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Introduction: The Pendulum Swings to Holism

> There are and can be only two ways of searching into and discovering the truth. The one flies from the senses and particulars to the most general axioms . . . this way is now in fashion. The other derives axioms from the senses and particulars, rising by a gradual and unbroken ascent, so that it arrives at the most general axioms last of all. This is the true way, but as yet untried.
>
> Francis Bacon,
> *Novum Organum,* 1620

> The nature of most human problems is such that universally valid answers do not exist, because there is more than one aspect to each of these problems.
>
> Victor Weisskopf,
> *Physics in the Twentieth Century,* 1972

Concepts of health and illness are based on, among other things, value systems and both individual and collective experiences; they are therefore culture-bound and subject to changes according to their historical and social context. As explanations for health and illness change with the mores of the times, actual medical theory and practice change, and these in turn have an effect on the epidemiology of disease.

In the industrial world, with its enormous problems of pollution, overpopulation, and chronic disease, concepts of health and illness are currently

being reevaluated; at the same time the theoretical assumptions and practices of cosmopolitan medicine have been subjected to much criticism and close examination.[1] (See Carlson 1975; Fuchs 1974; Illich 1976; McKeown 1976; Navarro 1976; Rhodes 1976.) It is in this context that an interest in medical systems of other periods of history and other cultures has recently emerged.

This criticism is also manifest in Japan, the country with the third largest gross national product in the world. The Japanese, like people in the West, have alternative medical systems that they can turn to when they are dissatisfied, and the traditional East Asian medical system,[2] established in Japan in the sixth century, is presently undergoing a revival. This medical system, which has caught the attention of Western observers from many walks of life, is the subject for analysis in this book.

Earlier studies of both cosmopolitan and other medical systems have usually concentrated on only one principal system of medical thought for any given culture at any given time. Where a medical system was in contact with cosmopolitan medicine it was generally assumed that, given enough exposure, cosmopolitan medicine would eclipse traditional medicine. More recent studies emphasize pluralism as the norm; in complex cultures where several medical systems are readily available it has been established that, although adaptation may take place as the result of culture contact, pluralism rather than assimilation is usual (Leslie 1975; Kunstadter 1975; Topley 1975). Moreover, when any one medical system is analyzed in detail, several persistent modes of thought, often radically different, can be detected, although certain modes attain dominance as a particular world view holds sway at any given historical time (Engel 1977; Ōtsuka 1976; Smith 1973; Virchow 1958). Recent studies of the decision-making process in general and the selection of medical care in particular stress the ability of an individual to sustain potentially conflicting points of view, any one of which may be drawn upon depending on the situation (Janzen 1978; Kleinman 1979).

1 The medical system usually referred to as "Western," "scientific," or "modern" will hereafter be referred to as "cosmopolitan" in accord with the argument put forward by Dunn (1976, p. 135) for use of this term.

2 The term "East Asian medical system" is used to refer to the medical beliefs that were dominant until the nineteenth century among the literate populations of China, Korea, and Japan and which are usually referred to in the literature as classical Chinese medicine or oriental medicine.

Our present willingness to analyze and understand medical systems as pluralistic institutions, and our interest in the complexity and in the wide variations of normal human behavior, are in themselves a reflection of changing values in contemporary times.

A glance at the history of Western medicine reveals perennial sources of tension in medical thinking and the swing back and forth from one mode of thought to another. This tension is apparent in the Hippocratic corpus, becomes polarized in the rationalist and empirical schools of Greece and Rome, and continues until the present day. Theories of disease causation furnish a recurrent issue for debate. Dubos (1965, p. 319) describes the two dominant modes of thought as the "ontological" versus the "physiological" viewpoint. According to the "ontological" doctrine, disease is regarded as a specific entity, "a thing in itself, essentially unrelated to the patient's personality, his bodily constitution, or his mode of life" (p. 320), while in the "physiological" model disease is seen simply as an abnormal state that is due to imbalance experienced by the individual organism at a given time. These types of explanations are used in many medical systems, but either one may receive greater emphasis, depending on the prevailing ideas of the time and the specific medical problem under consideration.

Since the seventeenth century in Europe, and the emergence of the mechanistic and reductionistic approach to biology and medicine under the influence of Newton and Descartes, the ontological theory has held considerable but not exclusive sway. Toward the end of the nineteenth century when the doctrine of "specific etiology of disease" (Dubos 1959, p. 101) came to the fore, ontological theory seemed destined to be the final answer to disease causation. The discoveries of Pasteur and Koch in the realms of bacteriology are of the greatest relevance during this period, and they led to the notion that all infectious disease could be controlled by means of specific drugs and vaccines. This belief was reinforced with the discovery of the sulfa drugs in the 1930s and antibiotics in the 1940s. It continues to dominate our approach to clinical research today when, for example, we look for *the* cause and cure of cancer.

Despite the tremendous success of the ontological, biomedical approach, the physiological model with its emphasis on psychosomatic theories and the relationship of the individual to the environmental milieu has always had a following, spearheaded until recently by epidemiologists and public health

workers and to a lesser extent by psychiatrists and psychologists. Over the past twenty years as an overwhelming adherence to the biomedical model has come into question, a reawakening interest in the physiological or "holistic" approach has gradually gained momentum. This is due not only to criticism of the biomedical approach but also to a change in values and attitudes toward knowledge in general.

There are complex reasons for a reexamination of the biomedical model related both directly and indirectly to the medical world itself. Intolerable costs (either to individuals or to governments), inaccessibility of medical care because of poor distribution by locality and specialty, and dissatisfaction with the "quality" of the medical encounter when it takes place, are cited by Eisenberg (1977, p. 235) as important factors. These problems are thought to arise largely because of the historical bias of cosmopolitan medicine in which an "engineering" approach was established in order to put medicine on a scientific footing. McKeown (1971) expresses it as follows:

> The approach to biology and medicine established during the seventeenth century was an engineering one based on a physical model. Nature was conceived in mechanistic terms, which lead in biology to the idea that a living organism could be regarded as a machine which might be taken apart and reassembled if its structure and function were fully understood. In medicine, the same concept leads further to the belief that an understanding of disease processes and of the body's response to them would make it possible to intervene therapeutically, mainly by physical (surgical), chemical, or electrical methods. (P. 36)

Von Mering and Earley (1965) state that the legacy of this attitude can be observed in modern medical practice:

> It has . . . been our observation that the clinic physician and the general practitioner share a kind of "molecular man" orientation which seems to predispose them to be more concerned with the specifics of the presenting complaint and to look eagerly for major disease in every bed or consulting room. (P. 198)

They believe that the "growth of medicine as a science of tests and measurements rather than an art involving the five senses" is largely to blame, along with the impersonal use of large hospitals as the usual site for diagnosis and treatment.

Specialization and the attempt to attain objectivity necessitated by a scientific approach are seen as major problems in the actual delivery of health care, leading to a lack of concern with the outcome of therapy, little interest in the experience of illness, and a tendency to equate the removal of symptoms with a complete and successful cure. Dedication to progress in medical technology, described by Carlson (1975, p. 12), is cited as the principal cause of iatrogenesis (damage caused by the medical profession itself). Iatrogenesis occurs in all medical traditions, but because cosmopolitan medicine is theoretically based on scientific tenets, it is particularly hard for doctors in this system to admit to fallibility and for patients to accept that doctors *are* fallible.

Not only the theoretical approach but the professionalization of medicine has also come under censure. In the words of Freidson (1970, p. 5), "Medicine's position today is akin to that of state religions yesterday—it has an officially approved monopoly of the right to define health and illness and to treat illness." In *Medical Nemesis* (1976, p. 40), although Illich's argument is often overstated, he makes the important point that in industrial societies where medicine is highly professionalized the public is stripped of its ability to care for itself; this he terms social iatrogenesis. He cites, among other things, the management of old age, childbirth, and death as areas where the medical profession has defined its right to be in control. The interrelationship of medicine with politics (Navarro 1976) and with the drug industry (Silverman and Lee 1974) provide further areas for critical analysis.

Recent developments in the field of epidemiology furnish data which, while not being critical of the biomedical model, indicate that its success may not be as dramatic as was formerly believed. Rosen (1958, pp. 225 ff.), Dubos (1961, p. 131), and McKeown (1965, pp. 21–58) put forward the argument that the general improvement in health and the decrease in mortality rates in the Western world largely took place *before* the advent of modern drugs and technology. These changes toward the end of the nineteenth century are attributed to better nutrition and to the introduction of certain standards of public hygiene instigated by medical reformers who were, in

fact, sometimes opposed to the germ theory of disease. McKeown (1971, p. 36) also stresses the importance of the introduction of birth control and believes that this is the most significant variable to consider in accounting for improved health conditions. According to McKeown, the contribution of clinical medicine to general health standards was not significant until the second quarter of the twentieth century, and by that time most of the total decline in mortality had already been achieved. The conclusions that are drawn from these articles are that social and cultural factors and man's relationship to his environment are of crucial importance in the occurrence and control of disease.

Change in epidemiology of disease from largely acute to chronic problems was thought to be due, on the one hand, to longer life expectancy and, on the other, to the conquest of acute problems, but epidemiologists see the issue as more complex than this. John Powles, in an article (1973) in which he makes use of the literature on epidemiology in hunter-gatherer, agricultural, and industrial societies, demonstrates that the rise in chronic and degenerative diseases in the modern industrial world is not just simply due to increased life expectancy, but is due rather to maladaptation to the environment that we have created for ourselves. He states:

> Industrial populations owe their current health standards to a pattern of ecological relationships which serves to reduce their vulnerability to death from infection and to a lesser extent to the capabilities of clinical medicine. Unfortunately this new way of life, because it is so far removed from that to which man is adapted by evolution, has produced its own disease burden. These diseases of maladaptation are, in many cases, increasing. (P. 12)

Other data, though still controversial, focus on the interrelationship of personality type with the incidence of many kinds of disease, including coronary heart disease, cancer, arthritis, migraine, low back pain, and asthma among others. (See LeShan 1959, 1966; Scotch and Geiger 1962; Simonton and Simonton 1975; Thomas and Duszynski 1974.)

In the light of these recent developments new trends in health policy planning are beginning to appear (Lalonde 1975). The fact that chronic diseases, for whatever reason, are the major medical problems in industrial

societies has probably spurred on this development: first, treatment of chronic disease causes the largest drain on budgets for health; second, the incidence of chronic disease brings into sharp focus the problem of why only certain members of the population show a high morbidity; and last, the question of quality in health care becomes central. Powles (1973) describes the situation thus:

> With a rising proportion of illness evidently man-made and increasing restrictions on the further increase of resource consumption for medical care, medicine seems bound to move in an "ecological" direction. . . . With less confidence in his ability to master nature man will have to learn to live more openly with his vulnerability to forces he cannot control and with the frailty of the individual human existence. Man's domination of nature has been the central impetus of modern industrial culture. Further pursuit of this within the already industrialized countries is likely to be self-defeating and could well be disastrous. (P. 25)

This need to move in an "ecological" direction was expressed in 1975 as part of official health policy planning by the Deputy Director-General of the World Health Organization, Dr. Lambo, who made the following observation:

> The health status of an individual becomes meaningful only in terms of his human environment, i.e., his social and cultural milieu. The lessons of the last few decades have shown that social and economic changes have at least as much influence on health as medical interventions. . . . We must be sensitive to the issues involved in these changes and relate them to the rhythms and needs of individuals. (P. 7)

This statement and that of John Powles hint at some of the changes in values and attitudes toward knowledge which stem not simply from medicine but from changes in our approach to science itself. Heisenberg's Uncertainty Principle is the first expression in mathematical form of the problems which the pure scientists are facing. He demonstrates conclusively that the concept of a distinct physical entity, such as a particle, is an idealization that

has no fundamental significance. It can only be defined in terms of its *connections* with the whole, and these connections are of a statistical nature, that is, probabilities rather than certainties. Heisenberg (1958) therefore concludes:

> [In modern physics], one has now divided the world not into different groups of objects but into different groups of connections. . . . What can be distinguished is the kind of connection which is primarily important in a certain phenomenon. . . . The world thus appears as a complicated tissue of events, in which connections of different kinds alternate or overlap or combine and thereby determine the texture of the whole. (P. 107)

Once Heisenberg's ideas were put into mathematical formulation, the way was open for some scientists to join forces with philosophers and other thinkers in seeking alternatives to explanations and answers for everything in finite scientific terms. The natural world is at present best explained with a model similar to that which Durkheim postulated sixty years ago for the social world: that the whole is greater than the sum of the parts and has a "reality" of its own, which cannot be totally explained by an examination of the parts. Man and the universe are not simply a jigsaw puzzle that will be made entirely comprehensible when the last piece is slotted into place.

The new trend in the sciences is therefore to appreciate the interrelationship of parts—ecological, holistic models are fashionable. The biologist Theobald (1972) states:

> All other species work within the existing habitat. Their success or failure depends upon their ability to adapt to the conditions in which they find themselves. Their survival depends upon a complex, interrelated ecosystem of which they form a small part and over which they have very limited control. . . . Man alone has tried to deny his relationship to the total ecosystem of which he forms a part by continuously cutting off feedback which he finds undesirable. He has developed the habit of seeing his habitat as totally flexible according to his own wishes and desires. (P. 1)

Fred Hoyle (1955), the astronomer, pushes the argument to its limits:

> Present-day developments in cosmology are coming to suggest rather insistently that everyday conditions could not persist but for the distant parts of the Universe, that all our ideas of space and geometry would become entirely invalid if the distant parts of the Universe were taken away. Our everyday experience even down to the smallest details seems to be so closely integrated to the grand-scale features of the Universe that it is well-nigh impossible to contemplate the two being separated. (P. 304)

When a holistic approach is applied to medicine new questions and attitudes emerge. Cosmopolitan medicine, with its technological bias, stresses the removal of specific symptoms by therapeutic intervention. But when a man is considered in relation to his environment, then the emphasis becomes one of maintaining health and balance rather than restoring lost health. Naming a specific cause for a disease is not considered sufficient. A search is made for a pattern of events that could have allowed the patient to become vulnerable to specific causes of disease. Social, psychological, environmental, and genetic factors should all be considered, not only to solve the present medical problem, but to aid in prevention of future problems. Emphasis is on adjustment rather than cure.

The range of cosmopolitan medicine is once again expanding to include a variety of factors beyond the biomedical model and is now similar to medical systems in nontechnological societies (Frank 1964, p. vii), to Western medicine until the early twentieth century, and also to that laid out in the classics of Ayurvedic, Yunānī, and East Asian medical traditions.

Dubos (1968) puts the holistic approach into contemporary language:

> The activities of various hormones influence all of the human organism's responses to noxious agencies. The secretion of these hormones is in turn affected by psychological factors and by the symbolic interpretation the mind attaches to environmental agents and stimuli. This individual interpretation is so profoundly conditioned by the experiences of the past and by the anticipations of the future that the

> physiochemical characteristics of noxious agents rarely determine the character of the pathological processes they set in motion. (P. 75)

The biomedical model, however, remains the most persuasive viewpoint for its many adherents; the classical debate is still very much alive, as Lewis Thomas demonstrates:

> Since we have got rid of a few very important diseases, I think there is good reason to believe that we can keep at it. . . . I have to confess, however, that a lot of people in my field do think that we're now stopped. It has become something of a popular notion to say that the diseases we are left with now that we have got rid of the major infections are in some sense so complicated and so multifactorial, as the term goes—that they have something to do with the environment, or have to do with stress and the pace of modern living. . . . I simply can't take that point of view very seriously—not as long as we are as ignorant about the mechanisms of those diseases as we are. . . . Although there may be a lot of things going on, there will be one central, master mechanism for each of them, which we may be able to change when we learn what it is. (Interview. See Bernstein 1978, p. 44)

Some thinkers, such as the biologist Paul Weiss, stress that both a "holistic" and a "reductionistic" approach are necessary; he states that they are in a "demonstrable complementarity relation in the sense that either one conveys information which the other cannot supply" (1960, p. 25). With this approach in mind, East Asian medicine can be most interesting to Western observers. It is a medical system in which, while both the ontological and physiological viewpoints can be detected, theoretically the physiological doctrine has remained dominant through the centuries. East Asian medicine is therefore held up as "holistic" and "natural" and has become a popular model for experimentation in medical practice in the West. It is possible that by drawing on both the biomedical and the East Asian medical model we

can come closer to a medical system that takes into account "complementary aspects . . . found in every human situation" (Weisskopf 1972, p. 349).

Unfortunately, acupuncture, one small part of the East Asian medical system, is frequently applied in North America today simply as another therapeutic technique in the arsenal of scientific weaponry. Wrenched out of cultural context and subjected to scientific evaluation, acupuncture is apparently still proving effective (Pomeranz et al. 1976; Risse 1973), but scientific experiments with acupuncture and other therapies of East Asian medicine will give us only a limited understanding of the nature of, and reasons for, its use through the centuries. For a more complete picture we must turn to a study of East Asian medicine in its cultural context.

Medical Systems and Cultural Context

Medical systems, like social systems in general, are embedded in a cultural matrix from which is derived the coherent body of ideas of which the system is composed. The practice of all medicine, therefore, including that of industrialized societies, has evolved as a result of its setting in a unique cultural context. Consequently, any attempt to analyze a complete medical system must include not only a description of the social structure, the social organization, and the belief system, but must also demonstrate how this relates, both historically and currently, to the total cultural context. Furthermore, since the actual experience of illness, though influenced by others, is ultimately an individual event, any study that does not consider the relationship of the individual to the social and cultural milieu must be considered incomplete.

Since concepts of health, illness, and disease causation and classification are largely culture-bound, the entire gamut of medical practice is also modified considerably by cultural beliefs; the roles of doctor and patient, the experience of illness, diagnostic techniques, and therapy, including the tools used in therapy, are all modified by cultural values. Medical theory, even that which is scientifically established, is culture-bound in the sense that the questions raised by theoreticians and the methods used to answer them are products of a particular period in history.

It is possible to introduce medical concepts and technology to other

cultures, whether it be cosmopolitan medicine to developing countries or East Asian medicine to North America. It is virtually impossible to introduce at the same time the equivalent of the context, both social and cultural, in which those concepts and techniques were originally used. The actual practice of, and meaning associated with, recently imported material is changed considerably. This is true even where doctors go abroad to train in the country of origin of the incoming medical material. The individual doctor may change his beliefs radically, but the system in which he must practice and the attitudes of patients will be important limiting factors on rapid changes in meaning associated with health and illness.

Even where there is a conscious effort from within a society to officially adopt a new approach to medicine, it has been shown that large modifications are made to meet the particular needs and values of the society in question (Sidel and Sidel 1973). By focusing on the variety of ways in which a medical system is actually applied both within and across cultural boundaries it is possible to highlight the values and some of the implicit meaning that people bring to the universal problems of misfortune and suffering.

If medicine is to serve its prime functions of preventing and alleviating suffering, it *must* be culture-bound to some extent. Mary Douglas (1970) puts it thus: "If . . . therapy works it is because the symbols [of medicine] are creative instruments of a particular social structure" (p. 302).

Research both in the medical world (Pelletier 1977) and in the function of symbolism (Turner 1967; Tambiah 1977) confirms this line of argument. The point is stressed that symbolic communication forms a mediating pathway between social and cultural events and psychophysiological reactions. Kleinman (1973a) goes so far as to say:

> The line begins to blur between ordering the experience of illness and shaping the illness per se. I do not mean merely that psychiatric disorders or psychosomatic diseases are in this sense symbolic phenomena, but any disease—smallpox, leprosy, syphilis, hypertension, cardiovascular disorders, cancer, etc.—is in part a cultural construct. Disease derives much of its form, the way it is expressed, the value it is given, the meaning it possesses, and the therapy appropriate to it in large measure from the governing system of symbolic meaning. (P. 209)

East Asian medicine, derived from a totally different philosophical background from that of cosmopolitan medicine and nurtured in a cultural setting in which people understand themselves predominantly in relation to their environment rather than as individuals, gives the opportunity for many insights for the Westerner. We can explore both its strong and its weak points by looking at it in cultural context as a symbolic system as well as an empirical body of knowledge.

Purpose and Setting of the Study

I shall analyze the practice of East Asian medicine in urban Japan in order to demonstrate its degree of adaptation to the cultural ethos of the present day by considering the system from several perspectives: cultural, social, interpersonal, and personal. I shall describe the classical theoretical system and historical background of East Asian medicine in order to compare present-day practice with the traditional, theoretical ideal and also to demonstrate certain continuities in social organization and attitudes that can still be discerned today.

In a discussion of contemporary socialization practices and beliefs and practice related to health care within the family I shall demonstrate some of the expectations that Japanese patients hold regarding the sick role and professional medical care. I shall show how the belief system and the healing processes used in East Asian medicine furnish the type of symbolic communication which anastomoses with the needs of certain patients.

A consideration of some of the problems inherent in the practice of cosmopolitan medicine in Japan will further develop the analysis. With this body of information I shall attempt to account for the resurgence of interest in East Asian medicine in Japan by considering recent changes at both the macro and the micro level of social organization. Finally, the East Asian medical system will be examined as a model for a "holistic" approach to medicine in the West.

Japan provides an extremely important setting for the study of East Asian medicine for several reasons. First, it is a country in which general health standards are extremely high, whose population is stable, and in which the epidemiology of disease allows useful comparisons to be made with patients of industrial societies in the West. Second, Japan's long and voluntary experience of more than a hundred years with cosmopolitan medicine makes it a par-

ticularly interesting society in which to study the integration and adaptation of a traditional medical system to the impact of cosmopolitan medical beliefs. Last, it is a society in which virtually all of the population is literate and in which mass media of all kinds are widely disseminated; it is potentially a well-informed population, and there is the possibility, at least, for some educated reflection among the public.

The research was carried out in the city of Kyoto in the Kansai region of Japan. An urban environment was selected because Japan supports a largely urban population today and because historically the complete range of East Asian medicine never did penetrate fully into the Japanese countryside.

The 1972 census of Kyoto city showed a population of 1,419,000. The lower income groups derive their livelihood from employment in light industry and small entrepreneurial enterprises of various kinds of which the silk industry is the most important. There is a high proportion of *burakumin* (the outcast group) and of Korean immigrants compared with other Japanese cities.

Among the middle classes the proportion of white-collar workers is relatively low compared with other major cities, and the proportion of independent businessmen and professional people is rather high. The number of extended families living in traditional Japanese style, frequently with large private incomes, is also higher than in other cities (Statistical Information Bureau, Ministry of Welfare, Tokyo, 1975). Compared with Tokyo and Osaka, Kyoto is regarded by the Japanese as a culturally conservative city, but this is not reflected in current politics—a Communist mayor has held office for many years.

Characteristics of the Medical Systems and of the Therapies under Discussion

Cosmopolitan medical system: otherwise termed "Western," "modern," or "scientific"; in Japan it is the dominant medical system and is state supported.

East Asian medical system: otherwise known as "traditional Chinese medicine" or "oriental medicine." When dealing with Chinese medicine in Japan I define it as East Asian medicine because it has been uniquely adapted over the past 1,300 years to Japanese cultural conditions while retaining

much of its original Chinese flavor. Dunn (1976, p. 135) defines this system as "regional" in that it is applied in several cultural settings and has a long scholarly tradition associated with it. In this respect it can be categorized with the Ayurvedic and Yunānī medical systems. Herbal medicine used in this system is mixed according to prescriptions in the pharmacopoeia of the East Asian medical tradition. Historically animal, mineral, and plant sources were used; today herbal medicine is composed almost completely of plant material.

Folk medical system: medical practice not derived from a scholarly medical tradition and provided by professional or experienced nonprofessional practitioners. Dunn's term for this system is "local." Oral medication is not in the form of individual prescriptions; it consists of one or two ingredients to counteract specific symptoms. Indigenous patent medicine, talismans, and incantations are all part of folk medicine. Moxa (see below) and massage are part of folk medicine when used without reference to scholarly theory. Many, but not all, of these beliefs and practices are indigenous to Japan.

Popular medical system: medical practice carried out among family members or friends without professional sources of advice. Techniques and beliefs are passed on informally from generation to generation.

Medical practitioners and patients state that they can readily make distinctions between these three medical systems and popular medicine, but in actual practice, both historical and current, the distinctions are not clearly maintained.

Frequently Used East Asian Medical Terms

Amma: a massage technique imported to Japan in the sixth century with other aspects of East Asian medicine.

Hari: the Japanese term for acupuncture, a therapeutic technique in which needles are inserted into the body at certain defined points.

Kanpō: means the "Chinese method." It refers to the entire medical system brought to Japan from China in the sixth century. In modern Japan it is also used to refer to the application of herbal medicine, as distinct from acupuncture, moxibustion, and massage. Any clinic that makes herbal therapy the center of its medical system is defined in Japan today as a *kanpō* clinic.

Okyū: a therapeutic technique, known in the West as moxibustion, in which small cones of a powdered herb, mugwort (*Artemisia vulgaris*), are burned on the body at certain defined points.

Shiatsu: a type of massage that was developed in Japan and given its present name in the nineteenth century. Principles from the martial arts are included in its theories.

Japanese Health Standards and Health Insurance Systems

General

Standards of health in Japan are high. Life expectancy is seventy-one and a half years for males and seventy-six for females (Public Health White Paper, 1973, p. 21), longer than in the United States. Epidemic diseases no longer present a major problem, but the death rate from tuberculosis, although dropping rapidly, is still higher than in the United States or Europe. The diseases that produce the highest death rate today are cerebral hemorrhage, malignant neoplasms, especially of the stomach, and heart disease (Public Health White Paper, 1973, p. 27)—a pattern typical for an industrialized society.

For every 10,000 persons in Japan there are 11.6 physicians, whereas there are 12.7 in the United Kingdom and 16.1 in the United States (WHO World Health Statistics Annual, 1971, p. 48). This is considered adequate by WHO standards, although the distribution of physicians is still low in the Japanese countryside. The availability of hospital beds in Japan is adequate: there is a ratio of 12.7 beds per 1,000 population, higher than that in either the United States or the United Kingdom.

The first National Health Insurance program was established in 1938, and this has gradually expanded so that now 50 percent of the population uses this coverage. The program is operated by local government agencies, and the cost of medical treatment is met by a 40 percent contribution from the national government and a 30 percent contribution from the patient, while the final 30 percent is paid for by a contribution from the local government and supplemented by insurance fees of participants. The fees are rated according to local tax payments and property holdings. The average white-collar worker pays about $12 per month insurance fees for a family of four.