar in arrangement of the parts were those found in contiguous areas made from the bast of cedar. In British Columbia the dugout cradle was beautifully copied in coiled work and decorated imbrications. Along the Pacific slope the basket cradle was common. The Salish developed such variety in basketry technic that mixed types of cradles were not surprising. The Yuman and Wichita tribes made hurdle cradles consisting of a number of rods or small canes or sticks arranged in a plane on an oblong hoop and held in place by lashing with cords or splints with the bed made up of shredded cottonwood bast. The Apache, Navaho and Pueblo tribes combined basket, hurdle and board cradle, the Navaho covering the framework

with drapery of the softest buckskin and loading it with ornaments. The ancient cliff dwellers used both the board and the hurdle forms. Here and there were tribes that placed their infants in network or wooden hammocks suspended by the ends. In these the true function of the cradle as a sleeping place was better fulfilled, other varieties serving rather for carrying.

Among the San Carlos Apache, at least, the cradle was made after the baby was born, to fit the body; later on a larger one was prepared. The infant was not placed into the cradle at once after its initial bath; a certain number of days elapsed and then it was done with appropriate ceremonies. When the mother was working about the home the infant was laid on a robe or mat and allowed free play of body and limbs. The final escape from the cradle was thus gradual, the process taking a year or more.

In many tribes scented herbs were placed in the bedding. Among the Yuma, difference was sometimes made in adorning boys' and girls' cradles, the former being much more costly. Some tribes made a new cradle for each child, but among the Pueblo tribes, particularly, the cradle was a sacred object, handed down in the family and the number of children it had carried was frequently shown by notches on the frame. It was believed its sale would result in the death of the child. If the infant died the cradle was either thrown away (Walapai and Tonto), broken up, burned or placed in the grave (Navaho and Apache) or buried with the corpse, laced up inside as in life (cliff dwellers, Kiowa).

Writing of the Winnebagoes, Surgeon David Day gave it as his opinion that the large percentage of deaths which occurred in the early periods of life among these Indians was abundantly accounted for by the Spartan treatment to which they were subjected in infancy. In this tribe, as soon as an infant was born it was laid on a board which previously had been covered with a few folds of blanket; then with a strip of cloth, 2 or 3 inches wide, it was as amply and securely bandaged from head to foot as an Egyptian mummy and then strapped to the board, care being taken always to include the arms,

which were extended upon the sides of the infant, and nothing left out of the bandage but its head. In this straightened position they spent the greater part of the first year of infancy, remaining at times for weeks without being taken from the board. The effect of this cradle with the heavy woolen bandages was to interfere with, if not entirely preclude, the healthy functions of the skin. The excrements of the child's body collected, excoriated the skin, and kept up a constant irritation. The motions of the limbs—the only voluntary exercise an infant could have and one so necessary to the development of its physical powers—having been entirely precluded, it soon became weak and enfeebled. But the most pernicious effect of strapping their infants upon these boards was exerted upon the brain. Being always laid upon their backs, with little or nothing between the hard board and the imperfectly ossified head, the continued pressure exerted by the weight of the head almost universally produced a displacement of the occipital bone inwards, causing trismus nascentium, paralysis, etc., and deranging the functions over which the cerebellum presides. They thought it a mark of comeliness to have the head perfectly flattened behind, and the Indian mothers showed much anxiety in this respect (*The Scalpel*, 1858). Daniel Drake also mentioned this flattening of the occiput of babies among the Natchez Indians of the interior valley.

Among the Sioux, Crows, Creeks and other North American Indians, as well as among some South American tribes, the mother plunged into the stream immediately after delivery, or if no running water was at hand, at least dipped the child in cold water as soon as it was born. The Apache Indians along the Colorado River, in place of the first bath, powdered the newborn baby with dry sand (*Ploss*, 1876). Among the Crows and Assiniboines, when a baby was born the umbilical cord was cut with a new butcher-knife, the stump was well greased, and the infant was then thrust into a laced sack made of blue cloth containing pulverized bull's manure or the inside bark of the cottonwood tree. This lining, with the child's discharges, was changed three or four times daily. When the stump of

the cord dropped off it was preserved in a beaded pouch and worn about the neck or waist as long as the person lived (Currier, 1891). The Mayan newborn had the cord cut with a stone, was bathed in warm water and buried to the neck under ashes to supply the lack of clothing (Moll, 1944). The birth of a son was celebrated with special rejoicings and extensive invitations issued for the feasts that took place on or about the day when the umbilical cord was to be cut, a ceremony which seems to have borne the same festive character as baptism among the Aztecs. Apparently the child remained with the navel string attached to it until a favorable day was selected by the Ahgih or astrologer for performing the ceremony of cutting it. The cord was laid upon an ear of maize to be cut off with a new knife and burned. The grains were removed from the cob and sown at the proper season, one half of the yield to be made into gruel and form the first food of the child aside from the mother's milk, the other half to be sent to the ahgih, after reserving a few grains for the child to sow with his own hands when he grew up, and make an offering thereof to his god.

Describing the birth of an infant to an Indian woman of the Illinois region in the days of the early American nation, Hallet pictured the old Indian woman in attendance as biting off the cord and cauterizing the stump with a live coal (Hallet). It is said of the Southern California Indians that as soon as a child was born, the mother herself tied the navel cord with a bit of buckskin string, severing it with a pair of sharp scissors prepared for the occasion, after which the end was burned with a coal of fire. The child was then thrown into the water; if it rose to the surface and cried, it was taken out and cared for. If it sank, there it remained and was not even awarded an Indian burial. A purification ceremony was then performed in which the mother and child participated. In the center of a hut a pit was filled with heated stones upon which herbs were placed, and the whole covered with earth, except a small aperture through which water was introduced. The mother and child stood over the pit wrapped in blankets and were soon in a violent perspiration. When they were exhausted

from the effect of the steam and heated air, they lay upon the ground and were covered with earth, after which they again took to the heated stones and steam. In some tribes the mother could hold no intercourse with her husband until the child was weaned. Among the Lummi Indians of Northwest Washington, when the child emerges from the womb, it is grasped by the right hand so that it will be right handed, or by both hands so that it will be ambidextrous. The navel cord is tied and cut and the baby bathed in luke-warm water, rubbed with dog-fish oil and wrapped with shredded cedar bark. The first feces of the baby is buried, not burned, to prevent the child's intestines from becoming weak (Stern, 1924). The Cheyennes and Arapahoes enveloped the child as soon as it was born in dry horse manure and did not wash it for several days. When a birth was about to take place among the Cheyennes, in more recent times, they had a bowl ready in which to wash the child, and a knife, in old times, of flint and later an arrowpoint was at hand to sever the umbilical cord, which was wrapped once about the finger and cut off short. The child was wrapped in a sheet or cloth, the inner surface of the legs being first dusted with powder from the prairie puffball, so that the tender skin should not chafe and the navel was dried with the same dust (Grinnell, 1923). Among the Hopi, ashes or sacred meal were rubbed on the newborn baby. On the first day of his arrival, the newborn Hopi's head was washed in soaproot suds and his diminutive body rubbed with the ashes, the latter it is alleged, to kill the hair, and his mother must also undergo the ceremonial head washing, which must be repeated on the fifth, tenth and fifteenth days with amole root, which is the only soap known to the Hopi.

Another writer states that the Hopi baby is first washed and dressed by its paternal grandmother or by one of her sisters. On the day of its birth she makes four marks with cornmeal on the four walls of the room. She erases one of these on the fifth, tenth, fifteenth and twentieth day of the child's life. On each of these days the baby and its mother have their heads washed with Yucca suds. On the twentieth day, which marks the end of the lying in period, the grandmother comes early,

bathes the baby and puts some cornmeal to its lips. She utters a prayer in which she requests that the child shall reach old age. Esther Goldfrank states that at the eastern Hopi pueblo of Cathiti, the pregnant woman keeps a perfect ear of corn in the house. After the baby is born she keeps a strong stick, the ear of corn and a light beside the baby until it is named, to ward off the evil spirits. The baby is washed in warm water, his head is washed and he is rubbed all over with oil. During the four-day lying in period a perfect ear of corn is kept beside the child and a small fire made from twigs kept burning. This may be used at any time to keep off the evil spirits. The Umpquas wrapped a newborn child in dirty rags and also put it away without washing. Among the primitive tribes that inhabit the region of Tierra del Fuego, the newly delivered mother, if near the sea or a river, plunged into the water for personal comfort, sometimes with the child in her arms. After this the child was placed between the breasts of the mother and covered with fine skins which had been especially prepared. This is in accord with Ratzel who says that the Fuegian woman has frequent and easy confinements, and to toughen the new born to withstand the rigors of the climate, when near the coast, it is immediately dipped into the sea (Corlett, 1935). The Ona mother of this same part of the world, in lieu of soap and when water is not at hand, covers and massages the child with white earth. Among some of the Eskimos, who are classified by ethnologists with the American Indians, the child is washed in snow, and is thus early in life, as in Tierra del Fuego, subjected to the most trying ordeals of nature. In spite of these hardships the race survives, although in many of the Northern climates it is gradually diminishing. Among the central Eskimos of Alaska the child is cleaned with a birdskin and clothed in a small gown of the same material. Then there are some Eskimos who lick their babies to clean them, lick them well over from head to foot as the cow does her calf (Chamberlain). The Iglurirmiut tribe of Eskimos swathe the child in the dried intestines of some animal. As soon as the Eskimo mother with her new born babe is able to get up and go out, usually in a few hours, the two are taken in charge

by an aged female *angekok*, who seems to have some particular mission to perform in such cases. She conducts them to some level spot on the ice, if near the sea, and begins a sort of march in circles on the ice, the mother following with the child on her back; this maneuver is kept up for some time, the old woman going through a number of performances, the nature of which could not be learned, and continually muttering something equally unintelligible. The next act is to wade through snow drifts, the aged *angekok* leading the way. We have been informed that it is customary for the mother to wade thus bare-legged. After a few days, or according to the fancy of the parents, an *angekok*, who by relationship or long acquaintance is a friend of the family, urinates into some vessel, and with the urine the mother washes the infant while all the gossips around pour forth their good wishes for the little one to become an active man, if a boy, or if a girl, the mother of many children. This ceremony, I believe, is never omitted, and is called "*qoqsuiariva*." Surely only the hardiest infant could survive such hardening procedures (Corlett, 1935).

Although the ancient Peruvians brought up their children with as little tenderness as possible, yet they never neglected continuously cleansing them. These inhabitants of the Inca empire washed the infant as soon as it arrived into the world, also with cold water, then it was bound in its wrappings; this was repeated every morning. If a mother wanted to give the baby a real treat, she took some water in her mouth and sprayed the child's whole body with it, except for the crown of the head which was never touched with water. The reason that they offered for this practice was that they accustomed the children in time to cold and discomfort and produced strong limbs (Ploss, 1876). Almost three months were allowed to go by before the arms were swaddled because they believed that the children might develop weak extremities from the wrappings. The Indians were not entirely unaware of the discomfort and unwholesome effects of uncleanness. Grinnell reported that each morning the Cheyennes, men and boys, some of them little fellows just able to walk, came from the lodges and hurried down into the stream to plunge into it.

This early morning bath was a regular practice. It was done at most seasons of the year but some omitted the bath in winter when the streams were frozen, while others broke the ice and bathed in the cold water. This they considered good for health, to make them hardy and also to wash away sickness. The custom was peculiar to men; women did not do it. The practice was similar to that of the Blackfeet (Cheyenne Indians, 1923). Other tribes believed that boys should wash in swiftly running streams so that evil spirits would be washed away; but girls could wash in stagnant water. With the weaker sex, it did not seem to matter. The Cheyennes would not use water to drink that had stood over night, however. They said they wished to drink "living water."

Among the Caribs dwelling in equatorial regions of South and Central America, the children were not bound but were allowed complete freedom to toss about in their little hammocks. A Brazilian Indian who attended his wife at her delivery placed the child, without swaddling it, in a little bed of cotton suspended in the air. Potherius observed North American Indians who merely draped the newborn infant in a beaver skin no matter how raw the weather. But this was not true with all tribes. More often the Dacotas and the Sioux placed the baby, right after birth in beds filled with down and soft feathers from geese or swans; then they wrapped it warmly in a cloth for a short time, perhaps an hour or so. The cloth was removed, the child was washed and wrapped again in the cloth with a new band. The Thlinkets of Alaska, placed the child upon a board and wrapped it in moose skin when it was a few weeks old, while the Nootkas, further south, rolled the new born child in a mat among feathers.

The varieties of cradles are almost endless. We have the "hood" (sometimes the "boot") of the Eskimo; the birch-bark cradle (or hammock) of several of the northern tribes (as in Alaska, or Cape Breton); the "moss-bag" of the eastern Tinne, the use of which extended to the employees of the Hudson's Bay Company; the "tough-cradle" of the Bilqula; the Chinook cradle, with its apparatus for head-flattening; the trowel-shaped cradle for the tribes of the Oregon coast, the

wicker-cradle of the Hypas; the Klamath cradle of wicker and rushes; the Pomo cradle of willow rods and wicker-work, with rounded portion for the child to sit in; the Mohave cradle, with ladder-frame, having a bed of shredded bark for the child to lie upon; the Yaqui cradle of canes, with soft bosses for pillows; the Nez Perce cradle-board with buckskin sides, and the Sahaptian, Ute and Kootenay cradles which resemble it; the Moki cradle-frame of coarse wicker with an awning; the Navajo cradle, with wooden hood and awning of dressed buckskin; the rude Comanche cradle, made of lattice-work and leather; the shoe-shaped Sioux cradle, richly adorned with coloured bead-work; the Iroquois cradle (now somewhat modernized), with "the back carved in flowers and birds, and painted blue, red, green and yellow." Among the Araucanians of Chili we meet with a cradle which "seems to be nothing more than a short ladder, with crossbars" to which the child is lashed. In the tropical regions and in South America we find the habit of "carrying the children in the shawl or sash, and bedding them in the hammock" (Chamberlain).

Among many of the primitive tribes, placing the baby in its cradle had a very special significance. When the babies of the ancient Mexicans were given names, the last of all the rites which the midwife conducted on behalf of the child was to ceremoniously place the infant in its crib. Standing before it, with the baby among a procession of torch bearers, she made a prayer to Yoalticitl, the goddess of the cradle, commended the child to her care and protection and then turned to the cradle which she thus addressed: "You, Mother, of the child, be kind to this little one and protect it so that no harm can come to it." She placed the child in the crib then, while the parents on their part prayed to Yoalticitl and spoke the same prayer. This ceremony was called "Tlalcoculaquilo."

Among the ancient Mexicans, Cihuacoatl or Quilaztli, was considered the first woman to have borne children, these being always twins. Zolotl was the divinity of twins and monstrosities; Ixtlilton or Tlaltecuin, a black deity, presided over the diseases of children. They believed that women who died in confinement wandered through the air afterward, possessing

the power of hypnotizing children (Flores, 1891). The Mayans relied on Zukuykak, or Ixmol, goddess of childhood to whom the month of Mol was consecrated, for the care and protection of children (Moll, 1944).

Among the villages along the Yukon River in Alaska a traveller reported that he saw little stools made of birch bark for small children. "The stool," he said, "has a stick of wood the purpose of which is to guard against any curvature of the little one's legs. The child sits comfortably upon a seat of moose skin and often would be carried around in such a chair upon the mother's back" (Ploss, 1876). Similarly the Kutchin women of the same region also carried their infants in a sort of bark saddle fastened to their backs, described by Whympers as "small chairs" and by Richardson as "seats of birch bark" (Bancroft, 1882).

The earliest Indians had no cows or substitute for the cow, for there were neither cows nor horses in America until the Spaniards brought them. An Indian slave of the Spaniards in 1521 related of the natives of Carolina that they had domesticated deer which generously furnished them with milk and cheese. His stories, however, were not wholly reliable. Occasionally among tribes on the buffalo plains of the middle west we find accounts of cases where a father himself has been obliged to care for and bring up an unweaned babe without a woman's help. "Young Woman," who was born in 1830, told G. B. Grinnell that she was so reared. Her mother having absconded, her father took the baby under his own care. He killed cows which had calves and cutting out the udders gave them to the child to suck. In the same way he killed female deer and antelope and let the child suck the udders. So he nourished her until he reached the Cheyenne camp where a woman took charge of the child. A like case was that of Arapaho Chief, a Northern Cheyenne (Grinnell, G. B., *Cheyenne Indians*, 1923). Usually the child was applied at once to the breast. Sometimes it was turned over to another matron to nurse until the mother's health was restored. The Cheyenne child was not allowed to nurse from its mother at first but some other woman who had a young child nursed it.

The medicine women for four days freed the mother's breasts from the early mammary secretion. During this time the mother was given doses of "mot si i yun," the milk medicine (*Actaea Arguta*), to induce a free flow of milk. Four days after birth the child might nurse from its mother. Among the Thlinkit Indians of Alaska, it was not considered safe to offer the baby the breast before all "impurities" had come away from the mother. These impurities, the source of later diseases, were to be removed by pressing and kneading the abdomen of the puerpera until vomiting was induced (Ploss, 1891). Among the same Indians, the new-born infant "is not given the breast until all the contents of its stomach (which are considered the cause of disease) are removed by vomiting, which is promoted by pressing the stomach," and among the Hare and Dog-rib Indians, "the infant is not allowed food until four days after birth, in order to accustom it to fasting in the next world." The Songish Indians do not give the child anything to eat on the first day. The Kolosh Indians, of Alaska, after ten to thirty months "accustom their children to the taste of a sea-animal," and among the Arctic Eskimos, Kane found "children, who could not yet speak, devouring with horrible greediness, great lumps of walrus fat and flesh." Klutschak tells us how, during a famine, the Eskimo of Hudson's Bay melted and boiled for the children the blood-soaked snow from the spot where a walrus had been killed and cut up (Chamberlain). One early writer about the Indians tells that the new born babe was immediately washed, whether it be summer or winter. The first nourishment given was the oil of some fish, or melted tallow of some beast; the infant was made to swallow it, and after that was given nothing but the mother's milk (Heagerty, 1928). Among Indians of California the old women who acted as midwives washed the child as soon as it was born and drank of the water; the unhappy infant was forced to take a draught of urine medicinally. The Hopi babies of more modern times (and of times gone by, I doubt not), are nursed as long as possible and are often fed piki bread and green corn very early. It was estimated by

Mary Robert Coolidge (*The Rain-Makers*, 1929, p. 64) that at least half of those born died of intestinal troubles.

As a rule the child continued to nurse as long as the mother's milk lasted or until another conception took place, a practice, as we have seen, lauded by Benjamin Rush as most salutary and commonly practiced in Europe among the gentility as well as the peasantry. John Jones, who in 1579 wrote the second book of pediatrics in the English language, remembered he was able to carry a stool for his good nurse when he wanted to suck (Radbill, 1938). Ancient authorities differed; some thought the best time for weaning was one year; others went up to three and four years as the optimum age. The Reverend Samuel Lee in 1687 stated that the Indians of New England suckled their young a year, commonly, and fed them with anything the child would eat, mentioning especially clams. If the mother died, the men gave the infants oysters to suck (Publ. of the Colonial Soc. of Mass., 1913). The Kanikars suckled the child for three to five years; the inhabitants of Sierra Leone often nursed the child until it could walk; the Alaskans, Dacotas, Sioux, Apaches and other native tribes, until the child was ten to thirty months of age. In other tribes the child was nursed until late in childhood, indeed even until puberty or longer (Ploss, 1891). Among the Arawak Indians of Peru, Dr. Farabee attributed the small size of the family to the fact that the women had children early and that the children nursed until they were three years old because of a lack of other proper nourishment. In 1807, Quandt reported that the Arawak women nurse their children until the next baby arrived, and then the grandmother, if one were around, took up the duty for some time longer. Appun often saw children standing alongside mother and grandmother calling upon the aid of both milk supplies. These women tried to maintain their flow of milk by suckling other young mammals. From his own observation Sir Robert Schomburk related the following concerning the Warrau Indians of British Guiana: "It is common for the children to be weaned only by the third or fourth year, so that often an older child is placidly standing by its mother and taking its customary nourishment,

while a younger one upon the arm of the mother is drinking at the second breast. But the most amusing sight was presented when a strapping lad who was first noticed up in the highest tree top of a Carico Papaya, suddenly clambered down laden with the fruit of this tree and ran to his mother in order to satisfy his thirst. But our amazement increased when we came upon four-footed brothers and sisters among the nurslings to which the mother just as obligingly, and with equal tenderness of glance and mien, offered her other breast, even though her own child was already sucking the first breast." Others have observed similar practices among the Makusis and Arekunaš (Ploss, 1876). Of the Arekuna of Guiana, Schomburk tells us:

"They bring up children and monkeys together. The monkeys are members of the family, eat with the other members, are suckled by the women, and have great affection for their human nurses. Oftimes a woman is to be seen with a child and a monkey at the breast, the two nurslings quarreling" (Chamberlain). Among the Huichol Indians of Mexico the child nursed until the next pregnancy and in addition partook of food prepared for the mother. The most common mortality among young children was from diarrhea caused by eating unripe fruit. The mortality among the children of this tribe was high (Corlett, 1935). According to Lady Brown, the women of the Chucuaque tribe of Indians inhabiting the uncharted Island of San Blas nursed their children at the breast until they were six years old. This observer said she had seen many of them suckle in turn children of various ages (Corlett, 1935). The Fuegian women at the extreme southern end of South America customarily nursed their children until the age of three, and Dr. George E. Darby (1933) reported that most of the Indian women of British Columbia nursed their babies until they were fifteen months old. Among the extinct semi-civilized races of America we find a pronounced solicitude, manifested by definite rules and regulations for the whole manner and means by which the mothers conducted themselves in the process of nursing the infant. Among the ancient Incas of Peru, the women always nursed their own

infants. If a mother desired to offer her breast to the child, she laid over it; this occurred no oftener than three times a day: namely, morning, noon and night; except for these times, the child never received the breast, let it cry as much as it would, until it gradually became accustomed to this routine. This custom was observed by the women of the entire Inca realm; as the reason therefore they asserted that the children would become pale, apt to vomit and insatiable with increasing age by too frequent nursing. No matter how proud or genteel a woman might be, she never entrusted her child to a wet-nurse unless she would be prevented from nursing because of illness. If the mother had sufficient milk for her child it got nothing else to eat or drink until it was weaned, for they believed that other foodstuffs given together with mother's milk would be injurious to the health of the child. As soon as a child could hold itself erect, it had to grasp its mother's breast the best way it could, without the mother even taking it upon her lap; if it desired the opposite breast, it would be held out to him and he had to reach for it himself without being taken up into the mother's arms. The test of a wet-nurse was to press out a drop of milk upon the nail, when if it did not run the milk was considered good. This test was a widely used one by the earliest European medical authorities and may have been introduced by the early Spanish arrivals. No food was given to the child the first day in order to create an appetite. It was suckled for three years, in some places much longer; during this time the mother adhered to a diet that would keep up the quality of the milk. Many abstained from sexual intercourse with their husbands for the same period to prevent the possibility of another child interfering with the proper nurture of the first one. A feast was given at the weaning of the child.

The women of the Aztecs always nursed their own babies; but when a mother was forced by illness to turn her child over to a wet-nurse, this substitute was chosen with the utmost care. Landa, about 1566, remarked that Mayan children nursed until three and four years of age, and that during the first couple of years they waxed "wonderfully pretty and

fat." This protective ancient custom of long continued nursing still postpones the problems of malnutrition until after the first infancy in some regions. In Paraguay, in rural areas, women nurse their children for two years supplementing the diet after six months with other foods. The Iriquois women believed that unless they nursed their own children they lost the qualities of a mother. They were amazed to learn that there were people who allowed strangers to nurse their children. However, if a mother died, wet-nurses were always acquired by every family; if necessary, even a grandmother, long past the age of fertility, could restore her milk supply and take the place of the mother. Among the Brazilian Indians, in addition to mother's milk the child's aliment included masticated meal. No mother among these would permit her child to be nursed by another woman; she would consider it disgraceful to give her baby to another woman to nurse, and so would only submit to such a procedure through dire necessity. The Caribs always nursed their own children, too, but as soon as the infants acquired a little strength, they began to feed them potatoes, bananas and other fruit.

To increase the flow of milk the ancient Aztecs advised the following: Where the milk flows with difficulty, take the plants *chichiltic* and *xijhtontli*, which shows acid slightly, the *tohmigo xihuitl* and crystal, ground in pulque and boiled. Let her drink it frequently. Afterwards, macerate the plant *memya xiuhton-tli* in pulque and let her also drink that juice; let her enter the bath and there have another drink, made from corn. On leaving it, let her take the viscous water drawn from the grain" (Gates, 1933). These highly cultured people, upon delivery of the infant, carefully examined the child to be certain that it was fully developed, then, with much ceremony and many incantations, bathed the baby, scarified its genitals and clothed it. A Mexican stone (*Tlacuiloltecpatl*) (painted stone) possessed the virtue of increasing a new mother's milk similar to the European milk stone (*galactites*), though it is not the same thing, being a white, transparent stone spotted purple, scarlet and green (Loomis, 1944). The Hopi Indians, following the "doctrine of signatures" gave decoctions of milk

weed to mothers with insufficient breast milk. Onions were given to the Delaware Indian mother to produce milk, but care had to be taken not to use a quantity that would cause nausea for the child and the mother, for they evidently felt that the food could be transferred to the child through the mother's milk, a belief that was universal throughout all ages and localities, and now acknowledged to be only partially correct. The *Actaea Arguta* (Nutt.) was called Sweet Medicine or Sweet Root by the Cheyennes; *motsi iun* in their language. The roots and stems, after they had been dried, were pounded up to make an infusion to be given to the parturient to rid her of colostrum quickly. It was considered generally a good medicine for the blood. "Sweet Medicine," a Cheyenne hero, is said to have named this plant for himself, telling the people that this would help them to save and to bring up their children. Often it was boiled with *Mertensia*, which they called "blue medicine," (*Mertensia siliata* [Torr.]) and given to nursing mothers with an insufficient supply of milk for the purpose of increasing the flow. With these they also used the *Oxytropis* sp., a plant likewise useful for mothers whose milk did not seem to agree with the child. *Lygodesmia Jiencea* (Pursh.), called milk medicine was similarly utilized alone or in combination. The Cherokee Indians always nourished their infants with mother's milk unless it be brought up to be a witch, when no mother's milk is given for twenty-four days, only the liquid portion of corn hominy being given during this period of taboo; or in case the mother's lactation is deficient, which is only rarely the case, a decoction of the bark of the smooth sumac (*Rhus Glabra*) is drunk by the mother "to make the milk flow abundantly," and from then onward she nurses the children (Mooney, 1932). For dry breasts the Pawnees used infusions of Skeleton-weed (*Lygodesmia jienceo*) and there were many other natural remedies besides to which the mother striving to maintain or augment her supply of milk could turn. The Arawak women of South America, in order to maintain the flow of milk for as long as possible, placed little pigs and young puppies to suckle at their breasts. For the same purpose of prolonging the production of milk in the

breasts many other South American races followed a similar practice. The women of Makusis Indians of British Guiana maintained their milk for a long time and the child nursed until whatever age he pleased. If the family increased in the meantime then the grandmother assumed the duty of the mother in this respect. To these old women likewise fell the duty of suckling young mammals, opossums, monkeys, doe, etc., found accidentally. While the child was nursing from one breast these women were often found offering the opposite to these young animals with equal solicitude (Ploss, 1891). However, the dog was always the preferred adoptive of numerous tribes. Gabriel S. Theodat saw the Indian squaws of Canada allow young dogs to suck at their breasts many times. Indeed the dog played this role in many of the cultured regions of the world; the ancient ladies of Rome, the modern Neopolitans, Persians, etc., practiced a similar custom. Even as late as 1850, Dewees advocated the use of puppy dogs in this manner to increase the flow of milk, and I have known it to be advised in Philadelphia by midwives.

If the mother's milk failed completely it was not unusual among many of the American Indians for some other woman who happened to have an adequate supply to nurse the baby. Many a white infant in captivity was reared by an Indian foster mother, while other children in different parts of the country were often entrusted to friendly Indians in the neighborhood for wet nursing. In 1609, Philip III of Spain forbade Indian women with live babies to nurse Spanish infants (Moll, 1944). Spanish laws and regulations for the government of the Indies contained several provisions for safeguarding the health of Indian mothers and children, especially during lactation and pregnancy. It was early realized that the child of the wet-nurse (*nodriza*, *Oma*) needed special protection, and also the child for whom the nurses' services were secured. In 1537 the Spanish Crown forbade the employment of Indian mothers in Tucuman (Argentina) as wet-nurses unless the Indian infant was dead; this was extended to Paraguay and Rio de la Plata in 1609. Writing to the celebrated Dr. Nehemiah Grew in reply to some queries relating to the Indians about 1687,

the Rev. Samuel Lee stated that infant feeding was much at one with that of the English Colonists and that the English sometimes used Indian wet-nurses to good advantage (Publ. of the Colonial Soc. of Mass., 1913). Roger Williams noted that the Indian women nursed all their children themselves, yet if they were of high station or rich they maintained nurses to tend to the child. In the story of the trials and tribulations of Jonathon Dickinson, wife and infant who were captives of the early American Indians it is related that the wife of Cassakee, one of the Aborigines, having a young child sucking at her breast, gave it to another woman and would have Jonathon Dickinson's child, which its poor mother was very loth to suffer, but she would not be denied, took the child, and suckled it at her breast viewing it and feeling it from top to toe, and at length she returned it to its mother. Later, while attempting to make their way back to habitable civilization, for want of food of any sort, the hapless wife's milk was gone and her child was in great want. The Indians would now and then give it suck, but rarely to satisfy it. Though the mother had so little milk in her breast, yet when an Indian woman lately delivered had no milk herself, asked Jonathon Dickinson's wife to suckle her child also, which she consented to, it proved a means of her own child's receiving benefits, for the Indians would for that reason give her fish which helped increase her milk (Hazard, 1830). Even the father has been known in time of need to have resorted to nursing the baby. Franklin mentioned an old Chippewa who, on losing his wife at childbirth induced milk to flow in his breasts in sufficient amounts to be able to rear his child. Gynecomastia and the anomalous presence of milk in the male breast has often been discussed by writers since the time of Aristotle. Indeed, Laurent in 1894 published a treatise on the subject and an extensive article appeared in the *Dictionnaire de Sciences Medicales* (1812, v. 30). In this country, Hall exhibited to his class in Baltimore a negro of fifty-five who had suckled all his mistress' family (Gould & Pyle, *Anomalies and Curiosities of Medicine*, Phila., 1897).

When the French Expedition for scientific exploration set out in 1785 under command of Count Jean Francois Golaup de la Perouse, the French Academy of Medicine proposed a long list of questions which the investigators were to look into. Among those propounded by the anatomists and physiologists were the following: "It has been said that men are frequently found in America whose breasts afford milk in sufficient quantity to suckle children; is this true? What are we to think of the hermaphrodites of Louisiana?"

Humboldt, in his personal narratives of 1799-1804 mentioned that in the village of Arenas, near Camana, there lived a man who had suckled a child with his own milk. The mother having fallen sick, the father, to quiet the infant, took it into his bed, and pressed it to his bosom. This man, Lozano by name, then thirty-two years of age, had never before remarked that he had milk, but the irritation of the nipple, sucked by the child, caused the accumulation of that liquid. The milk was thick and very sweet. The father, astonished at the increased size of his breast, suckled his child two or three times a day during five months. Witnesses testified that during this period the child had no other nourishment than the milk of its father. Upon examination 13 or 14 years later, the man's breasts were found to be wrinkled like those of a woman who had given suck. Humboldt mentions accounts of male animals whose breasts contained milk. Among the signs of alleged weakness of Americans, travellers have mentioned the milk contained in the breasts of men. It is improbable that this occurred in any group or tribes. The man in question here was a white man of European ancestry.

In every age, examples are cited of very young girls and of women in extreme old age who have suckled children. Alexander Benedictus, anatomist of Verona who lived about the end of the fifteenth century, relates the history of an inhabitant of Syria, who, to calm the fretfulness of his child after the death of the mother, pressed it to his bosom. The milk soon became so abundant that the father could take on himself the nourishment of his child without assistance. Other examples are related by Santorellus, Faria and Robert, bishop of Cork.

The anatomists of St. Petersburg have observed that among the lower orders of the people in Russia, milk in the breasts of men is much more frequent than among the more Southern nations. The greater part of these phenomena having been noticed in times very remote, it is not uninteresting to physiology that we can confirm them in our own days.

The Iriquois present an early example of artificial feeding of babies. They made a mixture of butter and hickory nuts which were dried and ground with jerked bear or deer meat. The mixture was boiled and given, when cooked to the proper temperature, in an ingenious nursing bottle. A bit of dried and greased bear gut was used, a goose quill being tied in at one end while the other was tied after pouring the pap (Stone, 1935). The Mead-Johnson collection of Pediatric Antiques displays 9 examples of Indian infant feeding utensils obtained by the dispersal of the Edward W. Payne collection of stone age relics. These were recovered from child burials or are miniature copies of adult utensils leaving little doubt as to their use in feeding children. The first is a crude clay feeding bottle made by the mound-builder Indians of Missouri; the second, also from Missouri mound-builders, is an unglazed pottery feeding bottle with very primitive, somewhat gourd-like containers with the open end drawn out narrow to assist in accommodating itself to the young mother. The third, excavated at New Madrid, Missouri, is a much finer piece of workmanship, also in the shape of a flask with the edge of the mouth scalloped somewhat and quite even. The fourth is a red glazed pottery feeding bowl of the Arkansas mound-builders, somewhat similar to a porridge bowl and from which, perhaps, mushy type of food was given. The fifth is a rare feeding vessel of rust colored pottery from the Oklahoma mound-builder Indians which is also gourd-like in shape but in addition has a hollow spout issuing from the side from which the infant could suck. The sixth is an Indian feeding bottle of painted pottery, slightly glazed, rust and black decoration showing a still further advancement in artistic skill, which was excavated at Newtrozo Creek, Arizona. The seventh, also of the Arizona Indians, although more elaborately decorated

and furnished with a handle like that on a cup, is quite similar in design to the preceding, though painted in brown and white. The eighth object is a papoose spoon very similar to a pap boat, with the handle concave to form a sort of gutter along which the liquid or semi-liquid food could no doubt be guided into the infant's mouth. This is of pottery, decorated in black and white, and came from the Hovenweep Canyon of Colorado. The last is an Indian feeding cup, no handle, its capacity only three tablespoonfuls, made of brown and white painted pottery and coming from Arizona.

In the early days in California nursing bottles were built of tubes of elder with a bladder attached. Nursing bottles were also constructed by the early mothers of this locality from cow-horns, and furnished with nipples made of buckskin. George Darby, writing about the Indians of British Columbia, stated that there were very few cows up the coast and it was very rarely that an Indian child got fresh milk. There were a surprising number of women who could not nurse their children at all, and so condensed milk was used for infant feeding to a large extent, though as soon as a baby was able to cry for it, he was given anything he wanted, even to soda water. There was a high infant mortality, although in the village where there was some supervision they were doing better. The Nanticoke Indians of Delaware made good use of Arrowroot (*Peltandra undulata*) as a baby food. Yucca-root pap formed a great part of the infant's food in some parts of Central America, even while it was being nursed by the mother. In the region of Valencia, in South America, Humboldt (*Travels*, v. 2) described a tree the sap of which was a nourishing milk. It was called the cow tree (*palo de vaca*). The inhabitants of the region drank plentifully of this vegetable milk and considered it a wholesome aliment. When incisions were made in the trunk of this tree, which resembled the broad-leaved star-apple (*Chrysophyllum Cainito*), it yielded an abundance of a glutinous milk, tolerably thick, devoid of all acidity and of an agreeable and balmy smell. When standing in the air it developed a stringy, cheesy coagulum which grew sour in about five or six days. Nitric acid caused the separation from

the milk of this same viscous membrane. The natives called the tree "Arbol del leche," the milk tree. At sunrise the natives and the negroes of the region collected the milk in bowls and carried this juice home to their children.

Cornplanter, a very intelligent chief of the Senecas said "that one reason why the Indians do not rear so many children as the whites is this: that the children of the former eat quantities of green maize. Certain it is, that the Indians lose great numbers of their children; and I have seen in their villages that the children are often pallid, unhealthy in appearance and very tumid bellied," a clearcut description of nutritional insufficiency by a keen observer of nature (Driscoll, 1933). Among the Cheyennes *Möksōis*, meaning "pot belly" was a term of endearment for a little boy, testifying, perhaps, to the commonness of this appearance in the children. Another writer who lived among the Indians of the middle west around 1870 or thereabouts made the following comment: "A somewhat comical characteristic of Indian children is the excessively protuberant abdomen and the thin legs and arms; a fat, chunky boy or girl is a rare sight among these people. As boys are never subjected to bearing burdens, and hardly ever put upon their feet before they are two years old the sight of bowed or knock-kneed legs among them is very rare indeed, but the practice of setting the young girls at the duty, mornings and evenings, of bringing packs of wood and water causes nearly all of them to be sprung either from in or out at the knees" (Wild Babies, Harper's New Mo. Mag., 1878). A pernicious practice, not uncommon to primitive races, consisted in the mother first chewing up the food and then passing it into the infant's mouth. Dr. Charles Blake, writing in 1786, saw syphilis thus transmitted in lower Canada. "The disease (St. Paul's Bay Disease) is nothing more than a confirmed syphilis," he observed; "the habits of the Canadians facilitate its communication in various ways: they use the same cup, drink from the same bucket, chew their infant's food and spit it into their mouths" (Charlton, 1923). Among the Indians in the Honduras, after a child is born, a mixture with supposedly magic properties, although consisting mainly of oil and dirt, is

thrust into the child's mouth (Corlett, 1935). The Lummi Indians of Northwest Washington, on the day of birth, gave the infant to suck some chopped clam meat soaked in the milk of another nursing mother. When an Indian papoose had rounded out its second year of existence, it left its cradle and began to chew meat, fish and other foods. He was seldom seen without some food in his mouth, if food was at all available, and when older, would spend hour after hour roasting over the coals of fire little strips of meat or fish impaled on twigs or forked sticks. When edible fruits and berries were ripe the children gorged themselves near to bursting with these gastronomic delights. Near the Indian camps Grinnell noted that the wild plums seldom ripened because the children picked and ate them green. The irresistible desire the Indians have to flee from society and enter again on a nomad life causes even young children sometimes to leave their parents and wander four or five days in the forests living on fruits, palm cabbage and roots (Humboldt, *Travels through South America*, 1799-1804). Humboldt saw Indian children of the tribe of the Chaymas at the port of Cumana in the Carribean draw out from the earth and eat millipedes or scolopendras eighteen inches long and seven lines broad (v. 1, p. 157). In times of famine, a not infrequent occurrence in the lives of the Indians, a different picture is painted. Conrad Weiser, to whom Indian life was perhaps more familiar than English, gave a piteous account of their condition in the winter of 1737, when he passed from Tulpenhocking in Pennsylvania on his way to New York. Scattered through the forests, they would fix their camps near a grove of sugar maple trees, the juice of which constituted the only magazine of food upon which they could with any certainty rely. Here the children searched along the lowlands and the banks of streams for nuts and esculent roots, or crowded weeping with their mothers around the traveller, in whose exhausted pouch yet remained a few crumbs of corn meal. A handful of maize steeped in a pot of ash-lye to make a kind of soup constituted to them a most luxurious dish. When the child was older different foods and substances were believed to transfer certain attributes. The heart of a bear was eaten to

attain strength; a fox for craftiness, and so on. Among the Eskimos a father explained that the image of a whale was put in a child's mouth so as to feed him on something that would make him grow up to be a fine hunter. Elisha Kent Kane found Eskimo children of the far arctic north who could not yet talk, voraciously devouring great chunks of fat flesh of the walrus. Among the Blackfeet Indians, as with others, as soon as the child had teeth, it began to get meat in its diet, if such were available at the time. Coras of Mexico prepared a feast in honor of a child when it was one year old and on this occasion for the first time salt was placed in the child's mouth. As soon as the child's teeth were all cut, a similar celebration took place and the child was then given its first meal. The Mendoza Codex appears to show that the diet of an Aztec child was prescribed according to age. In a series of ancient Aztec paintings which give a hieroglyphical history of these people, is represented the manner in which children were brought up, the portion of food allowed them, the labors they were employed in and the punishments resorted to by parents for purposes of correction. At the age of three years, half a cake of bread was allowed at each meal; during the fourth and fifth years the ration was a whole cake and during the sixth and seventh years it was a cake and a half, continuing so until the child reached his thirteenth year. From then on the allowance of bread was increased to two cakes. This bread was usually made from corn or maize and resembled the modern tortilla. Humboldt observed everywhere within the torrid zone of South America in a great number of individuals, children, women and sometimes even full-grown men, an inordinate and irresistible desire of eating earth. A fat clay, unctuous and exhaling a strong smell was the chief type of earth ingested. It was often found necessary to tie the children's hands or to confine them, to prevent their eating earth, when the rain ceased to fall. Some individuals seemed in good health while others would soon fall sick and waste away when they yielded too much to this mania for eating earth. At the mission of San Borja, the writer observed an Indian child of the Guahiba nation who was as thin as a skeleton. He was informed by

the mother that the little girl was reduced to this lamentable state of atrophy as a consequence of a disordered appetite, she having refused during four months to take almost any other food than clay. Twenty-five miles away, the tribe of Ottomacs ate the clay generally, yet seemed to experience no pernicious effects, but presumably these people ate sufficient nourishment of other sorts to preserve their health. They prepared balls of "poya" in which they incorporated maize and other furinaceous seeds thus making up a sort of bread. Children and full grown persons were reputed to have eaten this bread without suffering in their health (v. 2, p. 504).

As we have seen, the Indians were great believers in the hardening processes. Youths were inured to all sorts of hardships so that as men they could be healthy and better warriors. Many tribes were well aware of the fact that a strong, well developed body was better able to resist ordinary ailments than a weak, underdeveloped one. Nootka mothers rolled their children in the snow to make them hardy. From birth the Blackfoot Indian had his body toughened to resist injury, cold and hunger, heat and thirst; rough usage, therefore, became his accustomed mode of living. Later, while yet in childhood, he was schooled to endure pain with stolid indifference. He was plunged into cold water and compelled to swim, while his body was sacrificed and stung with various irritating substances. A whimper classed him among the women of the tribe, while the bold, unflinching bearing of the warrior was extolled and held as a model of imitation. Running long distances, swimming against the current or the tide and later performing feats of horsemanship all tended to make the American Indian before and after the arrival of the European, almost invulnerable to exposure, ordinary injury or disease.

Markham describes the formative or hardening method as practiced in the fourth rite of the year by the Peruvian nobility and their kings, in vogue in pre-Columbian days. With great ceremonial fanfare on the part of the priests, the youths were given breeches made of aloe fiber and sewed with sinews of the llama. They then marched to a ravine, where they were met by relatives and friends; here the aspirants were severely

flogged to test their endurance and to initiate them into the hardships of adult life. This was followed by songs and such mirth as the flogged youths could display. More flogging took place upon the return to the village, where further religious ceremonies were carried out. These hardening processes, rather sadistic it is true, with foot races and other enduring feats, lasted for a month. In spite of all this or because it was not continuous, the luxurious Inca nobility were not noted for hardihood; the infant mortality among the common people was unusually high. Both the Mayas and the Aztecs laid much stress on physical training for children.

The Indians of the Amazon region of South America also believed that at the period of adolescence a great physical change took place; therefore, it was considered the most propitious time to cleanse the body from the domination of evil and to start it on its way to motherhood and fatherhood purified by torture, and often the shedding of blood. This consisted of scarification and mutilations of the body, blood-letting, lashing with whips and circumcision. Whether or not circumcision in any of its many forms was practiced much among the Indians is hard to say. Mackenzie said that he could not tell for sure but that the appearance of it was general among those of the Northern Indians of Canada whom he saw (Bancroft, 1882). The natives of Goazacoalco and other places in Mexico practiced a kind of circumcision according to an early account (Bancroft). Las Casas and Mendieta state that the Aztecs and Totonacs practiced it and Brasseur de Bourbourg discovered traces of it among the Mijes. Las Casas affirmed that the child was carried to the temple on the twenty-eighth or twenty-ninth day after birth; there the high priest and his assistant placed it upon a stone and cut off the prepuce at the root; the part amputated they afterwards burned to ashes. Girls of the same age were deflowered by the finger of the priest who ordered the mother to repeat the operation at the sixth year. Zuazo added that these rites were only performed upon the children of great men, and that there was no compulsion in the matter, the parents having the option of having their children deflowered or circumcised at any time within five

years. Clavigero reviewed the subject of circumcision and denied it was ever practiced. Ternaux-Compans, referring to Diaz' statement that all Indians of the Vera Cruz Islands were circumcised, says that he must have confounded the custom of drawing blood from the secret organs with circumcision. Ceremonial drawing of blood in children as well as adults was widely practiced, the blood being drawn from ears, nose, lips and other parts of the body. Cogolludo stated that circumcision was unknown to the Indians of Yucatan. Duran and Brasseur evidently consider the slight incisions made for the purpose of drawing blood from the prepuce or ear in the eleventh month as the act. Carbajol Espinosa, following Clavigero, held the scarification of breasts, stomach and arms to be the circumcision referred to by other authors. In the temple of Huitzilopochtli this last ceremony was carried out on all Aztec children born during the year at a festival during the fifth month of the year. At another festival, the priest of this temple made a slight incision in the ear of the female child, and on the ear and prepuce of the male with a new obsidian knife handed him by the mother; then, throwing the knife at the feet of the idol, he gave a name to the infant after duly considering the horoscope and signs of the time.

Father De Smet in 1856 witnessed a strange ceremony probably of somewhat similar import among the Cheyennes. This was the "ear-cutting of children." This custom appeared to be common among all tribes of the upper Missouri and probable in other places, though there may have been some variety in the form of the ceremony. Among the Cheyennes the mother chose the operator and put the knife into his hands. She extended the child on the skin of some animal, carefully prepared and painted and which the Canadians called "*pare flèche*." While one of the relations or friends held the infant in a quiet position the operator made two to five incisions in the rim of each ear. These incisions were destined to receive and carry ornaments. The mother made a present of a horse to the operator and another present to each one of the assistants.

Grinnell gives the following account of the same practice. When a little Cheyenne baby reached the age of from three to six months, it was time for its ears to be pierced. A man of importance was selected for the ceremonious ritual and a handsome fee was paid to him. Just as with the Hebrew rite of circumcision, the ceremony was one of joy and celebration. If a man should have his child's ears pierced without this ceremony it would create a scandal in the camp. People would say that he had no affection for the child (Grinnell, 1923). In ancient times the person who actually pierced the child's ears made a long cut in the outer margin of the ear, from the top nearly to the lobe, and the strip on the outside was wound with beads or with brass wire.

When a young girl reached the age of puberty and had her first menstrual period she of course told her mother who in turn informed the father. Such an important family event was not kept secret. It was the custom among well-to-do people for the father to publicly announce from the lodge door what had happened and show his happiness by distributing presents.

Many and varied are the rites which accompany the first menses among primitive peoples. A menstruating woman is almost universally considered unclean and most rituals are in the nature of purifications of one sort or another. The Cheyenne girl unbraided her hair and bathed and afterward older women painted her whole body with red. Then, with a robe about her naked body, she sat near a fire, a coal was drawn from it and put before her and sweet grass, juniper needles and white sage were sprinkled on it. The girl bent forward over the coal and held her robe about it so that the smoke rising from the incense was confined and passed about her and over her whole body. Smoke was similarly used for purification of a woman right after childbirth by many Indian tribes. After this the girl was segregated for four days in a separate lodge. At the end of four days her grandmother, taking a coal from the fire and sprinkling on it sweet grass, juniper needles and white sage, caused the girl, wrapped in a

robe or sheet to stand over the smoke with feet on either side of the coal, purifying herself.

Many were the taboos associated with the menstruating woman and men had to shun her under pain of dire consequences of all sorts. An Indian school-teacher told Elsie Clews Parsons that once one of her Sioux pupils developed a tumor on the neck and his father took him out of school on the theory that the tumor was caused by contact with teachers who observed no monthly taboos (*The Old Fashioned Woman*, 1913).

Among primitive people, and especially among our Aborigines, the onset of puberty is generally accompanied by more or less ceremonial activity. Accordingly, many varied means are resorted to in different tribes, but all have this in common, that some physical injury must be inflicted on the child in this warfare against the demon. Among the Macus of Guiana, the girl, at the period of adolescence, is lashed with whips after she has been isolated for a week or ten days. This ceremony takes place during the night and the girl is supposed and almost forced to endure this without showing signs of pain. The Piaroas have similar practices. They seclude the girl and make her fast for a few days, after which several old women tie her to a pole and blind her eyes. The women then leave her, for if they are present when the evil demon is chased out of the girl he may enter one of them. A group of men armed with whips and blowing on windpipes complete the ceremony. They begin by striking the girl gently on the thighs, then harder, until the blood begins to flow in streams. Thereupon she is left in the care of a medicine man who stops the flow of blood. A large fire is then made around the pole and the evil spirit is supposed to be burned. Among the natives of Massachusetts, when a maid's menses were first taken notice of, a little house, or rather tent, called a wigwam, was provided for her and she was kept apart by herself. The hair upon the foreheads of the young females was cut in such a fashion, from time to time, that it was impossible to determine the natural appearance (*Publ. of the Colonial Soc. of Mass.*, 1913).

Wallace relates that the Indians girls of the Uaupes also undergo a terrible ordeal. Here the girl is secluded in a dark house with only a small amount of bread and water on which to subsist. After this she is brought out and surrounded by all the relatives and friends of her parents. Each person present lashes her several times across the back and breasts until she falls down either senseless or dead. If she recovers she is given a rest of six hours and the ordeal is repeated. This repetition may be continued for some time. The final act consists of dipping the whips or lashes into pots of prepared meat, after which the novice licks off the liquid. In this way is a woman made marriageable.

A peculiar ceremony is described by d'Orbigny in reference to the Yurucares of Bolivia. Among these Indians, when a girl approaches adolescence, her father shuts her up in a dark cabin built for the purpose. There she fasts for four days. When this time has elapsed, the neighbors are summoned and a quantity of chicha (maized beer) is prepared. The maiden is then seated on a stone, and every guest cuts off a lock of her hair and hides it in a trunk of a tree. When all the guests have so done, they seat themselves around her, whereupon she offers to each a calabash full of chicha. When the gathering begins to become a wassail, each father present performs a peculiar operation on his son, who is seated beside him. This consists in piercing the son's arm through and through with a sharp monkey-bone which has been rubbed with spices. This operation takes place again and again until the young men have their arms riddled with holes. The motive for this operation is to make the young men skillful hunters and the arms and legs of the girls are also perforated in order that they may be brave and strong. For six months after this ceremony girls cover their heads with bark and refrain from speaking to men. Among the Kodiak Island Indians when a girl reached the age of puberty she was confined in a hut built for the purpose, apart from the others and so small the inmate could not straighten her back while on her knees. During the six months following she was allowed a room a little larger but was still permitted no intercourse with anyone. A girl's arrival at the

age of puberty among the Gila nation of New Mexico was a period of much rejoicing. When the symptoms appeared, all her friends were informed of the important fact and preparations were made to celebrate the joyful event. The girl was taken by her parents to the prophet who performed certain rites which were supposed to drive the evil out of her, and then a singing and dancing festival was held.

Another custom is that of scarification. Among the Caribs the hair of the girl is cut off with a sharp fishbone. She is then placed on a flat stone and her flesh scarified with sharp agouti teeth from the top of the shoulders down the back. The incised marks generally consist of oblique crosses. In order that the scars may be permanent ashes are sprinkled over the open wounds. Evidently the girls of this tribe take pride in their scars as much as do the students in a German University.

Similar to these ceremonies, although not so severe, are the puberty trials of the boys. Often the youths are scarified or otherwise mutilated in their initiation ceremonies, and generally they are not admitted among the company of full-grown men until such rites have been performed. Among the Indians of Choco the boys are rigorously dealt with: scarification, tattooing, piercing of the lips for the insertion of ornaments, cutting and piercing the earlobe and flagellation, are required before they are given the title of man. While the boys were quite young, they were previously mutilated by sorcerers of the tribe.

Such were some of the ordeals through which many aboriginal boys and girls passed. The mutilations and accompanying ceremonies were essentially due to the belief in demons and spirits rather than against vicious man or beast. The constitution of the male was not weakened by physiologic processes such as menstruation and childbirth, but men likewise had to acquire through mutilation, the ability to deal successfully with demons in various forms. Even today these customs prevail (Corlett, 1935), as do such practices as piercing of ears, nose and lips, tattooing of face, breasts and various parts of the body, etc.

It is difficult to determine what diseases prevailed among the Indian children. The early Aztec physicians differentiated a considerable number of symptom-complexes as independent affections, with a specific treatment for each one. Among these they distinguished Coriza (especially a variety in the newborn), intestinal worms, discharges from the ear, etc. After a baby was born the mother was placed on a strict hygienic and dietetic regime which included the national drink (corn liquor), while the infant was given even more strict attention, for example, treatment of ocular catarrh (Newburger, 1930). As we have seen, many tribes, in common with primitive races from other ages and different parts of the world, destroyed those born with congenital malformations. Weak and immature babies were quickly weeded out, as a rule, by the hardening processes, but this was not everywhere true, for Heckewelder, who lived with the Indians of Pennsylvania in the early nineteenth century said: "I never heard of any nation or tribe of Indians who destroyed their children when distorted or deformed, whether they were born so or came to be so afterwards. I have on the contrary seen very particular care taken of such children."

Juan Agustin de Morfi, in a History of Texas covering 1673 to 1779, stated that among the Carancaguases were many boys (monoguias) whom the Spaniards of Bejar called hermaphrodites, but it was not known whether they were actually hermaphrodites or not. "These abominable people," he said, "find and conduct themselves in everyway like women. They accompany the warriors on their campaigns, not to fight, but to herd the horses which they steal from us, while they face and take whatever is given them; and principally, to lend their bodies to infamous and nefarious uses. Although the wives abominate this canaille (canalla) they have not learned how to persuade their husbands to do away with them."

Sexual perversion was reported among other Indian tribes in widely separated parts of both continents. A Kodiak Island mother would select her handsomest and most promising boy and dress and rear him as a girl, teaching him only domestic duties, keeping him at woman's work, associating him only with

women and girls, in order to render his effeminacy complete. Arriving at the age of ten or fifteen years, he is married to some wealthy man who regards such a companion as a great acquisition. These male wives are called "achmutschik" or "schopans." They were also known in Unalaska (Aleutian Islands) and among the Tlinkets of Alaska. Among the Central Americas and in Mexico the old chroniclers reported that Sodomy was practiced. The Caciques and some of the headmen kept harems of youths who were dressed as women, did women's work and were exempt from war. They went by the name of Camayoas and were hated and detested by the women.

The Reverend Samuel Lee, writing to Dr. Nehemiah Grew of London in the late seventeenth century, stated that there were no "hermaphrodites, monstrous births but few and none crooked" among the Indians. No "foole" among them but some born deaf, and so dumb: but very ingenious to demonstrate their minds, an obvious reference to the sign language so fully developed among the savages (Publ. of the Colonial Soc. of Mass., 1913). In his *New England's Prospect* of 1635, Wood wrote: "Yet did I never see one that was borne either in redundancy or defect a monster or any that sickness had deformed, or casualty made decrepit, saving one that had a bleared eye and another that had a weune on his cheeke." Morton in a similar blurb entitled "New English Canaan" extolling the virtues of the new land to prospective colonists in 1637 noted that "Not any of them crooked backed or wry legged." In Champlain's voyage occurs the following statement: "Tous ces peuple se sont gens bien proportionné de leur corps, sans aucune difformité." Roger Williams stated that the Indians "have amongst them naturall fooles, either so borne, or accidentally deprived of reason" (Publ. of the Colonial Soc. of Mass., 1913). Tantaquideon, writing of the medical beliefs of the Delaware Indians, stated that congenital malformation rarely occurs, but that such physical abnormalities are attributed to the power of malevolent spirits which afflicted the child because of his parents' failure to fulfill tribal obligations by keeping up certain ceremonies bequeathed to them. Such a physical handicap, however, did not keep an individual from

leading a useful life, for he was otherwise blessed. Delaware mythology reiterates the theme of the weakling child vanquishing his powerful opponents through the weapon of shrewd wits over brute strength (Tantaquidgeon, 1942). Hodge, in his handbook stated that children crippled by accident were treated by parents and companions with the greatest tenderness. That congenital abnormalities did occur among the Indians, then, there can be no doubt.

At the village of Comala in the State of Colima, Mexico, a considerable number of the children were said to be born deaf and dumb, idiots or deformed, and if we may believe the early chroniclers, developed goiters at an early age. No doubt they referred to an endemic area such as is known to occur in other parts of the world. Albinos were described among the Guatusos of Costa Rica by Wafer who related that he saw people "milk white, lighter than the color of any Europeans and much like that of a white horse." Their bodies were covered by a milk white down; hair and eyebrows were white and their eyes were oblong with the corners pointing down. During daylight they were weaksighted, restive and lacking energy, but after sundown their cheerfulness, activity and eyesight returned—the latter being apparently as good as that of other people.

Among the Mayans, a tuft of hair hanging over the face of children often made them cross-eyed. Indeed, mothers are said to have arranged it with a view to this very effect, deemed by them a desirable thing, or to have attached to the forehead a small hanging plaster for the same purpose. The number of "bizeos" treated by Dr. Cabot, who accompanied Mr. Stephens in his excursion through Yucatan, shows that though squinting eyes are still common in the country, the defect has at least lost its charm to Mayan mothers (Bancroft, 1882). In the seventeenth century, the Reverend Samuel Lee of Massachusetts Colony wrote that among the Indians teething was not so difficult and they kept their teeth longer.

Infant mortality everywhere was exceedingly high. Marasmus and diarrheas were commonly mentioned by various observers, as were coughs and other ailments of the respiratory tract. Scurvy among the Indians was frequently noted. Dur-

ing Cartier's second voyage to the region of the Gulf of St. Lawrence in 1535, scurvy attacked the Indians of Stadacona in the month of December, a time when food with vitamin C content was scarce. An excellent description of the disease is given in this report, which, by the middle of the following February, spread havoc among the European voyagers. The children of the Indians are not specifically mentioned but in times of famine, so frequent among the improvident American Nomads, vitamin deficiency diseases most certainly affected young and old alike. The natives, however, were familiar with the antiscorbutic properties of the bark of the white pine by which they cured themselves. The bark and leaves were boiled together and drunk every other day while the dregs were applied to the legs of the affected person. The tree was thought by Cartier to be the Sassafras. It cured the worst of them in six days. Epilepsy struck the Aborigines of America with awe as it did the ancient Europeans who called it the sacred disease. After the advent of the white man, contagious diseases attacked the Indians at times with great violence. Apparently tuberculosis, measles, scarlet fever and smallpox were importations to which the natives had no racial immunity. During the British regime at Kaskaskia, pioneer settlement of Illinois, the Indians complained of the English that "they gave us smallpox, which made all our children die." Kalm stated that the Indians carry their children, when they have the smallpox, into the water and duck them. This was done to cool the heat of the fever (Kalm, 1812).

The first outbreak of smallpox in the West Indies occurred in the year 1507, fifteen years after the discovery of America; whole tribes were exterminated. The complete disappearance of some tribes was due chiefly to smallpox. Cotton Mather, writing of the disease as it occurred among the Indians said that whole families of them all died at one time. "In one of the wigwams a poor infant was found sucking at the breast of the dead mother." In 1635, Le Jeune, one of the Jesuit chroniclers of Canada, said that the sickness began with a violent fever that was followed by a "sort of measles or smallpox." A little Indian girl, who had been baptized and sent to

France, died there of the smallpox. In 1636, the Huron festival season was turned to a season of mourning. The Jesuit missionaries everywhere heard the wail of the sick and dying children; and on or under the platforms at the sides of the houses crouched squalid men and women in all stages of the distemper. The Indians of Canada blamed the disease on the French, saying "that to kill their children, some Frenchmen penetrated the horrible depths of the woods, taking with them the picture of a little child which had been pricked with the points of an awl, and that therein lay the exact cause of their deaths." Probably they believed that the holes bored in the child's picture released the demon of the disease to consume them. The early Jesuit chroniclers go on to state: "In consequence of all these sayings, many had us in abomination; they expelled us from their cabins, and did not allow us to approach their sick, and especially children, not even to lay eyes on them." Deaths among the Canadian Indian children during the early Jesuit days is manifest when it is related: "The number of baptized in this single village, since the last relation, has risen to more than 260, of whom more than 70 children under 7 years died." Father Ragueneau, writing of the state of his mission during this period among a number of French Canadian villages reported in one of his letters: "The cabins of our Christians are the most afflicted with the malady; besides that alone of Joseph Chihouatenhoua, where five children have had the disease. The good Anne sees herself robbed of all her children." Everywhere the missionaries went they found the sick, the dead and the dying. "We meet 2 little children who are dying—prostrate near their mother who is all in tears." "I pass near a cabin where three little children are dying." Father Hierosome Lalemont, in 1640, wrote: "We have baptized more than a thousand . . . most of them went out of this world and among them more than 360 children under seven years . . . without counting more than a hundred other little children, who having been baptized in preceding years, have been harvested by this same disease and gathered by the angels like flowers of paradise." The relation of 1661 states: "In 1663,

among the Iriquois, more than 300 dying children were baptised by some captive Frenchmen" (Heagerty, 1928). The Indians never took kindly to the practice of inoculation for prevention of smallpox when it became rather generally practiced throughout the colonies before the introduction of Jennerian vaccination. They were in great dread of the disease and in many places not only abandoned the patient but even effectively isolated it by building fences and other obstructions around and invoking a strict taboo against the approach of anyone near the person of the victim. Sproat, writing about the Nootka Indians stated that young and old of both sexes were exposed when afflicted with lingering diseases.

Writing in 1870, one observer stated: "Consumption is the great regular scourge of Indian Youth. When left to themselves they know nothing of measles, scarlet fever, whooping cough, but they have mumps, several low intermittent fevers, bad colds and hacking coughs, and worse than all they are very scrofulous and suffer greatly from aggravated eruptions of the skin. But if there are any germs of disease in the air of an Indian encampment such as our children are usually waylaid with in early life, the pappoose is promptly brought down with it and suffers like our little ones, only in the case of measles, unless the weather be very warm and fine, the result is almost always fatal" (Wild Babies, Harper's New Mo. Mag., 1878).

Dr. David Day observed: "It is wrong to suppose Indian children better capable of surviving less careful treatment in infancy than are those of the whites. The former are generally born with less vigorous constitution than the latter; and in taking into consideration the numerous causes of disease and death to which these forest children are subjected, the wonder is, how any survive, not why so many die.

"Among the diseases to which this tribe (the Winnebagoes), are especially subject, and one tending more than all others to produce suffering and death, is scrofula; or, more properly, the strumous diathesis, which may be said to pervade the whole tribe. This disease shows itself among them in all its usual forms; enlargement and suppuration of the cervical and other glands, scrofulous diseases of the joints, tubercular meningitis,

etc., are its most usual forms among children" (The Scalpel, N.Y., 1858).

Eric Stone, too, pointed out that the Indians had no racial immunity, and when yellow fever, smallpox, measles or scarlet fever was introduced by a passing white man the Indian community was decimated by the disease. Digestive disturbances were frequent among the Indians because of the irregularity of the food supply and because of the nomadic existence. Fasts alternated with feasts. Rickets was fairly common, dependent upon their dietary (Stone, 1932).

Among the Indians of British Columbia about 50 per cent of the native babies were born with a bluish discoloration of the skin of the sacral region. It was called the "Mongolian" spots because Japanese and Chinese babies have the same characteristics (Darby, 1933). So far as I know there was no pathologic significance attached to this and I merely mention it in passing. When Frederick Starr, student of Mexican ethnology, was in Yucatan in 1901, he was told that every pure blood Maya Indian had a violet or purple spot on his back in the sacral region. The natives called the spot "uits" (bread), and it was vulgar or insulting to make reference to it. Dr. Baelz, a German physician who spent many years in Japan, long ago called attention to the existence of such spots on Japanese infants, which were so common as to be almost characteristic of that race. In time other investigators reported similar spots on other Asiatic babies and on non-Asiatic babies of Mongolian or Mongoloid peoples. Chinese, Annamese, Koreans, Greenland Eskimos and some Malays are known to have such spots. Sacral spots are also reported to have been reported among Samoans and Hawaiians. Because of this dissemination and because they are limited to the Mongolians, the occurrence of the spots has been considered by some to be proof of Mongolian origin. Baelz found two cases among Vancouver Island Indians. Starr, who affirmed that this phenomenon did not occur at all among the Aztecs of Mexico, stated that among the Mayas, the case is different. "In the little Maya town of Palenque, I examined all the pure blood babies. The back of the first little creature bared for my inspection bore a clearly defined, dark

blue-purple spot, just where it might be expected. The spot was almost two inches wide and nearly three-fourths of an inch high. The child was a boy of eight months. A brother, two years old, showed no trace of the spot, but the mother says it was formerly well defined.

"Everyone of the seven pure Maya babies, below ten months old, in the town were purple spotted. A pair of boy twins, two months old, were marked in precisely the same place with pale blue-purple spots of the same size and form. In one boy of ten months the spot seemed to be disappearing and was represented by three ill-defined and separated blotches." Three babies of mixed blood showed no trace of the colored spot (*The Chicago Tribune*, January 11, 1903).

Of the Tlinket babies, farther to the North, Marchand drew a sad picture. He said the little bodies were so excoriated by fermented filth, and so scarred by their cradles that they carried marks to the grave (Bancroft, 1882). From lists of remedies we learn that Indian children frequently suffered from worms, toothaches, earaches and numerous intestinal ailments common to all infants. The broad teeth of Moose fawns were hung about the necks of children when teething. Heckewelder reported of the Indians of the Middle Atlantic states at the end of the eighteenth century that, "worms are a very common disorder among Indian children, and great number of them die from that cause. They eat a great deal of green corn when in the milk, with beans, squashes, melons and the like; their bellies become remarkably large, and it is probably in that manner that the worms are generated. I rather think that Indian children suffer less in teething than the whites." Throughout Central America many travellers reported that children suffered a great deal from worms and that their abdomens were sometimes enormously swollen.

The first tribes to encounter the white man in the Carribean Sea defended themselves against the incursions of the newcomers fairly well until the introduction of measles among them. Then they succumbed by the thousands. This new weapon proved to be more deadly when coming in contact with a new race than did the cannon and sword of the Spanish

Conquistador. Then came smallpox and whole islands and sections of country were depopulated. In like manner scarlet fever, tuberculosis, and to a less extent, syphilis helped complete the process (Corlett, 1935). When smallpox appeared in Mexico for the first time in 1518, the Indians named the disease, the Great Leprosy, in contra-distinction to the Small Leprosy, a term applied by them to measles, of which an epidemic appeared soon afterward (Flores, 1891). Measles was reported in San Domingo in 1519, in Guatemala in 1523 and 1530 when a decree ordered patients to be properly cared for; and in 1558, 1576 and 1826; in Mexico in 1531 and 1595; in Argentina, 1634; Peru, 1558, 1585, 1618, 1693 and 1796; in Panama, 1606; Ecuador, 1611 to 1612, 1692 to 1694, 1785 (Moll, 1944). In Central America the ruling diseases among the native races were said to be smallpox, which wrought yearly havoc; dysentery, which also was not uncommon in the highlands during the summer, and leprosy, attributed to filth, immoral habits and bad food. Father De Smet, traveling among the Indians of the Middle West about the year 1838 wrote: "It is sorrowful to see the neglected condition of the little children in all the Indian Villages. Their hair seems never to have undergone the operation of the brush, so that their heads look like masses of cobwebs. Many have eye trouble and their faces and all their limbs look as if water had never touched them. The younger ones are generally naked." Travelling in the Middle West about 1865, Father De Smet visited various tribes. Upon his visit to the Sioux over 200 children were brought to him to be baptised. "Having scarlet fever in their camp, I spoke to them of the necessity and urgency of baptism and of the eternal happiness of the children who might fall victim to the disease." At Forts Berthold and Sully, sickness had carried off a majority of the children of tender years. At Fort Union, too, the mortality among the Assiniboin children had been equally great. At Masaya the death rate among children was said to be excessive and Scherzer, in his *Wanderungen* stated that all of the family had an extremely unhealthy appearance, particularly the children who were pallid and lean, had thick, swollen abdomens which he thought was caused

by eating qucca roots (Bancroft, 1882). In the St. Paul's Bay region of Canada, a disease, undoubtedly syphilis, was widespread from about 1755 to 1783, especially among the Indians. Children formed a large proportion of the infected. Some children seemed to be cured of the disease by the medicines which their infected mothers had taken, although the mothers themselves were not always perfectly cured by them. Dr. Bowman observed that none was found to be cured radically without mercury. Children were cured by sucking the mother to whom mercury was administered (Heagerty, 1928). Syphilis was very common among the Indians whose standard of morals condoned promiscuity to such a large extent. Among the Navajos, Mojaves, Yumas and Comanches, prostitution was rife; whole bands were said to be affected with syphilis and its effects often were visible in their young.

In 1722 the Reverend John Ettwin, leading a group of Moravian Indian converts, wrote that the beginning of the journey was not auspicious, as the measles broke out. "The epidemic proved a hindrance to our progress, as it attacked both adults and children. The former had to lay by at least two or three days, after being taken ill, and the children had to be carried. Matters, however, went so well with the sick as to be cause of surprise; all that they required was a drink made of the large sarsaparilla which proved efficacious in bringing out the eruption."

The early Indians of California also suffered severely of the measles (Harris, 1932). Father Ramon Abella, on December 31, 1806, reported 236 deaths from this disease among the Indians there in nine months, of which number 73 were children. Dr. Rollin in 1786 found hernias among the children of the Monterey Indians, though whether these were inguinal or umbilical is not stated. He said that hernias in children were ignored; he had attempted, he feared unsuccessfully, to teach the parents how to reduce hernias in children by taxis and bandages (Harris, 1932). In the early nineteenth century the Rev. John Heckewelder, in commenting on the frequency of crippling rheumatism among the aged Indians, also stated, "I have seen boys 10 and 12 years of age, who through colds or fits of

sickness had become so contracted that they never afterwards recovered the use of their limbs." Paralysis was believed by the Delaware Indians to be the result of an encounter with an apparition. Zeisberger stated that it was claimed that wandering spirits and ghosts sometimes threw something into a public path and whoever passed over it was bewitched and became lame or ill. Among the Delawares the children were cautioned against answering the call of an unseen person as it might prove to be a "ghost-whoop." Should a child answer such a call, his jaw would become dislocated or even his entire body paralyzed (Tantaquidgeon, 1942). When two Dutch travellers visited the site of Albany, New York in 1680, a certain half-breed Indian woman came with her little boy about four years old, who was dumb or whose tongue had grown fast, to ask them for advice or a cure, but as they were not doctors or surgeons, all they could do was to give her their opinion and what they thought of the case (Dankers, 1867). The Aztecs of Mexico believed stammering was caused by too long suckling. Considering the length of time that often elapsed before their babies were weaned, this trait should have been very common.

To understand the theory and method of Indian therapeutics it is necessary to know the mind as well as the means used by the natives in treating diseases. As Stone says, the theological-physical dualism of the American Indian is best illustrated by his use of the word "medicine." He may use the term to refer to an herb or drug, but more often it means some supernatural agency or article which may be of aid in curing disease; just as often the same thing may be invoked to insure the success of some individual or tribal undertaking. The Indian boy of almost every tribe, before achieving manhood, was expected to retire to some secluded spot and "make his medicine." There he fasted, prayed, mortified his flesh, and meditated until, in the auto-suggestive state of ecstasy thus aroused, he received some communication from the gods; the appearance of some animal, a bird, some unusual conjunction of the elements, or some fantasy which would reveal to him the supernatural agent guarding and directing his life. This would become his "medicine," and would in future be invoked in times of social, mental

or physical stress. Among the Pawnees when a child fell ill, medicine men were called in and the supernatural agent called forth by the medicine man who effected the cure was understood to be the fetish presiding over the child's destinies (Stone, 1932). When an Indian sorcerer was examined in 1690 by Francisco Antonio Fuentes of Guzman as to the manner of assigning the proper nagual to a child, he gave the following account:

Having been informed of its day of birth, he in due time called at the residence of the parents and told the mother to bring the child into the field behind the house. Having there invoked the demon, the NAGUAL of the child would appear under the form of the animal or object set opposite its birthday in the calendar, a serpent were it born on the second of January, a flower were it on the thirteenth, fire were it on the twenty-fourth, and so on. The sorcerer then addressed certain prayers to the NAGUAL to protect the little one, and told the mother to take it daily to the same spot, where its NAGUAL would appear to it, and would finally accompany it through all its life (Brinton, 1894).

When a child was sick and the mother's or friend's ministrations proved ineffectual, the shaman or medicine man (who could, in many tribes be a woman) was called upon for aid. Many women of the Ojibway tribe took the degree of Midiwin in the "Grand Medicine Lodge" and of course a large part of their practice was restricted to women and children.

The following description written in 1870 was evidently by an eye witness: "When a papoose becomes ill, refuses to eat or be comforted, and after several days and nights of anxious, tender endeavor to relieve her child, the mother begins to fear the worst, she sends for the shaman, or a doctress of the tribe, and surrenders her babe to his or her merciless hands. This shaman at once sets up over the wretched youngster a steady howling, and then anon a whispering conjuration, shaking a hideous rattle or burning wisps of grass around the cradle. This is kept up night and day until the baby rallies or dies, one

doctor relieving the other until the end is attained, and the result is death nine times out of ten.

"The Indian sees in a sick person the form of one who is stricken down by the lodgment therein of a devil or bad spirit and the only way to restore the patient to health is to scare this devil, terrify this demon, out of the body of the sick, and to do this their infernal practices are resorted to dancing around the sick and dragging them about, yelling and frothing at the mouth and making hideous noises with calabashes and rattles day and night, without a moment's intermission.

"If the patient then recovers, the shamans are warmly congratulated; when the sick die, however, under this peculiar treatment, there is no reproach uttered, no hint as to the least desire to change doctors when the next case comes along, but on the contrary, the shamans are gravely and humbly complimented for their wonderful courage in attacking and facing so powerful and wicked an evil genius as the one must have been which succeeded in taking the life of the patient in spite of the doctor's terrible adjurations and noisy incantations" (Wild Babies, *Harper's New Mo. Mag.*, 1878).

Eric Stone presented a similar picture somewhat more vividly: "In 1887 a band of Chiricahua Apaches were confined as prisoners at Fort Marion (St. Augustine, Fla.). An epidemic broke out invaliding about half the band and causing the death of 23 children. At last the medicine-man decided to hold a 'cha-ja-la.' The preliminaries were almost as important as the ceremony itself and both were directed by Ramon, the oldest medicine-man, who drummed and chanted from the first application of paint till the last ministrations were completed. The ritual began with the adornment of the three shamans who were to be the actors in dance. They all wore undercoats of greenish brown. On their bare upper arms was painted a yellow snake, its head over the deltoid, and a red flannel ribbon was bound on below this. On the breast and back of each jacket were painted various insignias about four inches in diameter. On the breast of one was a yellow bear, and on his back a Khan; bear and zig-zag lightning adorned the second,

while the third was decorated, front and back, with the conventional lightning design. Each wore a different mask and each bore a wand in either hand, about the proportions of a common lathe, with a snake lightning design on both flat surfaces. When ready, the medicine-men began a peculiar whistling as they bent slowly left and right; then backward and forward until the head was at a level with the waist. In this position they spun rapidly in a circle on the left foot and then in reverse direction and charged around, in and about the group of tents occupied by the band, making cuts and thrusts with their wands to drive out the evil spirits. Then they joined and visited a squaw who held a papoose on a cradle. The mother remained kneeling as they frantically beat about the baby with their wands. Then the squaw held the cradle up to the four cardinal points of the compass and at each point the play with the wands was repeated. At each point, after passing of the wands the baby was given to each medicine-man who held it to his breast, lifted it to the sky, lowered it toward the earth and then held it out to each of the cardinal points. All the time and during all this maneuver the medicine-men were whistling, snorting and prancing to the rhythm of Ramon's drum. The mother and friends of the patient's family added to the noise by shrieks and cries. Each invalid was visited and the same procedure was carried out over each."

Other measures were used in various ways as in the following by Musters (quoted from Corlett, 1935).

"The patient, a child about a year and a half old, was very ill with influenza. The doctor arrived, and laying the child on its back, proceeded, after patting it lightly on the head, and murmuring an incantation, to place his mouth close to the patient's chest, and shout, as far as I could understand, to exhort the evil spirit to leave the child; after this he took it up, carefully handed it to its mother who, under his directions smeared it all over with gypsum. This over, it was handed back to the doctor, who had been absent a minute. He then produced a hide-bag, at the bottom of which were some charms; into this he inserted the baby's head several times, muttering incantations; after this a white mare was brought up, and after being

painted with red ochre hand-marks all over, was knocked on the head, cooked and eaten. The liver, heart, and lungs were hung on a lance, at the top of which was suspended the bag containing the charms. Whatever effect these ceremonies may have had, the child recovered."

The Indians were firm believers in the curative value of the "laying on of hands" especially by those endowed with special virtues. When Cabeza de Vaca was stranded for six years among the Aborigines of Texas, beginning about 1529, he was put to work by the savages curing their ills by placing his hands on various parts of their anatomy. Calling upon his God and Saints may have been his own idea, but his methods were curiously akin to those of the Indian medicine men. When Jacques Cartier, French voyager, arrived in Canada in 1535, there came out of one village all the women and maidens, "part of which had their armes full of young children, and as many as could came to rubbe our faces, our armes, and what part of the bodie soever they could touch, weeping for very joy . . . desiring us with their signes, that it would please us to touch their children." The significance in this is later brought out when "they (the Indians) brought before him (Cartier) divers diseased men, some blind, some criple, some lame and impotent and layd them all along before our Captaine, to the end they might of him be touched: for it seemed unto them that God was descended and come downe from heaven to heale them. Our Captaine seeing the misery and devotion of this poore people, recited the Gospel of St. John, that is to say, In the beginning was the word; touching everyone that were diseased . . ." Of the Indians of California, Sir Francis Drake reported in 1579 "they then began to shew and make knowne unto us their griefs and diseases which they carried about them . . . making signes, that if we did but blowe upon their griefes, or but touched the diseased places, they would be whole." Drake, however, while fully aware of the value of the "King's Touch," resorted to the commoner healing practices of Europe of his time, for he used "ordinary meanes, as lotions, emplaisters and

unguents, most fitly (as farre as our skills could guesse) agreeing to the natures of their griefes, beseeching God, if it made for his Glory, to give cure to their diseases by these meanes."

In many parts of the continent mud baths, medicated baths, sweating lodges, and other forms of vapor baths were used extensively, steam being generated, as a rule by pouring water over hot stones. This form of treatment was used for many ills, but the white men living among the Indians thought that measles and other eruptive fevers treated in this way almost always proved fatal (Andrews, 1903). They were undoubtedly prejudiced in the general belief that this would induce more "cold." Measles is met with so frequently as the diagnosis among the Indians anyhow, that one is led to believe it may have been hodge-podge of many eruptive fevers. In cases of measles some Indians used to fix a half-dried castor of the beaver on the end of a needle and stick it up each nostril to relieve the congestion and inflammation. One motive of the Acyuses in the massacre of the Whitman family is supposed to have been the missionary's failure to cure the measles in the tribe. He had done his best to relieve the sick and his power to effect in all cases a complete cure was unquestioned by the natives. Among some early Indian natives ailing infants were washed in urine, and according to Garcilaso, even made to swallow some of their own discharges (Moll, 1944). Some early natives of Latin America, when children were taken sick, had their tongues examined and if they were coated, the children were given a piece of dried cord to suck. Aleutian Island mothers plunged their crying babies naked into the water, winter and summer, and held it there until it was quiet. No doubt about the effectiveness of such hydrotherapy (Bancroft, 1882).

When the United States Government began to erect hospitals in the Indian reservations it was indeed an innovation. The establishment of a white man's school for their children and a new medicine house aroused a great commotion among the Indians of one reservation. When a man died in the hospital of acute appendicitis, the Indians refused to go into the building.

"What," said they, "do they want us to go in a dead house when we are sick. NO!" However, this abhorrence of a hospital or building in which someone has died is by no means peculiar to the Indian races. Time and time again I have met with strong opposition from my own patients against sending a child to this or that hospital because the parents or neighbors knew of someone who had died there.

When an Indian boy was taken ill suddenly while at school the weather being unfavorable and his tepee some miles away, he was induced to go into the new hospital for the night. He grew rapidly worse, his temperature shot up to 104 degrees and towards morning he became delirious. He called for his mother and begged to be taken home. The doctor pronounced it pneumonia. The outlook for both the patient and the hospital looked bad. Should an Indian die in the new hospital, its use as a hospital would have to be abandoned.

In the early morning the mother came. Mokuyi-Kinasi, the medicine man came too. He asked that the boy be allowed to be carried home. "For many generations of men the Great Spirit has caused the corn to sprout and bring forth a plenteous yield. He has also given us herbs to cure the sick. We do this in our own way. We do not believe in keeping house for our people to die in. The bottles smell and let out 'bad medicine.' We do not like it, let us go." The nurse remonstrated; with her shrill, strident voice; she said, "It will kill him to be moved." The doctor, evidently not hopeful as to the outcome of the boy's illness said, "The old cuss"—referring to the Indian doctor—"might do him good." And so it was arranged that the boy should go. He was tenderly wrapped in blankets by his father, mother and grandfather, and carried to his home. Once there, the medicine man cupped the chest by powerfully sucking different parts, gave him a draught and softly crooned a medicine-song accompanied by the gentle rattle of the medicine-che-che-quay. The boy swooned into a sleep, from which he awakened somewhat refreshed. He was contented for he was at home among familiar objects. The odor of the bottles in the apothecaries' room was replaced by sweet smelling grasses. His ear caught the mocking bird's morning song.

There was no foreboding, sour-faced nurse, but his mother bent over him and with loving hands smoothed his brow. The kind, wrinkled face of his grandfather looked down on him on his cot of furs. His heart gave a joyous throb; he felt better. A sweet langour replaced the fever which bore him farther and farther away from the white man's school and the white man's dead house. He made a rapid recovery under Mokuyi-Kinasi's care.

So far as I could ascertain, Mokuyi-Kinasi gave nothing more than curative surroundings, the personal influence of those in whom confidence was reposed, wrought what "the dead house" and the nurse, whose personality was "bad medicine" even to the less acute Caucasian, could not supply and were deadly when brought in contact with the intuitive Indian who read at a glance impending doom (Corlett, 1935). This calls to mind too, Dr. L. Emmett Holt's frequent prescription: One hour of loving care.

The Hopi Indians were particularly fond of practicing according to the "doctrine of signatures." For convulsions a twisted piece of wood was laid on the body; in some Indian tribes, mothers with faulty lactation were given concoctions of milk weed. In any form of gastric disorder the Indians employed emetics. In fact the Indian took emetics as frequently and as casually as the white takes laxatives. The Apache hung a small stick from the woody part of a spiny cactus called cholla (*opuntia emorcyi*) around the necks of their children to protect them against sickness.

Among the Mohaves when a child became afflicted with whooping cough the father must perforce abstain from drinking tea, and had to bathe in the Colorado River at specified intervals. A vaguely similar custom was found among the Winnebago. The Delawares thought relief could be obtained in whooping cough if the mother first suckles a puppy and then her child. Chestnut (*Castanea dentata*) leaves made into a tea were used by the Mohegans to cure this disease, while the Delawares considered a tea made from the root of the Skunk Cabbage (*Symblocarpus foetidus*) to be the remedy of choice. A number of methods are in use among the Nantikoche Indians

to avert or cure whooping cough. It is believed that a string or necklace of deerskin will protect the wearer against this disease. If a woman marries without changing her name, i.e., marries a man of same name, she can cure her children of whooping cough by feeding them bread stolen from her neighbors. One informant stated, however, that it is bread stolen from such a woman that effects the cure. In the first instance, a friend often was asked to leave bread where it could be taken unseen.

Another method of treating whooping cough involved securing as many cockroaches as there are children affected, and naming one after each child. Then each child placed a roach into a bottle which was then tightly corked. The sickness is believed to pass with the death of the insect. During this period it is necessary to keep the child's bowels open, else the charm may react and kill him.

A person living in the city is advised to put a cockroach in a thimble, tie it up in a cloth and wear it around the neck, "you will never whoop after wearing it." Whooping cough has been prevalent probably since the discovery of America. It was mentioned in Haiti in 1770, in Brazil in 1780 and in Costa Rica in 1801.

For chickenpox, the child affected is placed before the open door of a chicken house so that the chickens in coming out will fly over him.

Blood-letting by scarification, suction and other means were not unknown to the Indians of North and South America. However, an irate aboriginal father nearly strangled a French Priest to death when one of his children received this treatment for an illness which subsequently caused its demise.

In an anonymous Hispano-Mexican manuscript discovered at the Biblioteca Nazionale Centrale in Florence, the text relates: "When a child has a sore chest, the sorcerer uses the herb iztauhiati, and sucks out blood or matter. Some children get well. Others do not" (Nuttal, 1902). Bernardino de Sahagun, a Spanish Franciscan friar of remarkable intellectual gifts, who went to Mexico soon after the conquest and left a valuable work on the customs and history of Ancient Mexico,

recounted the following curious mode of treatment for children: "The child patient, or the patient child, was held head downwards and its head was shaken to and fro, its mouth being pressed close or stopped with cottonwool. Of this prescription it may be surmised that some may have recovered, but that the majority did not." The Incas of Peru attributed some healing powers to the umbilical cord and allowed the infant to suck upon it if it became ill (Ploss, 1876).

From the extensive materia medica of the native Indians published in different places a few substances stand out as having been particularly useful in children. Sour Dock (*Rumex crispus*-1) was widely used for diarrheas and other diseases by the Indians and the early pioneer American Settlers. A decoction of the root of the Wild Licorice (*Glycyrrhiza Pepidota* Pursh) was used as a remedy for fever in children; Sarsaparilla was also very popular. The root, bark and inner bark of the trunk of several species of oaks were used by many tribes in the form of a decoction for diarrhea. The root of the Raspberry (*Rubus occidentalis* L. & R. *Strigosus* Michx.) was similarly prepared as a remedy for bowel trouble and an infusion of the leaves combined with willow bark was considered an excellent remedy for cholera infantum by the Crees. The bark of mountain ash (*Sorbus Americana*, "bear berry") was steeped in hot water by the Indians in the region of St. John's Lake, Canada, and given to babies to drink for general disorders and especially for cholera. Red alder bears the same name and served a similar purpose. *Cogswellia orientalis* (C. & R. Jones) as a tea was used chiefly for children to relieve pain in the bowels or diarrhea. The plains Indians called the *Parnasuie fimbriata* (Konig.) "for children to drink" (*kas kun isesti man i wats*). From the powdered leaves of this plant a tea was made which was administered to very small babies when dull or when sick at the stomach (Grinnell, 1923). A strong decoction of the chocolate root (*geum nivale*) was used by the Indians of Newfoundland for dysentery, colds and coughs, particularly in children. The *Arabis glabra* (L) was used to check a cold when it first appeared and as a general preventive of

sickness; by the Cheyennes it was "given to children when sickness was about." The Seneca tribe employed the root of the Seneca Snakeroot (*Polygala Senega* L.) in the form of a decoction as a remedy for coughs and colds and the leaves in the treatment of sore throats. Skunk-oil was regarded by the Delawares as a valuable remedy for colds and croup. For children the average dose is from 3 to 5 drops. A small quantity may be used externally on throat and chest. For colds, a syrup made by roasting onions was also used. For infants and young children the syrup was sweetened and a few drops taken clear or in milk. A tea was made also from Calamus or "muskrat" root (*Acorus Calamus*) to cure infants of colds. A tea brewed from "Horsemint" (*Monarda punctata*) or skunk cabbage leaves was also good for colds (Tantaquidgeon, 1942). The Indians now living in Oklahoma give babies the grated root of the arrow-arum (*Peltandra virginica*) with milk. If a child suffers from croup, he is stood against a door-joint and his height marked. After he outgrows the mark, the croup will leave him. The Aztecs believed morning dew cured catarrh in newly born children (Bancroft, 1882). The Prairie mushrooms or puffballs (*Lycoperdon Gemmatum* Batch.) were gathered and kept for use as a styptic for wounds, especially for application to the umbilicus of new-born infants. The powder of these fungi was used as a dusting powder to prevent chafing of the skin. For earache a wad of yarrow leaves (*Achillea millefolium* L.) was crushed and put into the ear (Youngken, 1876). An Indian treatment for earache that Dr. Corlett remembered to have undergone as a small boy was as follows: A green limb was cut from an Ash tree and one end put into the fire. As the sap was driven to the free end by the heat it was allowed to fall drop by drop into the upturned ear, the patient lying on his side (Corlett, 1935). The Delawares used chestnuts (*Aesculus glabra*), "bigacorn tree," ground up and mixed with sweet oil or mutton tallow to make a poultice for earache. A small bag filled with hops (*Humulus lupulus*) and heated was also considered useful for earache or toothache. Skunk scent or rabbit urine was put into the ear to relieve earache by some modern

tribes. The Maricoba tribe prepared earache drops from the seeds of the castor oil bean while the Montagnais put skunk oil into the ear to relieve earache. Others blew tobacco smoke into the ear for the same purpose, a practice I have seen used among my own patients. A little bag of dried blossoms of Hops (*Humulus lupulus*) was applied, heated, in cases of toothache or earache by the Mohicans. The Omaha and Ponca tribes powdered blue flag, mixed it with water or saliva and dropped this preparation in the ear for earache.

Various tribes of North American Indians rubbed the soft down of the cat-tail plant on the skin of infants to prevent chafing. Newly born babes were laid in a mass of the down. Paint was put on the faces of both adults and children as a protection against wind and sun as well as for many other reasons and among the Apaches and Mojaves it was a common practice to plaster the head and body with mud as a protection against vermin and the sun's rays. Cochimi and Pericui mothers of New Mexico, for protection against the weather, covered the entire bodies of their children with a varnish of coal and urine. The primitives everywhere lived in filth and squallor and vermin abounded. The people of Tehuantepec and of Chiapas were even pictured as having a disgusting habit of eating the vermin which they picked from the heads of their children.

The Montagnais of the region of Quebec boiled the leaves of the pitcher plant (*Sarracenia purpurea*) and used the tea as a wash for sores and for children's rashes. For the same ailment a leaf of the plant could be split and bound over the affected part. It was said to draw out the "bad stuff." Ringworm was cured by California Indians by placing the milk of the poison oak in a circle around the affected part. For infantile skin eruptions the ancient Mayans advised anointing the body with a poultice made from the seeds of the michi-husuhtli, red incense, grain which were to be burned; then the plant tlatlanquaye, leaves of the huitzitzilxochitl, the root of the tlahuehaetl and tla-yapaloni, laurel leaves, xiuh-ecapatli leaves from which the acid water is to be drawn; the boy was also to

drink medicine from white earth, the small white stones gathered from the bottom in flowing water, the stone a-camallo-tetl and coltotzin, the bush talmizquitl, and points ground in water. When the infant refused to breast because of pain or when the infant was so affected that it spewed out the milk and would not take the breast into his mouth, he was given a drink made of the herb called te-amoxtli, quail's blood set in the sun, and its hairs, somewhat restored, which were to be incinerated. Also a poultice was ordered to be carefully prepared from a weasel's brain and a scorched human bone, from which the acid water was to be drawn (Gates, 1933).

The Cheyenne tribe believed the rhizome of the Sweet flag (*ocorus calamus* or *Calamus*), when chewed and rubbed on the skin, to be good for any malady. They tied portions of the rhizome to the dress, blanket or necklet of their children to keep away the night spirits (Youngken, 1876). The Delawares prepare the leaves of catnip (*nepeta cataria*) with peach seed to make a syrup very beneficial to children.

Among the Cherokee Indians (Mooney, 1932) the very strong sinewy roots of goatsrue or catgut (*Tephrosia*, *Virginiana* L.) are boiled and given to the child to drink to make it strong and muscular; it is given the eavesdrop, from where it falls in one continuous spout, to drink to make it a fluent speaker, although this belief was probably borrowed from the whites. The fleshy tubers of the wild lily (*Lilium canadense* L.) are boiled and the decoction is given to the child to drink; he is also bathed in it, the object of both actions being to make it fleshy and fat, by the same reasoning that eating the heart of a bear will endow strength, of a fox cunning, etc. Another plant put to the same use as the wild yellow lily bulbs was the Adam and Eve or putty roon (*Aplectrum hiemale*). The fronds of brake (*Pteris* sp.), from the stiffness of the leafstalks, came to be thought of for weak babies and for old people; they were made up into a bed for the patient. Some tribes in South America smeared children, frail individuals and sick people, with the castigation blood in order to make them courageous, strong and healthy. The Montagnais Indians of Canada drank the sap of the poplar (*populus tremuloides*) for worms. The bark

also was steeped for the same purpose and used as a drink. Wormroot (*Apocynum cannabinum*) also was used, and snake-root (*aristolchia serpentaria*) was given for fits because of its twisted appearance. Rhubarb was highly lauded by Monardes who wrote: "The whiche beyng used of many, the fame of it was extended all abrode, that in shorte tyme, banishying the use of Ruibarbe of Barbarie, and tamyng it Ruibarbo of the Indias, and so all men dooeth commonly call it. And also it is called Mechoacan, for that it is brought from thence; and not only in Mexico, and in that countrei thei doe take it as the most excellent purgation: but also in Peru and in all the partes of the Indias.

"It is given at all Tymes and in all ages, it dothe his woorke without molestation. It is a medicine easie to bee taken, for that it hath no evill taste. . . . and so it is easie for children" (Monardes, 1925). George Sticker, in a paper on the diseases in Central America at the time of Columbus published in *Janus* (1924, v. 28, p. 232) quotes from Piso, "*De Indiae utriusque re naturali et medica*, (Amsterdam, 1658) the following in regard to ipecocuanhoe: ". . . this salutary root, which has not only the faculty to expel all noxious matter per superiora et inferiora, but also resists all sorts of poisons. I believe that a more excellent medicine against diseases arisen from old obstructions, or to cure diarrhoeas scarcely may be found . . . as it upsets the body less but opposes effectually all poisons, it is principally administered to children and grand women." This root had such a salutary effect that the Brazilian Indians, from whom Piso learned its use, kept it as a holy secret (Patten, 1930). Now it is a popular household remedy present in many a medicine cabinet of homes where there are young children present. Giving an early account of an Indian remedy, Peter Kalm, from his travels in America in 1748 reported that: "The Worm-seed is plentiful on the road, in a sandy ground such as that near the ferry, opposite to Philadelphia (on the Jersey Shore). I have already mentioned that it is given to children to carry off the worms. It is then put into brandy, and when it has been in it for one hour, it is taken out again and dried, and given to the children, either in beer, sweetened with treacle,

or in any other liquor. Its effects are talked of differently. Some say it kills the worms; others again pretend that it forwards their increase. But I know, by my own experience, that this worm-seed has had very good effects upon children."

Peach leaves (*Prunus persica*) are infused by the Delawares to expel pin worms and to stop vomiting in children. A small quantity is sweetened and drunk occasionally until relief is obtained (Tantaquidgeon, 1942). Button Snakeroot (*Eryngium aquaticum*) was also used for pin worms as well as for tape-worms. Tobacco was also used "In wormes, and in all kinde of them, it killeth them and dooeth expell them. Merveilouslie, the seethyng of the hearbe made a sirupe delicately, taken in verie little quantitie, and the joyce thereof put on the navell, it is needfull after this be doen to geve a glister, that may avoyde them out, and expell them out of the guttes" (Monardes, 1925). Some other plants used by the Aborigines for worms, which must have been quite common among them, were: running blackberry (*Rubus hispidus*), Spearmint and peppermint teas, "peppergrass" (*Bursa bura pastoris*), leaves of spicewood which were to be brewed or made into a tea, and others.

Spigelia was valued as a vermifuge before the discovery of America and was also used as a sedative and diaphoretic. A decoction of the rhizomes and roots of the smaller yellow lady's slipper in which was placed red fleshy stalks of a chickweed was used for worms in children. From the appearance of the red, fleshy stalks of the chickweed, it was supposed to have some connection with worms (Youngken, 1876). In 1764, Alexander Garden, M.D., of Charlestown, South Carolina, published an enthusiastic account of the Indian Pink in which he said: "About 40 years ago, the anthelminthic virtues of the root of this plant were discovered by the Indians; since which time it has been much used here by physicians, practitioners and planters" (Essays and Observations, Philosophical Soc. of Edinburgh, 1771).

Tobacco was used for many ills by the Indians long before the coming of the white men. Monardes wrote: "In one thing, the women that dwelleth in the Indias, doeth celebrate this

hearbe, that is in the evil breathyng at the mouth of children, when thei are over filled with meate, and also of greate people, anointyng their beallies with lampe oile, and puttyng some of those leaves in ashes hotte to their beallies, and also to their shoulders it doeth take away their naughtie breathyng; and it doeth make that thei goe to the stoole, the tymes that it is needfull" (Monardes, 1925). The same writer mentions an oil from "The Figge Tree of Hell" applied to the navel of children "doeth provoke them to the stoole and if they have wormes it doeth expell them and killeth them" chiefly if given a drop or two in milk. The present day Nanticoke Indians of Oklahoma still blow tobacco smoke into a child's mouth to cure it of colic. For indigestion of babies the following "tea" is considered beneficial: A crust ("crisp") of soot taken from the chimney is placed in a cloth bag and steeped in a half cup of hot water. The Cherokees used a decoction of Cranesbill along with chicken grape as a mouth wash in thrush and Canada Moonseed was used for scrofula and sore mouth. The Mohegans made the leaves of the rattlesnake plantain (epipactic pubescenes) into a mash to prevent sore mouths in babies and gave "Elder Blow," flower of elder (*Sambucus canadensis*) made into a tea to babies with colic. As a mouth wash for infants they used an infusion of Golden thread (*Coptis trifolia*). For colic they also gave their babies catnip tea (*Nepeta cataria*), while the Teton-Dakota tribe administered a decoction of grindelia to their children for this complaint (Youngken, 1876); the Delawares made a tea from the flower of the Elder (*Sambucus Canadensis*) "hollow tree." Some Indian mothers, for hiccups put a little wild ginger on the Indian baby's tongue. Among the Hopi Indians, inhabitants of the Pueblos of New Mexico and Arizona, the leaves of a plant named for the bat are placed on the head of a restless child to induce it to sleep in the daytime, because that is the time the slothful bat sleeps. It is not often that the Hopi children require an application of bat-plant medicine, but even the best of children get fractions sometimes (Hough, Walter: *The Hopi Indians*, 1915). The Hopi believe that the wild plants are most valuable for healing and religious purposes. Bunches of dried herbs, roots, etc. hang from the ceiling beams

of every house, reminding one of the mysterious bundles of "yarbs" in a negro cabin, and as occasion requires, are made into teas and powders for all sorts of ills.

When all other remedies had failed among the Delawares an emergency medicine was sometimes made from scrapings of deer antler. During its preparation a prayer was offered to the animal from which the antler was obtained. Wi. Tapanoxwe, an Indian medicine man of Lenape lineage who spent some time with Gladys Tantaquidgeon, herself a descendant of the Delaware Indians and an ethnologist well versed in American aboriginal lore, related to her an incident in which a trial was made by means of this substance. His niece was preparing it for a small child who was dangerously ill. She dropped a small quantity into a cup of hot water, and observing it settle to the bottom, knew that the little patient would not recover, for this was considered of bad import. The medicine was administered as a tea, but the child died in a short time (Tantaquidgeon, 1942). Golden Aster (*Chrysopsis mariana*) roots made into a tea quieted infants and also acted as a tonic for sickly children. Among the Delawares of Canada, Nannyberry (*Viburnum lentago*) and Mullein leaves are steeped and the tea administered in a case of measles. *Mertensia ciliata*, the so-called "blue medicine" of the Cheyennes was thought to be useful in cases of smallpox and measles, drunk in the form of an infusion.

As among all other folk, primitive and modern, there were many and various superstitions and myths concerning the child. When a child of the Guaranis of South America took sick all the relatives had to stop eating any food that they thought might be harmful to the child. Among the many North American Indian tribes, the father lifted his newly born offspring to the sun as if he would consecrate the child to its protection. The sun itself was a deity or else served to represent a benevolent divinity, just as Apollo, the sun was a healing diety to the Greeks. Among these tribes, as with some South Americans, blowing tobacco smoke through the child's mouth, as well as the mouth of any sick person, was common for they ascribed a sympathetic power to it. At the birth of a child to an Indian

woman of the middlewest in the early nineteenth century, Hallet describes how a hawk, symbolic of birth, was drawn by the attending mid-wife from a pouch and dropped to the ground. If it lay breast up in the pose of a man who dies a natural death, that would be considered a good omen. If on the contrary the bird fell breast downward, that was the position of a man slain in battle or cut off untimely and the omen was bad. It meant the child's time on earth would be short (Hallet). Among the Ojibways the medicine men, or *midi* (a society of wizards), carried out a ceremonial consecration of the new-born during which they danced in the temple wigwam with their medicine bags under their arms accompanied by drums and calabashes while the infant lay in the center and its parents and relatives stood on the sides; at the end of this ceremony the father received from the medicine man mysterious charms and amulets which were to be useful to the infant in later life: for instance a carefully wrapped white powder, or else some roots tied with red strings, etc. Before giving a name to a baby, the medicine man was consulted; usually a bird, or an animal or some laudable attribute was chosen, after some favorable sign appeared in some way. This was usually at the time when the child went out to "make his medicine," and this became his patron saint as it were. Various deities and idols were held especially sacred to childhood and infancy. Among the Aztecs the Goddess of birth was called *Itzcuinam* or dogmother. At the first bath of the infant the midwives of the ancient Mexicans repeated many blessings; among others, they turned to the new-born with these words: "Take this water, for the goddess *Chalchuihcurje* is your mother." The moon and the waters were the mythical original mothers of the Indians of North America; the Chippewas, Ottawas, Takkalis, etc., both rendered aid to the mother at childbirth, the babe in its cradle as well as the youth and maiden in their amours.

Upon the birth of a Delaware child, as among other Aboriginal tribes, it was given a pet to serve as the guardian of its health. If there was sickness about, the Indians believed that it would be visited upon the dog instead of its little master, a hopeful belief in the transference of disease or dependence upon

a scapegoat widespread throughout all primitive folklore. A small bag containing charcoal was tied around the pet animal's neck by the child's parents. If the animal died, it was buried and the child was given another pet. However, if the child fell sick and died, a release ceremony was performed by placing a string of wampum about its neck, thus freeing the animal. Among the ancient Zapotecs and other tribes inhabiting the Isthmus of Tehuantepec in Mexico, when a mother was about to be confined, the relatives assembled in the hut and commenced to draw on the floor figures of different animals rubbing each one out as soon as it was completed. This continued until the moment of birth and the figure that then remained sketched upon the ground was called the child's *tona* or second self. When the child grew old enough he procured the animal that represented him and took care of it, as it was believed that health and existence were bound up with that of the animals, in fact that the death of both would occur simultaneously. Soon after the child was born the parents, accompanied by friends and relatives, carried it to the nearest water where it was immersed while at the same time they invoked the inhabitants of the water to extend their protection to the child. In like manner they afterwards prayed for the favor of the animals of the land. The Quiches of Central America, among others, continued to call in the sorcerer even in modern times to take the horoscope of the new born and to appeal to the gods in its behalf. He also gave the infant the name of some animal which became its guardian spirit for life. Esquemelin related that the natives of Belize Coast and adjacent islands carried the new-born infant to the temple where it was placed naked in a hole filled with ashes, exposed to the wild beasts and left there until a track of some animal was noticed in the ashes. This became patron to the child who was taught to offer it incense and invoke it for protection.

Parental affection is nowhere more strongly brought out than in lamentations for the dead among some of the lowest tribes of California Indians. Feeding the dead has been in practice among many primitive peoples. The mother, with some of the

Indian tribes of New Mexico, used to drop milk from her breast on the lips of her dead babe; and in many parts of the world we meet with the custom of placing food near the grave so that the spirits may not hunger, or of placing it in the grave or coffin so that on its way to the spirit-land the soul of the deceased may partake of some refreshment. Among the ancient natives of Venezuela, "infants who died a few days after their birth, were seated around the Tree of Milk, or Celestial Tree, that distilled milk from the extremity of its branches." Of the Yokaia, Mr. Powers tells us "It is their custom to 'feed the spirits of the dead' for the space of one year, by going daily to places which they were accustomed to frequent while living, where they sprinkle pinole upon the ground. A Yokaia mother who has lost her babe goes every day for a year to some place where her little one played while alive, or to the spot where its body was burned, and milks her breasts into the air. This is accompanied by plaintive mourning and weeping and piteous calling upon her little one to return, and sometimes she sings a hoarse and melancholy chant, and dances with a wild ecstatic swaying of the body."

Of the Miwok the same authority says: "The squaws wander off into the forest, wringing their arms piteously, beating the air, with eyes upturned, and adjuring the departed one, whom they tenderly call 'dear child,' or 'dear cousin' (whether a relative or not) to return."

Of the Niskwalli Indians of the state of Washington, Dr. Gibbs observes: "They go out alone to some place a little distant from the lodge or camp, and in a loud, sobbing voice, repeat a sort of stereotyped formula as, for instance, a mother on the loss of her child:

'Ah seahb! shed-da bud-dah ah-ta-but! ad-de-dah!

Ah chief my child dead alas!

When in dreams they see any of their deceased friends this lamentation is renewed."

Very beautiful and touching in the extreme is the conduct of the Kabinapek of California:

"A peculiarity of this tribe is the intense sorrow with which they mourn for their children when dead. Their grief is

immeasurable. They not only burn up everything that the baby ever touched, but everything that they possess, so that they absolutely begin life over again—naked as they were born, without an article of property left."

Besides the custom of "feeding the spirits of the dead" just mentioned there exists also among certain of the California Indians the practice of "whispering a message into the ear of dead."

Among the western Eskimos, "the mother who loses her nursling places the poor 'papoose' in a beautifully ornamented box which she fastens on her back and carries about with her for a long while. Often she takes the miserable mummy in her arms and makes it a kind of toilette, disinfecting it and removing the mouldiness" (Chamberlain).

Of the Doracho Indians of Central America, the following statement is made: "When a mother, who is still suckling her child, dies, the latter is placed alive upon her breast and burned with her, so that in the future life she may continue to suckle it with her own milk." Powers remarks concerning the Korusu (Patwin) Indians of California: "When a woman died, leaving her infant very young, the friends shook it to death in a skin or blanket. This was done even with a halfbreed child." Of the Nishinam Indians, the same authority informs us: "When a mother dies, leaving a very young infant, custom allows the relatives to destroy it. This is generally done by the grandmother, aunt, or other near relative, who holds the poor innocent in her arms, and while it is seeking the maternal fountain, presses it to her breast until it is smothered. We must not judge them too harshly for this. They knew nothing of bottle nurture, patent nipples, or any kind of milk whatever, other than the human." Among the Wintlun, also, young infants are known to have been buried when the mother died shortly after confinement.

The Eskimos, Letourneau informs us, were wont to bury the little child with its dead mother, for they believed that unless this were done, the mother herself would call from Killo, the other world, for the child she had borne (Chamberlain). A Kodiak mother, upon the death of a child, would retire for a

time from camp, living in a small hut or "kennel," as Lisiansky described it (Bancroft, 1882).

Concerning the burial rites of a child, Bishop Cammerhof's journal of a journey to Shamokin, Pennsylvania, in 1748 relates that Logan's wife, who was a Mohican and a relative of Mohican Abraham, one of the first Moravian converts among the Indians, reported that while away on the annual hunt in November, her little daughter died, being, as she informed him, bewitched by a Delaware sorcerer. She immediately returned home with the corpse and gave it a Christian burial in a coffin but in the coffin with the corpse the mother showed the presents she had placed there, viz.: a blanket, several pairs of moccasins, buckskin for new ones, needle and thread, a kettle, two hatchets, and flint, steel and tinder, so that on arrival in the new country, it could go at once to housekeeping. The coffin was beautifully painted and had a supply of bear's meat, Indian corn and a calabash. The mother sat by the grave and wept and sang "Wake up my child, arise and eat; for five days ye have tasted no food . . . this my child was killed by the sorcerer."

Among the Indians of Peru the death penalty was meted out to a baby when it was born if a child who was still nursing from the mother died during this pregnancy. They reasoned that the unborn babe was in some mysterious way the cause of the death of the nursing child. Among the ancient inhabitants of Guatemala, if a nursing infant died, the mother held her milk back in her breasts for four days and would not suckle any other child since she believed that because of the dead child some harm or disease might affect the living one. This form of respect for the dead was called "navitia," from nahui, four, referring to the four day period of restraint (Ploss, 1891). The ancient Mexicans believed that if a twin birth occurred one of the two children could bring an end to the life of one of its parents; therefore, one of the twins was killed as soon as it was born (Ploss, 1876). Motolinia and Torquemado are the authorities for this, but the custom could not have been very general, for it is said that in Tlascala, a nearby province, the mother assigned a breast to each of the twins.

While most of the Brazilian Indians did not burden their pregnant women with the heavy labors to which they were otherwise accustomed, the women among the Patagonians of South America, the Dacotaks and most other North American Indian tribes did not receive any special attention (Ploss, 1876). Indeed, the Cahuilla Indians in California believed it was best for an expectant mother to have plenty of work to do so that the child would be industrious and strong (Miller, 1928). In 1513 ordinances in Spain for San Domingo and Puerto Rico, as well as later for Mexico and Peru, with the aim of protecting the health of the Indians restricted the work of pregnant women and of children (Moll, 1944). Women were to be given lighter tasks during the later months of pregnancy, and for several years after the birth of the child. As with all uncivilized races, and until quite recently among even the best of obstetricians, a belief was maintained that a pregnant woman should not gaze at a deformed person or make fun of him as the maternal impression thus created might affect her child. Care was also taken to avoid being frightened by dogs and other animals.

In the islands of the Torres Straits, flesh of the sole-like flat fish is said to cause the child in the womb to develop weak eyes and a misshapen nose; the eating of another fish causes the flesh of the child to become wrinkled like that of the old; while the use of the octopus flesh will cause the child's hands, mouth and fingers to become malformed. A Thompson River Indian woman will not eat hare when pregnant for fear her child will be born with harelip. If she ate or even touched with her hand a porcupine, or anything killed by an eagle or hawk, her child would look and act like these. If she ate the so-called fool-hen or squirrel the child would be foolish or a cry-baby (Teit, James: *The Thompson River Indians, Memoirs. Amer. Mus. Nat. Hist.*, v. 2, p. 303-304). Among the Lummi Indians of Northwest Washington the pregnant woman does not eat halibut, which it is believed, causes white blotches on the skin of the baby; steelhead salmon which causes weak ankles; trout, which produces harelip; nor the beaver, which nurtures an abnormally large head; shad or blue cod, which gives the child

convulsions; the sea-gull and crane, which make it a "cry-baby"; and deer meat which brings on absent-mindedness. If she desires a small baby she drinks juices but does not eat fats (Stern, 1924). The Guarani mothers are said to have watched their diet during pregnancy and to have fasted, so that the infant would be more inclined to suckle after birth. Even the husband is reported to have fasted. Among some mid-western tribes, to assure the birth of a son, the expectant mother ate the seeds of a water gourd. The Aztec mother believed that sleeping in the daytime would contort the child's face; approaching too near the fire or standing in the hot sun would parch the foetus. Eating *tzictli* or *chicle*, our modern chewing gum, was thought to harden the palate of the unborn child, and to make its gums thick so that it was unable to suck, and also to communicate to it a disease called *netentzzoponiztli*; neither must the edible earth, of which the Mexicans were very fond, be eaten by the mother lest the child should prove weak and sickly. Other things which the woman fancied were to be given her because any interferences with her caprices might be hurtful to her offspring.

Chandless, an explorer of the Amazon River, on one occasion could not induce two of his native porters to row more strenuously; one said that he had left his wife pregnant, the other that his wife was at home with an infant. Their actions had to be tempered if their young ones were not to be injured (Miller, 1928). In Texas, the Carancahua expectant father, a month before the child was born (perhaps even for a longer time), partook only of fish and fasted at long intervals. The belief existed that at that period any injury to the father could be transmitted to the infant, and moreover, any evil spirits acquired by ingestion of flesh containing the same, would forthwith seek lodgment in the infant body (Dyer, 1916). Some California tribes likewise subscribed to these beliefs. The conduct of the husband was supposed in some manner to affect the unborn child and he was consequently laid under certain restrictions, such as not being allowed to leave the house, or to eat fish and meat (Bancroft, 1882). Among many of the various tribes of South American Indians, among whom

the custom of *couvade* is common, the spouse had to limit himself to special diet during the pregnancy of his wife; he had to avoid the pleasures of meats and live only on fish and fruit. For instance, if a woman of the Manhee Indians of Brazil became pregnant the husband immediately began a rather strict fasting period that lasted till after the delivery of the child. It is possible that they did this on the same grounds as the ancient Peruvians of the Inca empire, among whom twin births or natural malformations were of evil portent, which the parents tried to prevent by fasting for a certain time. According to Brett the Caribs believed that during the pregnancy of his wife a father should be denied the pleasure of certain foods because the child might incur certain harm therefrom; if he were to eat of a certain small animal, his child would be thin; of a certain little fish, it would be blind; of the peccary, it would develop a trunk-like mouth; of a certain bird, it would become dumb. Of the Indians of British Guiana, Mr. Im Thurn says they believe that if the father should eat the flesh of the capybara, the child would have large protruding teeth like the animal, while if he should eat that of the labba, the child's skin would be spotted. Apparently there is also some idea that for the father to eat strong food, to wash, to smoke, to handle weapons would have the same result as if the new-born baby ate such food, washed, smoked, or played with edged tools. The connection between father and child, the author believes, is thought by these Indians to be much closer than that existing between the mother and her offspring. In Paraguay and other South American localities a strict diet was enjoined upon the father and other relatives when the baby was sick (Ploss, 1876).

The Hopi Indians placed a swift-running insect on the wrist of a male child in order to make him a good runner; while on the girl's wrist is placed the cocoon of a butterfly in order to strengthen the wrist for corn growing (Miller, 1928). The Sioux and Algonquins tied a small bow and arrow to the cradle of a son so that he might grow up to be a great hunter, while the daughter was presented with other toys; on the other hand, the Natchez laid their boys upon panther skins, the girls on

buffalo hides, in order to confer upon them the favorable attributes of these animals. James Adair, a British trader among the Southern Indians for forty years, beginning in 1735, stated that by the custom of the country in Louisiana, little boys were bedded on panther skins or buffalo skins in order that they might grow into men of spirit, while little girls were couched on fawn skins in order to acquire the submissive characteristics thought becoming to Indian femininity. If when a child was born his feet were set on a bear rug, it would give him courage. It was also believed by some that a child born during a storm would grow up to be a chief and if a child began to walk on the day of a new moon he would grow up to be a fast swimmer. The Guarani of South America presented his boy with a miniature sword, bow and arrow and thereby reminded him pointedly to practice with his arms when he should reach manhood and be brave against his enemies. Even among the ancient Mexicans the child received from its father, according to his trade, similar reminders of tools, arms, etc., but the girl got a little spindle or weaving instrument (Ploss, 1876). Such implements as these were made either in miniature or painted on the bodies of the children. Among the Otomis of Mexico if the child was a boy one of the old men took it in his arms and painted on its breast an axe or some implement of husbandry, on its forehead a feather and on the shoulders a bow and quiver; he then invoked for it the protection of the gods. If the child proved to be a girl, the same ceremony was observed with the exception that an old woman officiated and the figure of a flower was traced over the region of the heart, while on the palm of the right hand a spinning wheel was pictured and on the left a piece of wool, thus indicating the several duties of after life.

The connection between infant dentition and a mouse (or rat), so commonly believed in and mentioned by the folklore of European peoples, was not unusual among the tribes of many distant lands, ancient Mexico, New Zealand, etc. The ancient Mexican belief prescribed: a deciduous tooth must be laid in a mouse-hole or else the teeth will not grow any more (Ploss, 1876).

Grease obtained from a black hen is rubbed on the aching gums of teething infants by the Nanticokes. Another remedy is to roast the brains of a dead rabbit and rub a small amount on the gums. Another informant suspends it by a cord from her child's neck. A mole's foot inclosed in a small bag is worn also for the same purpose. The deciduous teeth of children are thrown into the fire. If a dog should swallow one of these teeth a dog's tooth will grow in the child's mouth. During the teething period, the present-day Delawares hang a little bag containing finely crushed charcoal about the child's neck. The latter chews upon it to ease his aching gums. A loose milk tooth is pulled out by means of a string, its removal allowing the permanent tooth to grow in straight. The extracted tooth is taken outdoors by the child and thrown in the direction of the east, with these words: "My tooth, I place down here. I know when you return I will feed you white beans."

An Indian child's nails are trimmed with a knife or scissors. Care is taken not to lose any of the nail trimmings, which are carried into the woods and left upon a stump. At the same time the following words are addressed to the owl: "Grandpa, I now give you these, your grandchild's nails, to make frames for your eyes." The Hares and Dog-ribs of Northwestern Canada do not cut the finger nails of female children until four years of age, in order that they may not prove lazy (Bancroft, 1882). Babies and small children are not allowed to cry at night, nor older children to play after dark, for fear that their faces will become misshapen.

Among the Eskimos, the mother, after the birth of her child, must observe a great number of regulations referring particularly to food and work. She is not allowed for a whole year to eat raw meat or a part of any animal killed by being shot through the heart. In Cumberland Sound she must not eat for five days anything except meat of an animal killed by her husband or by a boy on his first hunting expedition. This custom seems to be observed more strictly and for a longer time if the new-born child dies. The mother also must keep a little skin bag hung up near her, into which she puts a little of her food after each meal, having first put it up to her mouth. This

is called laying food up for the infant, although none is given it (Corlett, 1935).

While nursing a child, a Delaware Indian mother must refrain from intercourse with any man other than her husband so that the infant may not have diarrhea.

It was believed by the inhabitants of Peru that in the matter of wet-nursing there was a vast difference between negro and Indian women. All diets and all medicaments were, like all people, divided into two classes, the cold and the hot, the heating and the cooling. Black, for example was cooling. Swollen joints must always be bandaged in black. If one were ill of a fever it was a good thing to go to the country and drink the milk of a black cow. So it was that the milk of a negro woman was cooler and more refreshing than that of an Indian. At the birth of a child no perfume of any sort must be allowed in the room for perfume would almost certainly cause convulsions.

In the rites of the Nagualists there occurs a baptism by fire which was celebrated on the fourth day after birth of a child, during which time it was deemed essential to keep the fire burning in the house, but not to permit any of it to be carried out, as that would bring bad luck to the child. This baptism of fire or purification by fire was in practice among ancient Aztecs of Mexico. To the second water baptism was added the fire baptism wherein the child was drawn through the fire four times. Among the Tarahumari Indians of the Mexican Sierra Madre, the medicine man "cures" the infant, so that it may become strong and healthy and live a long life. A big fire of corn cobs, or the branches of the mountain cedar, is made outside the house and the baby is carried over the smoke three times toward each cardinal point, and also three times backward. The motion is first toward the east, then toward the west, then south, then north. With a fire brand the medicine man makes three crosses on the child's forehead if it is a boy, four, if a girl. Among the Sacs and Foxes, North American tribes, after the delivery of a child the placenta was wrapped in the blanket on which delivery took place and secured to a tree to keep it from wild animals. Should a wolf or coyote

eat it, it was believed that the child would resemble such an animal and eventually be devoured by it. The placenta must not be thrown into the river lest the child should resemble a fish, or be drowned and eaten by a fish (Currier, 1891). "When a living nursing child is taken out at night, the mother takes a pinch of white ashes and rubs it on the face of the child so that the spirits will not trouble, because they say that a child still continues to hold intercourse with the spirit-world whence it so recently came" (Chamberlain).

The Delaware Indians of today, to cure a child from slobbering, catch a number of minnows and have the child hold them in his mouth. This is repeated several times a week until a cure is affected. The Nanticokes believe that if an excess of saliva runs from a baby's mouth, one should empty a thimbleful of water into the tea kettle when the child is nine days old. That will prevent the child from slobbering. They also believe that after severing the umbilical cord of an infant, it should be disposed of by burning, lest misfortune ensue. If the cord is dropped, the baby subsequently will be unable to retain its urine. To cure a child of bed-wetting, they feed him portions of a roasted "timber rat." This is believed to effect a sure cure. Wistapanoxwe and a companion once killed and roasted such a rodent and both agreed that the flesh was palatable and not unlike that of squirrel. They were reticent, however, as to the therapeutic effect. A white-footed mouse was used for the same purpose among the Gayhead Indians. When a child's hair was cut it had to be left in some out of the way place, for it was believed that if the birds used it in building their nests, the child would suffer from headaches. If the remnants were burnt it would cause the hair to become brittle. In northern Mexico it was a common custom to hang a small bag containing poisonous herbs round the neck of a child, as a talisman against diseases or attacks by wild beasts. The neighboring Mosquito tribes further to the south, just before the mother and child returned to the village from the seclusion of the maternity hut, fastened about the neck of the new arrival a "pew" or charm consisting of a bag of small seeds with which to pay old Charon

for ferriage across the river in case of an early death (Bancroft, 1882).

Indians of all ages had great faith in charms of various sorts. Little deerskin charms containing the dried fragments of the umbilical cord and tied to the clothing of children up to the age of six or seven years often had the shape of a lizard or turtle. This charm had wide currency and was common to the Sioux, Cheyennes, and Arapahoes. Mackenzie in the early nineteenth century observed the same thing among the Chipewyans in the north. He said: "The women have a singular custom of cutting off of a small piece of the navel string of new-born children which they hang about the neck. They enclose it in a case made of buckskin which they decorate with porcupine quills and beads."

A Cheyenne or Blackfoot woman might kill a newt, water-dog or mud-puppy and cause her little child to put its bare foot on the animal in order to cure leg ache. Sometimes with the same purpose in mind the figure of a lizard or newt might be sketched with charcoal on the sole of the foot (Grinnell, 1923).

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