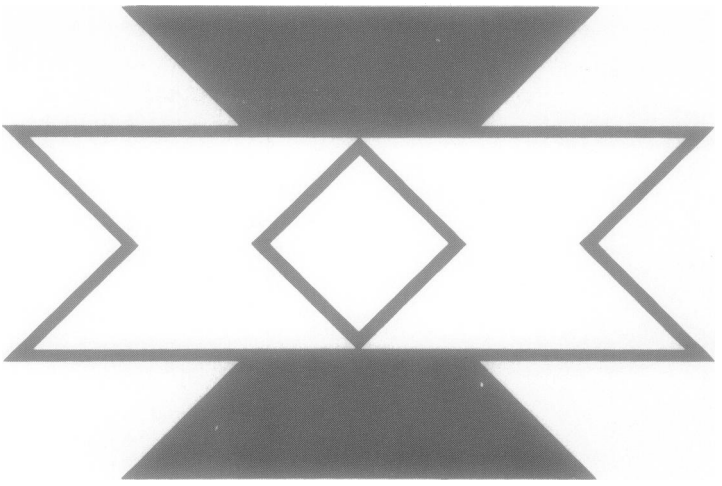

Medicine among the American Indians

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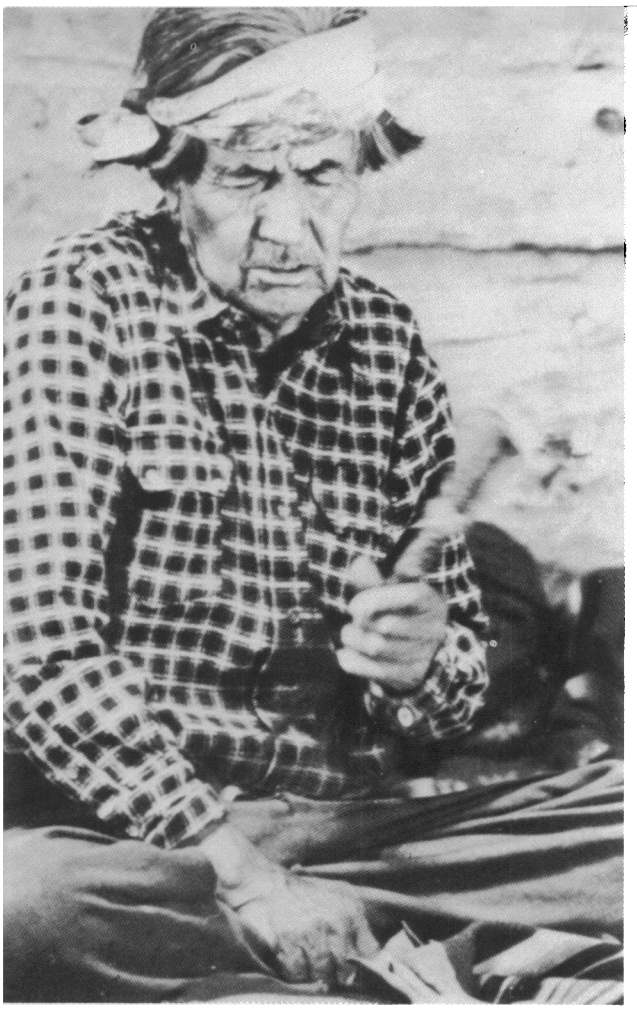
The role of the medicine man among American Indians was highly significant at the time of the early settlement by whites in this country, as is well known. With the general encroachment on Indian territory, and assimilation by many Indians of white practices, the role of the native medicine man has in most instances become less significant. Today, most health practices of modern Indians are not substantially different from those of any other low-income ethnic group in the United States. On the other hand, there are some notable exceptions. Some tribes still retain many of the ancient practices, taboos, and rituals of their early forefathers.

In a review of cultural, religious, or other practices among the American Indians, one must bear in mind that many of these people have been in a constant state of change, particularly since World War II. However, many of the barriers between the Indians and their non-Indian neighbors are being broken down, and the Indians are becoming



The ranking Navajo practitioner is the Singer.

more assimilated into the so-called "American way of life." For example, the Indian Health Service reported that more than 97 percent of births among Indian and Alaska Natives now occur in hospitals compared with 88 percent in 1955, and that today about one-third of the births are to parents of whom one is a non-Indian.

Much of Indian medicine practice is psychosomatic; it is directed at the mind as well as the body of the patient. Traditionally, the tribal medicine man frequently has been considered to have powers beyond that of physical healing. In western tribes, for example, many diseases were ascribed to witchcraft or breaking taboos and were treated by charms kept in "medicine bundles," which are discussed later.

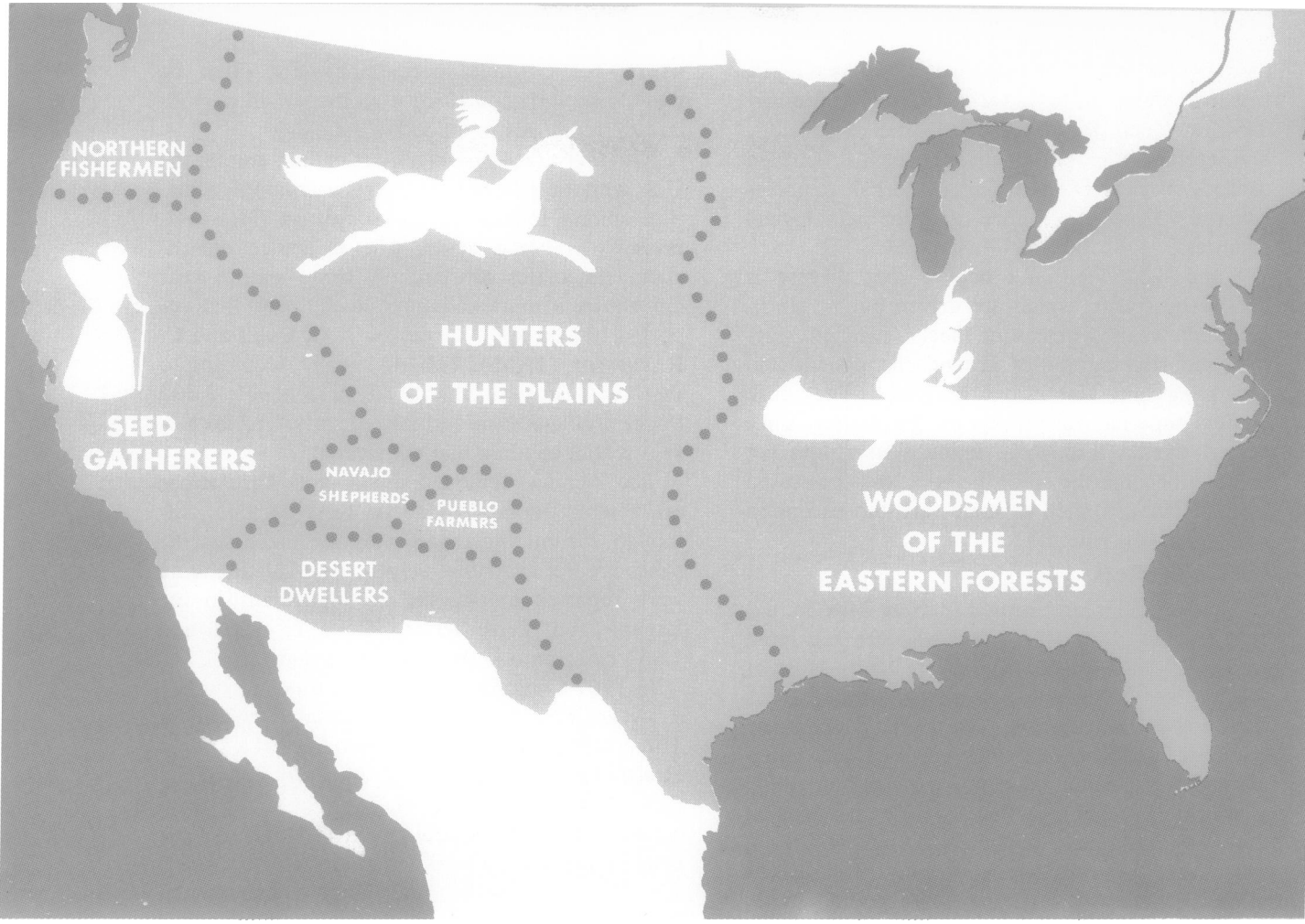
At the outset, the function of the medicine man should be clarified. Many Indians consider normal health to be a state in which a balance of nature exists, just as in their natural environment. When this balance becomes upset, for whatever reason, the person becomes unwell, and it usually behooves him to obtain assistance in returning to normal health. It is by no means unusual for a physician to call upon the services of a medicine man to assist him with attending to a particular patient. Similarly, when a medicine man becomes sick it is not considered improper for him to consult a physician concerning his malady.

Why then does this apparent anomaly of cross purposes exist between the two professions? The answer is perhaps best expressed in terms of a hypothetical example. Suppose that an Indian child breaks a leg and is treated by a physician. While he is a patient at an Indian hospital his family may call on the services of their tribal medicine man for a ceremonial Sing (often at considerable personal expense). This does not necessarily imply lack of faith in the physician who is treating the patient.

The family wants to be assured that for whatever reason the child fell and broke his leg in the first place there will be no recurrence of this or some other form of accident. In other words, the medicine man may attempt to determine why this particular child was singled out to have the accident and not, say, some other member of the family. Finally, the medicine man provides the patient and his family with a sense of inner satisfaction that they have taken the appropriate steps for their personal peace of mind and that they have made their peace with whatever forces were opposing them.

Many of the Indian medicine practices described in this paper are as told by physicians in the Indian Health Service in recounting some of their day-to-day experiences.

Many programs operated by the Government for Indian people in recent years have placed additional emphasis on direct Indian involvement. In the Indian Health Service, this approach has manifested itself in several ways, not the least of which is a more general awareness of health standards and practices. The volume of outpatient visits to IHS facilities testifies to this, since it is greater now than ever before. This is not necessarily because of a higher incidence of illness, but rather because of more general acceptance of Western medical practices together with a highly successful training program for Indians to serve in both professional and nonprofessional positions throughout the Indian Health Service. At present, more than half the total IHS staff are Indian, and the in-



Cultural groups of American Indians in the United States

creasing number of ways in which Indian tribes are taking on added responsibilities in the health field is probably the single most important development in the health program.

The means by which the medicine man arrives at his prognosis may differ among tribes. Some tribes may interpret dreams, whereas others use sand paintings or some other technique, as discussed later, but their ultimate purpose is generally the same.

Cultural Groups

The map shows a somewhat simplified picture of the cultural diversity of the Indian tribes. Seven fairly distinct cultural groups are identified, and these are probably the most expedient for studies of Indian medicinal and health practices, both present and past. These groups are woodsmen of the eastern forests, Pueblo farmers, desert dwellers, Navajo shepherds, hunters of the plains, northern fishermen, and seed gatherers.

There are also several isolated remnant groups in the Eastern and Southern States in predominantly non-Indian areas. Most of these Indians have adopted their non-Indian neighbors' social and economic patterns, but usually strongly assert their Indian tribal connections and history as a means of community identification. The native medicine man has virtually disappeared, although the Indian communities like other isolated groups may continue to use some traditional herb remedies.

Woodsmen of the Eastern Forests

This group consists of all the tribes east of the Mississippi. These tribes are generally more thoroughly assimilated into the surrounding white American cultural patterns, although at one time variations within this geographically large group were fairly well marked.

In early times, many of the tribes believed that diseases were caused by animals and were reme-

died by the use of natural herbs. For example, sassafras was used for a variety of digestive disorders for which dogs were considered responsible, and certain tree barks cured arthritis believed caused by deer. Other similar herbal remedies covered virtually the entire range of pathological disorders.

Some Iroquoians still believe that disease is caused by spirits, which are driven out by medicine men wearing grotesque masks, dancing, singing, and shaking rattles around the patient and sprinkling him with water or ashes. The mask confers supernatural powers on the wearer, since a spirit speaks through it. If the wearer does not actually become the spirit, he is at least possessed by it. However, such practices are the exception rather than the rule.

Pueblo Farmers

These Indians are located in New Mexico, except for the Hopi of Arizona who are separated from the other Pueblos by the Navajo. Most of the Pueblos have had considerable contact with their non-Indian neighbors over many generations, but under the conservative guidance of their councils still retain many traits of their pre-Columbian ancestors. Dr. Maurice Sievers, who has been at the Phoenix Indian Hospital for several years, wrote that southwestern American Indians often differ significantly from the white population in the frequency, distribution, and manifestations of disease (*Public Health Reports,* December 1966, p. 1075). He observed, for example, that although the prevalence of diabetes mellitus among Indians varies considerably, it is far more frequent in the southwestern tribes (whose members tend to be obese) than in the general U.S. population. In 1954, B. S. Kraus estimated that diabetes was least frequent among the Navajo and Apache tribes and most frequent in the Papago and Pima tribes ("Indian Health in Arizona," University of Arizona Press, 1954, ch. 6).

Ritualistic healing practices are common in these southwestern tribes. However, the medicine man may become a strong ally of the physician in motivating the tribal acceptance of modern medical practice if physicians and other workers exhibit an understanding, cooperative attitude toward the established Indian customs. The place of the medicine man in the Pueblo culture is still fairly important, although now subsidiary to that of the white physician in most instances. Councils retain control over day-to-day actions to an extent where, for example, permission must often be granted by the council for a mother to allow public health officials to inoculate her child.

Although trachoma is almost extinct among the U.S. white population, it is still a common affliction among Indians in the Southwest. However, progress is being made. The incidence of trachoma fluctuates substantially from year to year but shows a marked improvement over that reported from a 1960 survey by J. C. Cobb and C. R. Dawson (JAMA, Feb. 4, 1961). According to the 1960 survey, about 16 percent of 2,522 Pueblo Indians seen and 23 percent of 1,126 Navajo school children had the disease.

The Acoma, Jemez, Laguna, and Taos tribes are Pueblo Indians living in New Mexico. Although current incidence rates for these specific tribes are not available, only 21 cases of trachoma were reported among the 7,500 Indians in the Laguna and Taos Service Units in 1968 and 1,662 cases among the 96,500 Navajos.

In 1967 Congress appropriated funds to initiate a 5-year intensified program to combat trachoma. Three teams are now working out of the Indian Health Service hospitals at Phoenix and Tuba City, Ariz., and at Gallup, N. Mex. Each team consists of an ophthalmologist, two nurses, an education specialist, a clerk, and a driver-interpreter. All IHS field staffs, including environmental health personnel, are collaborating. From July 1966 to July 1967, these teams screened 40,931 persons residing in a target area and found 4,883 (11.9 percent) active cases of trachoma. During 1967, the number of new cases was 3,642—about half of the 1966 total. Of these new cases in 1967, more than 50 percent were in the age group 5 to 14 years.

Desert Dwellers

Two variant groups, the agricultural Pimas and the nomadic Apache, are included in the desert dwellers. The Piman linguistic group, including the Papago as well as the name tribe, originally followed a way of life much like the Pueblos. However, they have gone much further than the Pueblos in adopting Anglo-American patterns. Dependence on medicine men varies from little or none among most of the Pima to an appreciable amount in some parts of the Papago country.

In 1968, in a detailed study by the Indian Health Service of the Papago Indians in Arizona, the question was asked: "What do you think of the primary medical service you received?" Of

5,372 Indians responding to the question, 431 or 8 percent referred to the medicine man as their primary source of medical attention, compared with 4,044 or 75 percent who used Indian Health Service facilities. Incidentally, 90 percent classified the service from their medicine man as "good" or "very good" and only 29 persons considered him "fair" or "poor." This compared with 3,149 persons or about 78 percent of those using IHS facilities who rated such facilities as good or very good; less than 2 percent rated them as poor.

Apache communities are usually small, and the resources available on their reservations are fairly adequate. As a result, there has been less incentive for migration from the reservation than for most other tribes, even though they were among the last Indians to accept living on a reservation. Like their linguistic cousins the Navajo, the Apaches still retain to a large degree their distinctions in language, dress, and dwelling, and the medicine man continues to play a fairly important role in the health picture.

As among many Indian groups, the Apaches consider themselves healthy until acute illness forces them to seek medical attention. Many Apaches have difficulty in describing their symptoms and are likely to simply say "I am sick." Further questioning by the physician does not usually clarify the case history since the Apaches seem to be vague about the early stages of their sickness. For example, mothers are often unaware of the first sign of illness in a child and, therefore, cannot give a good estimate of the length of time the child has been sick.

In prescribing medicine, the physicians have to give careful instruction in its proper use. Dosages are prescribed by describing the part of day when they are to be taken, such as "sunrise and sunset." It is useless to name a specific time since most Apaches do not keep close track of time, and they are likely to eat meals at odd hours. Physicians are also careful in describing the length of time a medicine will take to work effectively, for the Apaches will discard the medicine as soon as they feel better or if they do not derive immediate benefits.

Most Apaches seem to have a general idea about the germ theory of disease. Although they are not always sure which inoculations are for which diseases, they do seem aware of the general protective value of inoculations, according to a 1962 study by the Stanford Research Institute on the San Carlos Apache Indian Reservation.

Dr. John Morris, a radiologist assigned to the 137-bed IHS hospital in Phoenix who is widely experienced in treating Indians in the Southwest, stated in an interview (Your Radiologist, fall 1965):

> . . . treating Indians is an enjoyable experience. Although they are not very communicative, they will subscribe willingly to whatever must be done. They may not fully understand the means and methods of "white man's medicine" but they believe it will get results. . . . The traditional Indian stoicism keeps them from showing fear in medical situations, but this may be partially due to their inability to fully comprehend. The Indian's knowledge of the human body and of illness and remedies is based on principles more of magic than of medicine.

Among generalities, Morris observed an absence of duodenal ulcer and bronchogenic carcinoma among his Indian patients. By contrast, gallbladder disease, gallstones, and diabetes were prevalent.

At one time the medicine man was an important figure in curing sickness. In more recent years, however, the old medicine men have been dying off and most Apaches have been responding quite well to hospital and clinic care. Some of the older conservative Apaches still make use of the remaining medicine men, especially for chronic illnesses associated with old age. Some illnesses are considered "Indian sickness" which require the traditional native treatment. A few, to be on the safe side, use both the medicine man and the IHS physician. Several of the medicine men themselves come to an IHS facility for treatment. In some situations a medicine man is allowed to attend patients in the hospital, and in a reciprocal manner, medicine men refer patients to the hospital.

Navajo Shepherds

The Navajo Reservation extends over nearly 24,000 square miles in Arizona, New Mexico, and Utah. Navajo legends tell that "The People," or "Dine," as they call themselves, emerged from underground. Of all Indian tribes, the Navajo are by far the most numerous. Their current population is estimated at about 125,000, almost one-fifth of the entire Indian population of some 800,000. For this reason, their medical practices and faiths are discussed in somewhat greater detail in the following narrative than are the other tribes.

The Navajo traditionally has believed that illness occurs when by some means the patient falls

out of harmony with the forces of nature. Therefore, the most important thing is to restore through ritual the harmony which has been disrupted, so that the body can heal itself.

Any discussion of the present-day Navajo culture and medical practices would be incomplete without mention of their former tribal health chairman, Annie Wauneka, the daughter of Chee Dodge, the first chairman of the Tribal Council. That Mrs. Wauneka was able to bring to her people the virtues of modern medicine without destroying their ancient and beautiful beliefs is a tribute to the veneration in which she has been held by the Navajos and to her ability to combine the practical with the traditional. She has worked not as an outsider but as a Navajo woman. She had on the one hand the help of the IHS with its health education, mobile X-ray units, and nurses and physicians to conduct prenatal and mass vaccination clinics as well as eye and ear examinations. On the other hand, she encouraged the medicine men of the tribe to take part in the opening of IHS hospitals and to refer patients to medical centers when they were critically ill and also to help the Navajo overcome his fear of non-Indian medical practice.

She also visited the hogans to persuade the ill to enter a hospital. She prevailed on expectant mothers to go to hospitals for the delivery of their babies and won tribal appropriations for artificial limbs and braces, wheelchairs, hearing aids, and eyeglasses for the handicapped. Over the years she inspired scores of young Indian girls to become registered or practical nurses. Probably as a result of Annie Wauneka's work, about three-fourths of the present-day nursing staffs in the five IHS hospitals on the Navajo reservation are Indian.

Dr. Taylor McKenzie, the grandson of a medicine man and the first Navajo to graduate from medical school, was chief surgeon at the IHS Hospital in Tuba City, Ariz. In a paper entitled "Navajo Doctor," published by Baylor University, Waco, Tex., February 1967, McKenzie said:

> . . There is an acute problem of medical care among my people. Because of the language barrier and superstitions, doctors have not had an easy time with the Navajo. Tribal medicine men still outnumber the professional medical people on the reservation, and about one in seven elders continue to practice Indian medicine to drive out evil spirits.

Malnutrition was a principal medical problem encountered by McKenzie: "There are few people who can't get food; the problem lies in clinging to a traditional restricted diet." Another problem was a higher incidence of kidney stones among children on the reservation than found elsewhere.

A detailed account of the medicine man's role in Navajo tribal affairs was given by Dr. George E. Bock, medical director of the Navajo Area Indian Health Program, in the April 1967 issue of PHS World. Some excerpts follow:

> The Navajo healing process may be broken into several categories . . . these are: Recognition of diseases; diagnosis; symptomatic treatment; etiology; cure; and prevention.
>
> The Navajo recognizes mental and social disturbances as well as physical pain as being the sign of illness. Physical illness, although recognized by pain, is not classed in the same disease entities and so the urgency of various danger signals differs from that of the Anglo American. Moreover, common complaints such as diarrhea, upper respiratory ailments and skin lesions do not alarm the Navajo in their early stages. They are so common they hardly appear as ailments.
>
> Diagnosis may or may not follow the recognition of illness. If the individual feels it is serious, and if a diagnostician is immediately available, then diagnosis is obtained.
>
> There is a clear-cut hierarchy among Navajo practitioners. Unlike many cultures, these levels of practitioners are not in competition with one another. They work together.
>
> The ranking Navajo practitioner is the Singer or Chanter. Most of us mistakenly call him the Medicine Man, or call all three practitioners Medicine Men. The Singer is the High Priest of the Navajo religion. Only he can cure illness—that is, restore the individual to harmony. He does not treat or relieve symptoms; he does not set bones; he does not attend women at childbirth.
>
> A man becomes a Singer by serving an apprenticeship with an established Singer. He must learn hundreds and hundreds of songs full of archaic words, and must learn them perfectly, not merely the words but the precise tone and way of singing them, and an enormous number of rules about sequence that are almost obsessive in their complexity and thoroughness. In addition, he should know all the legends concerned in the origin of the ceremonials, must know where to find and prepare the herbs concerned, how to make the fetishes and paraphernalia, how to make the sand paintings, direct the dances, and finally all the acts and procedures of the ceremonial, not only for himself but for the patient, the helpers and the audience, which always participates to some extent. . . . It takes an average of five years of concentrated study to learn one Sing.
>
> The second ranking Navajo practitioner is the Diagnostician. No Singer makes a diagnosis. A diagnostician must diagnose the cause of the illness and prescribe the proper Sing. Unlike the Singer his skill is not learned. He has received his abilities from a mystic source; he may have received his ability suddenly. Various techniques are used. Hand trembling, star gazing, and seeing are all currently in use although hand trembling is the most

prevalent technique. The Diagnostician just seeks the cause of the illness.

After performing the prayers necessary for successful diagnosis, the hand trembler will think of one possible cause after another. The hand stops trembling when the correct cause is thought of. Once the cause is known, the same process is repeated to find the correct ceremonial or Sing which will cure the disease. In return for finding the cause and the correct treatment, the Diagnostician receives a small compensation in the neighborhood of five dollars. The Diagnostician is not accorded the status of the Singer.

The third ranking practitioner is the Herbalist. Because the ceremonial cure is costly and must often wait until the proper time of the year or until the extended kin group can muster the money and manpower to sponsor one, an individual frequently needs to relieve his symptoms prior to curing. It is important to note that symptomatic relief does not mean the disease has been cured and logically does not obviate the need for a Sing.

In the area of symptomatic treatment the Navajo is a pragmatist. Whatever relieves the pain is resorted to, and he seeks relief from the Navajo Herbalist, Hopi Medicine Men, Anglo physicians, Christian faith healers, all of whom he considers equal. Navajo herbal remedies are nothing more than symptomatic relief to the Navajos themselves, and the Herbalist has not been accorded the status of the Singer. Instead, he is on a par with the other symptomatic treatments, whether emanating from Navajo culture or the surrounding cultures. The status of symptomatic treatment is not only important for the understanding of the Navajo healing process but also for recognizing the role played by the Anglo medical practitioner.

Where does the non-Indian practitioner come into conflict? First of all, our physicians on the Navajo Reservation are young—and young men do not have status, at least not as healers.

The traditional Navajo ranks the non-Indian physician with the Herbalist, the lowest and most insignificant of the Navajo practitioners. This is a shock to our young physicians. The physician gives medicine, he sets fractures, he does surgery, he relieves pain. No Singer would ever do these things because he does not treat symptoms or obvious organic problems. The physician asks many questions to obtain a diagnosis; not even a Navajo Diagnostician would do this. The non-Indian physician has taken a place beside the Hopi Medicine Man, the missionary and the faith healer.

A second area of misunderstanding occurs between the Anglo physician and the Navajo patient and his family. The Navajo patient does not verbalize his anxiety as does the average white patient, but is quiet and says nothing. He does this for two reasons. First, this is the normal way for a Navajo to handle his anxiety, and secondly, he is in the presence of a white physician whom he may fear, may resent and above all, he does not understand. He, therefore, volunteers nothing.

Most PHS staff on the Navajo Reservation are making a conscious effort to understand the Navajo culture, to overcome the communication barriers, and to learn patience. Our Clinical Society has invited Singers to speak at its meetings. Singers have been called into consultation at some of our hospitals. We permit patients to go home for Sings, or we help the families arrange for a partial Sing over the patient's clothes until he can return home for a full ceremony.

This discussion by Dr. Bock gives a greater insight into some of the problems encountered by the white IHS physician who is assigned to the Navajo area.

Hunters of the Plains

Until fairly recent times, many of the plains Indians ascribed diseases to witchcraft or breaking taboos and treated them with charms which they kept in "medicine bundles." They had bundles for healing, love, business, and sorcery. The possessor of a successful healing bundle could become prosperous by charging high fees; on the other hand he might be put to death if he lost too many of his patients. The following description of the use of bundles among these western tribes appeared in Spectrum, published by Pfizer Laboratories in March 1962.

These medicine bundles were often conceived as a result of a vision. The prospective shaman cleansed himself and went to a high place, where he prayed to the chief deity to send a supernatural being, and fasted until the vision came. It often took the form of an animal, which taught him how to guarantee success in war, love, doctoring, etc. He then made a bundle to hold symbolic representations of his vision. Snakes were among the most frequent animals used in healing, even though the Indians never heard of Aesculapius or Hippocrates. Exhibition of the bundle was usually accompanied by singing, dancing and a smudge fire. A special costume was often worn. . . .

Visions, especially when sought, were necessarily significant, but fortuitous dreams might be dismissed as "no account" unless they were particularly vivid, or recurrent, in which case the dreamer was bound to act upon them. The reasons for seeking a vision were as varied as the exigencies of life. The dreamer might himself be suffering from disease, poverty, or failure to realize some consuming desire, or he might want to win rank and respect in his tribe. The bundle he made would be used for his own purposes or for the common good.

Among the plains Indians, medicine men are gradually being replaced by the physician and the hospital, but still may be found among most tribes. As in other regions, current tribal practices are best described by a physician who is personally involved with the Indian on a direct basis.

Dr. Thomas Ivey was the first IHS resident physician to be stationed on the reservation of the Cheyenne Indians at Lame Deer, Mont. Prior to his arrival, the Indian's medical needs were supplied by a physician who came 3 days a week

from the hospital on the adjoining Crow reservation.

The Crow and the Cheyenne are hereditary enemies, however, and to go to a hospital on the Crow reservation is a great humiliation to a Cheyenne. It is 40 miles from the Crow hospital to Lame Deer, and the time that the visiting physician could spend with the Cheyennes was necessarily limited. Added to the daily 80-mile round trip was the understandable suspicion of the white man, in no way abated by the fact that the doctor came from the Crow reservation. When Ivey arrived, the Cheyennes had had little experience with, and little faith in, the "white man's medicine."

Ivey indicated that his biggest problem at the Crow hospital was gaining acceptance and trust. This job of gaining acceptance led indirectly to a cordial professional referral arrangement with the tribe's two medicine men, who were basically herb doctors. They would prepare a herb tea for almost any ailment, using such descriptive herbs as "fleabane" and "boneset."

According to Ivey:

> The Indian expects to receive some kind of medication whenever he goes to the doctor. The medicine man always gives him something, and he doesn't think you are much of a doctor if you can't prescribe something to help him.

The local medicine men referred some of their patients who didn't seem to be greatly helped by herb tea to the white physician. In turn, Ivey advised some of his patients to stop and see the medicine man, always asking the patient to tell the medicine man that the white doctor had referred him.

The arrangement seemed to work out to the benefit of all, and it eliminated the dangers of professional jealousy. The patient with nothing actually wrong with him was a rarity in Ivey's practice. The Indian is just as stoic in real life as in fiction. "Most of the cases I see are in the most advanced stages," said the physician. "The Indian just doesn't pay much attention to sickness, unless it gets to the point that it is disabling him." Otherwise, he just takes a fever or a severe pain as one of the vagaries of life.

An example is the early stages of arthritis. Ivey has not been able to treat people with this disease in its early phase, because an Indian accepts severe pain in the joints merely as one of the disadvantages of growing old. Another characteristic complicating the physician's diagnosis is the fact that an Indian looks upon sickness as something afflicting the whole body, but not a particular organ or area. Diagnosis is also complicated by language barriers, although Ivey estimated that between 60 and 90 percent of his patients spoke English. The remainder spoke the Cheyenne tongue.

Another diagnostic problem is that the Indian is extremely reluctant to remove any article of clothing. According to Ivey:

> The Indian always wears his hat, indoors or out. It is the first thing he puts on when he gets out of bed in the morning and the last thing he takes off before he goes to bed. To get an Indian to remove his hat is a major operation, even for a medical examination. To get his shirt off is almost unbelievably difficult, and anything beyond that verges on the superhuman.

The Cheyennes have been virtually isolated from the white man and his civilization, including his medicine. For example, 35 cases of trachoma were reported during calendar year 1968 on the Lame Deer reservation.

Northern Fishermen

Coastal tribes in the western Washington and Grand Ronde-Siletz Agencies have been overwhelmed by the surrounding white population, and are well on the way to complete integration. However, other tribes are less advanced on this path and employment of a medicine man is somewhat more common among these tribes than on most of the plains reservations.

Seed Gatherers

These Indians, located in California and the Great Basin area, were the most primitive of the aboriginal cultures. With little past culture to lose, they adopted quite readily the patterns of the incoming whites. Most are migratory laborers, and they are all but indistinguishable in costume or custom from their non-Indian co-workers, although the sense of a separate cultural heritage still tends to hold them separate in their social life.

Current Health Status

The Indian Health Service staffs 51 hospitals as well as more than 300 other full-time and part-time health facilities almost exclusively for the use of the Indian people. In addition, contractual arrangements are in effect with hundreds of community general hospitals, local and State tuberculosis and mental hospitals, and some nursing and convalescent homes. These provide medical

A PHS physician finds a way to treat a shy lady so that she will not lose her dignity.

services to Indians where no Indian Health Service facility is available.

In fiscal year 1969, there were nearly 70,000 admissions to Indian Health Service hospitals and another 25,000 admissions under contractual arrangements for inpatient treatment of Indians. This is in itself an indication of the wide acceptance of modern medical techniques by the Indian people. In addition, more than 1,660,000 outpatient visits were recorded in 1969; about 40 percent of these were home visits or at field facilities including health centers and visits to a physician at school.

Among the most dramatic changes in the health status of the American Indians has been the drop in deaths from tuberculosis; the rate for Indians is now about 16.2 per 100,000 population, a decrease of nearly 70 percent from 1954. Tuberculosis, which ranks as the 10th leading cause of death, was the primary cause of death in 1949. The causes of death differ substantially in rank from those among the general population. Whereas accidents ranked fourth in causes of death for the general population in 1967, they were the leading cause among Indians. Although deaths from diseases generally associated with substandard living and insanitary conditions, namely tuberculosis, gastritis, influenza, and pneumonia, have declined sharply among Indians in the past 10 years, they are still high.

The infant death rate among Indians has dropped more than 50 percent since 1955. Even with this sharp decline, the rate in 1967 was still nearly 1½ times that for the general population, in which most infant deaths occur within a few days after birth. With almost all Indian babies now being born in hospitals, the neonatal mortality rate (under 28 days old) was 14.2 per 1,000 live births in 1967. This rate compared favorably with 16.5 per 1,000 live births for the general population. This is not true, however, for the postneonatal period (28 days up to 1 year) where the death rate in 1967 was 15.9 per 1,000 live births for Indians and 5.9 for the total population. These postneonatal deaths are primarily the result of accidents, pneumonia, and gastritis, all of which are associated with the rigorous climate and the substandard living and sanitation conditions prevalent in the Indian's home environment.

As mentioned earlier, some diseases are prevalent among Indians which are virtually nonexistent among the remainder of the U.S. population. For certain diseases, U.S. rates are not available because they are rare. For example, otitis media has had the highest incidence rate of all communicable diseases reported among Indians since 1963. More than 36,000 cases of otitis media in Indians were reported in 1968, with a rate of 9,115 per 100,000 population; nearly one-fourth of those afflicted in 1967 were children under 1 year of age, and 60 percent were under 5.

A measles immunization program was started in 1963, and since that time the number of cases dropped from 5,262 to 311 in 1968. A decline in the rate of new active cases of tuberculosis is also encouraging; in 1962 the rate was 209 per 100,000 population and in 1968 it was down to 140.

Despite the many health problems of the Indians and the deficiencies still to be overcome, considerable progress and improvement has been made in the past decade. This is largely attributable to the increased understanding and participation of the Indian people themselves as well as to the effect of increased resources.