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EAST AFRICAN MEDICAL ATTITUDES

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Abstract—An overview of traditional views and practices is taken primarily from studies of fifteen tribal societies. An emphasis on supernatural causes of disease, a dependence upon witchdoctors who utilize herbal and ritual remedies, and the use of surgical techniques were features common to most groups. Numerous health problems are shown to result from traditional beliefs. Among them are dietary deficiencies, high infant mortality, and poor mental health. Proposals to incorporate the witchdoctor into modern practice are discussed, but considered unwise, although an analysis of herbal remedies is recommended, as is an emulation of the traditional emphasis upon social and emotional factors in illness. The need for widespread, innovative health education and for scientific measurement of its progress is stressed.

TRADITIONAL MEDICAL SYSTEMS

IF THE modern medical practitioner is to understand popular reaction to his efforts, he must have some grasp of the traditions surrounding medical phenomena in his locale. Although attitude measurement is a field currently dominated by psychologists and sociologists, East African research of this type has generally employed anthropological methods, if not always professional anthropologists. In 1924, a clergyman, W. E. Owen, reported on disease concepts amongst the Kavirondo people of northern Kenya [1]. Their animistic views, he said, led them to blame most diseases on the spirits of dead ancestors, whom they worshipped as a prophylactic measure. Several other forces, all supernatural, were named as disease agents. Owen described several attempts, some "successful", at sorcery in the area, and detailed cleansing rituals designed to prevent illness. This subjective, anthropological effort generally typified the methodology that would be employed in subsequent studies of other East African cultures and their medical views. Those studies, taken as a body, describe the medical systems within about 15 tribes, and will be given primary emphasis in the description of traditional systems which follows.

Aetiological concepts

The table below codifies views of disease causation, as reported in studies of 12 East African cultures.* If these studies can be considered complete, it becomes clear that there are obvious similarities from tribe to tribe, but that no one disease agent is recognized by all. This illustrates the danger inherent in any unqualified generalization about what "East Africans believe" [e.g. 2].

The table does not express the diversity of *specific* beliefs from tribe to tribe, but perhaps the following examples will serve to illustrate. (1) The Swahili of oceanside Kenya believed that convulsions in small children were brought by a sea bird which flew overhead. The cure was effected by reciting religious texts and throwing a frog over the roof [10]. (2) The

* Research with other cultures in the region generally did not attempt a complete listing of all aetiological agents.

TABLE 1.
MOST COMMON CAUSES OF DISEASE AS SEEN BY TWELVE EAST AFRICAN TRIBAL MEDICAL SYSTEMS

Causes of disease	Ancestor spirits	Broken rules	Contagion	Evil eye	Evil spirits	God	Heredity	Natural causes	Vague evil force	Witchcraft
Tribes										
Kavirondo [1]	×	×							×	×
Kikuyu [3]	×	×		×						×
Nyamwezi [4]	×	×	×			×	×			×
Sukuma [4, 5]	×	×	×			×	×			×
Baganda [6, 7(b), 8]	×	×	×					×		×
Hadza [9]		×			×					×
Swahili [10]		×			×	×		×		
Sebei [11]	×	×		×			×	×	×	×
Toro [12]	×		×		×		×	×		×
Bakonjo [13]	×	×			×					×
Digo [14]	×	×			×	×		×		×
Gogo [15]	×									×

Baganda of southeastern Uganda similarly believed that epileptic seizures could be precipitated by the flight of a certain bird overhead or by the wriggling of a lizard inside the head [16]. (3) The Hadza of northern Tanzania, formerly Tanganyika, traditionally reserved *epeme*, the fatty portions of game animals, for secret consumption in the bush by men. If a man fell ill he was likely to suspect that a woman had seen him eating *epeme*. His guilt over having broken *epeme* custom would be absolved with a ritual *epeme* dance, after which immediate cure was anticipated [9]. (4) The Sebei [11] and the Kikuyu [3] of western and central Kenya, respectively, believed that certain persons with an *evil eye* could inadvertently cause illness in another by looking directly at him or complimenting him. The Kikuyu cure was to spit on the evil-eyed person.

Treatment methodology

The therapeutic process, though obviously it differed from tribe to tribe, can roughly be delineated as follows. The patient fell ill. If the symptoms were not severe a home remedy (often an herbal extract) was administered. If the symptoms persisted or intensified, the patient or his family consulted a diviner, who diagnosed and/or named the cause of the malady. A medicine man, or witchdoctor (The two terms are essentially synonymous, although the herbalist and occultist were sometimes differentiated.) then prescribed and often administered the curative combination, consisting in part, of animal, mineral, or plant compounds. If the illness was thought to be due to witchcraft, counter-magic was employed, and the sorcerer sought. If evil spirits, ancestor spirits, or gods were blamed for the malady, a ritual or ceremony to placate them was arranged. If broken cultural rules or taboos were named as the cause, an act of penance or restitution was prescribed. If the patient followed all directions and remained ill, another practitioner was sought. The medical functionaries described here were sometimes combined (e.g. a witchdoctor–diviner) or

subdivided into specialists (e.g. a bone-setter, a mid-wife, etc.). The distinction between the witchdoctor, usually a respected figure who worked for prevention and cure, and the witch, generally a sinister figure who intentionally or unintentionally caused disease and misfortune, was made in almost all societies. There was great variation in the techniques of divining, which will not be described in this paper, and treating, which will.

There were many levels of sophistication in the understanding of disease dynamics and treatment. The Hadza [9], for example, as of 1959, had almost no knowledge of syndromes. Each symptom of a disorder was treated individually with the *epeme* dance described above, by scarification of the afflicted area, or with herbal remedies usually purchased from the neighbouring Sukuma tribe. Cuts were treated by cauterization or by pouring in boiling fat. Dying men, women, and children were abandoned. The Luo of northwestern Tanzania [17] were much more advanced. They studied anatomy by examining slaughtered animals and by performing post-mortem caesareans on women who had died in childbirth. Although they saw many illnesses as supernaturally caused, they developed numerous, effective, non-supernatural treatments. They correctly described at least 19 disease entities and were able to distinguish primary from secondary syphilis.

The traditional surgical techniques of several East African tribes were carefully described by Roles. In his article on *ritual operations* [18] there is a detailed account of male and female circumcision ceremonies, practiced primarily in the eastern two-thirds of East Africa to formally induct youths into adulthood. The techniques vary from simple, though painful, operations allowing for the removal of prepuce or clitoris at the rate of 100 per hour, to the elaborate Suk (of northwestern Kenya) method in which the prepuce is pulled forward, staked to the ground, covered with hot ashes, sliced into longitudinal strips, and cut off at the corona. Traditional forms of self-mutilation including cutting designs on the face, removing or chipping certain teeth, and piercing the helix or lobe of the ear. Some of these practices had ritual significance, many were designed to beautify, but others, such as the Makonde (of southern Tanzania) custom of piercing the lip and inserting a carved plug, originated as an effort to make women unattractive to slave traders.

Therapeutic surgery [19] usually required a tribal expert. Deep wounds were often seared, filled, and stitched. When a Masai (of the Rift Valley in Kenya and Tanzania) warrior's abdomen had been ripped open by a lion, the tribal surgeon would wash the protruding intestines, return them to the abdomen, pour in a quart or more of sheep fat, then stitch the wound closed. Childbirth was assisted by professional midwives in some tribes, including the Toro [12] of western Uganda, but other tribes, like the neighbouring Bakonjo [13] of the Ruwenzori Mountain slopes, thought that friends of the mother would suffice. Most tribes had fracture experts; many of these set and aligned broken bones, often utilizing splints [19]. The Luo replaced broken skull fragments with a piece of gourd and stitched the skin over it [19]. The Kisii of western Kenya are still renowned for a 5-hr cranitomy, used on patients with skull fractures or headaches following head injury. The head is shaved and washed, the skin at the top is cut and peeled back, broken skull fragments are removed, an oval opening is made which exposes the dura, then the opening is filled with fat gently applied with a feather [19]. Because pain in the body was often thought to be caused by an evil influence or poison, it was common to burn the evil force with hot metal on the body's surface or to let the poison out by cutting the skin and cupping blood with suction from an animal's horn [2, 19]. Another widespread custom, making numerous small cuts over the area in pain and rubbing in medicinal compounds, reflects the common belief that evil or poisonous forces in the body need to be let out and replaced with strong counter-forces. This

may partially explain the great confidence numerous African people place in modern, medical injections.

Thousands of different plants and *plant compounds* have been swallowed, rubbed into scarifications, poured into wounds, boiled and breathed as fumes, splashed onto eyes, smoked in pipes, and sniffed as snuff by East African patients in the last 100 years. The Samburu [20] of northern Kenya believed traditionally that many diseases were caused by a poison in the body; thus they favoured herbal compounds used as purgatives. The Digo [14] of eastern Kenya preferred rubbing their medicines into self-inflicted cuts because they understood that blood was important and that it circulated throughout the body. Skin, internal organs, and excreta of wild and domestic animals were often thought to have medicinal value.

Disorders of *supernatural* origin were usually treated in kind. The use of magical amulets for disease prevention and/or cure was described amongst the Kikuyu [21], the Sebei [11], the Digo [14], and the Luo [17]. Descriptions of ritual cleansing or spirit-appeasing ceremonies are available for the majority of tribes listed in this paper. Amongst the Baganda [22, 23] if a person fell ill he would often be advized that the *lubaale*, i.e. the spirit, of his kinship group was unsettled. If this occurs even today many of the family members will feel compelled to gather with the ailing one at a *lubaale* shrine for a spirit possession ritual. After being anointed with Lake Victoria water and with medicines, the family members will participate (at a total cost of up to 500 shillings) in a ceremony of music and dance aimed at inducing the *lubaale* to inhabit one of their number. The possessed one will then relay the spirit's instructions to the family for setting their affairs straight, after which he may choose to remain a *lubaale* medium (and thus a diviner and medicine man) for the rest of his life. The Zaramo of eastern Tanzania were reported in 1968 [24, 25] to believe that illness might often have a natural cause, but *always* a supernatural one. Therefore, after his illness had been completely cured by medicinal means, a Zaramo tribe member would then pay to discover the sorcerer or spirit originally responsible for that illness. An expensive spirit-exorcism ceremony would often follow.

Additionally, *patent medicines* such as Andrews' Liver Salt, which were sold by Arab, Asian, and European traders were variously credited by African groups with potency for cough, intestinal trouble, diarrhoea, constipation, impotency, barrenness, and a mind-numbing list of other maladies [4, 5, 10, 12, 14, 17].

Attitudes revealed by technique and language

There were numerous other methods of treatment employed for physical disorders, and each method reflected something of the underlying belief of the people concerned. For example, the Kikuyus' personification of disease forces led them to erect spirit-proof archways over the principal paths into a village, to prevent the entry of an epidemic [21]. The Nyamwezi and Sukuma tribes of western Tanzania understood that the body could build a resistance to certain diseases, and thus they developed a system of vaccination by rubbing pus from a smallpox sore into cuts on vaccinees' noses [4]. Analysis of disease terminology has been employed profitably by nearly all of the authors to reveal underlying attitudes toward certain symptoms or syndromes. Tanner [5] noted that the Sukuma name for childhood emaciation is *mako ga busangila*, which means "defilement of adultery"—an aetiological concept implicit within a name. Southwold [6] reported that the Baganda traditionally recognized four categories of disease: *obulwadde*—those too trivial to worry about (e.g. colds), *endwadde ez'ekizungu*—those which require a European doctor (e.g.

syphilis), *endwadde ez'ekiganda*—those which require a traditional doctor (e.g. swelling of the feet), and *olumbe*—those which bring certain death (e.g. a disease which has been unsuccessfully treated by European and traditional methods). By learning which disease cases fall into which categories, one might predict with moderate accuracy which patients in a community would appear in government clinics with little or no encouragement, which patients would prefer the tribal doctor and resist western treatment, and which patients would be considered hopeless and denied any help by their families. In the same vein, Orley [16] discussed the Baganda belief that persons with long histories of epilepsy have "spoilt brains" and can no longer be helped.

Mental illness

Popular conceptions of *mental* illness have been less thoroughly researched. Aberrant behaviour was blamed on ancestor spirits by the Kikuyu [3], and evil (non-ancestral) spirits by the Toro [12] and the Hadza [9]. The Toro also recognized heredity as a potential influence. The Sebei [11] felt that psychosis could be caused by killing another person, or by other factors to be mentioned below. Significant reports in this area have been filed by Edgerton and by Orley [8]. The Baganda, according to Orley's 1968 paper, felt that mental illness, because it existed before the Europeans came and resisted their treatment methods, must have been a Kiganda illness. Since the Europeans stressed that illness was not brought by witchcraft, the Baganda were content to believe that European illnesses were not. However, the tendency to group diseases into separate camps made it seem logical that Kiganda illnesses, including insanity, could be brought by witchcraft. The Baganda recognized that madness came in violent and mild forms. Many years ago the violently insane were restrained in stocks until they died or improved, but today they are usually sent to Uganda's mental hospital. Less violent, but often no less serious cases, such as those with psychotic depression, are still rarely taken to the hospital for help, largely because they do not disrupt community life.

In 1966, Edgerton [26] reported on the results of interviews with over 500 illiterate persons representing four East African tribes. He discovered that it was not true, as some writers had stated, that all Africans viewed sorcery or witchcraft as the sole cause of psychosis. The Sebei and the Pokot (of northwest Kenya) overwhelmingly blamed a worm in the front of the brain. Although some of the Sebei tribesmen thought the worm was sent by witchcraft, the majority from both tribes said that one gets the worm, and thus the psychosis "for no reason". Most seemed to feel that a disease which came for no reason could not be combatted, and resultantly recommended that psychotics be restrained, starved, killed, or allowed to wander until dead; however a number of the Sebei put faith in the traditional method of putting a red-hot iron to the patient's head to kill the offending worm inside. The Hehe of southwest Tanzania and the Kamba of south-central Kenya blamed sorcery and witchcraft most frequently, but some Hehe subjects felt that God or heredity could cause psychosis, and some Kamba persons listed drinking, the shame of poverty, and grief over a loved one's death as causative factors. Confident that they understood aetiology, members of both tribes fully trusted their traditional remedies for insanity. The Hehe emphasized herbal medicines with magical accoutrements, while the Kamba employed an occult ritual and sometimes heat treatment under a blanket. All four tribes considered bizarre behaviour to be psychotic *only* if it occurred without good reason. Finally Edgerton tested the notion that in African tribal societies only "severely disruptive" behaviour would be recognized as psychotic. The majority of subjects, asked to tell how the insane behave,

listed more "mildly disruptive" behaviour (like going naked) and "merely eccentric" behaviour (like sleeping and hiding in the bush) than severely disruptive acts (like violent assault).

EFFECTS OF TRADITION

While respecting the complexity and diversity of traditional medical concepts, one must condemn the ill effects such concepts have often had on physical and mental health patterns. For example, the Digo [14] have traditionally grouped rickets, kwashiorkor, and loss of strength in children under one heading, *chirwa*, which they attributed to sexual transgressions by the parents. This belief has obvious value for social control, but those who cling to it still refuse to believe that western medicine or improved nutrition could alter their children's conditions. Most traditional systems exhibited a quite imperfect knowledge of the body's nutritional needs [e.g. 7(a), 14]. Some had food taboos which deprived women and children of high protein foods [3, 12]. Many over emphasized the value of one or two favourite foods (often bananas [7(a), 12], plantains [7(a), 13], or maize [3, 14, 27]) to the exclusion of other valuable and accessible dietary items. At least one tribe [12] gave its children such poor nutrition that kwashiorkor was considered a normal part of childhood; others considered the disease a serious one, but would let a child die with no treatment attempted if told by a witchdoctor that the child could not be cured [10, 13, 14]. There were, and still are, countless other health hazards perpetrated by local customs and taboos. The Sebei [11] have traditionally associated flies with cattle; a man with many flies in and about his house was a wealthy man. When western medicine began to spread the fear of flies, old Sebei men were angered at seeing them killed. Wilkinson [28] described the poor sanitation that resulted from Kikuyu traditions, and also the fact that Kikuyus would never go near a seriously ill person because their custom forbade any contact with a dead or near-dead person. Jelliffe and Bennett [29] enumerated other problems created by common African beliefs. They pointed out that a campaign for community pit latrines would languish among people who hide all excrement, nail clippings, and hair cuttings in secret places for fear that witches might find and use such items to bewitch them. They mentioned the practices, common to many African cultures, of putting unsanitary pastes or powders on babies' umbilical stumps (creating the danger of tetanus) and of giving enemas which produce diarrhoea in children.

Though frequently not as visible, the emotional scars created by traditional attitudes may be as severe as the physical effects. Orley [16] pointed out that most Baganda still view epilepsy as a contagious disease that spoils the brain. Resultantly, when a child is known to have this disorder he is removed permanently from school, instructed to keep away from people (including his family), told not to play with other children (they, in turn, are told to avoid him), and required to eat alone with his own utensils. He then begins a lethargic, withdrawn, and shame-filled existence which is likely to last the rest of his life. Another useful study of Baganda attitudes toward epilepsy was carried out by Billington [30]. Bennett [31] demonstrated that even a strong, positive attitude, the belief that a wife's first duty is to bear children, can backfire, creating depression, anxiety, or promiscuity in women who are sterile.

Some groups, notably the Hadza [9], who did not herd or cultivate, but lived on roots, berries, honey, and wild game, seemed remarkably healthy and disease-free. However, when this situation was reported for various tribes, the writers usually hastened to explain special circumstances. Woodburn attributed Hadza health to their low population density and

nomadic existence, both of which made disease transmission difficult. Spencer [20] stated that the apparent good health of the Samburu could be partially explained by their high infant mortality rate (In 1959 over one-third died before age 6 months.) which tended to weed out those with low disease resistance.

DISCUSSION: RELEVANCE FOR MODERN MEDICINE

Current strength of traditional views

What relevance does all of this have for the modern clinician? Initially it should impress him with the fact that, on arrival in East Africa, he is not entering a medical vacuum. The medical traditions in this part of the world are hundreds of years old and are extremely tenacious, especially amongst the rural population, but also amongst surprising numbers of the urban, the wealthy, and the well-educated [17]. Ssekamwa [23] described the secrecy with which some members of Kampala's educational and social elite, fearful that their peers will think them ignorant or unchristian, slip under cover of darkness into the medicine man's house for treatment. He also mentioned the great popularity of the medicine men's stands in the Kampala bus parks and in the suburbs of that city. Whisson [32] reported the case of William, a young, well-educated Luo, who fell ill in rural Kenya. The unshakeable belief of family and friends that witchcraft was the cause of his illness shook William's confidence in western medicine, and led him to abandon hospital care and seek the help of a Luo witchdoctor. Kaggwa and Welbourne [22], Swantz [24, 25], and Perlman [12] touched on the immense pressure that family members can bring to bear on their relatives (including the unbelieving ones) to gather together, and bring money, for a therapeutic, group ceremony led by a witchdoctor.

Traditional medical views and methods often maintain their strong grip on a society because they perform useful social functions. The group ceremonies mentioned just above are effective means of reuniting widely separated family members. The Kikuyu [3], the Baganda [7(b)], the Toro [12], and numerous other tribes have traditionally employed diagnosis as a means of social control. The people believed that breaking tribal rules would lead to illness, and conversely that the type of illness they got would reveal the nature of their past sins. Often the traditional cures may persist because the patients find them reinforcing. For example, the cure for *saka*, a disease peculiar to married Taita women (of southeastern Kenya), has always been to give them whatever they ask for (no matter how extravagant or difficult to obtain), to support their appearance at the special *saka* dance (for which they wear a beautiful costume, permitted only at that dance), and to give them cigarettes (which they never receive when well) when they feel exhausted [33]. Many belief systems persist largely because they are internally consistent and seem to produce their own proof of validity [12, 14]. Some individual practices, such as the Samburu tradition of using a sharp stone to slice open the urethra on the ventral side of the penis, seem to persist just "because it is our custom" [34].

In many ways, direct and subtle, the modern practitioner will be reminded that the forces of tradition compete with his efforts. A patient admits that he considered the clinic only after tribal doctors had failed; another is known to be sampling traditional and modern techniques concurrently; a third suddenly terminates clinical treatment after a hushed conference with his family [17].

The witchdoctor's place

The current strength of traditional medical views in East Africa makes it impossible to ignore them. Frequently harmful, often effective, always widely popular, the medicine man is a force to be dealt with. But how? Ndeti [35] argued that scientific medicine should abandon "professional jealousy" and recognize the legitimacy of the African medicine man. To support this view he initially employed linguistic analysis in an effort to demonstrate that most African cultures identify the witchdoctor with wisdom and with other positive characteristics. He recounted four instances of successful treatment by medicine men; two of the patients involved had been initially treated by modern medicine without success. The argument that witchdoctors are prone to err and endanger their patients was countered with a reminder that western doctors had widely prescribed thalidomide as a tension-relieving drug for pregnant women. Finally Ndeti praised the medicine man for understanding the importance of the doctor-patient relationship, and for being aware that most physical disorders have cultural and emotional aspects. Burkitt [36] bolstered Ndeti's argument by listing numerous superstitious and archaic practices still common in western medicine. Giel [37] offered more support by hinting at professional recognition of the witchdoctor and his incorporation into modern pyschiatric services.

While most other writers support Ndeti's view that traditional systems contain admirable elements, few have favoured professional recognition of the witchdoctor. Orley [8], speaking from a psychiatric point of view, saw such a notion as an elaboration of the "noble savage myth"—the feeling, in part, that "primitive" treatment may have some sort of secret curative power. He pointed out that in Europe the psychotherapeutic value of church attendance and visits to the local pub is not denied, but few there would favour registration of the priest or publican as psychiatrists. Sangmuh [37] argued that most calls for legitimatizing traditional healers come from those who have not seen the many unfortunate results of these healers' activities.

It seems certain that to extend professional recognition to the witchdoctor would be to undercut much of the painstaking progress made by western medicine in East Africa. At a time when modern medicine, practiced by steadily swelling ranks of African doctors, is rapidly gaining popular respect, there is little to be gained by offering undeserved respectability to the opposition, and thus helping it to prosper. Some of the therapeutic techniques described earlier are admirable for their advances over the general technological levels of their respective societies. However, to legitimatize traditional medicine would be to condemn thousands of epileptics in Uganda to a life of disgrace with "spoilt brains"—while relative normality lies just a bus ride and a packet of pills away. Thousands of infants in tribes all over East Africa might continue to die from untreated kwashiorkor because officially certified witchdoctors name sorcery as the cause. The insane might continue to be cauterized, desorcerized, ignored, or otherwise abused. It is highly unlikely that witchdoctors, self-confident as they are, could be persuaded or educated to change their views about cause and treatment of diseases. It is equally unlikely that, once recognized officially, they could be silenced.

Many writers have given eyewitness accounts of remarkable cures with indigenous methods [1, 12, 14, 35], but even given the obvious tendency of ethnologists to admire the people they study, it is doubtful that any could muster serious statistical support for *broad* efficacy of traditional treatments with *severe* disorders. If statistical evidence were forthcoming modern medicine might have cause to reconsider, but anecdotes rarely move scientists.

The uses of tradition

There is, however, much to be gained from at least two aspects of traditional East African medicine. Perhaps the most valuable contribution of indigenous systems will prove to be the extensive lists of herbal and mineral compounds used for curative purposes. Numerous researchers [5, 11, 12, 21] have compiled such lists and are still doing so, but past efforts have tended to select only 20–50 items from systems utilizing 1000 or more. As the popularity of modern medicine eclipses that of local systems, there is a danger that many traditional remedies will be forgotten. The time for extensive listing, gathering, and testing of local *materia medica* is now. Ojiambo [38] recalled that the drugs, curare and quinine, came from early South American Indian herbalists. Just which anaesthetics, tranquillizers, purgatives, and other drugs lie "undiscovered" in Africa will only be known if the necessary study is carried out with dispatch.

Another element worthy of analysis is the psychology surrounding the traditional therapeutic process. Modern doctors can learn much from tribes such as the Baganda [6, 7(b), 29] about the social and emotional precipitants of disease, both mental and physical. It is more of a necessity, however, that the modern therapist study traditions in order to understand popular attitudes surrounding maladies he may treat. Thus he may know the feelings the patient is likely to have about his ailment, and the methods of treatment he is likely to trust. A woman who is sterile or a Baganda youth with epilepsy certainly require more than routine regimentation within the clinic. An old man who has consulted witchdoctors all his life will almost certainly be insulted if he is not shown respect and examined properly (although crowded African hospitals and clinics can never hope to match the elaborate attention the witchdoctor lavishes on his patient). A rural African patient whose physical complaint is psychologically sustained will often place little confidence in treatment which omits the syringe, and as a result he may not be cured. A placebo injection may be more effective in such a case than a lecture on hysterical and psychosomatic disorders. In explaining the nature of a patient's disorder the modern doctor should not forget the severe stress placed upon those whose attitudes are being rapidly, almost forcibly, changed [12, 40, 41, 42, 43]. An explanation, no matter how truthful, which is too complex to understand, which conflicts sharply with the patient's own ideas, or which seems to indict the patient for ignorance or superstition, may result in emotional disturbance or termination of treatment. Good witchdoctors are experts in the therapist–patient relationship. They know how to make a patient feel respected, thoroughly cared for, and fully confident that he will be cured [14, 17, 38]. They have extensive knowledge of local attitudes toward various illnesses, and they know how to get at the social and emotive dynamics of an illness [7(b), 11, 14, 29]. There is much that must be learned from them if western medicine is to supplant its predecessor in East Africa.

Attitude modification and assessment

It is clear that the ultimate goal must be a popular movement toward scientific medical views. Efforts by modern doctors to understand local customs and practices, must aim at eventually altering them. Mtawali [44] described a 1951 effort to combat venereal disease in the Bayaha tribe of northwestern Tanzania by attacking traditional conceptions. The success achieved by public meetings, pamphlets, regional newspaper articles, and home visits was modest, but does illustrate the value of mass education and sociological change. Arya and Bennett [45] discussed the use of orientation talks, health booklets, medical counseling, and residence hall discussions for the health education of university students in

tropical Africa. Jelliffe and Bennett [29] emphasized the importance of health education across all age levels of a community, stating that if primary school teachings conflict with parental views, children might rather believe their parents. Rutishauser [7(a)] recommended the use of local customs as springboards for improvement. For example, she said that health educators could urge the continuance of the Baganda custom of *ettu*, cooking food in small packets, but encourage stuffing the packets with protein-rich foods. Billington [30] stressed the possible benefits of a national society in Uganda, devoted to the welfare of epileptics. The impact of Alcoholics Anonymous in many countries aptly illustrates the power of such organizations to alter public attitudes toward disease entities, and patients' attitudes towards themselves.

Such efforts at attitude change must certainly be supplemented by research into the effects of those efforts. Studies such as those of Heisel [46] into rural attitudes towards fertility limitation, and Arya and Bennett into university students' attitudes towards smoking [47] and venereal disease [48] are useful. Hoorweg's study, still in progress, of the "psychological factors in the acceptance and spread of feeding habits among mothers" of malnourished children [49], may provide useful information about how to modify local attitudes. It is imperative that periodic checks be made into popular conceptions of serious, widespread health problems. Questionnaire and interview techniques must be devised and widely utilized, which broadly assess East African attitudes toward kwashiorkor, epilepsy, mental illness, and the like. Heisel's research [46] illustrates the difficulties, but also the possibilities, inherent in such techniques. Failure to utilize them on a large scale will leave us improperly informed about the progress of medical science within the minds of the people of this region.

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