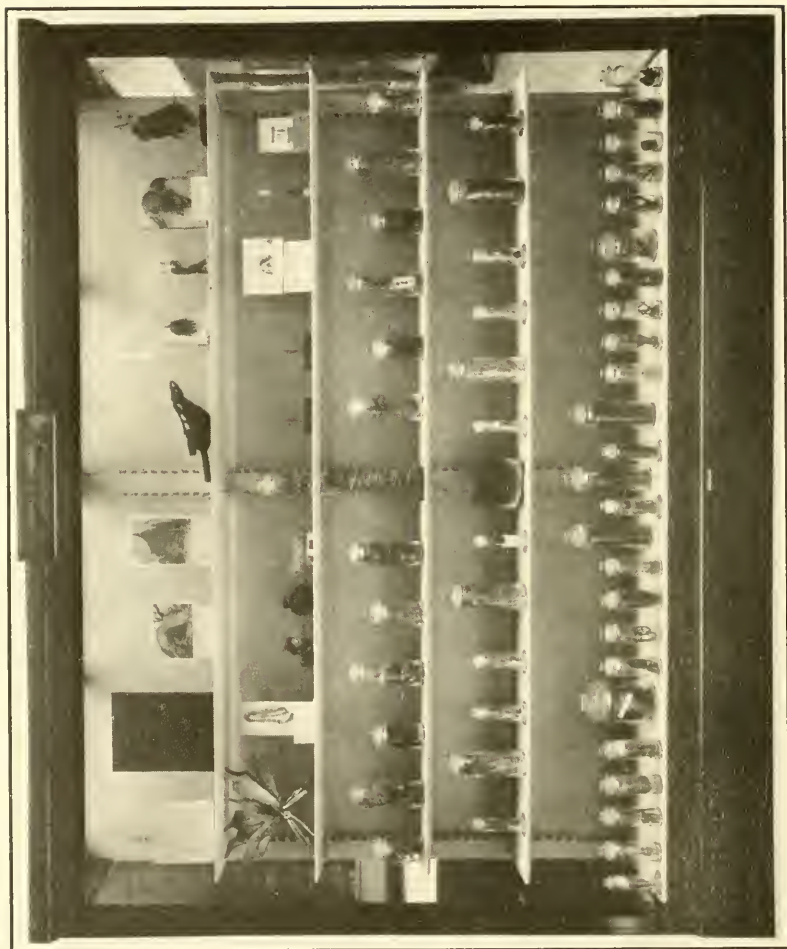




HISTORY OF MEDICINE EXHIBITS—EAST GALLERY

FOR DESCRIPTION OF PLATE SEE PAGE 1



INDIAN MEDICINE EXHIBIT
FOR DESCRIPTION OF PLATE SEE PAGE I

THE INDIAN MEDICAL EXHIBIT OF THE DIVISION OF MEDICINE IN THE UNITED STATES NATIONAL MUSEUM

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INTRODUCTION

This paper is a continuation of a previous article¹ descriptive of the history of medicine exhibits, published by the Museum to meet the demands of visitors for information, copies of labels, and pictures of specimens of these exhibits. The exhibit of American Indian medicine, herein described, was arranged by the late Dr. James M. Flint, U. S. N., who was for many years honorary curator of the division of medicine, with the assistance and cooperation of representatives of the Bureau of American Ethnology, department of anthropology, and others. The purpose of the exhibit is to illustrate original medical practices of the Indians.

Acting upon the suggestion of Prof. W. H. Holmes, then head curator of the department of anthropology, of which the division of medicine was at that time a unit, Doctor Flint arranged a series of history of medicine exhibits. Magic and psychic medicines were given first place in the series; then followed exhibits illustrating the medical practices of the ancient Egyptians, Greeks, and Romans. The Egyptians, who, according to Pliny, were the originators of the healing art, named mythological deities as the first physicians. The Greeks and Romans also assigned to medicine, as its founders and supporters, ever-ruling gods and goddesses, and the first remedies of the people of these countries were "magic." It is not surprising, then, that the Indians also associated the technique of medicine with the offices of religious worship; that the physicians of this race were connected with the priesthood; or that their remedies were principally magic.

Medical practices were much the same among the various tribes. While nothing attaining to the dignity of a science existed, still in medicine the Indians used faculties as discriminating and arrived

¹ Proc. U. S. Nat. Mus., vol. 65, art. 15, no. 2528, 1924, pp. 1-44, figs. 1-24, pls. 1-5.

at results as important and correct as those achieved by other races in a higher state of cultural advancement.

RELIGION OF THE INDIANS

The Indians believed in an enormous number of spirits existing throughout nature. These spirits were of varying power, and many tribes entertained the idea of a superior or supreme deity associated with the sky or the sun. This conception is evidently the basis for the notion of a great spirit generally attributed to the Indians by the whites. Some of these spirits were considered wholly good and some wholly bad, but as often, or rather more often, a spirit might be propitious or malevolent depending on circumstances. The Indians recognized these spirits in dreams; in numberless signs and omens among birds and beasts; they heard them talk in tempests; they saw them in dark clouds; they beset them in almost every possible angry sound which the jarring elements made; and they were even embodied in the insects which crept out of the earth.

The idea of magic power, exerted by means of spirits or through other occult powers of nature, was one of the fundamental concepts bearing on the religious life of the Indians. It existed among all the tribes. That this magic power could influence the life of man, and could in turn be influenced by human activity, was the common belief. This belief in magic power being strong in the Indian mind, all his actions were regulated by the desire to maintain control over it.

MEDICINE OF THE INDIANS

The following, concerning the medicine of the Indians, is from the Bureau of American Ethnology's Bulletin 30, Handbook of American Indians:

In general the tribes show many similarities in regard to medicine, but the actual agents employed differ with the tribes and localities, as well as with individual healers. Magic, prayers, songs, exhortation, suggestion, ceremonies, fetiches, and certain specifics and mechanical processes are employed only by the medicine men or medicine women; other specific remedies or procedures are proprietary, generally among a few old women in the tribe; while many vegetal remedies and simple manipulations are of common knowledge in a given locality.

The employment of magic consists in opposing a supposed malign influence, such as that of a sorcerer, spirits of the dead, mythic animals, etc., by the supernatural power of the healer's fetiches and other means. Prayers are addressed to benevolent deities and spirits, invoking their aid. Healing songs, consisting of prayers or exhortations, are sung. Harangues are directed to evil spirits supposed to cause the sickness, and often are accentuated by noises to frighten such spirits away. Suggestion is exercised in many ways directly and indirectly. Curative ceremonies usually combine all or most of the agencies mentioned.

MEDICINE MEN

Each tribe had men who professed to mediate between the world of spirits and the world of men. The designation and functions of these persons differed considerably in the various tribes, but they may be classed roughly as priest-doctors, prophet-doctors, and herbalist doctors.

Priest-doctors.—The priest-doctor was a magician and the art which he practiced was magic. In some tribes the men who practiced this art formed into societies or associations. They were admitted by a public ceremony, after having been instructed in private, and given evidence of their skill and fitness. Anyone could become a

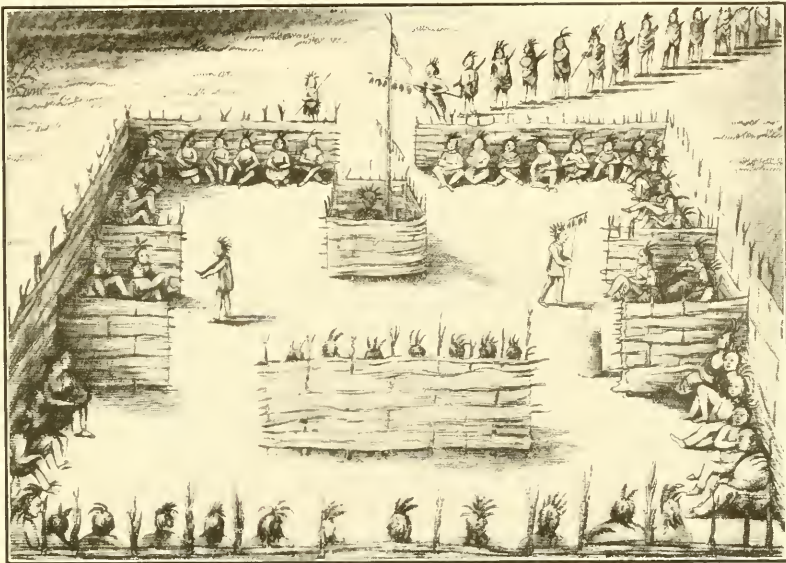


FIG. 1.—PRIEST-DOCTOR'S LODGE

follower and practitioner of this art. The priest-doctors assembled to teach the art of supplicating spirits. These practitioners are to be distinguished from the true priests, whose positions and functions were tribal instead of individual.

Catlin² describes the practice and dress of the medicine man pictured in figure 2 as follows:

Here is a gentleman who gains laurels without going to war—who stays at home and takes care of the women and children. His fame and influence, which often exceed that of the chief of the tribe, is gained without risk of life, but by a little legerdemain and cunning, which are easily practiced upon a superstitious people, who are weak enough to believe that his mystic arts often produce miracles, and which, like all miracles, are difficult to prove or to disprove.

² Life Amongst the Indians. By George Catlin.

Whilst residing in the American Fur Company's factory at the mouth of the Yellowstone River, on the upper Missouri, I had the opportunity of witnessing a Blackfoot doctor's display, in this identical costume, over a dying patient who breathed his last under his strange and even frightful gesticulations and growls and groans under this skin of a yellow bear—hopping over



FIG. 2.—A BLACKFOOT PRIEST-DOCTOR

and over his patient whom he had placed on the ground, and was pawing about with his hands and feet, in the manner that a bear might have done.

Each one of these Indian physicians, during his lifetime of practice, conjures up and constructs some frightful conception for his medicine dress, strung with skins of deformed animals, reptiles, and birds; the hoofs of animals, the claws and toenails of birds, the skins of frogs, of toads, of bats, and every-

thing else that he can gradually gather, to consummate ugliness of looks and frightfulness of sounds by their grating and rattling noises as he dances underneath them, with his face hidden, adding to them the frightful flats and sharps of his growling and squeaking voice, and the stamping of his feet as he dances and jumps over and around his dying patient.

The doctor never puts on this frightful dress until he goes to pay his last visit to his patient, and when he moves through the village with this dress on it is known to all the villagers that the patient is dying; and from sympathy, as well as from a general custom, they all gather around in a crowd to witness the ceremony; and all, with the hand over the mouth, commence crying and moaning in the most pitiable manner.

Prophet-doctors.—The art of the Indian prophet was practiced alone, by solitary and distinct individuals who had no associates. Prophets



FIG. 3.—INDIAN PROPHET'S LODGE

sprang up at long intervals and far apart among the Indian tribes. They professed to be under supernatural power and to be filled with a divine afflatus. The art which they practiced resembled that of the priest-doctors, differing chiefly in the object sought. The priest-doctor sought to control or influence events; the prophet to predict them. Both applied to spirits for their power. Both used material substances, such as stuffed birds, bones, etc., as objects by or through which the secret energy was to be exercised. The general modes of operation were similar. The seventh annual report of the Bureau of American Ethnology contains the following with reference to Indian prophets among the Ojibwa Indians:

The jessakkid is a seer and prophet; though commonly designated a "juggler," the Indians define him as a "revealer of hidden truths." There is no

association whatever between the members of this profession, and each practices his art singly and alone whenever a demand is made and the fee presented. As there is no association, so there is no initiation by means of which one may become a jessakkid. The gift is believed to be given by the thunder god, and then only at long intervals and to a chosen few. * * * The exorcism of demons is one of the chief pretensions of this personage, and evil spirits are sometimes removed by sucking them through tubes. * * * (See figs. 4 and 12.) The lodge (fig. 3) used by this class of men consists of four poles planted in the ground, forming a square of 3 or 4 feet and upward in diameter, around which are wrapped birch bark, robes, or canvas in such a way as to form an upright cylinder. * * * When the prophet has seated himself within his lodge the structure begins to sway violently from side to side, loud thumping noises are heard within, denoting the arrival of spirits,

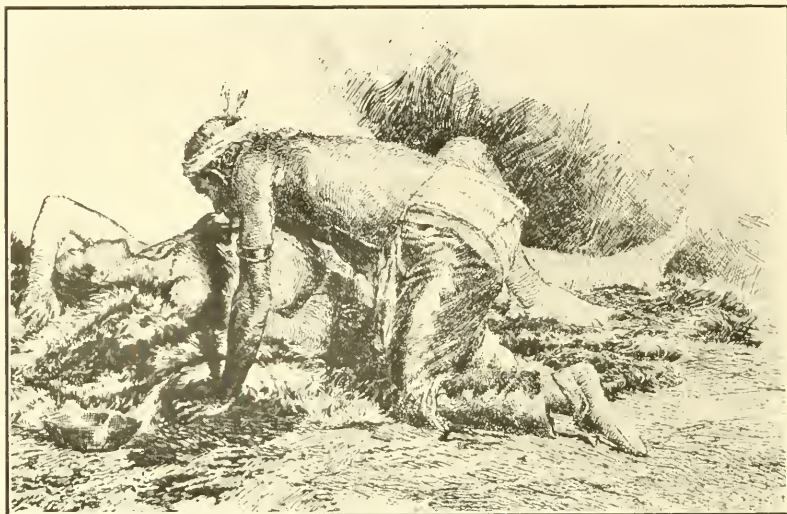


FIG. 4.—MEDICINE MAN REMOVING DISEASE

and numerous voices and laughter are distinctly audible to those without. Questions may then be put to the prophet and, if everything be favorable, the response is not long in coming."

Herbalist doctors.—These persons, men and women, were the real physicians of the tribes. They administered liquid and dry medicines, bled patients, cupped with a horn, and operated on ulcers, swellings, wounds, etc. Although herbalists were aware that certain plants, roots, etc., would produce a definite effect upon the human system, they attributed any benefit obtained therefrom to the fact that the remedies were distasteful and injurious to the demons in the system and to whom the disease was attributed.

In figure 5 the doctor is seated upon a mat inside of a rude tent, holding between his feet a vessel, the contents of which he is stirring with his right hand; with his left hand he shakes a rattle, meantime reciting certain incantations whereby he potentizes his

drugs. Figure 6 pictures the doctor, seated by the side of a sick man, shaking a rattle and invoking the assistance of friendly spirits to drive out the malicious spirits which are causing the sickness. A bowl of medicine (fig. 14) is at hand which the doctor usually sprinkles or blows upon the patient in the intervals of the invocations.

ORIGIN OF DISEASE AND MEDICINE

The Indians believed that disease was not natural, but was due to the evil influence of animal spirits, ghosts, witches, etc., or to the absence of the soul. Some tribes believed in several souls, the loss of one of which caused partial loss of life, that is, sickness, while the loss of all, or of the principal one, entailed death.



FIG. 5.—HERBALIST DOCTOR PREPARING MEDICINE

Mooney in his *Sacred Formulas of the Cherokees* gives the following interesting account of this particular tribe's belief concerning the origin of disease and medicine:

In the old days quadrupeds, birds, fishes, and insects could all talk, and they and the human race lived together in peace and friendship. But as time went on the people increased so rapidly that their settlements spread over the whole earth and the poor animals found themselves beginning to be cramped for room. This was bad enough, but to add to their misfortunes man invented bows, knives, blowguns, spears, and hooks, and began to slaughter the larger animals, birds, and fishes for the sake of their flesh or their skins, while the smaller creatures, such as the frogs and worms, were crushed and trodden upon without mercy, out of pure carelessness or contempt. In this state of affairs the animals resolved to consult upon measures for their common safety.

The bears were the first to meet in council in their town house in Kuwahi, the "Mulberry Place," and the old White Bear Chief presided. After each in turn had made complaint against the way in which man killed their friends, devoured their flesh and used their skins for his own adornment, it was unani-

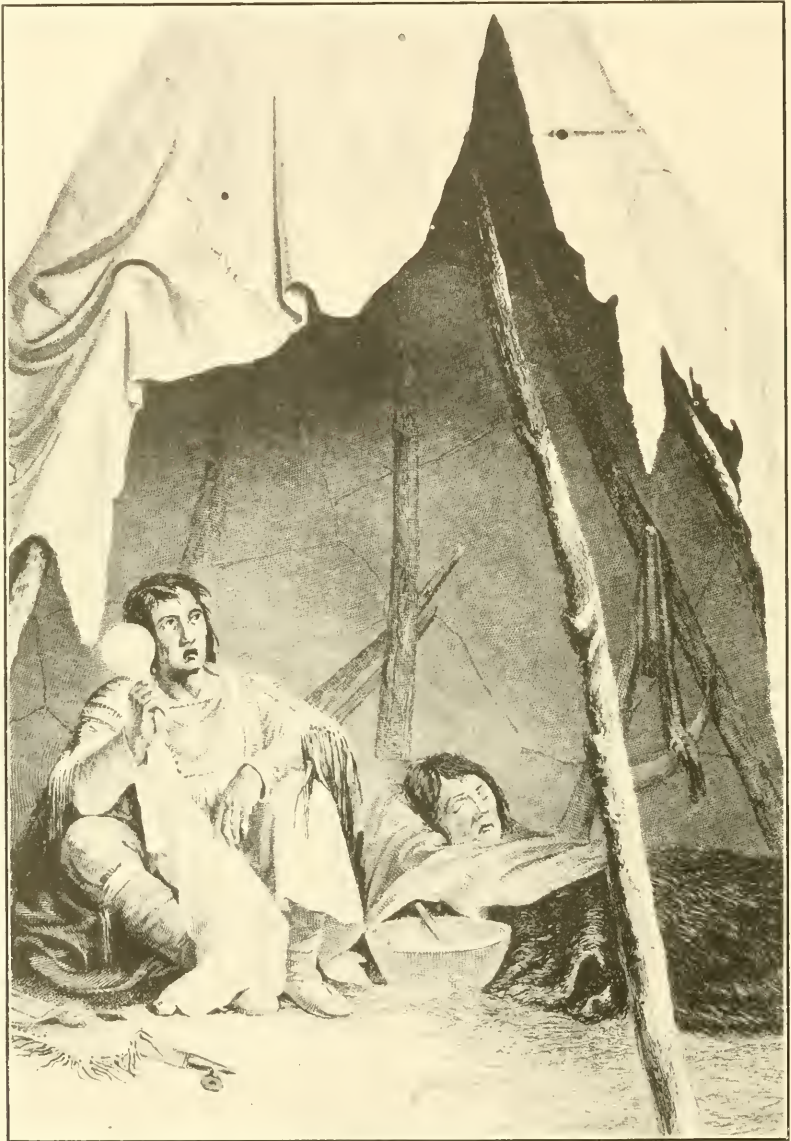


FIG. 6.- MEDICINE MAN ADMINISTERING TO PATIENT

imously decided to begin war at once against the human race. Some one asked what weapons man used to accomplish their destruction. "Bows and arrows, of course," cried all the bears in chorus. "And what are they made of?" was the next question. "The bow of wood and the string of our own entrails!"

replied one of the bears. It was then proposed that they make a bow and some arrows and see if they could not turn man's weapons against himself. So one bear got a nice piece of locust wood and another sacrificed himself for the good of the rest in order to furnish a piece of his entrails for the string. But when everything was ready and the first bear stepped up to make the trial it was found that in letting the arrow fly after drawing back the bow his long claws caught the string and spoiled the shot. This was annoying, but another suggested that he could overcome the difficulty by cutting his claws, which was accordingly done, and on a second trial it was found that the arrow went straight to the mark. But here the chief, the old White Bear, interposed and said that it was necessary that they should have long claws in order to be able to climb trees. "One of us has already died to furnish the bowstring and if we now cut off our claws we shall all have to starve together. It is better to trust to the teeth and claws which nature has given us, for it is evident that man's weapons were not intended for us."

No one could suggest any better plan, so the old chief dismissed the council and the bears dispersed to their forest haunts without having concerted any means for preventing the increase of the human race. Had the results of the council been otherwise, we should now be at war with the bears, but as it is the hunter does not even ask the bear's pardon when he kills one.

The deer next held a council under their chief, the Little Deer, and after some deliberation resolved to inflict rheumatism upon every hunter who should kill one of their number, unless he took care to ask their pardon for the offense. They sent notice of their decision to the nearest settlement of Indians and told them at the same time how to make propitiation when necessity forced them to kill one of the deer tribe. Now, whenever the hunter brings down a deer, the Little Deer, who is swift as the wind and can not be wounded, runs quickly up to the spot and bending over the blood-stains asks the spirit of the deer if it has heard the prayer of the hunter for pardon. If the reply be "Yes" all is well and the Little Deer goes on his way, but if the reply be in the negative he follows on the trail of the hunter, guided by the drops of blood on the ground, until he arrives at the cabin in the settlement, when the Little Deer enters invisibly and strikes the neglectful hunter with rheumatism, so that he is rendered on the instant a helpless cripple. No hunter who has regard for his health ever fails to ask pardon of the deer for killing it, although some who have not learned the proper formula may attempt to turn aside the Little Deer from his pursuit by building a fire behind them in the trail.

Next came the fishes and reptiles, who had their own grievances against humanity. They held a joint council and determined to make their victims dream of snakes twining about them in slimy folds and blowing their fetid breath in their faces, or to make them dream of eating raw or decaying fish, so that they would lose appetite, sicken, and die. Thus it is that snake and fish dreams are accounted for.

Finally the birds, insects, and smaller animals came together for a like purpose, and the grubworm presided over the deliberations. It was decided that each in turn should express an opinion and then vote on the question as to whether or not man should be deemed guilty. Seven votes were to be sufficient to condemn him. One after another denounced man's cruelty and injustice toward the other animals and voted in favor of his death. The frog spoke first and said: "We must do something to check the increase of the race or people will become so numerous that we shall be crowded from off the earth. See how man has kicked me about because I'm ugly, as he says, until my back is covered with sores;" and here he showed the

spots on his skin. Next came the bird, who condemned man because "he burns my feet off," alluding to the way in which the hunter barbecues birds by impaling them on a stick set over the fire, so that their feathers and tender feet are singed and burned. Others followed in the same strain. The ground squirrel alone ventured to say a word in behalf of man, who seldom hurt him because he was so small; but this so enraged the others that they fell upon the ground squirrel and tore him with their teeth and claws, and the stripes remain on his back to this day.

The assembly then began to devise and name various diseases, one after another, and had not their invention finally failed them not one of the human race would have been able to survive. The grubworm in his place of honor hailed each new malady with delight, until at last they had reached the end of the list, when some one suggested that it be arranged so that menstruation should sometimes prove fatal to woman. On this he rose up in his place and cried: "Thanks! I'm glad some of them will die, for they are getting so thick that they tread on me." He fairly shook with joy at the thought, so that he fell over backward and could not get on his feet again, but had to wriggle off on his back, as the grubworm has done ever since.

When the plants, who were friendly to man, heard what had been done by the animals, they determined to defeat their evil designs. Each tree, shrub, and herb, down even to the grasses and mosses, agreed to furnish a remedy for some of the diseases named, and each said: "I shall appear to help man when he calls upon me in his need." Thus did medicine originate, and the plants, every one of which has its use if we only knew it, furnish the antidote to counteract the evil wrought by the revengeful animals. When the doctor is in doubt what treatment to apply for the relief of a patient, the spirit of the plant suggests to him the proper remedy.

INDIAN THEORIES OF DISEASE

The Indians believed that disease was caused by:

1. A malevolent spirit which assumed material form either animate or inanimate and attacked the victim with or without provocation.
2. A spirit, or an object supernaturally injected into a person, which acted at the suggestion of a human enemy who possessed supernatural powers.
3. The angered spirits of the dead, or those of animals, plants, and other natural objects.
4. Absence of the patient's soul.

ARRANGEMENT OF EXHIBITS

Magic medicine.—Exorcism: Invocation: Incantation: Amulets and charms: Talismans: Fetiches: Transference of disease: Signatures: Evil eye.

Pharmacological medicine.—Some drugs of the Indians.

Surgical medicine.—Sudatory (sweat) bath: Venesection: Cupping: Cantery.

MAGIC MEDICINE

Magic is the "pretended art of producing supernatural effects by bringing into play the action of supernatural beings, of departed spirits, or of the occult powers of nature." The application of magic



FIG. 7.—SIOUX MEDICINE MAN

to the treatment of disease is magic medicine, exerted through gods or demons, disembodied spirits of men, animals, plants, or minerals, or by occult powers residing in certain natural objects.

Type specimens, and descriptive information, illustrating how the Indians brought these magic agents and influences into action for

the cure of disease are assembled in the exhibit under the head of magic medicine.

Exorcism.—Exorcism is the practice of casting out evil spirits by religious or magic formulas or ceremonies. The Indian medicine man, in the exercise of the function of physician, strove to exorcise the malignant spirits by means of intimidation or cajolery, or through the intervention of friendly spirits more powerful than the disease spirit.

Sioux medicine man.—Picture of the costume worn by the medicine man or priest-doctor while exorcising the evil spirits of disease. Clad in the skin and mask of a bear with pendants of various small animals, he carries in one hand a drum, and in the other a spear with a carved and decorated shaft (fig. 7). Cat. No. 143117, U.S.N.M.

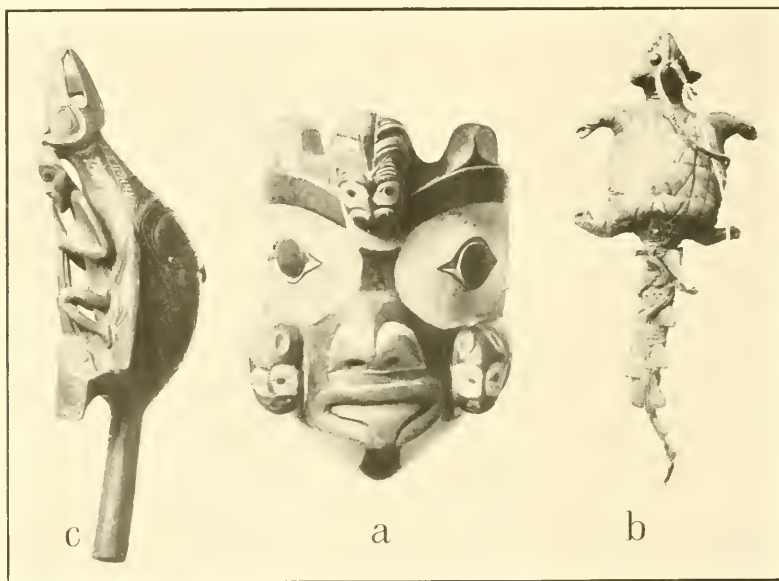


FIG. 8. —ANIMAL MASK AND RATTLES

Mask.—Worn by Indian medicine man in the practice of exorcism (fig. 8a). Cat. No. 67957, U.S.N.M.

Turtle rattle.—Used by Indian medicine man in the practice of exorcism (fig. 8b). Cat. No. 165848, U.S.N.M.

Raven rattle.—A hollow wooden figure, carved in imitation of a raven, bearing upon its back a recumbent figure representing a sick man, from whose mouth another raven is drawing out the materialized spirit of disease. The cavity of the bird contains numerous small pebbles. Used by the medicine men in Alaska, while preparing medicine and in the ceremony of exorcism (fig. 8c). Cat. No. 9256, U.S.N.M.

Invocations.—Invocations are among the oldest, most persistent, and most universally practiced means employed for the cure of disease. Prayers invoking the assistance of disembodied spirits of

men or animals were commonly used by the Indians as an accompaniment of other remedial agencies.

Indian invocation.—For the cure of rheumatism. The common belief of the Cherokee Indians regarding rheumatism is that it is caused by the revengeful spirits of slain animals, especially deer. The disease can only be driven out by some more powerful animal spirit. The doctor invokes the aid of the red dog of the east, the blue dog of the north, the black dog of the west, the white dog of the south, and finally the white terrapin of the mountain, in separate prayers. While reciting the prayers the doctor rubs the afflicted part with a warm solution of fern roots and at the end of each he blows once upon the part.

The invocation is as follows:

"Listen! Ha! In the Sun Land you repose, O Red Dog. O now you have swiftly drawn near to hearken. O great adawehi, you never fail in anything. O, appear and draw near running, for your prey never escapes. You are now come to remove the intruder. Ha! You have settled a very small part of it far off there at the end of the earth.

"Listen! Ha! In the Frigid Land you repose, O Blue Dog. O now you have swiftly drawn near to hearken. O great adawehi, you never fail in anything. O, appear and draw near running, for your prey never escapes. You are now come to remove the intruder. Ha! You have settled a very small part of it far off there at the end of the earth.

"Listen! Ha! In the Darkening Land you repose, O Black Dog. O now you have swiftly drawn near to hearken. O great adawehi, you never fail in anything. O, appear and draw near running, for your prey never escapes. You are now come to remove the intruder. Ha! You have settled a very small part of it far off there at the end of the earth.

"Listen! On Wahala you repose, O White Dog. Oh, now you have swiftly drawn near to hearken. O great adawehi, you never fail in anything. O, appear and draw near running, for your prey never escapes. You are now come to remove the intruder. Ha! You have settled a very small part of it far off there at the end of the earth.

"Listen! On Wahala you repose, O White Terrapin. O, now you have swiftly drawn near to hearken. O great adawehi, you never fail in anything. Ha! It is for you to loosen its hold on the bone. Relief is accomplished."

Mooney's Sacred Formulas of the Cherokees.

Cat. No. 143987, U.S.N.M.

Incantations.—Magical words or phrases recited or sung. The use of incantations arose from the belief that maladies had a super-human origin. The ceremonial use of words, verses, songs, etc., as incantations were commonly used by the Indians to prevent and cure disease.

Schoolcraft gives the following as a specimen of the chants used by a Dakotah medicine man:

Flying godlike, I encircle the heavens,

I enlighten the earth to its center,

The little ox (the struggling patient) lies struggling on the earth,

I lay my arrow on the string.

The manner of the doctor who used this incantation was such as to impress the patient that he (the doctor) was conscious that it expressed his own abilities.

Amulets and charms.—All races have trusted largely to amulets and charms for the prevention and treatment of diseases. They are objects to which is attributed magical influence or power, so as to fascinate or to help or protect.

Charms for preventing or curing disease were the common resort of the Indians. These charms were of various kinds; generally

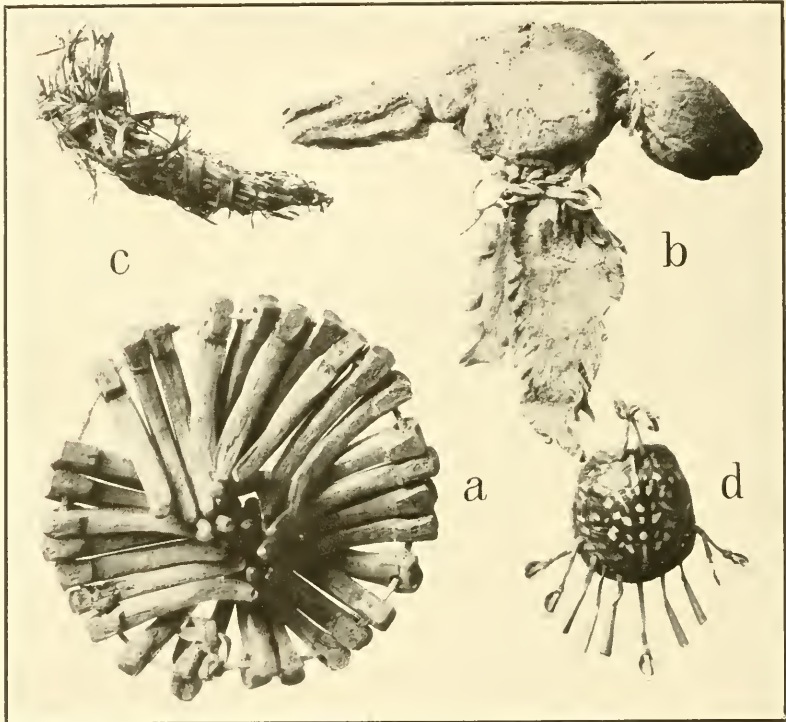


FIG. 9.—AMULETS AND CHARMS

from the animal or mineral kingdom, but sometimes from the vegetable kingdom.

Amulet.—Bear's claws strung upon a deerskin thong. Frequently worn as a necklace by the American Indians (fig. 9*a*). Cat. No. 143098, U.S.N.M.

Pah Ute Indian amulet.—A deerskin pouch divided into three pockets, one containing the leaves of a shrub, another a root, and the third shredded bark. Worn by the Pah Utes as a protective against disease and accident (fig. 9*b*). Cat. No. 19069, U.S.N.M.

Klamath Indian amulet.—Twigs of a shrub bound together with strips of bark. Worn suspended from the neck (fig. 9*c*). Cat. No. 24129, U.S.N.M.

Cheyenne Indian amulet.—A shell of a box tortoise, with pendants of small shells and metal drops (fig. 9*d*). Cat. No. 165954, U.S.N.M.

Talismans.—Talismans are material objects, which are supposed to work wonders whether kept in one's possession or not.

Talisman.—A bunch of white feathers, stained with red paint. One of the numerous articles comprising the paraphernalia of an Indian medicine man (fig. 10). Cat. No. 143099, U.S.N.M.



FIG. 10.—TALISMAN

Fetiches.—Material objects believed to be the dwelling of a spirit, or to represent a spirit, that may be induced or compelled to help the possessor.

Alaskan Indian fetich.—Carved out of a block of wood in imitation of a naked Indian in the attitude of, and probably impersonating, a quadruped. One of the articles composing the outfit of an Alaskan Indian medicine man (fig. 11a). Cat. No. 143105, U.S.N.M.

Zuni fetich.—A clay image of the mountain lion. The spirit of the mountain lion guards the north, and is master of the gods of the hunt. The hunter

makes invocation to the indwelling spirit of this image for assistance in the pursuit of game, and for protection against injury (fig. 11*b*). Cat. No. 128669, U.S.N.M.

Indian fetich.—A beaver's tooth suspended by a deerskin strap, the lower part of which is ornamented with minute beads of various colors. Like other fetiches, this is used to cause or cure disease. The medicine man often pretends to extract some of these teeth from the body of the sick man, thus curing the disease by removing the cause (fig. 11*c*). Cat. No. 143489 U.S.N.M.

Transference of disease.—The medicine men of the Indians frequently treated by means of suction. Sometimes the medicine men were believed to have gods in their bodies in the form of lizards, frogs, leeches, tortoises, snakes, etc., which served as suction pumps in extracting disease. When an Indian doctor was to operate upon a suffering patient, he placed the sufferer upon a blanket on the

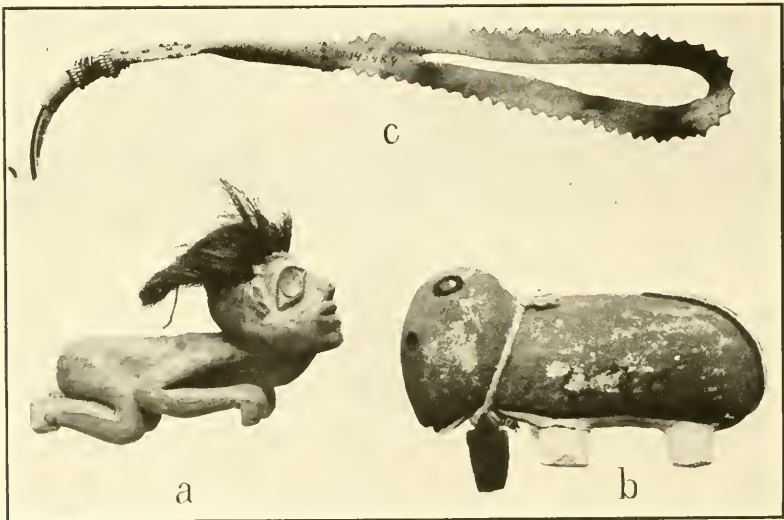


FIG. 11.—FETICHES

ground with the body almost naked. After chants, prayers, the use of the rattle, and many other ceremonies, the doctor got down on his knees and applied suction to the affected part. After sucking thus for a considerable time, the doctor would arise to his feet in apparent agony, groaning, pounding his sides, writhing, and holding a dish of water to his mouth, he proceeded with a singsong bubbling to deposit in the dish the disease which had been drawn from the sick person (figs. 4 and 12).

Bone tube.—An instrument used by the medicine man, by means of which he sucked out with his mouth the cause of disease from the body of the patient. The doctor pretended to swallow the bone tube, and after a time to vomit it together with the poison of the disease (figs. 4 and 12). Cat. No. 141167, U.S.N.M.

Signatures.—Some outward sign appearing upon plants and other objects believed to indicate their medicinal use. The belief in European countries was that the Creator in providing herbs for the service of man had stamped on them, at least in many instances, an unmistakable sign of their special remedial value. In most cases the Indians selected the remedy by some imaginary relation between the physical qualities of the drug and the symptoms of the disease. For a disease caused by the rabbit the antidote must be a plant called rabbit's foot, rabbit's ear, or rabbit's tail; for snake dreams the plant used is snake's tooth; for worms a plant resembling a worm in appearance, and for inflamed eyes a flower having the appearance and name of deer's eye.

Maidenhair fern (Adiantum pedatum).—Used either in decoction or poultice for rheumatism, generally in connection with some other fern. The doctors explain that the fronds of ferns are curled up in the young plant but unroll and straighten out as it grows, consequently a decoction of ferns causes the contracted muscles of the rheumatic patient to unbend and straighten out in like manner (fig. 13). Cat. No. 143490, U.S.N.M.

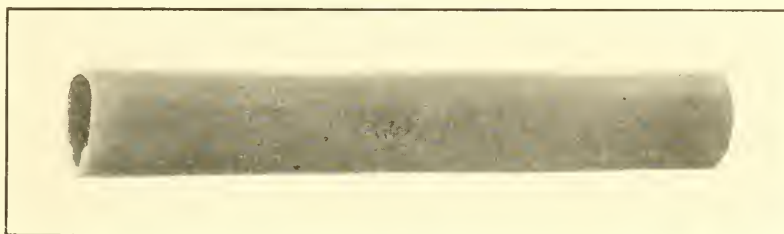


FIG. 12. BONE TUBE

Evil eye.—The belief in the power of some persons to bring misfortune, sickness, and even death to men or animals by gazing at them is one of the most ancient, widespread, and persistent of human superstitions. This belief was universal among savage and partly civilized people everywhere. A belief prevailed among the Indians that the medicine man possessed powers of conjuration and a god-like power of killing those against whom he might hurl his direful charms or glances. The Indians would hide or avert their heads in the presence of medicine men to escape their glances.

Horns.—Horns, in one form or another, were of all objects the most common defense against the evil eye. The North American Indians wore horns to ward off that awful, universal, inescapable, mystic glance that has continually harassed man in all quarters of the globe (fig. 17). Cat. No. 143503 U.S.N.M.

PHARMACOLOGICAL MEDICINE

The Indians practiced a sort of domestic or empirical medicine in which drugs were the principal agents. But even in this method of treatment the selection of the remedy was more often determined

by some imaginary relation between the physical qualities of the drug and the symptoms of the disease than by proof of its efficacy. The knowledge possessed by the Indians concerning plants and their therapeutic uses was superficial, and the popular impression regarding the medical skill of the Indian doctor in this respect is erroneous.

The following concerning animal, mineral, and vegetable drugs



FIG. 13.—MAIDENHAIR FERN

used by the Indians is from the Bureau of American Ethnology's Bulletin 30, Handbook of American Indians:

Vegetal medicines were, and in some tribes still are, numerous. Some of these are employed by reason of a real or fancied resemblance to the part affected, or as fetiches, because of a supposed mythical antagonism to the cause of the sickness. Thus, a plant with a wormlike stem may be given as a vermifuge; one that has many hairlike processes is used among the Hopi

to cure baldness. Among the Apache the sacred tule pollen known as *ha-dn-tin* is given or applied because of its supposed supernatural beneficial effect. Other plants are employed as remedies simply for traditional reasons, without any formulated opinion as to their modes of action. Finally, all the tribes are familiar with and employ cathartics and emetics; in some instances also diaphoretics, diuretics, cough medicines, etc. Every tribe has also knowledge of some of the poisonous plants in its neighborhood and their antidotes.

The parts of plants used as medicines are most often roots, occasionally twigs, leaves, or bark, but rarely flowers or seeds. They are used either fresh or dry, and most commonly in the form of a decoction. Of this a considerable quantity, as much as a cupful, is administered at a time, usually in the morning. Only exceptionally is the dose repeated. Generally only a single plant is used, but among some Indians as many as four plants are combined in a single medicine; some of the Opatá mix indiscriminately a large number of sub-

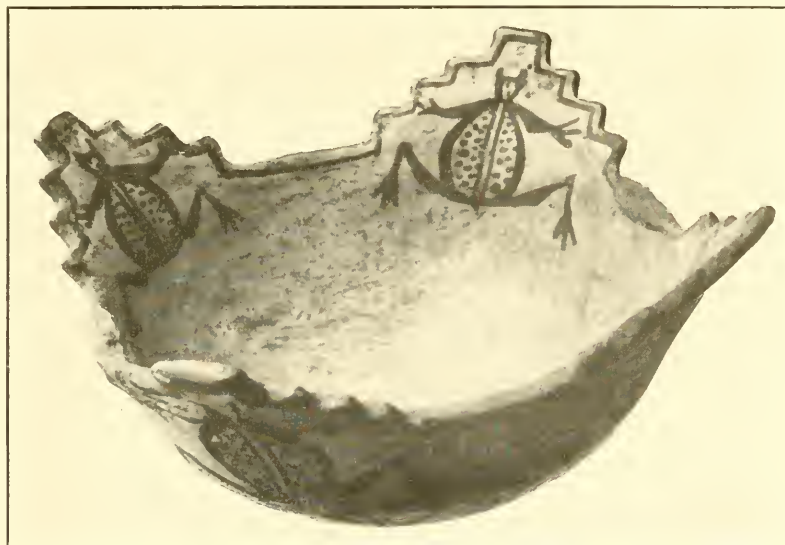


FIG. 14.—MEDICINE BOWL

stances. * * * Some of the plants, so far as they are known, possess real medicinal value, but many are quite useless for the purpose for which they are prescribed.

Animal and mineral substances are also occasionally used as remedies. Among Southwestern tribes the bite of a snake is often treated by applying to the wound a portion of the ventral surface of the body of the same snake. The Papago use crickets as medicine; the Tarahumare, lizards; the Apache, spider's eggs. Among the Navaho and others red ocher combined with fat is used externally to prevent sunburn. The red, barren clay from beneath a campfire is used by the White Mountain Apache women to induce sterility; the Hopi blow charcoal, ashes, or other products of fire on an inflamed surface to counteract the supposed fire which causes the ailment. Antiseptics are unknown, but some of the cleansing agents or healing powders employed probably serve as such, though undesignedly on the part of the Indians.

Magic rites were observed in gathering medicinal materials. This extract from Mooney's *Sacred Formulas of the Cherokees* describes the practices of that tribe in this respect:

In searching for his medicinal plants the doctor goes provided with a number of white and red beads, and approaches the plant from a certain direction, going round it from right to left one or four times, reciting certain prayers the while. He then pulls up the plant by the roots and drops one of the beads into the hole and covers it up with the loose earth. * * * the bead is intended as a compensation to the earth for the plant thus torn from her bosom. * * * In some cases the doctor must pass by the first three plants met until he comes to the fourth, which he takes and may then return

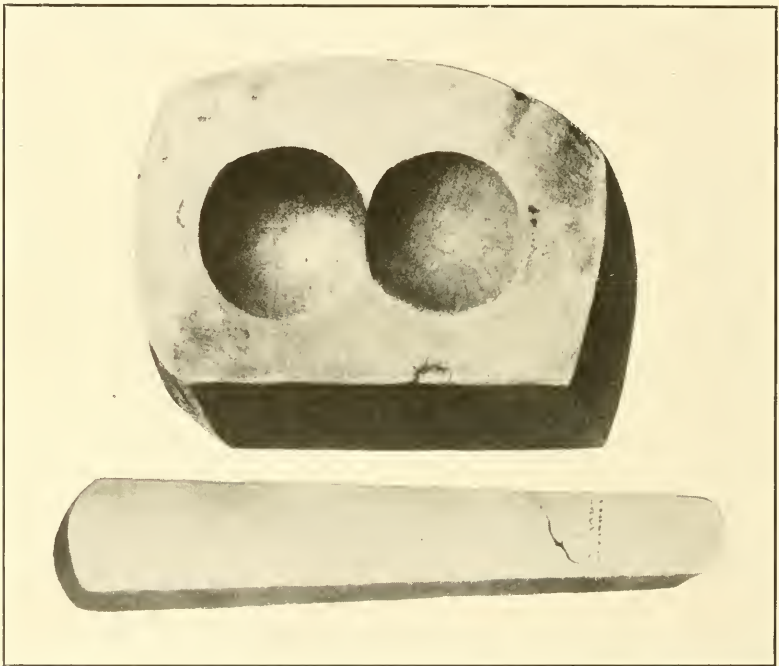


FIG. 15.—INDIAN MORTAR AND PESTLE

for the others. The bark is always taken from the east side of the tree, and when the root or branch is used it must also be one which runs out toward the east, the reason given being that these have imbibed more medical potency from the rays of the sun.

Some tribes were very careful in preserving drugs. Articles of materia medica were dried by hanging in lodges. They were then pounded in a mortar (fig. 15), and tied up in bags of animal tissue, such as the coat of a bladder impervious to air, and, to a certain extent, to water.

The following are a few of the Indian drugs exhibited in the National Museum's collection, in most instances to call attention to the methods of treatment rather than to the drugs themselves.

The seeds of *Sophora speciosa*, a shrub or small tree growing in Texas. Contains a poisonous alkaloid. Used as medicine by the Tonkawas. The Indians are said to have used these seeds occasionally as an intoxicant, half a bean producing delirious exhilaration followed by a long period of sleep. Cat. No. 53436, U.S.N.M.

Sage brush.—A hot decoction of this herb is used by the Arapaho Indians in fever, and by the Shoshones in venereal diseases. Cat. No. 53533, U.S.N.M.

Small white sage.—A species of *Bigelovia*. Used by the Shoshone Indians in the form of hot decoctions. Cat. No. 53534, U.S.N.M.

Gum weed.—A species of *Grindelia*. The tops are used in decoction, in venereal diseases, to be drunk freely, either hot or cold. The Arapaho Indians hang it on the tipi poles to ward off lightning. Cat. No. 53536, U.S.N.M.

Globe flower.—The root bark and small roots of *Cephalanthus occidentalis*, button bush. A Cherokee Indian remedy for cough, which has been adopted into the domestic medicine of the whites. Cat. No. 53539, U.S.N.M.

Brazilian tea.—Used as an adulterant and substitute for Chinese tea, and in the ceremonies of the Indian sorcerers. Cat. No. 53548, U.S.N.M.

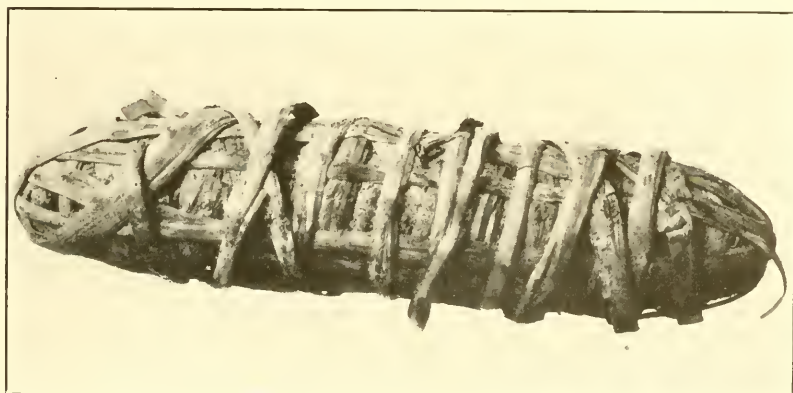


FIG. 16.—WILD-CHERRY BARK

Large white sage.—The stems and flowers of a species of *Bigelovia*. The Arapahoes rub it between the hands and smell of it, to keep them awake when on the warpath. They also fumigate the tipi with it in sickness. Cat. No. 55535, U.S.N.M.

The stems and flowers of a species of *Dalca*, growing in New Mexico. A cold infusion is used as an emetic, and for bathing the body to increase strength. The plant is named for a bird, the blossoms having the color of the plumage and the stems the strength of the bird. Cat. No. 142207, U.S.N.M.

The dried flowering tops of a species of *Aplopappus*. Used in form of an infusion, one ounce to one quart of water, both internally and as a lotion. Administered for snake bite, in which case the patient must remain alone during four days; should a woman nursing her infant be looked upon, death would follow. Prescribed by medicine men of the Snake order. Cat. No. 142209, U.S.N.M.

A root used for toothache.—A piece is made very hot and held between the teeth. Given by medicine men of the Ant order. Although these medicines are often known to others than the doctors, yet the others would not dare collect or use them. Cat. No. 142210, U.S.N.M.

The top and part of the stem of a species of *Aptopappus*, growing in New Mexico. Used in the form of decoction, externally and internally, as a remedy for the irritation of the skin produced by the bites of vermin. Cat. No. 142211, U.S.N.M.

Star medicine (Psoralea cscutenta).—"Stars falling to the ground penetrating the earth, becoming the tubers of the plant." The farinaceous tubers are used as an article of food. Pounded and mixed with water to the consistency of paste, they are used for poultices. Prescribed by the medicine men of the Snake order. Cat. No. 142212, U.S.N.M.

Roots.—Roots of an unknown plant found in New Mexico, growing in lowlands remote from water. Powdered and mixed with water it is given in dysmenorrhea and in protracted labor. Cat. No. 142213, U.S.N.M.

Aralia root.—Root of *Aralia nudicaulis*, used in the form of decoction as a remedy for sore eyes. Given by medicine men of the Ant order. No one else is supposed to know the medicine. Cat. No. 142214, U.S.N.M.

White head medicine.—The stems of a species of *Dalca*. A decoction of the plant is used both internally and as a lotion in various diseases. It is emetic in large doses. Cat. No. 142215, U.S.N.M.

Yellow-rooted grass.—For toothache. The disease spirit is believed to be a worm which has wrapped itself about the root of the tooth. The doctor invokes in turn a red spider, a blue spider, a black spider, and a white spider, of the Sun Land, to let down threads from above and draw up the intruding worm. After each invocation to a spider follows a prayer to the spirit of fire. The prayers having been said, the doctor blows upon the tooth or outside of the jaw a decoction of the herb. Cat. No. 143092, U.S.N.M.

Black snakeroot (Aristolochia serpentaria).—A decoction of the root is blown upon the patient during the ceremonial of exorcism by the medicine man. It is also used for coughs; chewed and spit upon the wound for snake bite; and put in the cavity of a decayed tooth for toothache. Cat. No. 143156, U.S.N.M.

Crane's-bill (Geranium maculatum).—A Cherokee remedy. Used in decoctions with frost grape to wash the mouths of infants affected with "thrush." The root of this plant is recognized as an efficient astringent. Cat. No. 143157, U.S.N.M.

Beggar's-lice.—The whole plant of a species of *Cynoglossum*. A Cherokee remedy. A decoction of the root or top drunk for kidney disease; the bruised root with bear's oil used as an ointment for cancer. Because of the sticking quality of the burs, a decoction of the plant is taken to aid the memory and in the preparation of love charms. Cat. No. 143158, U.S.N.M.

Wild-cherry bark.—For intermittent fever. This disease is believed to be caused by the colonization of malicious insects or worms under the skin. In the preparation of the medicine, the bark is infused in water into which seven coals of fire have been put. The patient is placed with his head toward the rising sun; the doctor, standing in front, with medicine cup in hand, invokes in succession the spirits of the air, of the mountain, of the forest, and of the water; after each invocation he takes some of the liquid in his mouth and blows it on the head, the right shoulder, the left shoulder, and the breast of the patient. The ceremony may be repeated each day for four days (fig. 16). Cat. No. 143160, U.S.N.M.

Spurge (Euphorbia hypericifolia).—A Cherokee remedy. The juice is used as a purgative; rubbed on the heads of children for skin eruptions; made into an ointment for sores. Cat. No. 143162, U.S.N.M.

Galega virginiana.—"They (the roots) are tough." Common names: Catgut, turkey pea, goat's rue, devil's shoestrings. A Cherokee remedy. Women wash their hair in a decoction of the roots to prevent its breaking or falling

out, because these roots are very tough and hard to break; from the same idea ball players rub the decoction on their limbs, after scarification. Cat. No. 143163, U.S.N.M.

Senega (Snakeroot).—The roots of *Polygala senega*. Used by the Seneca Indians as a remedy for the bite of the rattlesnake. Introduced into medicine of the whites as a stimulating expectorant and diuretic, useful in pneumonia, asthma, and other pulmonary affections. Cat. No. 50389, U.S.N.M.

Yellow root.—To hasten childbirth. The doctor, standing by the patient, repeats certain phrases to the effect that a horrible old man or woman is coming for the purpose of hurting the child. He then takes some of a decoction of yellow root in his mouth, and blows it upon the top of the woman's head, upon the breast, and upon the palm of each hand. Cat. No. 50525, U.S.N.M.



FIG. 17—HORNS

SURGICAL MEDICINE

The Indians' knowledge of anatomy was, in a great measure, comparative, having been derived from an acquaintance with the structure of the higher order of animals killed in the chase and used as food. Their skill in curing wounds consisted chiefly of close attention to the injured part, and the frequent application of washes which kept the wound clean. Some dexterity was shown in the treatment of fractures and superficial wounds, and the mechanical means of curing consisted of bandaging, bonesetting, cauterizing, counterirritation, cupping (by sucking), cutting, poulticing, scarifying, and venesection. Splints were made of reeds or the bark of trees and fastened to broken bones with bandages in order to pre-

vent motion of the fragments; also in a great degree the contraction of the muscles and consequent shortening of the limb. Hemorrhages were treated with applications of drying powder of vegetable origin. This powder was pressed into a wound and retained with a bandage. Incised wounds were closed with sutures made of the inner bark of certain trees, or the long tendon of the deer, which was removed after several days.

A sudatory (sweat) bath was taken medicinally, and also as a preparation for certain ceremonial observances. Figure 18 is an illustration of this bath. The tent is made with a bent pole covered with blankets or skins. In the illustration the blanket is re-



FIG. 18.—SUDATORY (SWEAT) BATH

moved from the front to show the interior. The patient is seated inside upon the ground, with a jug of water by his side, while an assistant is heating stones at a fire outside the tent. The assistant passes the hot stones to the bather, who fills his mouth with water from the jug and blows it upon the stones, where it is instantly converted into vapor which fills the tent and speedily induces perspiration. While in this sweating stage it is customary for the bather to plunge into a pool of cool water, if one is near.

Venesection was resorted to in the treatment of certain diseases and was performed by the aid of a piece of flint, which was driven into a vein.



FIG. 19.—LANCETS AND SCARIFICATOR

Stone lancets.—Thin chips of flint, about one and one-half inches long and one-quarter inch wide, used for surgical operations (fig. 19). Cat. No. 34050, U.S.N.M.

Stone lancets.—Small flint arrowheads used by the Indians for bloodletting (fig. 19). Cat. No. 127758, U.S.N.M.

Scarificator.—A small flake of flint. Used for making shallow incisions in the skin for the purpose of drawing blood, and as a preliminary to the applica-

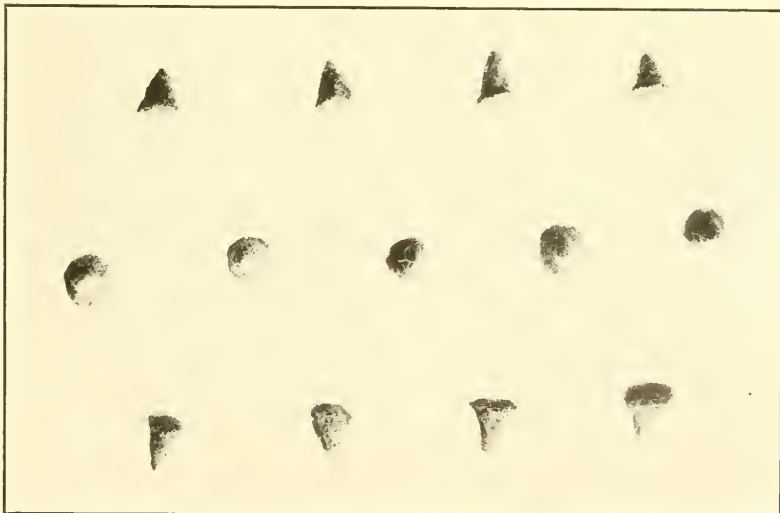


FIG. 20.—MOXA

tion of medicine to strengthen the muscles preparatory to ball games. The scratches were usually made in certain set figures (fig. 19). Cat. No. 141166, U.S.N.M.

Cupping, or local bleeding, was performed after scarification with a piece of flint. A horn, cleaned and perforated at the tip, was used for this purpose. The mouth was applied to the hole in the tip of the horn and a vacuum formed by suction. The Indians cupped very satisfactorily with this simple contrivance, and this remedy was resorted to for acute pain in almost any part to which the horn could be applied. Whatever benefit there may have been from cupping, the Indians probably thought its virtue consisted in the fact that a malevolent spirit or foreign body was thereby drawn out.

Moxa.—A form of cauterly usually consisting of combustible vegetable fiber which is burned in contact with the skin as a counterirritant. The specimens pictured in figure 20 were made by the Klamath Indians. Cat. No. 141441, U.S.N.M.

