

SHANTI NAGAR: THE EFFECTS OF  
URBANIZATION IN A VILLAGE IN  
NORTH INDIA

3. SICKNESS AND HEALTH

RUTH S. FREED AND STANLEY A. FREED

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## ABSTRACT

Shanti Nagar during 1958 to 1959 was a village in the initial stages of response to modern urbanization, primarily emanating from Delhi, the capital city of India, which was experiencing rapid modernization and urbanization. One aspect of these changes was in the diverse patterns of health care which were practiced in the village. The changes, which were occurring with respect to health care, were slow and not always easy to detect, but some of the changes were with regard to a greater use of Ayurvedic medicine because of Arya Samaj influences, and

others to a lesser degree with Western medicine. The health care system of Shanti Nagar comprised a composite use of curers and healing practices deriving from the Atharva-veda, Ayurvedic and Unani systems of medicine, and Western medicine. The present paper points out the concepts of sickness and health of the people of Shanti Nagar and how their system of belief regarding illness and healing was eclectic, often an article of faith, and at the same time pragmatic. It also provides indices of changes in health care.

## INTRODUCTION

Shanti Nagar, situated about 11 miles (18 km.) to the northwest of the City of Delhi in the Union Territory of Delhi, was a village of 799 people during the time of our study from 1958 to 1959. Numerous villages surrounded by farm and grazing lands characterized the region. Delhi became more accessible to the people of Shanti Nagar after Indian political independence when paved roads and bus transportation were introduced between the city and the village. The railroad station was about 2 or 3 miles (3 to 5 km.) from the village, and trains provided daily transportation to and from Delhi and Narela, a market town. Narela was more often visited by villagers by bicycle or bullock cart.

The fieldwork for this and two earlier monographs was the joint enterprise of the authors. Because a great deal of background and detail regarding Shanti Nagar is provided in the two earlier studies, which are a part of this same series (Freed and Freed, 1976, 1978), we repeat data only when essential to understanding the present monograph. For example, to understand mortality and morbidity it is necessary to have knowledge of the demographic characteristics of the population. It is also necessary to be familiar with the castes of the village.

The population consisted of 407 males and 392 females; there were 13 castes. The Jat Farmers and Brahman Priests were the two most populous, well-off, and landowning castes, accounting for 56 percent of the people.

The low castes (Chuhra Sweeper, Chamar Leatherworker, Gola Potter, Mahar Potter, and Nai Barber) comprised 35 percent of the population. All the high castes including the Jats and Brahmans made up 65 percent. Fifty-one percent of the population was male; 49 percent was female. The population of Shanti Nagar was youthful; the average age being 21.2 years and the median 15. Villagers told us that since independence times had been good, there were no famines and therefore their children were not dying as much as formerly. Thus, the population was increasing. Further population data can be found in Freed and Freed (1976, pp. 37-51).

Representatives of the following castes resided in Shanti Nagar: Bairagi Beggar, Baniya Merchant, Brahman Priest, Chamar Leatherworker, Chhipi Dyer, Chuhra Sweeper, Gola Potter, Jat Farmer, Jhinvar Waterman, Lohar Blacksmith, Mahar Potter, Mali Gardener, and Nai Barber. The castes with the smallest numbers, consisting of single households with no more than 11 members, were the Baniya Merchant, Chhipi Dyer, Mahar Potter, Lohar Blacksmith, and Mali Gardener. The Jhinvar Watermen, represented by two families, numbered only 13 persons. Because of their small numbers, these six castes did not have incidences of morbidity and mortality comparable to the larger castes.

The major subjects of this study of sickness and health are morbidity and mortality, ecol-

ogy, concepts of sickness, the kinds of curers or people from whom cures were sought, descriptions of some cures, and the diseases found in Shanti Nagar. Freed and Freed (1976, pp. 17-28) have described how the fieldwork generally was carried out. For sickness and health the methods primarily employed were in-depth interviews among all castes; observation of illnesses and treatments with follow-up interviews; the attempt to record all births, deaths, and causes of death that occurred during our residence in Shanti Nagar; and a survey of supernatural beliefs.

Since ecological conditions and the way in which people live affect their health, we have provided a description of those elements of daily life which affect general well being, such as the sources of water, methods of waste disposal, the living space provided for humans and animals, and the general relationship of the villagers to the land. A more complete picture of the ecological base may be found in Freed and Freed (1978).

The villagers' concepts about sickness, the identification and treatment of disease, and the curers they used depended on a number of variables: the age, sex, and experiences with illness of an individual, the location of the village in which he or she was born, caste, religious orientation, education, and urban experience. Generally, males living in the village were born in Shanti Nagar but their wives came from the surrounding regions of the Union Territory of Delhi, southern Punjab, and Uttar Pradesh. Although the region so circumscribed was not extensive, still regional variants existed in terminology, dialect, caste, and religious beliefs.

The village concepts of sickness and their treatment were based on four theories of curing:

1. Those from the Atharva-veda, which describes the way in which priests in Vedic times exorcised diseases or used pragmatic methods of curing.
2. The Ayurvedic system of medical theory based on the three humors (bile, phlegm, and wind) and their homeostasis.
3. The Unani system of medical theory, borrowed from the Greeks by Islam, and somewhat similar to Ayurvedic theory but with four humors (blood, black bile, yellow bile, and phlegm).
4. The allopathic system of medical theory which is identified in this study as Western medicine.

Intertwined in the minds of the villagers with these four approaches to curing is a complex system of beliefs in deities, spirits, and the soul and its rebirth or release from the round of rebirths. However, for practical cures, the villagers were eclectic and willing to try various curers as well as curing practices. Common illnesses, regarded as not particularly serious, especially those found among children, were treated within a household by experienced adult women.

In Ayurvedic and Unani medical theory, humoral theory as found among the concepts of sickness and health in Shanti Nagar requires a brief explanation. Humoral theory refers to the concept that the body possesses specific humors, which when disturbed create an imbalance in the body resulting in sickness. These humors may be out of balance because of food, climate, or both, or the imbalance may be due to other factors. However, the popular concept of such disturbances was based on whether the food or drink which an individual ingests was hot or cold and the relation of the food to the season of the year. In this context, hot and cold do not refer to the temperature of a specific food but rather to an innate quality. For example, rice is a cold food even when it is served hot.

Humoral theory has had a long history, for both the early Hindus and the Greeks used it in diagnosing and curing illnesses. It later spread and became a part of general European medical lore through the Middle Ages and beyond, including among its practices bloodletting and cupping. Folk ideas regarding humoral theory, especially the idea of an imbalance in the body resulting in illness together with the concepts of hot and cold foods, very probably have or have had a worldwide distribution. For example, Is-

lam borrowed the humors and other practices of humoral theory from the Greeks. The peoples of Latin America have miscellaneous concepts of hot and cold, cupping, and bloodletting derived from humoral theory, which the Spanish and Portuguese conquerors passed on to them. Anthropologists have noted these practices in Latin America and more recently in Asia (Foster, 1953; Clark, 1959; Kutumbiah, 1969; Basham, 1976; Bürgel, 1976; Werner, 1976).

To identify diseases, we proceeded as follows: Whenever villagers told us about a disease or were reported as having one, we recorded the details such as symptoms, course the disease ran, treatment, and the term used to identify the sickness. We checked its meaning carefully with other informants and our research assistants. We then compared the reported symptoms with those characterizing the disease given in the Merck Manual of Diagnosis and Therapy (Lyght et al., 1956). Whenever no clear agreement or substantiation could be found between the symptoms reported and those listed in the manual, we held the identification in abeyance until we could check with additional informants. Sometimes the illness and the associated beliefs were clarified in further interviews, or later in the analysis of all the data on sickness and health.

In the section on sicknesses, the diseases found in Shanti Nagar have been categorized according to Alland's (1970, pp. 19-20) five-fold classification of diseases with one exception. His five categories of disease are (1) infectious or parasitic; (2) functional; (3) genetic; (4) nutritional; (5) psychosomatic. Since his fifth category refers to diseases which are both somatic and psychological, it does not include diseases which are solely psychological. Therefore, we have substituted the term psychological for psychosomatic as a broader category and use it to include psychological diseases which are solely psychological as well as those which are psychosomatic. We have relied on the "Diagnostic and Statistical Manual of Mental Disorders" (Committee on Nomenclature and Statistics of the American Psychiatric Association, 1968) for the identification of some psychological disorders, as well as other

sources. However, some diseases whether of the psychological or somatic type defied identification through these sources, in which case we present them as they were reported.

## MONEY, WEIGHTS, AND TEMPERATURE

We have generally used Indian units to designate money and weights and have occasionally given their equivalents in dollars, pounds, and kilograms so that non-Indians, especially Americans, can understand the quantities involved. Such an understanding is most easily developed for weights because the pound and kilogram have not changed through time. On the other hand, the several devaluations of the dollar since 1959 and the steady attrition of its purchasing power may mislead the reader into underestimating the purchasing power of the sums of Indian money that we report. Monetary conversions were made on the basis of the rate of exchange in 1958: 4.76 rupees to one dollar; at that time, the Indian rupee was worth more in terms of the dollar than it is in 1978. Moreover, even if one keeps in mind that the dollar was more valuable in 1958-1959, it still fails to convey adequately a realization of the value of the Indian rupee. Perhaps the best appreciation of its value can be derived from the estimate that Meier (1962, p. 304) has made of the cost for an individual of a minimum adequate standard of living for a year in New Delhi in April 1960, "a level of living well above subsistence and one which permitted cultural activity as sophisticated as any that has been achieved up to the present day—so long as such cultural activity renounced conspicuous consumption of material goods or energy." The total cost was Rs. 1030 a year, a figure that included prorated sums for essential urban services, such as police, schools, and public health that amounted to a total of Rs. 365 (Meier, 1962, table 1).

Two monetary systems were then in use; the first, the ancient traditional system; the second, the decimal system. Although the Government of India had begun to convert its currency to the decimal system, both systems were functioning in 1958-1959. In the traditional system,

the rupee, abbreviated Re, Rs. (pl.), is divided into 16 annas. An anna is divided into 12 pie, three of which equal a pice. In the decimal system, the rupee is divided into 100 naye paise, abbreviated nP. We give sums of a rupee or more in the decimal form: for example, Rs. 8.25 (8 rupees and 4 annas). We use annas only for sums of less than a rupee. Because the rupee was worth 21 cents, an approximate value in dollars of a sum of rupees can be quickly obtained by dividing by five.

The seer, approximately equivalent to 2.05 pounds (.93 kg.), was the unit of weight in the Shanti Nagar region. Consequently, seers can be easily converted to pounds by multiplying by two. The seer is divided into 16 chattaks. One chattak equals 5 tolas. A maund, equal to 40 seers, is approximately equivalent to 82.3 pounds (37.3 kg.).

The Celsius scale for measuring temperature is in the process of replacing the Fahrenheit scale in the United States. However, as a convenience for those American readers who have to convert a Celsius reading to Fahrenheit in order to have a subjective appreciation of how hot or cold it is, we have given each temperature in both scales.

#### ACKNOWLEDGMENTS

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#### A NOTE ON THE TRANSCRIPTION OF HINDI WORDS AND NOMENCLATURE

Proper names of persons, castes, organizations, places, major yearly festivals, and geographical features, and of all words contained in Webster's "Third New International Dictionary of the English Language, Unabridged" have been reproduced in Roman script. Other Hindi words, the Romanized spellings of many of which have become more or less standardized because they frequently appear in English publications, have been italicized and spelled in their customary forms without diacritics. English plurals and possessives have been used (except when Webster's gives the Hindi plural), for example, *vaid*, *vaid*s.

We have used binomial names for castes. The first word is the usual Hindi designation for the caste; the second, an English word that denotes the traditional occupation of the caste and/or translates the Hindi term. For example, the English translation of Nai is barber, the traditional occupation of the caste: hence, the caste designation, Nai Barber. Jat does not mean farmer in English, but the Jats are traditionally farmers: hence, the caste designation, Jat Farmer. There were two castes of potters (Kumhars) in Shanti Nagar, the Gola Kumhars and the Mahar Kumhars. To avoid the use of a cumbersome three-term name, we designate the castes, Gola Potter and Mahar Potter. When the same caste is mentioned successively, we frequently shorten the name following its initial use either to its Hindi or English component. When used in this way, the English word is capitalized. When not capitalized, words such as potter, farmer, and priest refer to occupations and not to castes; for example, "Ram Kishan, a Brahman Priest, was a farmer," means that the foregoing member of the Brahman caste worked as a farmer.

## MORBIDITY AND MORTALITY

Illnesses were often so taken for granted that no one mentioned them, or individuals were isolated within households when they were sick so that it was not possible to gather data on all the incidences of illness. Therefore, we have no complete figures on incidences of morbidity, but rather have data only on those cases which we either stumbled on early in our fieldwork or which later were reported to us as we came to know the villagers. It was possible to ascertain endemic diseases in the population and to recognize epidemics. Two of these occurred to people and one to cattle during our fieldwork. All three of these epidemics were definitely related to human ecological problems. The villagers suffered from a severe epidemic of influenza immediately after a large wedding, May 1958, and a mild epidemic of typhoid during the rainy season. Cattle epidemics were expected throughout the region in the early fall of

the year, and one did occur in Shanti Nagar in 1958, which was reported in a description of the celebration of Akhta, a festival to drive out or exorcise the disease (Freed and Freed, 1966). Many of the attitudes toward cattle diseases were similar to those held for human diseases, primarily deriving from Hindu religious beliefs and from Ayurvedic medical theories. However, inoculations against diseases were given to cattle and humans by government employees.

A major part of our data on morbidity and mortality derives from our census of the village and our regular recording of births and deaths. We obtained accurate information regarding births and deaths from January 1, 1958 to June 1, 1959 (tables 1, 2).

Within this period, 13 male and 20 female infants were born. Ten children under the age of four died, five males and five females. One

TABLE 1  
Births of Infants and Deaths of Children under 4 Years  
of Age by Caste and Sex — January 1, 1958 to June 1, 1959

Caste	Births			Deaths		
	Male	Female	Total	Male	Female	Total
Bairagi Beggar	1	1	2	1	—	1
Baniya Merchant	—	—	—	—	—	—
Brahman Priest	5	2	7	—	—	—
Chamar Leatherworker	2	1	3	—	2	2
Chhipi Dyer	—	1	1	—	—	—
Chuhra Sweeper	—	4	4	2	1	3
Gola Potter	—	3	3	—	—	—
Jat Farmer	4 <sup>a</sup>	6	10 <sup>a</sup>	1 <sup>a</sup>	1	2
Jhinvar Waterman	—	1	1	—	1	1
Lohar Blacksmith	1	—	1	—	—	—
Mahar Potter	—	—	—	—	—	—
Mali Gardener	—	—	—	—	—	—
Nai Barber	—	1	1	—	—	—
Total	13 <sup>a</sup>	20	33 <sup>a</sup>	4 <sup>a</sup>	5	9 <sup>a</sup>

<sup>a</sup>One of the Jat infants was stillborn. The mother was not counted in the village census since she was a married daughter of the village and had gone permanently to her husband. Thus, for the village population the total infant births was 12 males and 32 overall; the deaths of children under four in the village population were three males, five females, and eight overall. For ages at death of the children, see table 2.

TABLE 2  
Death by Caste, Sex, Age, and Cause — January 1, 1958 to June 1, 1959

Caste <sup>a</sup>	Male	Female	Age	Cause
Bairagi Beggar	1	—	6 days	Undiagnosed
Brahman Priest	—	1	15 years	Possible homicide
Chamar Leatherworker	—	1	3 years	Drowned
Chamar Leatherworker	—	1	9 months	Probably typhoid
Chamar Leatherworker	1	—	70 years	Old age
Chuhra Sweeper	1	—	60+ years	Treated at hospital; sent home to die. Old age.
Chuhra Sweeper	1	—	3 years	Blind, kept in cage, death from poor care, poverty
Chuhra Sweeper	1	—	1.5-2 years	Dysentery, emaciation, typhoid
Chuhra Sweeper	—	1	2 years	Fever: typhoid or influenza
Jat Farmer	1	—	54 years	Heart condition; diagnosed and treated at hospital; then sent home to die
Jat Farmer	—	1	60 years	Influenza and simultaneous beating by husband
Jat Farmer	—	1	60 years	Suicide because grandson listed next died
Jat Farmer	1	—	3 years	Typhoid, dysentery (emaciation)
Jat Farmer	—	1	40 years	Malfunction of liver or circulation; not treated at hospital until almost dead; then sent home to die
Jat Farmer	—	1	2-3 months	Mother above died so infant died
Jat Farmer	1 <sup>b</sup>	—	Stillborn	Difficult primaparus delivery at side of road; culmination of several days
Jat Farmer	1	—	90+ years; some in- formants said 100 years	Blind, feeble: old age
Jat Farmer	1	—	30+ years	Malfunction of liver or circulation, treated at hospital, sent home to die
Jhinvar Waterman	—	1	1 week	Born with clubfoot and massive liver-like growth in lumbar region; late delivery. No treatment. Primaparus
Total	10	9	—	

<sup>a</sup>The following castes had no deaths: Baniya Merchant, Chhipi Dyer, Gola Potter, Lohar Blacksmith, Mahar Potter, Mali Gardener, Nai Barber.

<sup>b</sup>This child was born to a married daughter of the village who had gone permanently to her husband so was not counted as part of the village population.

of these children, a stillborn infant, was not part of the village population (table 1). The number of deaths which occurred between January 1, 1958, and June 1, 1959, was 19. Ten were males and 9 females. Of these 19, nine were adults 15 years of age or older and 10 were children under four years of age. The adults consisted of five males and four females. As indicated above, among these deaths, one of the male children was not part of the village population (table 2). Death occurred at the extremes of the age range in old age or infancy,

the common pattern of mortality in human populations (Lieban, 1977, p. 18). Six of the nine adults who died ranged in age from 54 to more than 90 years. Individuals who died at age 60 and upward were considered to have died of old age. Four adults, one 40-year-old female and three males of 60, 54, and 30 years of age, respectively, had examinations by physicians in Delhi; one male died of a coronary thrombosis; another male and the female were diagnosed as having disorders of the liver and circulatory system.

## ECOLOGY

Villagers believed that life was healthier in the country than in the city, even though they might not have the amenities available in a large city. This view was based on their belief that the air, water, and food were purer in the country. It was also related to their ability to control the way of life to which they were habituated better in the village than in a city. Many villagers were not familiar with the different kinds of urban living and most often encountered poorer urban standards; their fear of strangers and their belief that strangers could not be trusted added to this view. There were some exceptions among wealthier, educated families who were able to live in better urban quarters. But even they, when old age approached, might return to the village which they still believed was healthier than the city.

The best opportunities for learning higher standards of living and the available amenities for health with regard to sanitation, sewage, food, and contagious diseases resulted from training for and serving in the armed forces or the police. Living in the barracks or quarters, essential for both these types of service, taught young men about standards of hygiene and health, and gave them an appreciation of the range and quality of foods available, as well as the range of entertainment, and the benefits of exercise. These findings are based on interviews with young males undergoing police and military training as compared with youngsters attending schools in the village region, and a few young men attending colleges.

### SANITATION, CLEANLINESS, HYGIENE

The spread or containment of specific diseases is directly related to personal and community hygiene (Alland, 1970, p. 57). A number of illnesses found in Shanti Nagar were due to the village having no piped clean water or hygienic system of waste disposal. There were four wells from which water for household use could be obtained. Two of these were

for all castes except the Harijans (Chamars and Chuhras); one was for the Chamar Leatherworkers and another for the Chuhra Sweepers. Twelve families owned hand pumps. Women generally drew water from the well once or twice a day depending on the size of the family and their daily workload. Bathing and washing clothes usually occurred in one's household or courtyard because the village council had forbidden bathing at the well. Children sometimes went into the village ponds for recreation or to water the cattle but seldom bathed there.

Profitable agriculture and animal husbandry depended on water. The village ponds were used to water the animals, but they dried up before the monsoon season. With the monsoon season there was considerable flooding in and around the village. There were Persian wheels and canals for irrigation of the fields. Farmers paid for the canal irrigation and were obliged to be in their fields at specific times of the day or night in order to open the irrigation ditches through which the water flowed. Tubewells were just beginning to be introduced in the region. Just what effect the additional water for irrigation would have on health, especially the breeding of mosquitoes associated with malaria, could not be foreseen.

Villagers tried to bathe every day, as has long been the ideal pattern in India. Males who worked in the city rose early and bathed before eating and setting out for work. Women did not bathe as regularly as men, and some women and children were noticeably dirty. Kin and neighbors who interacted with them daily would gossip about their dirty neighbors due to their appearance, odor, and because they were not observed bathing or preparing for bathing. Some of this was slovenly behavior, a few had psychological problems; but often a woman had so much work to do that by the time she was ready or able to bathe, the allotted bathing water had been used up by the other family members. Then she was simply too tired to fetch more from the well. Very few males car-

ried water, and then only when there was debilitating sickness among the adult females in the family. Males expected their women to have an adequate supply of water on hand for all household needs.

There were no tubs, showers, or wash basins. A bather used a small pitcher holding about 16 ounces of water. Usually, this was unheated, for fuel was costly. This water was used carefully and sparingly to wash one's whole body. Most bathing was carried out in and around one's clothing, publicly in the courtyard for men and children, and in a private corner for women. Usually soiled clothing was removed a piece at a time for modesty while bathing and replaced with clean clothing at the same time. Although male urban workers wore trousers, shirts, socks, and sometimes underwear in cold weather they bathed wearing a loincloth or shorts. Women's clothing and modesty standards complicated their bathing procedures and made it harder to cleanse themselves. Very small children were bathed by their mothers who either held them and washed them or stood them in a shallow metal basin, or on the ground, as the mother poured small amounts of water while rubbing them with the water.

The ideology controlling the Indian technique of bathing was based on the belief that the lower parts of the body were particularly dirty and polluting. Sitting in a tub of water would not cleanse; it would only pollute all parts of the upper body touched by the water because the water would become polluted by the lower parts of the body resting in the tub. Other factors were the lack of privacy or specific rooms for bathing in most village homes, the need to use water sparingly, and the modesty of females which was instilled beginning at about four to five years of age.

In the village, men of the Nai Barber caste shaved high-caste men about twice a week and for special occasions. They also cut hair once a month. A few men who worked in the city used hot water for shaving and bathing. Men of all castes who worked in the city, including Brahmans, shaved themselves with a safety razor. This procedure was a change, as twice-born men formerly did not shave themselves.

From infancy onward, the Nai Barber clipped or shaved off all hair of children of both sexes of the high castes up to four or five years of age. At about four or five years of age, little girls were allowed to let their hair grow. Shaving the hair of young children was a deterrent to lice and made it easier to wash their heads. The low castes shaved and cut their own hair.

Women wore their hair long, usually in two braids. Formerly, the Nai Barber woman who served a family washed the hair of the family's women and set it in numerous small braids against the sides of the head, but this hairdress was no longer fashionable and was only occasionally seen. Mainly, women washed and braided their own hair. Despite the washing of hair, some people had lice; one could see a mother picking lice from a child's head or vice versa. We assumed the existence of fleas from our observations of itching, skin infections, and from the presence of animals.

Although the Community Development Programme had managed to introduce a public latrine in the village, almost no one, except occasional urban visitors used it. The villagers did not favor latrines in the village. Defecation and urination were normally performed in the fields. Only infants, small children, the sick, and aged defecated within village bounds. A mother disposed of her infant's waste in the gutters around the house or courtyard; the Chuhra Sweeper woman who served the family removed all such waste. About half of the lanes of the village were paved with brick; the gutters were kept clean. The dung dropped by cattle was picked up almost immediately by their owners and later made into dung cakes for fuel. Other refuse was regularly removed from the village habitation site.

Household cleaning mainly consisted of sweeping since the floors were either of hard packed dirt or cement and had no floor coverings. Since there were no windowpanes there was no need to wash them. Windows could be closed by shutters during dust storms, rain, and at night. There was a minimal amount of house furnishings. Carpets, curtains, and draperies were nonexistent and furniture consisted of

string cots, stools, and wicker chairs, all of which did not require dusting.

Cooking was done in the family's courtyard where there was a low clay fireplace, or on a number of clay stands arranged for cooking adapted to various types of pots. Some families had a shedlike arrangement open on one side next to the regular dwelling. Most cooking pots were of brass and scoured with ash regularly; really good housekeepers had shining brass pots. The floor or ground around the area used for cooking was plastered with cow dung at least once a week. Some people performed this task every day or almost every day.

Houses were made of brick or mud. They had drains but no pipes—that is, gutters formed either of clay or of cement—through which dirty water was drained off into the courtyard. None of the houses had window screens. It was rare to see a house closed and locked unless no one was in it. As a result of the many open windows, doors, and drains all houses had a fair amount of animal life in them: rats, flies, mosquitoes, and pigeons. The pigeons usually flew in through an opening at roof level, which was built into brick houses to provide air in the hot weather. Occasionally a peacock danced on a rooftop. Brick houses might be one or two stories high; for the well-off landowners, often two stories; for the Chamars and Chuhras, who were only beginning to have brick houses, usually one story.

There were no facilities to heat or cool houses. In the winter months, the houses were chilly and damp; people spent as much time as possible during the day in the sun. At night, they slept indoors wrapped in quilts. Regardless of the season, people slept in all or part of their regular daytime clothing although they might remove some article such as a headcloth, socks, or a shirt. In the summer months, the houses were extremely hot; people then slept outside, preferably on a roof top to catch whatever breeze might occur.

Although Dhobis (laundrymen) are ubiquitous in India, most clothing was washed by the women of a household. There was no Dhobi who resided in the village, but one came from a neighboring village once a week, approx-

imately, to gather and deliver laundry for some of the well-off families and for those men who held office jobs in the city. Women of the household washed clothing in cold water, sometimes with soap, and slapped and scrubbed it on a rough surface until clean. The garments were then hung or spread out to dry, but never ironed, unless by the Dhobi. There were no irons in the village.

It was customary to wear old, but not ragged or torn, clothes. Women dressed up to go to the well or for ceremonial events. Men dressed up for ceremonial events and to go to the city. Items of clothing were not changed every day, except by men who worked in office jobs in the city. A great many villagers had good clothing, even new clothing, which they kept in trunks for special events. Very gradually this clothing became old and was used for daily wear in the village. Some of the clothing that women wore (the full skirts and sequin-ornamented headcloths) were not so easily washed as men's clothing (both the traditional dhoti and trousers and shirts). The relative lack of means for keeping clothes clean probably contributed to the spread of infectious diseases. The custom for married women of wearing a headcloth covering the head and face below the eyes may have spread disease, especially to infants in arms, as these cloths were rarely washed.

One of the village men was a district sanitary inspector; he saw to it that the village streets and wells were clean. The primary method to insure pure water was preventive; the village banned washing clothes and bathing at the wells. Periodically, potassium permanganate was dropped into the wells. Because this chemical tinted the water, villagers considered the practice unhealthy. Potassium permanganate prevents bacillary dysentery, but not amoebic dysentery. The safest water purification procedure, short of a government controlled system of piping purified water is to boil water for 3 to 5 minutes (Most, 1975, p. 18). None of the villagers boiled their water although a few heated it for bathing and shaving. Other methods of water purification are to add chlorine, iodine, or Halazone tablets (Most, 1975, p. 18).

These methods were too costly and complicated for the villagers to follow even if they had understood the need for purifying water, which they did not.

All milk was cooked over a slow fire immediately after milking which probably prevented some forms of illness (Polunin, 1976, p. 126); drinking warm milk was customary. No one drank raw milk right from the cow. The milk was either drunk hot or converted from heated milk into butter, ghee, or curd; in warm months, curd was mixed with sugar and un-boiled water and drunk as a cooling concoction.

### CLIMATE AND SEASONS

Actual illnesses and beliefs about illnesses were correlated with the changing seasons of the year. In general, three major seasons were recognized: (1) the rainy season, which tapered off into a brief warm spell, beginning in July and ending in September; (2) the cool, winter season from October to March, and (3) the hot, dry season from March until about the end of June. In a sense, people were cognizant of a more ancient method of dividing the year, derived from the Ayurveda, the traditional system of Hindu medicine. Under this system the year was divided into halves: the taking-half, approximately from December to June and the giving-half, from June to December (Planalp, 1971, p. 20). In Shanti Nagar, the villagers did not identify these two halves in such terms, but the marriage season, from November to July, was roughly equivalent to one of these two halves. The other half, when there were no marriages, started just before the rainy season when the gods went to sleep, to November, when the gods awoke on the festival of Dev Uthani Gya (Gods Awakening Eleventh) and marriages again occurred. (R. Freed and S. Freed, 1964, pp. 85-86, 88).

Beginning with the spring season in the month of Chaitra, (March-April), the correlation of expected illnesses with seasons was as follows. In spring, formerly, the most feared illness was smallpox. Because of vaccinations this was no longer so, but the women cele-

brated the festival of Sili Sat to propitiate the Smallpox Mother goddess and other goddesses that were believed to bring contagious diseases to children (Freed and Freed, 1962, pp. 262-271). The celebration of Sili Sat had come to be a form of preventive psychological health care against contagious diseases for children.

The hot/dry season was formerly the time of cholera and other epidemics. Since this season was also the time of the greatest number of weddings, when large groups of people assembled, a variety of contagious diseases might be contracted such as influenza, pneumonia, dysentery, and colds. At the time of weddings, many guests were fed in the village of the groom and of the bride. In the bride's village, the wedding guests, many of whom came from outside the village, might number up to 500 or more. All guests received a meal. Members of the wedding party who accompanied the bridegroom to the bride's village were not only fed regularly for two to four days, but were provided with sleeping quarters, water for bathing and shaving, and the hookah for smoking. As a result of the influx of people and crowded living conditions, there was always the possibility of spreading contagious diseases and of having an epidemic.

In the third season, the rainy or monsoon time of the year, the most frequently reported illnesses were typhoid and attacks of malaria. This was the season during which the most illnesses occurred and was the most physically uncomfortable. Although in May and June daily maximum temperatures ranged from 100°F. to 118°F. (38°C. to 48°C.), the heat was dry and humidity was low. When the rains came in July, temperatures generally fell to below 100°F., but then it was very humid. The rainy season considerably increased the mosquitoes which at other seasons were not numerous. Malaria, as a result, occurred or reoccurred. The heavy rains caused flooding which contributed to even more pollution of drinking water than was usual.

Toward the end of the rainy season and continuing into the brief warm humid period, cattle sickness and attendant deaths were expected. When an epidemic struck the village

cattle, villagers held the ceremony of Akhta to drive out the disease (Freed and Freed, 1966). Thereafter, in the dry and cooling autumn, there were reductions in human as well as animal sickness, another harvest period, and perhaps the most pleasant time of the year climatically and in terms of lack of illnesses. During the cold winter season, the major complaints were aches in the joints, colds, coughs, and various contagious diseases since there was a resumption of marriages, a series of festivals, and a pilgrimage to Hardwar on the Ganges River by many villagers.

Adult men and women worked in the fields, many of which were irrigated. Some irrigation water was drawn from wells by Persian wheels, but most of it came from a canal controlled by the government. Canal water was distributed to the fields through a network of irrigation ditches. The individual farmer had to be in his field at whatever time of the day or night he was scheduled to receive water. The water from irrigation and rains contributed to ills associated with dampness such as rheumatism and provided breeding places for insects, often vectors of various diseases.

There were regular population movements daily, weekly, monthly, and seasonally which could have contributed to the spread of contagious diseases. Although 49 percent of adult men had urban experience (Freed and Freed, 1976, pp. 38-39), not all of them regularly worked in a city. Even so, a fair proportion commuted by bus or train to Delhi, and a few went to the market town of Narela daily. Other males worked in cities farther away and returned home either once a month or perhaps only once every six months. These regular population movements must have contributed to various forms of illness in the village although no one ever mentioned this possibility. A few individuals, usually males, more rarely females with their husbands, attended circuses or the cinema in Delhi, which entertainments may have been additional sources of contagion. In the late fall and winter, merchants traveled to Shanti Nagar during the harvesting and processing of sugarcane into brown sugar. Other merchants occasionally visited the village

throughout the year, just as the villagers themselves took their produce and milk into Delhi to sell. All of these population movements contributed to a village community which would be subject to the same illnesses as those found in the cities, market towns, and other villages of the surrounding region.

The common belief was that the seasons of the year affected one's health in different ways. Changes in diet were correlated with changes in seasons. The belief in the relationship of diet (hot and cold foods) to the changing seasons was derived from Ayurvedic medical theory. Although the concepts of "hot and cold" foods were at the heart of the concept of changing the foods one ate according to the seasons, the actual foods eaten were more often due to the crops harvested in the two harvesting seasons. In the spring, the major crops harvested for human consumption were wheat and gram; in the fall, bajra (pearl or bulrush millet) and rice. Sugarcane was slowly harvested and processed in the winter months, and fruits and vegetables in season were eaten throughout the year (for details of crops, see Freed and Freed, 1978, pp. 28-70). All of these foods together with dairy products composed the major part of the diet. The Chuhra Sweeper caste ate the most meat and flesh foods, but even they had a dominantly grain-vegetable-dairy diet. This diet was characteristic of the village as a whole with most of the population eating no meat, poultry, fish, cheese, or eggs.

#### LIVING SPACE, PEOPLE, ANIMAL LIFE, AND HEALTH

Cattle have long been of supreme importance in the life of the Hindus. Zebu cows and water buffalo provide the main source of proteins and fats. Hindu traditions venerate the cow, and treat the female water buffalo with almost as much respect as the cow because of the milk she gives. As a result, the villagers lived in symbiosis with their cattle and became fond of them. Cattle were kept in buildings that were often part of the dwelling place, were grazed during the day, but kept inside in the extremely hot season and stall fed.

Some cattle were kept in enclosures rather than buildings. These were low-walled compounds, which might be used as an area where the adult women in the family sat to make dung cakes from the dung dropped by the cattle. These dung cakes were stored in neat piles which were plastered with a coating of dung to keep the cakes dry; before the rains began, each stack was covered with a straw mat for additional protection. These stacks, which resembled small huts, were placed on the peripheries of the village dwelling area. Dung cakes were the primary fuel for cooking; they were also used in the hookah to ignite the tobacco. Other fuels consisted of wood gathered from the thickets and groves of trees for cooking, ghee for lighting a lamp at night, especially for religious reasons, or occasionally kerosene for a lantern. No fuel was used for heating houses, even in the chilly months of the late fall and winter.

The village had been in the process of shifting from *kachcha* (made of mud) to *pukka* (made of brick) houses since the 1920s. Buildings and enclosures housed men, women, children, cattle, and other animals. Only 16 out of 110 families had no cattle. The Gola Potters owned donkeys, mules, and horses; the Chuhra's owned pigs and chickens. All these animals were kept in the section of the village in which their owners lived. Zebu and buffalo bulls wandered from village to village in the area and mated with the respective cows of their own species. Some families had dogs; one Brahman family kept a cat chained near the family supply of grain to protect it from rats and mice.

There were three terms used to designate the major types of houses or parts of dwellings: *ghar*, which usually referred to the family members composing a household or to the women's part of the household where the cooking occurred; *gher*, which referred to the building or part of the building in which the cattle were kept; and *baithak*, which referred to the place where the men sat, or the men's sitting room. This space was where the men slept, too. Regardless of how these spaces were arranged, family members went back and forth

between them. Thus, all of these areas of the household were subject to the same vectors for diseases, and the same diseases.

The fact that animals were often kept in buildings in proximity to humans increased the possibility of infectious disease because animals and animal waste attracted insects. In the various combinations of men's, women's and animals' quarters, all family members were directly in contact with the places where the animals were kept and often interacted with them. Men and older children might graze animals; women most often milked the cows and water buffalo, fed them, and gathered and cut fodder. When animals were not housed within or next to the living quarters, people were less exposed to flies. Cleanliness was involved, for it was more difficult to keep a household clean where there was considerable interaction between humans and animals within it. When the wastes of animals were deposited within a building, these drew flies, mosquitoes, fleas, and ticks.

All food supplies for humans were stored in the dwelling quarters of the humans; some fodder was usually stored in the same quarters as the cattle. These supplies drew mice, rats, flies, and other animal life. Since Hindus consider the five products of the cow (milk, curd, clarified butter, urine, and dung) to be purifying, they did not consider the effects of cattle living close to them as being deleterious to their health. The cows and bullocks were considered to be almost family members in some cases.

Flies were in abundance all year-round with some reduction in their numbers in the hot, dry weather of May and June. On extremely hot days, they would drop dead in front of one's eyes from the heat. Mice and rats could be seen running around houses and courtyards. Rats would crawl over people at night, sometimes bite them, and would eat stores of food, such as grain and brown sugar.

When mothers were working, small infants were placed in baskets suspended by ropes from the ceiling partially to keep them out of the way of rats, but the rats sometimes reached them by clinging to the ropes.

Nothing was done about flies except keeping

the lanes of the village clean. Most villagers were hesitant about taking life, except for a few Jats, who hunted, and the Chuhra caste, who killed pigs, chickens, pigeons, and fish for food. Thus, flies and rats were problems. The villagers trapped the rats, carried them outside of the village, released them from the traps, and returned to the village—with the rats possibly arriving ahead of them. They knew that rats ate their stores of food, but many were not aware that rats and flies carried and spread a number of diseases, any more than they understood how other animals might be vectors of disease, except for rabies of which they had great fear. For a mad dog bite, of which a number occurred in the hot season before the rains, they immediately went to a hospital in Delhi for treatment. This was the only occasion on which they resorted quickly to modern Western treatment. There was absolutely no indecision or hesitation. It was the only resort (cf. Gould, 1965, p. 201).

Most daily activities took place outside rather than inside dwellings year-round. In the winter months, both the *kachcha* and *pukka* buildings were cold and damp; it was customary for people to sit or stand on the sunny side of a building for warmth.

We did not measure the spaces occupied by buildings or count the number of people in proportion to the number of rooms or size of rooms in a household. From observation, most high-caste families had more space for their buildings, dung pits, stored dung cakes, courtyards, and the like, than did low-caste families. Houses were built close to one another, often sharing a common wall, for housing was confined within a limited centralized space, and all surrounding land was used for planting, grazing animals, threshing, or the cremation grounds. Although many high-caste houses had spacious inside courtyards, or walled courtyards on a lane, few of the poorer or low-caste families had courtyards. In the sections of the Gola Potters, Chamars, and Chuhras, there was space around the houses which formed compounds where all members of the particular caste might gather.

On the average, the size of rooms was larger

and there were more of them for the high, more prosperous castes than for the landless, low castes. Jats and Brahmans tended to have houses with the most and largest rooms. The single Baniya Merchant and Mahar Potter families fit into this category. Bairagis, except for one family with two *pukka* buildings, had limited space and number of rooms as also did most other families of the village. These conditions should have had some effects on physical and mental health. Very little privacy existed for most villagers, but the poorer the family and the lower the caste the less privacy and living space. For persons with contagious diseases, there was little or no possibility of isolation within many of the households. For the lying-in of a woman, no private room existed in many houses. Usually a room was partitioned by hanging quilts and sheets as isolating dividers.

Females most often slept in the women's quarters with their small children, sometimes with as many as one adult woman and two or three small children in a bed. A newborn infant slept at the head of its mother's cot, and later continued to sleep with the mother at least until another child came along. When a new infant was expected, other children slept with a grandparent of the same sex as the child. Some children slept on the floor of the house. Bedclothing in the winter usually consisted of a pallet on the string cot with a quilt in which to wrap oneself if alone or to cover those who slept together. In the hot summer months such coverings were not needed. Pillows might or might not be used, although newly married couples had them and also used bedsheets and even embroidered pillowcases as a part of the dowry brought by the bride. These latter luxuries did not last long. Quilts were usually cleaned and often restuffed with fresh cotton at the end of a winter season. Bedclothes were also aired. However, the sleeping conditions most probably promoted the spread of contagious diseases in a family.

If a married couple was young, had only one or two small children, and lived alone, there would be no problems with regard to obtaining sufficient privacy for sexual relations.

But few couples fell in this category. As one man said, married couples became clever and sly about working out occasions for sexual relationships when they lived in joint or supplemented nuclear families, or when they had older children. One old woman said that when she was first married, her mother-in-law arranged for her to carry her husband's meals out to the fields so that the young couple might have a chance to slip off together in the fields for coitus.

Since sexual relations ideally were carried out with no other adults or older youngsters present, there often was a great deal of frustration, inhibition, and tension within a household due to the lack of privacy. These psychological difficulties increased as men worked in the cities and were present in the village only on holidays. When husbands who worked in cities were absent from the village for periods varying from one week to one year, wives who remained in the village were subject to psychological and physical health problems resulting from such absences. Some of these problems were brought out in a doll play session of a small boy, whose father worked in the city. He repeated a characteristic conversation between his mother and his father, seeing himself as his father in the doll play session and saying to the adult female doll, "You should cover your face, the children are around. The male doll is going to sleep. No, no, it is going to take a walk." The child's phrases indicated his awareness that a woman only uncovered her face and head when she planned to sleep or have sexual relations with her husband. Since the children were present, her husband had told her to replace her headcloth. The child unknowingly indicated the frustration of the father by repeating that first he was going to sleep then changed

his mind, saying that he was going to take a walk.

The crowded family life, the lack of privacy, and the rules regarding sexual intercourse contributed to domestic squabbles and psychological problems. In many ways, the villagers had Victorian attitudes regarding sex and family behavior. The family settings were to a degree comparable to Freud's Victorian era with the authoritarian father (Campbell and Naroll, 1972, pp. 437-438). Most heads of families were authoritarian males; many villagers had a puritanical ethic in that they believed actions, especially hard work, determined one's fate and one's caste in rebirths; and they also had a sense of sin.

Some of the separations into dwellings exclusively for male or female use, excepting children, were in families where a number of people were widowed. For example, one family consisted of three widowed adults—one male, two females—and of two married couples. The husband of one of the married couples was away from the village for long periods so that two adult females and one adult male were totally without mates, and another adult female was without a mate a good deal of the time. The problems of sexual tension were resolved by devoting one building to the females and another building to the males and cattle. However, the adult women fought with each other, and the widower was known to have a temper. Although psychiatric treatment was relatively unknown in the village, one intelligent young Jat recognized that the fights and jealousies between women in his household were due to the absence of their husbands, and that males, too, had problems when they had no wives, were widowed, and lived in the very domesticated setting of a joint household.

## CONCEPTS OF SICKNESS

Shanti Nagar did not have a unified system of health care. The phrase "health care" used in Western medicine and in medical anthropology is inappropriate for portraying attitudes toward sickness as contrasted to those toward health in the village of Shanti Nagar. Health

was something that one had "naturally." Sickness was to be avoided, if possible, by eating foods considered appropriate for the person and the season, by good actions, by warding off evil, and by propitiating deities. Sickness was unwanted, but no one expected to be able to

avoid it. It was an intermittent fact of life from birth to death. One did the best one could at the time it occurred. Some of the ills and medical treatments of Western medicine did not fall within the category of sickness in Shanti Nagar. For example, to be pregnant, have a baby, or to be old were not sicknesses and, therefore, did not warrant medical attention. These states were natural for human beings. Because of this attitude, the subject of birth, is generally not treated here; it is discussed in detail in a subsequent volume on the rites of passage. It is important to understand this overall attitude before we describe the various concepts and beliefs about sickness and its treatment.

Since the attitudes and concepts of disease found in Shanti Nagar constituted a different way of thinking about disease than that found, generally, in the West or within the vocabulary of medical anthropology, we describe the village concepts of sickness and their relationship to curing practices and curers. The concepts result from a long stream of history and incorporate theories and practices from Hinduism, Islam, British rule, the Arya Samaj, and Western medicine. Although the concepts themselves may be traced as deriving from one or another tradition, when they are considered together, they pervade beliefs about sickness and health as well as other aspects of the village culture. These concepts are faith and fate, spirits as intrusive forces causing illness, the association of mother goddesses with the illnesses of childhood (in particular the poxes) or, for the Chamar Leatherworker and Chuhra Sweeper castes, the Panch Pir (five Islamic saints, who served the same purposes as the mother goddesses), humoral theories from Ayurvedic and Unani medicine, the relation of humoral theories to food and fever, the germ concept in Western medicine, beliefs of the Arya Samaj regarding fumigation and cleanliness, and pragmatism from the villagers' points of view in the selection of cures and curers.

#### THE RELIGIOUS BACKGROUND

Although all the villagers were Hindus, they roughly could be divided into three subdivisions: Sanatan Dharma, Arya Samaj, and the

low castes which had been influenced by combined concepts and beliefs from Islam, Sanatan Dharma, and a kind of popular Hinduism. Sanatan Dharma is the orthodox version of Hinduism, and in Shanti Nagar the deity most often worshiped or referred to was Ram Chandra, an avatar of Vishnu. The worship of Krishna, another avatar of Vishnu, had been repressed because of the Arya Samaj influences. The Arya Samajis were dominantly Jats but the whole region had been influenced by Arya Samaj teachings because its founder, Swami Dayanand Saraswati, and his followers were active throughout the area; modern disciples of the Arya Samaj continued to be active there. Saraswati was a holy man who renounced his caste, that of a Saraswati Brahman, and wandered for many years before he founded the Arya Samaj, a reform sect which based its teachings on a return to the Vedas. What is of most consequence from the point of view of disease is that Saraswati's teachings denounced all forms of magic and miracles, claiming that the various types of curers who used such methods were frauds, that sickness should be cured by fumigation with fire and incense and by cleanliness, and that curing should be practiced by those having a knowledge of physiology and physics, his definition of medical knowledge. Thus, he was against many of the beliefs perpetuated by the Atharva-veda, but gave his interpretation of the Vedas to substantiate his reforms. In addition, he said that all the names for deities in the Vedas were in fact attributes of one god so that Arya Samajis are monotheists.

Both Arya Samajis and those following Sanatan Dharma believe in the Vedas, which are considered by Hindus to be their most holy and authoritative books because they were given by the gods or God to the saints to give to the people of India. Because this region had a strong orientation toward monotheism and anti-Brahmanical Hinduism, the teachings of the Arya Samaj have been compatible and have found wide acceptance. However, few of the villagers knew the ancient Sanskrit texts so that which was Vedic was sufficiently unclear to them for them to impose or accept the different interpretations (Freed and Freed, 1966, pp. 675-677).

What has happened and probably will continue to happen is that the different interpretations regarding sickness that are related to religious beliefs will blend and persist. The ideas which have the greatest possibility of persisting are the harmony-disharmony theory of the Ayurveda, the idea that contagious diseases are intrusive forces in the body that need to be driven out, and the need to have faith in and propitiate a deity. With a great deal of scientific education throughout the entire village population, perhaps some of these beliefs might be dispelled.

Because Ayurvedic medicine is linked with the Vedic age, even though much of it developed thereafter, the Arya Samajis as well as the rest of the villagers were more willing to accept it than to accept Western medicine, especially since its practices and ideology about harmony and the humors were more closely related to their basic beliefs about curing. Therefore, Ayurvedic medicine had considerable prestige even though some Arya Samajis used Western medicine. The use of Western medicine also fits into the ideology of the Arya Samaj, for Western physicians had a knowledge of physiology and were not the curers tabooed by Saraswati.

#### FAITH AND FATE

The villagers believed that one should help an ill person and provide medicine if one could, but that if the moral quality of a person's actions in past and present lives were of such a nature as to cause death, then nothing would help. They believed that there was a certain amount of leeway between an absolute and invincible fate and a relative fate. The interpretation of one's actions in the process of life, death, and rebirth might result in a fate other than was expected. One could never know what one's past actions in previous lives contributed for one's future life or for release from the round of rebirths, anymore than one could be sure that some small action in this life might not result in a lower or higher form of rebirth, or even in release from the cycle. The odds were unknown so life and death were a gamble. Therefore, when sickness befell, they

supplicated a deity who they believed might help them and promised an offering to the deity if the person recovered. Arya Samajis, however, simply offered their prayers to Bhagwan, God. These religious beliefs were adhered to along with the known curing remedies available to them. In a general sense, recovery was always in "the lap of the gods." Since villagers were aware that some people might have typhoid, for example, and recover with home treatment while others might see one or another type of curer and yet die, the unpredictability of the outcome and their inexact knowledge of the causation of illnesses fostered their attitudes and beliefs. In addition, although they expected throughout their lives to suffer a number of illnesses, most of them believed that if perchance they died of an illness, they would not only be reborn but would be reborn into the same family, playing the same roles opposite the same family members. This belief gave them great comfort and made it possible for them to face illness as well as death. It was also based on wishful thinking, attachment to one's family, and stories which circulated about the countless rebirths of the same pair of lovers or spouses.

Villagers were pragmatic in the acceptance of illness as a fact of life. It was part of the order of events in one's life. No one expected to live out life without having had a series of childhood and other contagious diseases which were endemic in the population. They worried about these illnesses, but learned to take them as well as death in stride. Therefore, the concern was not of the same order as the concern with diseases which one either never had contracted or rarely had known others to have had. However, some illnesses were considered to bring relatively mild suffering, while others brought severe suffering and a greater possibility of an early death, which despite the belief in rebirth was not desirable. People believed that one should live out the various stages of life and not die too young. If one died too young, one could become an endlessly wandering ghost. If one lived a normal lifetime, one went to the land of the dead, where Yama, the god of the dead, or Bhagwan (God) for the Arya Samajis, weighed one's actions

and decided on the form of rebirth or the release of the soul who came to him. Release of the soul was believed by followers of Sanatan Dharma, but not by Arya Samajis.

Minor ailments such as internal upsets, slight respiratory problems, coughs, headaches, and many childhood complaints were not initially considered serious. They might persist for a long period with little or no diagnosis or treatment and become steadily worse so that finally the sufferer became so ill that he was unable to function. Because of the encouragement of stoicism in the face of pain or any kind of suffering, illnesses which often did become progressively worse might eventually be treated too late.

"Preventive medical concepts" consisted of wearing amulets or various charms for protection from spirits or the evil eye and the observance of religious festivals for the long life of a husband and the welfare of children: for example, the festival of Sili Sat to prevent poxes, Karva Cauth for the preservation of the life of one's husband, and Hoi, the worship of a mother goddess, for the welfare and protection of children (R. Freed and S. Freed, 1964, pp. 83, 87, 89). Amulets were worn by children who were believed to be especially susceptible to spirits, ghosts, and the evil eye, a belief no doubt reinforced by the high infant mortality rate. No one followed the practice of going to a physician for an examination to be assured that he was in good health. Such action would have been considered a waste of money because as long as one was not sick, one was healthy. The person who functioned and had no fever or outstanding ailments was healthy; the person who suffered fever, extreme pain, could not use his limbs, or found that his vision or hearing was failing or almost gone might consult some kind of curer, but only because he could not otherwise function.

As persons grew old, family members did little to cure their ailments, except to provide them with drugs which might ease their pain, for these ailments were expected for the aged and were regarded as signs of approaching death. The degree to which a family sought treatment for a sick member and the kind of treatment sought depended on combinations of

the following factors: the sex and age of the individual, the financial state of the family, the time of the year, the endemism of the disease, the duration of the illness, the amount of malfunctioning, the education of the family head, and the family's religious orientation.

### INTRUSIVE SPIRITS

To understand the concept of an intrusive spirit force, it is necessary to indicate the derivation of this idea and its relationship to the concept of the soul, supernatural beings, immortality, and rebirth in Hinduism. The concept of an intrusive spirit force causing illness with attendant soul loss and death may once have been universal in the prehistory of human beings, judging from the complex of such beliefs that have been found in numerous societies around the world. A remnant of this complex in Western society is the belief that at death the soul leaves the body. Both soul and spirit may well have been part of a development from the basic concept of animism, with soul being that part of individuals who die and are either reborn or attain immortality (Tylor, 1958, page x). In Hinduism, the Atharva-veda, the Veda which is concerned with the everyday affairs of human beings such as the family and curing practices for humans and cattle (both of which were a part of family and daily life), describes the belief that an intrusive spirit enters the animal or person to cause illness. This spirit force should be exorcised by rituals performed by a Brahman. One of the main elements in such rituals is exorcism through a fire ceremony, representing the god, Agni. Thus, the supernatural being, Agni, fights the intrusive spirit, another supernatural being, which is causing the illness (Müller, 1898, Atharva-Veda, pp. 5-9, 13-14, 21-22, 25-28). Depending on which supernatural force wins or is stronger, the patient survives or dies. If the person dies, the soul either becomes a wandering ghost in the case of an untimely death, or journeys to the land of the dead to be judged by Yama, god of the dead, and thereafter may be reborn or be joined with the Universal Absolute. In either case the soul continues its existence but in different forms. Although soul

and diverse supernatural beings are often distinguished, souls may become supernatural beings such as ghosts and spirits, or become a part of the Universal Absolute when released from the round of rebirths.

The Universal Absolute or supreme soul of the universe is a super, neuter deity, overarching all the male and female deities in the Hindu pantheon, capable of being one and the same as any and all of them as well as absorbing all souls released from the round of rebirths (Dowson, 1950, p. 56). This ability is reflected in the statement that the deity is everywhere, even within a human being, for the Universal Absolute is all matter, spirit, and being (Freed and Freed, 1962, p. 251), but it was never worshiped in Shanti Nagar, nor did the villagers refer to it, only to the principle. In this sense the Universal Absolute is an organizing principle that provides the basis for interpreting everything beyond the mundane explainable world in terms of experience and cause-effect in an animistic way. Thus, what caused illness was a spirit, which could result in death of the body, release of the soul to become a ghost, to be reborn, or to become part of pervading "deityness."

Based on these beliefs, death due to a contagious disease was regarded differently depending on age. When an infant died the belief was that the infant could not have accrued sufficient good actions to be released from the round of rebirths, nor could the infant have become hostile to its family in such a short time on earth and thus become a wandering ghost. Such an early death was an index of the infant's bad actions in previous lives. If an adult, especially one who was of low caste or a stranger to the village, died of a contagious disease in a severe epidemic that caused him extensive suffering, he was expected to become a ghost permanently attached to the village. This type of ghost was usually male. For aged persons, this belief did not hold. Even though they died of a contagious disease, their souls were expected to proceed to the land of the dead for appraisal by Yama.

The soul of anyone who committed suicide became a wandering ghost, for suicide was a sign of sick behavior. Such ghosts were described as malignant; they were capable of

causing their children, if young, or relatives and close friends to die. Such deaths were described by saying, "the ghost takes them." The persons so taken, although they may have died with identifiable symptoms, were believed to have died because of the intrusion of the ghost.

Beliefs about an intrusive spirit force exhibited a considerable range in the village. They were quite strong and widespread among the women as well as among the uneducated and the lower castes. Such beliefs were held by many followers of Sanatan Dharma, the orthodox aspect of Hinduism, but by very few of those males who professed to be followers of the Arya Samaj, which was against beliefs in intrusive spirits and ghosts (Freed and Freed, 1966, pp. 675-677).

### MOTHER GODDESSES

In a society that was hierarchy and power conscious, deities took precedence over ghosts and spirits in the amount of power they were believed to have to drive out a sickness, especially a contagious disease of childhood. Any deity might be propitiated in case of illness; sometimes an individual worshiped only one chosen deity. Among women who had children, the deities most often worshiped were the mother goddesses whose names were either synonymous with a specific disease or were associated with a number of diseases of childhood. These mother goddesses were believed to be capricious so that they might act either malevolently or benevolently. They could bring the disease, cure, or kill. It was unpredictable what role they might play, and worshipers were expected to please them. The curing of the disease and the worship of the goddesses were in the hands of mothers. A mother generally took care of her children in the event of many illnesses, including serious contagious diseases, and only resorted to a means of curing other than home remedies, the propitiation of mother goddesses, or professional curers if death seemed likely, or if the patient was an only son. Men did not, as a rule, interfere with this aspect of women's work.

The classification and identification of diseases were linked with the terms used to identify the goddesses. Because women came from

different dialectical regions, they sometimes used different terms for the mother goddesses. These goddesses and their associated diseases are as follows:

(1) Chechak Mata, the goddess of smallpox. Chechak was the usual village term for smallpox although Sitala Mai (Smallpox Mother) and Deshali Mai were also used. The last term was suggested by only one woman, and was also used by another woman for measles. The term, Kali, an orthodox female deity associated with smallpox and called the goddess of death and destruction, was rarely used to refer to smallpox.

(2) Kalka Mata, the goddess of the cremation grounds. The only caste that regularly worshiped Kalka both for the welfare of children and other members of the caste, was the Chamar Leatherworker. This goddess was also known as Masani Mata (mother of the cremation ground or cemetery). Individuals might worship her in the village or at the shrine for Kalka Mata in another village.

(3) Khamera Mata, the goddess who controlled measles. No differentiation was made between (rubeola) measles and German measles (rubella).

(4) Khasra Mata, the goddess of itches, scabies, eczema, and similar maladies of the skin. These were usually regarded as minor ailments but children in particular were frequently afflicted with them. Chicken pox usually fell within the realm of this goddess as a minor affliction, but sometimes was considered to be in the domain of the Crossroads Mother goddess.

(5) Marsal or Mursal Mata, the goddess of mumps.

(6) Phul Ki Mata, the goddess of boils and other large skin eruptions similar to boils. This goddess was clearly distinguished from Khasra Mata on the basis of the meaning of *phul*, a flower or blossom (i.e., an eruption of the skin).

(7) Kanti Mata, the goddess of typhoid. With typhoid there was a small identifiable rash. The disease was sufficiently different from other types of skin symptoms to warrant its own goddess.

(8) Chaurahewali Mata, the Crossroads Mother goddess. This mother was propitiated

for the welfare of all children and might be worshiped for all illnesses as well as for a particular illness. If there was no other goddess to propitiate for the illness of a child, then the Crossroads Mother would most likely be propitiated.

All of these goddesses except Chaurahewali Mata were known as the Seven Sisters, who caused poxes and were said to be jealous of one another. They were usually worshiped together so that none of them would be slighted and cause the death of a child. Perhaps this precaution was taken because many younger women were unfamiliar with the characteristic symptoms of these different contagious diseases and, in any case, some of them were difficult to distinguish. It is possible, also, that some of these goddesses no longer had their former importance because of inoculations to control smallpox and cholera, the two most deadly diseases.

The diseases associated with these goddesses were treated by worship and offerings to the appropriate goddess. Villagers believed that the disease had to be driven out of the body of the patient. The goddess's name was a synonym for the disease even when an individual, whether male or female, did not worship the goddess or believe that the particular goddess should be propitiated. In other words, the goddess's name served as a classification for the sickness. There also was a trend to combine the worship of the goddesses, not just for the reasons given above but also for the general welfare of children, inasmuch as some of the diseases were not so prevalent as formerly. This trend may have been enhanced by the prevalence of inoculations for these diseases and by the tendency, due to Arya Samaj influence, to worship one deity. However, there was still considerable vitality in the worship of these goddesses as can be seen in the following description of their worship.

There were six locations in or near the village where offerings were made for the welfare of offspring. The shrine of the founding male ancestor of the village, known as Bhumiya, was near the Brahman meeting house in the southeast corner of the village. This shrine (fig. 1) was more elaborate than the others which consisted, at most, of a few bricks. Worship at



FIG. 1 Shrine of Bhumiya, the founding ancestor of Shanti Nagar.

the shrine of Bhumiya was included in ritual-religious circumambulations of the village (Freed and Freed, 1962, p. 266).

At the northeast corner of the village near the bus stop, where two roads crossed, were a couple of bricks, the shrine to Chaurahewali Mata. Offerings were made here not only on the occasion of illness to children but also to fulfill a vow when a child recovered and at the time married daughters and their children who had been visiting the village returned to their husbands.

One of the roads leading away from the crossroads curved northward; along it was a shrine to Kanti Mata under a *jal* tree (*Tamarix dioica*; a dwarf variety of *Tamarix*, Growse, 1880, p. 493). It too consisted of a couple of bricks. Offerings were made here when anyone had typhoid. Across the road was an infrequently used shrine to Kali Mata where women

worshiped if a child had smallpox or if a family member was seriously ill.

Outside of the village to the southwest on a road going toward the canal were two shrines on opposite sides of the road. One was to the Seven Sisters or Mother Goddesses; the other to the Panch Pir. The Panch Pir shrine was used primarily by Chamars and Chuhars of both sexes, but sometimes women of other castes bowed their heads and clasped their hands when going by to be on the safe side. Of the Seven Sisters, the most powerful was the Smallpox Goddess, Chechak Mata. She was also the most feared. Each goddess of sickness had specific offerings which were projections of what the mothers of sick children believed might please a female deity and which sometimes coincided with identifications of the diseases.

In the spring of the year when Sili Sat was

observed, a festival originally in honor of the Smallpox Goddess, the circumambulation of the village started with the shrine to the Seven Sisters and proceeded counterclockwise around the village ending with the Crossroads Mother goddess (fig. 2). The shrines to Kanti and Kali were omitted (Freed and Freed, 1962, pp. 262-269). This festival had become one of the general preventive ceremonies that followed the control of cholera and of smallpox by inoculations.

Three similar but more complete circumambulations of the village occurred at the time of Akhta, a festival to cure cattle disease, during which smoke was wafted at the cattle from a pot of smoking cow dung and incense, the pot was buried off village land, taboos were observed, and mantras were recited (Freed and Freed, 1966, pp. 684-686). All these rites were intended to drive out the disease. The recital of mantras was in accord with the practices of Sanatan Dharma. The rite of wafting smoke at the cattle could be interpreted as exorcism, according to the principle of spirit intrusion, or as hygienic fumigation, according to the followers of the Arya Samaj.

## AYURVEDIC MEDICINE

Beliefs about disease and its treatment may be traced from the Rig-veda and Atharva-veda to Ayurvedic medical theory. In the Atharva-veda in particular, there is a taxonomy of diseases which is close to popular categorizations of disease in Shanti Nagar, categories based on overt symptoms. These Vedic categories are fever, diarrhea, cough, consumption, dropsy, tumor, leprosy and skin diseases, inherited diseases, and seizures by demons (cf. Kutumbiah, 1969, p. xi). Although the great majority of curing techniques are by means of incantations, which Kutumbiah calls magico-religious techniques, there are, in addition, empirico-rational elements. These elements consist of herbal remedies, sometimes used as amulets, and substances containing life-giving properties, for example, the five products of the cow, porridges, and in particular rice pudding; and honey and fat (cf. Kutumbiah, 1969, p. xi). A number of the ideas regarding curing in the Atharva-veda were incorporated into Ayurvedic theory, but the empirico-rational elements, especially those regarding drugs, were separated from the mag-



FIG. 2 Routes taken through Shanti Nagar for the festivals of Sili Sat and Akhta.

ico-religious elements. Basham (1976, p. 19) and Kutumbiah (1969, p. xv) indicated that from five to six centuries before Christ there was a traditional medical system, Ayurveda, in India, and Kutumbiah noted that there were medical schools around the sixth century B.C. Specific substances, in particular food and drugs, and an empirico-rational approach characterized early Ayurvedic theory and practice, but it is interesting that the magico-religious elements from Vedic times were still of importance in the medical beliefs in Shanti Nagar.

Ayurvedic medicine with its associated theories is best known in many parts of the world for the classification of foods as "hot and cold" and secondly for humoral theory, a system of curing and health care based on the notion of balance or homeostasis of the body. In Ayurvedic medicine, there are three humors (the *tridosas*), wind, phlegm, and bile. The basic principle is that illness results when the body has an excess of waste products, a condition which, in turn, results in an imbalance among the three humors. Waste products normally are excreted from the body in the form of urine, feces, sweat, secretions in or from the ears, eyes, nostrils, pores, and genitals; hair, nails, and oil from the skin also constitute waste products. These waste products are considered to be leftovers and polluting but are derived from the consumption of foods. Foods are absorbed into the various parts of the body to build and replenish them; the waste products are then excreted. The process by which this occurs is described as a sort of fire in the stomach. Modern science would call this process metabolism; the composition and replenishment of bodily parts could be compared to cells and cell growth. Foods sustain and nourish the body while waste products pollute it. Thus, these two concepts in the medical system are reflections of good and bad processes, purity and pollution.

When food intake is of the right sort for the temperament of the individual and the season of the year, or when it is in the wrong combination for the person and the time, the individual is affected accordingly. An excess of waste products in the body results in illness. The main symptom of illness is a burning in

the body—fever. This simplified version of humoral theory indicates the general basis of Ayurvedic medicine (Kutumbiah, 1969, chs. 2, 3).

In Shanti Nagar no one person could provide a comprehensive statement of Ayurvedic theory. In general, villagers had some notion of balance, which to them was health. They also were concerned with daily eliminations, especially if they considered themselves to be constipated, in which case they resorted to easily available commercial remedies. The most important aspect of their beliefs was that specific foods were suitable at particular times of the year. The terms most often used to designate the characteristics of foods important to the maintenance of health were "hot and cold." They believed that if the intake of food and the excretion of wastes were out of balance then one would have an excess of one or more of the humors, and that such an excess would provide a clue to the sickness (cf. Opler, 1963, p. 32).

Diagnosis and curing were based on the ability of the curer to pulse. Pulsing consisted of holding the wrist of the patient so that the pulse could be felt and looking closely at the individual to discern from touch and sight which of the humors was causing the illness. When a curer failed to pulse before giving a diagnosis and prognosis, the patient had no faith in the curer's abilities. Pulsing, although diagnostic, was part of the cure for the villager. It was as though the power to cure was vested in the curer and passed on to the patient through touching.

The physician relied on the pulse beat to learn which of the humors was out of order. As Opler (1963, p. 33) described this technique, "The pulse he uses is the width of two fingers away from the root of the thumb." The pulse, as felt by the forefinger, tells him whether wind is the humor causing the disorder, the middle finger, bile, and the ring finger, phlegm. Also, the right hand of the male patient and the left hand of the female patient are pulsed because it is assumed that the circulatory systems of males and females differ.

The villagers were aware that they needed specific substances in their bodies such as air

and water, but they did not mention the five elements which Ayurvedic medicine considered to be essential for the parts of the body. For example, earth substances went to nails, bones, teeth, muscles, skin; ethereal substances, to the pores and channels of the body, including the ears for a sense of sound and hearing (Kutumbiah, 1969, pp. xl, 35-36, 62-63). It was obvious that the villagers' understanding of Ayurvedic medicine consisted of an attenuated, popularized version of its theory. Their knowledge reflected their belief in the Vedas. Just as anything which was part of the Vedas was recognized as truth, so too ideas stemming from Ayurvedic medicine were good for one. But knowledge of both Ayurvedic medicine and the Vedas was limited for most villagers, even though Ayurvedic medicine was taught in schools around the Delhi region, and villagers, especially Arya Samajis, consulted practitioners of Ayurvedic medicine. In fact, when a villager said he had consulted a physician or doctor, the practitioner was more often an Ayurvedic physician than a physician trained in Western medicine.

One of the concepts which was known from Ayurvedic medicine was that of *qualities*, which are a part of the process by which foods are taken into the body and broken down for use or excretion. A few literate Brahman and Jat men had some knowledge of these qualities. Here is a conversation providing one of the best examples:

Onions are polluting. Onions have in them something that makes man more passionate. If, for example, people drink wine, it has a bad effect. Onions have a similar effect, but to a milder extent. Our religion is that people should eat less and pray. If they indulge themselves less, they are better able to pray. Everything we eat goes through seven changes. First, it becomes like a juice; then in the lungs it is churned again and purified where it becomes black. The blood which is purified goes to the left side, the heart, while it is being churned. The remaining blood which is blue goes to the right side. The dirt becomes urine, and the pure juice is left. Then the intestines harden the blood and that becomes our flesh, and afterwards the flesh becomes fat in the body. The fat is converted to energy and then to bone. The last change is bone. From the food

which we eat these seven things are made; whatever we eat will affect these seven things. If we take something intoxicating, these seven things will be impure; if we eat something light and pure, these seven things will be pure.

The food which we eat contributes to the attributes and is based on three qualities of the individual: *satoguna* (truth, from *satric*, anything which is true), *rajoguna*, and *tamoguna* (*guna* means the main content of the substance). Formerly, the saints used to be called *satric* people, i.e., they had the qualities of truth in them. They ate foods which were light: milk, raw fruits, and vegetables without spices. Fresh. The kings and people who had physical power were *rajoguna*, the second quality. They had to protect the country and used a lot of physical power so they ate food which gave them energy and made them strong. The sages of the first class only drank water, ate air, and prayed to God; or only ate fresh vegetables and uncooked leaves and fruits. The *tamoguna* were the devils. This is why onion is polluting. When it is eaten, one can't keep the mind balanced and one loses control over the mind and the body. The second and third categories of people could eat onions, but it was not a food for the saints.

This informant was a Brahman, who worked as a clerk in the city. He continued.

Today I eat onions and chili peppers. Today eighty percent of the people are in the third category. The *tamoguna* of olden days were better than the *rajoguna* of these days because they also had principles.

The juxtaposition of religion, ethics, behavior, and food points up the concept of qualities; the food eaten makes the person. This informant, who had taken correspondence courses in Ayurvedic medicine, had incorporated his reading of Ayurvedic medicine into a belief widely held in Shanti Nagar that the current era was the Kali Yug (an age of darkness, falsehood, and sin) and that in early times there was an Age of Truth. He also used qualities to define the differences between Brahman priests, Kshatriya warriors, and those who did not fit into either of these categories. His description of the process by which food is turned into essential elements for the parts of the body and the role the *gunas* play in digestion and metabolism was closer than most villagers came to these ideas

(Kutumbiah, 1969, p. 50 and adjacent diagram on blood circulation).

In Ayurvedic theory, the qualities are related to taste, lightness or heaviness, and various other characteristics that may be applicable to food. From this classification derives the theory of hot and cold foods because the tastes fall into two groups: sweet, bitter, and astringent which are cool; and acrid, acid, and saline which are hot (Kutumbiah, 1969, pp. 37-38). However, none of the villagers used this method of describing hot or cold foods although they spoke of hot and cold foods, and of foods that were too cool and too hot.

Hot and cold foods were to be taken in combinations and at specific seasons, but the ways in which hot and cold foods were interpreted varied. The degree of variability and the fact that a number of young and middle-aged adults were unable to classify foods according to hot and cold was a probable index that the hot and cold taxonomy was of diminishing importance in ideas pertaining to health, although still used to validate reasons for eating or not eating certain foods. For example, rice pudding was eaten on certain festivals, and in some instances substituted for unleavened wheat cakes which were the main staple in Shanti Nagar. On the few days when rice pudding was eaten, men preferred their wheat cakes; they resisted change in their regular diet. It was always men who said "rice is too cool." A few outspoken Jats simply said they preferred wheat cakes and did not like rice.

Here is an example from a male Chamar Leatherworker of his categorization of hot and cold foods.

Rice is colder than ice. If you eat it in the winter you will get wind and pain in the joints. Cooking makes no difference. It stays cold. But if rice is cooked or eaten with meat, it becomes hot. Meat has the essence of being hot; and if you eat meat with something whose essence is cold, the heat in the meat makes the other hot. Carrot is cold, also buttermilk, millet, and butter. Bajra [bulrush or pearl millet] is hot. Wheat has a uniform essence throughout the year, neither hot nor cold.

It was a good thing that the belief about wheat

existed, for it was the staple food and eaten year round. It may have become classified this way because it was the main staple and considered basic to health.

A Jat who was a strict follower of Arya Samaj teachings regarding food, i.e., he was a vegetarian, said he had never eaten eggs or meat because they spoil the brain. He called them dirty and hot foods. He said some of his brothers ate meat and that they acquired anger as the result. He also remarked that the lower castes who ate meat had a certain amount of meanness in them and this meanness would continue.

A Brahman woman in her sixties gave the most complete classification that we obtained of hot and cold foods (table 3). In explaining hot and cold foods, she said: "Too hot is for a food which nourishes one. Take both hot and cold together. There's a difference between too cold and cold. Limes are too cold. One who eats too much of a food that is too cold will be a victim of pneumonia. Eat limes, but eat sparingly and they are very good. If you eat too much, you get dysentery. If a snake bites you, take lime juice, then the poison won't affect you. Some foods are too hot, such as potatoes; some are just hot, such as spinach, okra, lentils, and ground gram flour. We mix flour from dried peas with curd and place it on the fire and make *pakor*s. Gram by itself is hot but eaten with rice it becomes very tasty."

Taylor (1976, p. 293) found that the classification of hot and cold foods in north and south India varied and was unable to find any underlying principle linking the beliefs. This range of variability regarding the classification of foods as hot and cold may have been influenced through time by the staple and other types of food most characteristic of the community and by the multiple choices regarding curing practices so that India does not provide the same classifications everywhere. The variety of languages alone could contribute to these differences.

The important theme was that food was the starting point for illnesses, even though germs or spirits might contribute to the humoral imbalances caused by the wrong kind of food.

TABLE 3  
Hot and Cold Foods

Categories	Foods
Hot	spinach, okra, onion, cauliflower, cabbage, lentils, gram flour
Too Hot	potato, eggplant, tomato, garlic, cabbage, red pepper, hot spices, basil
Cold	carrot, turnip, radish, lemon, orange, rice, wheat, maize, coriander, tamarind, mint
Too Cold	lime juice

Another theme was that fever was the index of a serious malady, one which was caused by an imbalance in the system. Without fever, the malady did not require immediate attention and was hardly worthy of notice. For these reasons, chronic ailments and functional disorders were not easily recognized and might be taken care of only when it was too late. The nature of chronic ailments was that the sufferer was not always aware of them; they were intermittent in their attacks, pain, or disturbances of the body and were not necessarily accompanied by fever. Acute illnesses with a sudden onslaught of fever were more readily recognized and treated.

The villagers believed in the inheritance of caste status through the blood. The reason for this belief may be related to the Ayurvedic concepts of food, digestion, metabolism, and excretion which fostered the belief that the kinds of foods one ate contributed to the quality of the blood. In this connection, the concept of qualities is particularly important. The villagers' view of the relationship of blood and caste is a popularized version of a complex Ayurvedic theory of the circulation of the blood (Kutumbiah, 1969, pp. 45-50). It validates beliefs about caste and, therefore, enforces the existing social hierarchy. Purity and pollution concepts are in accord with this popular belief in heredity through the blood which is the primary enforcer of ascribed caste status. The thinking is circular. If one is born into a specific caste, one will eat foods related to that caste; therefore, one's system as well as that of

all others in the caste is either purer or more polluted than members of other castes. Because the members of a caste are either purer or more polluted than the members of other castes due to the foods eaten and other caste customs, the offspring in that caste will have the same qualities as the other caste members.

The importance of food and its relationship to the type of person one becomes was illustrated by a story in which a king's son becomes a coward because his mother, the queen, allowed a Sweeper woman to be his wet nurse. Her milk, having been formed from the foods which a Sweeper woman eats, was inferior to that of a queen, whose milk would result in a son with courage.

There were some general sayings regarding food:

"A child becomes strong drinking cow's milk; it makes him stronger than buffalo milk. Cow's milk and ghee increase the knowledge of a person."

"Buffalo's milk makes you passionate; cow's milk quiets you."

"If food is not good or is indigestible, then one gets fever."

"Salt in food helps digestion."

"A man who boasts about what he has eaten is like a Muslim who rubs grease on his mustache to give the impression he has eaten well."

"The surest way to ruin a man is to feed him without making him work."

In sum, it was food, bodily wastes, and fever which were related to illness and well-being; it was the presence of fever and the technique of pulsing which were necessary to determine whether the illness was caused by an imbalance of wind, phlegm, or bile. The concepts of an intrusive spirit force or of germs were in accord with the theory of imbalance in the human body; for these intrusive factors, too, caused disturbances in the system, especially if the food intake was wrong. Fever was important because it was the index of the combination between an intrusive force, whether spirit or germ, and wastes, which together caused illness. Without the wastes from bad food, the individual would not be susceptible.

### UNANI AND UNANI PROPHETIC MEDICINE

The term Unani is the Arabic word for their medical system which was derived from the Greeks. The Arabs developed Unani medicine as an offshoot of Hippocratic and Galenic theory. It was introduced in north India by waves of Islamic invaders from the twelfth century onward and has similarities with Ayurvedic medicine, for the Hippocratic-Galenic theory of medicine recognized humors and had other features in common with Ayurvedic medicine. The question of which came first, Greek or Hindu medical theory, has been debated but the general interpretation is that the Ayurvedic system was earlier than the Greek, that the two systems, though similar, are not identical, and that they developed separately (Kutumbiah, 1969, pp. xl-xliv). The major differences are that the Indian humoral theory forms a triad and the Greek, a tetrad; moreover the humors differ. The Greek has four humors: blood, phlegm, yellow bile, and black bile; Ayurvedic, three: wind, bile, and phlegm. In general, both systems function similarly, but in details they differ (Kutumbiah, 1969, pp. xl-xli). None of these fine points was recognized in Shanti Nagar. For most of the population, humoral theory was a mixture of Ayurvedic and Unani lore with the medical practices more often called Ayurvedic having more prestige than practices called Unani. For example, the one practice from Unani medicine of considerable importance was pulsing. Pulse-lore was introduced in India from Islam along with Unani medicine around the twelfth or thirteenth century (Kutumbiah, 1969, p. xlii; Planalp, 1971, pp. 25-26). Yet in Shanti Nagar, pulsing was considered to be Ayurvedic.

Among the low castes in Shanti Nagar, there was a strong animistic influence from Islam which was similar to and reinforced the animism of Hinduism and the concept of an intrusive spirit force. The Chuhra Sweeper caste in particular had been very much influenced by Islam, for during World War II they worked for the British Army in what is now Pakistan. Consequently, they came in contact with many Islamic customs; one of the older men in particular related how he had learned curing prac-

tices from fakirs (faqir, Arabic), religious mendicants with magical powers. This branch of Unani medicine has been called Prophetic medicine as a result of the influence of the teachings of the Prophet Muhammad on Unani medicine (Bürgel, 1976, pp. 54-61). It reduced scientific thinking and reintroduced magico-religious precepts, some of which were recognizable in Shanti Nagar. For example, Muhammad taught that to suffer pain expiated sin, and from this connection derived the ideas that disease was a sign of holiness, and suffering was a religious virtue. The villagers subscribed to stoical behavior which may or may not have been influenced by these ideas. Another idea is that science is twofold; there is a science of bodies and a science of religion. This attitude was as much a part of Ayurvedic medicine as Unani. The idea resulted in confusion between religion and science, for the villagers believed that their Vedic literature had revealed much of modern scientific knowledge.

One of the drugs recommended by Muhammad is of particular interest. His precept was, "Use black grain, it heals everything except death" (Bürgel, 1976, pp. 57-58). Black grain was black cumin seed. It was used in Shanti Nagar contrary to Muhammad's prescription, for at the time of such contagious diseases as poxes, it was not put into the ghee in which food was cooked. The reason for omitting it was that the seed and the poxes, especially smallpox, were similar. Because the seed could not be put into the ghee, the food was not then cooked in ghee since all food cooked in ghee required the cumin seed to be cooked in it, too.

What is of greatest significance, however, about Prophetic medicine was that it reinforced the concept of curing by magical practices, the use of amulets against the evil eye and evil spirits, and exorcising diseases (Bürgel, 1976, pp. 54-61). As a result of this influence, the low castes usually had members who would exorcise different types of sickness, such as the evil eye, spirit possession, toothache, and stomachache. Low-caste villagers worshiped at the shrine for the five Islamic saints when family members were ill or on other occasions when the supplication of these five saints was appropriate. The names and deeds of these saints were not very well known to the vil-

lagers who most often simply worshiped and propitiated them as a unity, somewhat as they did in the case of the Seven Sisters.

### POLLUTION, DIRT, AND EVIL

Three dichotomous concepts were related to concepts of sickness, especially contagious diseases. These concepts were purity and pollution, cleanliness and dirt, and good and evil. Purity and pollution referred to the ritual status of an individual at a particular point in time in terms of birth, death, emissions from the body, and contact with other human beings who have a different status because of inherent or other reasons for being pure or impure (Khare, 1977). For example, menstruating women were considered under specific circumstances to contribute to sickness or to be dangerous as far as sickness was concerned.

Cleanliness and dirt were recognized as contributing to sickness, but definitions of cleanliness and dirt varied depending on the degree of knowledge with regard to what kinds of dirt might cause illness. For example, in the section on ecology, we noted that humans and animals, especially cattle, lived closely together. Because of the high regard for cattle, they were not considered as either ritually polluting or dirty. Bathing was not carried out sitting in a tub of water. The practice was considered polluting because the lower parts of the body and their emissions were ritually defiling; however, it was also considered dirty because the water accumulated the dirt from these emissions and was not rinsed off.

An explanation of how good and evil might cause sickness, especially contagious disease, is complicated by the relationship of good and evil to tabooed or unexplainable behavior, and guilt, sin, and envy. For example, a menstruating woman was believed to bring death to a new mother and child through fever because she was ritually polluting but, also, because she was believed to be able to cause such death due to her physical condition. The basis of these concepts was that what was unknown was dangerous. In the household in which a birth occurred, menstruating women kept away from the birth room. Female attendants were past the menopause; but for women outside the family

and lineage, it was not always possible to determine whether they were menstruating so they were barred from visits. A woman who had recently had a child die or who had never borne a child was believed to cause such death due to her ill-wishes to a person who had borne a child. People who carried an aura or load of bad fortune in their lives were expected to cause misfortune in the form of illness to others who were more fortunate. Bad fortune was considered to be due to bad actions in past and present lives. Although evil was never overtly attributed to envy, it was obvious that those individuals who shared this belief in bad fortune and bad actions considered that the person causing evil did so because of subliminal envy. In addition, if individuals did not conform to the rules of ritual purity or cleanliness, then they were expected to have an evil aura which could cause illness, for to some degree ritual purity and cleanliness were intertwined because the person who was unclean was not following good actions.

### WESTERN MEDICINE

The description of Western medicine in Shanti Nagar is mainly one that lacks characteristics. (Western medicine is identified as modern, scientific, and allopathic.) It was the most remote in the conversations of people when they discussed illness, just as very few individuals had a concept of scientific methods and control of research for understanding the causation of diseases. Science was being taught in rural schools but the facilities, at that time, were poor, and the teachers themselves had relatively little knowledge of the subject, at least in the lower grades. As for the medical information that was imparted in schools, it seemed to have relatively little effect upon the parents of the children. In India, adults are not inclined to learn from children. Lewis (1965, p. 301) commented, "Evidently the medical information imparted in school does not diffuse readily through all the caste groups." In any case, the villagers' knowledge of Western medicine consisted principally of familiarity with the effectiveness of a few Western drugs, chiefly penicillin and aspirin. Everyone in the village was willing to take aspirin and be inoc-

ulated with penicillin because of the quickness with which desirable results occurred.

The villagers, however, were aware of the concept of germs, even though the concept was scarcely more than semantic. They knew that "germs" entered the body and caused sickness. The similarity of this concept to the more ancient one of an intrusive spirit force entering the body and causing sickness was apparent when the villagers discussed the contagious diseases, such as measles, typhoid, and especially, those of childhood. They might recognize that they were caused by germs and yet attribute their cause to the mother goddesses whom they continued to propitiate. Moreover, since both germs and intrusive spirits entered the body, they could cause disharmony in it. Therefore, there was conceptual compatibility of the belief in germs, intrusive spirit forces, and Ayurvedic concepts; these ideas reinforced each other which aided their mutual persistence. Penicillin was taken to quite easily because it seemed to drive out the intrusion quickly, no matter what its form. Since the villagers wanted most of all to get rid of the disease, any form of exorcism that worked, a shaman's ritual or penicillin, was acceptable (Freed and Freed, 1966, p. 681). If more Western medicines and treatments, especially those that worked quickly and were inexpensive, could be introduced into Shanti Nagar in such a way that they were compatible with the main tenets regarding sickness and health held by the villagers, they might be quite willing to accept them provided that they proved more effective than other easily available cures. However, no medicines consistently cure; many medicines or medical treatments, both Western and non-Western, simply provide palliatives while the illness runs its course. Therefore, Western remedies do not always show themselves to be superior to those of other medical systems.

We recorded 25 of the 110 families of Shanti Nagar who consulted Western-trained physicians or who went to Western-style medical hospitals or clinics for treatment. By high and low caste, they were as follows. High caste: 1 Baniya Merchant, 11 Brahman Priest, 6 Jat Farmer, 1 Lohar Blacksmith; low caste: 2 Chamar Leatherworker, 3 Chuhra Sweeper, 1

Mahar Potter. Probably more than 25 families had used Western medical treatment inasmuch as we did not carry out a survey to obtain this information but gathered it only in the context of interviews on curing and other subjects. It is quite likely that the Jat Farmers consulted Western physicians much more than is here indicated although they had a strong bias for Ayurvedic treatment because they generally followed the tenets of the Arya Samaj. They had friends and relatives who were Ayurvedic physicians and consulted them. It should be noted that high-caste families were usually larger than low-caste families because the incidence of the joint family was greater (47%) among the high castes than among the low (24%) (Freed and Freed, 1969, table 10). Joint families averaged about 10 members; nuclear families, about 4.6 members. Therefore, the larger number of high-caste than low-caste families who have used Western medical treatment would indicate an even greater number of individuals from high-caste families consulting Western physicians than from low-caste families.

The government provided Western medical services in its national health program; these services were primarily available to villagers through hospitals and clinics. Thus, most Western medical treatment was impersonal, that is, the individual went to a hospital or clinic and was treated by a physician whom he did not know. Males were more apt to be treated by Western physicians than females because the women had no freedom of movement beyond the village unless they were chaperoned or past the menopause. Men who worked in the city, were in military or police service, worked for the railroad, or had any civil service position were the most likely to receive Western medical treatment. Men who worked in factories, also, might avail themselves of Western medicine. There were a few women who had been treated by Western physicians, either in or out of a hospital. Male children followed the path of their fathers; they might be taken to a physician, hospital, or clinic for treatment in the Western system, but not girls, who followed the model of their mothers. This difference was due to the greater desire for male than for female children; therefore boys were more

likely to be given more expensive and time-consuming medical treatments. Despite the greater use of Western medicine by males, the fullest account of an experience in a hospital was provided to us by a Chamar Leatherworker woman who had one of her children delivered in a Delhi hospital because her other infants had died. In her case, she had access to the hospital through her natal family, who lived in Delhi and had a relative working in the hospital. To have access to someone working in a medical system made it easier for villagers to seek that specific type of health care.

One of the drawbacks in Western treatment was the system of payment. To provide medicine was considered an act of merit for the giver. Thus, some indigenous curers did not ask for payment for treatment but took what their patients gave them. Such a donation was not payment but an act of charity, for these curers were usually holy men. As a result both sides gained merit. Although technically, people who used the government medical facilities in Delhi did not have to pay, the villagers believed they would have to pay something in the way of a bribe to obtain access, and they knew that they would have to spend time and carfare.

Taylor (1976, p. 287) found that in Punjab to the north of Shanti Nagar, the distance one traveled to a curer was important. Seventy-one percent of the patients interviewed went less than half a mile to an indigenous curer and paid small fees in cash. Further, the more traditional the curer, the more likely it was that he would spend more than 10 minutes with each patient. These same considerations, distance, reasonable cost, and the amount of time the curer devoted to a patient, were also important to the people of Shanti Nagar in their choice among the available systems of medical treatment.

### ECLECTICISM AND TRENDS

Few families exclusively consulted one type of curer. Depending on age, sex, available time, place of work, occupation, and education, an individual might consult only indigenous curers in the immediately surrounding

area. In cases of severe illness, there was a growing tendency to patronize a Western-style physician in Delhi. Specific kinds of illness, such as dog bites and physical injuries requiring operations, were considered the exclusive jurisdiction of Western medicine. However, a wide range of indigenous curers used medicines which were manufactured by pharmaceutical companies. The availability of these drugs had already contributed to what Leslie (1976b, p. 271) called "the practice of 'pharmaceutical medicine'." Both indigenous and Western drugs which were advertised led to self-treatment by an ill individual. According to Taylor (1976, pp. 288-289), this practice has grown.

### CURERS

Curers were generally male as has been the tradition in Indian medicine. Most female practitioners were midwives, who were not considered curers by villagers; female physicians, especially gynecologists; and nurses in Western-style institutions in the city. A description of the many types of curers provides a good indication of the range of medical treatment available to the villagers.

Many terms existed for curers, some of which designated curers whose methods were based on similar theories. For example, *bhagats*, *fakirs*, *ojhas*, and *siyanas* were primarily exorcists who "took off" the disease. The term *vaid*, was generally translated as doctor or physician and might be used to refer to an Ayurvedic or Western-style physician. The word *hakim* (curer, of Arabic origin) was used less often and was usually associated with Unani or Unani Prophetic medicine, but it might be used to refer to a Brahman Priest, who gave penicillin shots, or to an Ayurvedic physician. The English term, doctor, was sometimes used. Swamis and sadhus, Hindu holy men, practiced a mixture of Ayurvedic and popular pharmaceutical medicine. The term, compounder, was used instead of pharmacist; some people called a compounder a *vaid* or doctor. Vaccinators, who operated under government auspices, were designated by that term; veterinarians were government men who treated animals, most often cattle. Those

practitioners whom we observed or met in the village will be described in terms of the medical theory they practiced and what they did.

Within the village there was one *ojha*, an older man of the Chuhra Sweeper caste. Primarily he performed simple rituals for exorcising the evil eye and removing pain from minor ailments. His rituals were essentially similar for all ailments. He said that he had learned his techniques from a Muslim fakir (a Muslim religious mendicant who performs feats of magic and endurance) in Pakistan while working for the British government during World War II. Few people in the village attributed evil intentions to any of the exorcists.

Except for a Jat and a Brahman who performed the rituals of Akhta to drive out cattle diseases, there were no other exorcists in the village. The rituals they performed, which consisted of smoking the cattle with incense and reciting mantras, were exorcism from the point of view of followers of Sanatan Dharma but, as interpreted by the Arya Samajis, they were fumigation, a scientific remedy. By allowing a Jat to perform with a Brahman, the Arya Samajis believed that their point of view was maintained and they therefore permitted the village to celebrate Akhta (Freed and Freed, 1966).

Several shamans (called bhagats) were called from outside the village to cure a young Chamar Leatherworker bride of ghost possession. They were also referred to as *siyanas* (healers). Their method of curing was primarily by dealing with the ghost in a series of conversations but it also had acts designed to exorcise the ghost from the possessed person (S. Freed and R. Freed, 1964, pp. 155-156).

There was a Hindu hermitage relatively close to the village to which villagers went for penicillin injections as well as various other pharmaceutical remedies. The members of the hermitage were referred to by the terms *sadhu* (holy man) and *swami* (a spiritual preceptor or teacher). The terms were used interchangeably. These men wore orange robes, characteristic of holy men; when they visited the village to treat patients, they pulsed the patient and then prescribed medicine or gave penicillin injections. One of these men, who was not a shaman and did not use exorcising techniques, cured a

woman who was believed to be possessed although her symptom was a period of unconsciousness, perhaps due to hyperventilation (S. Freed and R. Freed, 1964, p. 163).

There were a few young men in the village who were either compounders or in training for this work. They, too, dispensed medicines and provided medicine either free to their family and lineage or at relatively low cost. In addition, villagers would either themselves buy medicines from Delhi pharmacies or ask one of the regular commuters to do so. All of these activities were part of what Leslie (1976b, p. 271) has called "pharmaceutical medicine."

It is noteworthy that all of the services so far described cost less in terms of time and money than visiting a Western-style physician at a regional clinic or in Delhi. The form of payment also differed since the Western physician expected to be paid at the time of service. Moreover, he provided only a prescription but no medicine. Marriott (1955, pp. 264-265, 267-268) has commented on this problem and suggested that Western physicians would have to change some of their Western cultural patterns and adapt to those of an Indian village. Payments in the village for exorcising, pulsing, injections, and the like were usually on the order of Re. 1, although wealthy landowners might give more when it was called an act of charity.

During the time that we were in Shanti Nagar, only one fully qualified Arya Samaj, Ayurvedic physician came to the village. He lived in a hermitage near Narela and paid his visits on a motorcycle. His wife was a nurse and helped at the hermitage which was a combination of clinic, hospital, and hermitage for one holy man who lived there. This physician visited Jat families and treated various illnesses such as influenza, typhoid, and pneumonia. We were never present during his curings but he told us about his patients, in particular a small infant whom he treated for pneumonia and who recovered. A Brahman Priest who was a professional priest at Arya Samaj weddings and who taught Sanskrit in higher secondary school also gave injections to people in Shanti Nagar and the surrounding region. He and the Ayurvedic physician charged higher fees than other

indigenous practitioners, from Rs. 5 to Rs. 10, for those families who could afford them. All of these curers were distinguished by three characteristics: they were quickly accessible, charged relatively small fees, with the cost of the remedies included in the fees, and were all part-time healers.

Although no bonesetters lived in the village, there were some in the region who were known for their skill. The patient went to them rather than the reverse so we never saw them in practice. A Brahman Priest in the village who had once been a government vaccinator had cures for snake and scorpion bites.

Vaccinators regularly visited the village at least once a year, and inoculations were given to children. The government provided this service free. Cattle also received inoculations. A veterinarian station maintained by the government was some miles from the village, so villagers did not like to take sick cattle there. If they were sick enough for a veterinarian, the owners believed that they might die on the way. Within the village were a number of men who were quite knowledgeable about the care of sick cattle. They had their own remedies as well as those they obtained from the veterinarian.

There were two types of midwives. Two traditional village midwives, who were Chuhra Sweepers, lived in the village. Their fees were traditionally fixed although wealthy families might pay them larger amounts than poor families. In a nearby, large village, there was a government midwife whom the villagers referred to as a nurse because she had formal training for midwifery from the government. She was supposed to provide her services free, but the few families who used her paid her a fee. They also had to pay the village midwife because the government midwife did not come for six days and nights after birth to bathe the mother and child and clean after both of them and the village midwife did. This double payment militated against the use of the government midwife. She was primarily employed by families who wanted the prestige of having her and because, in one such family, one of the men held a position in the health sector and the family felt compelled to use her.

The curers who were most consulted were those closest to the village who charged the least and were in the greatest numbers. Clark (1959, pp. 203-206), in describing a Mexican-American community, indicated the importance of the family in determining what should be done in case of sickness. Romanucci-Ross (1977, p. 481) referred to the hierarchy of resort to curative practices among the Manus and indicated that Western medicine is the last resort for serious illnesses only. Beals (1976) suggested that the strategies used in resorting to different types of curers in south India indicated a pluralistic approach to one's choice depending on multiple factors. All three of these factors were pertinent in Shanti Nagar. For example, the kind of disease might determine the curer. In cases of spirit possession and possibly other types of mental illness the villagers might be more apt to consult an indigenous practitioner. This practice has been confirmed by Carstairs and Kapur (1976, p. 117). Beals (1976, pp. 198-199) also suggested that the practice of taking important members of the family to the city for Western medical treatment might indicate that it is the best or most preferred treatment, even though few villagers have access to it. The evidence from Shanti Nagar tends to confirm this. However, the referral system in Shanti Nagar was determined by the following factors which need to be taken into consideration when introducing and predicting change: the decision about whom to consult which was vested in the man who headed the family, the financial condition of the family, the distance of the curer from the patient, and the cost.

Finally, the following case illustrated the problems of the patient in being treated by a swami who practiced "popular pharmaceutical medicine." It presents a chain of events in the curing of a Chamar Leatherworker man who had fever. First he went to a swami at the nearby hermitage. The swami gave him pills to take at 9.00 A.M. and 4.00 P.M. After taking these pills, he had diarrhea during the night. The next day he returned to the swami who gave him more medicine to take at the same times. The result was that he sweated so badly that his clothes were soaked. He again took the

pills the next day at 11:00 A.M. and from then until 5:00 P.M. he reported "perspiring like anything." When he ate, he found his tongue was covered by blisters. The next morning he took some cotton and moistened his lips with dew collected from the leaf of a banana tree, and thought he would be all right. But it was not for another day or so that he was able to eat unleavened wheat bread. The net impres-

sion was that the only remedy that he thought helped him was the dew from the banana leaf. He considered the swami's medicine to have been worse than the sickness. It is probable that the disease had run its course and the fever had been broken by the time he used the dew, but it was the dew that he believed had eased his discomfort.

## SICKNESSES

In the following survey and description of sicknesses, Alland's (1970, pp. 19-20) modified categories are used. They consist of infectious-parasitic, functional, genetic and congenital, nutritional, and psychological diseases. As mentioned in the introduction, "psychological" has been substituted for "psychosomatic." In addition, wherever the data were available, we indicate how the villagers treated an illness. As a result, there are treatments which overlap with other classifications because the villagers viewed the disease in terms of a different method of classification and, therefore, treated the illness in accordance with their classification. Therefore, specific illnesses, although lumped under the Alland categories, may not fit in one specific category. Examples of these overlapping areas are: (1) under the category "infectious-parasitic," in addition to diseases which specifically belong there, are other diseases associated with the mother goddesses, and complaints having to do with the stomach, food, and excretions, some of which are infectious-parasitic and some of which are undiagnosed. Sterility and fertility, which are treated briefly together, consist of what the people did or did not do about these two characteristics related to health, but there is relatively little information. (2) Under the category of functional disorders, three subdivisions overlap with others. For example, skin disorders may be psychological, infectious-parasitic, and functional. Asthma, as reported, seemed to fit best in the functional category. The lumping of illnesses of the eyes, ears, and teeth under functional disorders is based on the use of these organs and their relationship to the body as a whole. Although there are infectious agents in-

involved in disorders of the eyes, ears, and teeth as well as congenital and genetic causes, the villagers did not identify any such causes. The falling of the uvula is related both to diarrheal and functional disorders. Since the villagers described the falling of the uvula as a displacement, its classification as a functional disorder is more accurate than any other category. The treatment of the falling of the uvula is akin both to treatments for stomach and bowel disorders and to those for functional disorders. No doubt in a Western medical approach to these disorders the category of the disease, its symptoms, and its treatment might be explained separately, but in this cultural review of the illnesses which occurred in Shanti Nagar the method used herein provides a means of identifying and recognizing the diseases as the villagers saw them.

### PSYCHOLOGICAL

In discussing psychological disorders, we describe the behavior and characteristics of the individual with the disorder, occasionally using a few psychiatric terms which are either descriptive of the behavior or because the villagers themselves used their Hindi equivalents. There were three major categories of psychological disorders so far as the villagers were concerned (even though they did not label them psychological). These were the evil eye, spirit possession, and incurable mental states (epilepsy and madness in village terminology).

#### EVIL EYE

There were two sets of beliefs about a person who cast the evil eye. One was that a

person might do it intentionally; the other, was that the individual was unaware that he or she had this power. The latter belief was accepted by almost all believers in the evil eye. Perhaps 1 percent of the villagers thought that someone might intentionally cast the evil eye, but a person who was thought to do so was almost always someone who was not a part of the village community—that is, a stranger. A number of people did not believe in the evil eye, primarily, as would be expected, Jats who were Arya Samajis, and those who were fairly well educated. However, some of them were occasionally a bit uneasy about the evil eye; beliefs in the evil eye may have been a culturally approved way of expressing anxiety.

The evil eye was associated with undiagnosed or vague symptoms of illness. It was not connected with such illnesses as an identified contagious disease, a broken arm or a sprain (although these two disorders were connected with ghost possession, and one broken arm did result from extreme anxiety); nor was the evil eye associated with diseases of the aged. If a person experienced a series of misfortunes that included any of these illnesses, however, the illnesses might be attributed to someone's having cast the evil eye on the unfortunate sufferer. Minor ailments, such as a cold, headache, quick and passing fever, stomach or bowel complaints, and even a toothache might be attributed to the evil eye.

General explanations of how one became sick because of the evil eye were as follows:

"If a bride is dressed beautifully and everyone admires her, the envy of the admirers can cause sickness." In general, the villagers were disturbed if anyone commented on the beauty of a child or woman; it was considered bad form and potentially dangerous to compliment persons on their appearance.

"If a child cries, the mother says 'Look out, the spirit will get you,' so the child keeps quiet. The thought of the spirit diverts the child just as someone saying 'You are beautiful,' diverts you and makes you sick!"

"If a child under 10 months of age has the evil eye and looks at a person, even the strongest person can die."

A past incident was related of a family that had a cow which gave about 10 seers of milk.

A neighbor woman asked for some of this milk so the family gave it to her. Then the woman hid somewhere, and after that the cow never gave milk. When one of the family asked the woman why she was hiding, she answered, "I have a daughter-in-law who never had a child so I took a little of the milk and played magic by casting the evil eye on the cow. When the cow stopped giving milk, my daughter-in-law became pregnant, had a child, and it lived." Although this incident was identified as casting of the evil eye, it appears to be more a case of magic than of the evil eye. In any case, the action was intentional. Other cases of displacement of effect from person to cow and then to another person were related, but they were identified by the informant as "playing magic"; not so this incident.

Only one person in the village was clearly identified by a number of informants as being able to cast the evil eye. It was said that she was unaware that she did so. An elderly widowed Brahman, she was considered inauspicious because of her widowhood, which had occurred when she was a young woman. She had a bedraggled, obsequious, and depressed manner. A number of men said that if they saw her the first thing in the morning misfortune followed them throughout the day.

When the evil eye was cast intentionally, it was through admiration. Back of the admiration was envy. No such cases occurred during the fieldwork, but informants described two past examples:

"A young wife was decorating the house very nicely for the wedding of her husband's sister. A professional cook who was hired for the wedding said to the senior woman of the household, you should get *jhara* [ceremony to drive out or protect against the evil eye] done for her because she is going to show the effect of the evil eye. Shortly thereafter the young wife fainted and had a high fever. The cook explained that he knew she was drawing the evil eye because she looked very beautiful, and one of the sisters-in-law had commented on her appearance." It was not unusual for sisters-in-law to be jealous of one another.

One of the Chuhra Sweeper women said that she had a pretty daughter, and a woman replied to her, "Oh, your daughter started walking

early." The very same day the child had a fever. The Sweeper woman thought the other woman was envious and had cast the evil eye. In this case, the woman who had commented had a son who was not yet walking, and she said, "Your child is walking and my son is not although he is the age when he should be."

One person said that individuals with a black mark down the center of their tongue could give the evil eye or could work for good or evil. If they predicted something about a person, it would come true.

Women or children who were weak or particularly beautiful and men who were handsome or strong were considered to be susceptible to the evil eye. A young man, who almost never was ill, said the only time he took sick was 11 years previously when first married. He believed that it was due to the evil eye. He attributed his good health to never overeating and to riding his bicycle to and from work everyday. Some old women believed that when nursing a child, the bandeau should not be removed completely because the breast, when nursing, was susceptible to the evil eye.

Non-kin or menstruating women could cast the evil eye on a newborn child so they were barred from the house at the time of and after birth. Females in their menses were believed to be more apt than anyone else to give the evil eye to a newborn child; if they did, it was believed that the child would be covered with blisters.

Preventive medicine against the evil eye consisted of iron amulets worn on wrists and arms, a small locket (*tawiz*) containing a piece of paper on which mantras were written, and a necklace composed of gold, silver, and ivory objects put on a child the sixth day after birth. Other protective devices were a red cloth or red string (red was auspicious) tied around the neck. The purpose was similar to a locket with a mantra in it, but for the locket a blue thread (a symbol of Krishna) was used to tie it around the neck. These protective devices also drove out or warded off evil spirits and ghosts. One person said that a black mark behind the ear protected one from the evil eye.

Another protection from the evil eye was a string tied around the arm near the armpit.

Distracted by staring at the string, a person who cast the evil eye would not do so. The man who told us about the string wore one himself and had suffered a long period of unemployment and misfortune in his family. It was as though he almost believed that he gave himself the evil eye. He exhibited deviant behavior, and the members of his family had an aura of anxiety and tension.

The village *ojha* performed a curing ritual to remove the evil eye from its victim. The *ojha* placed a shallow pan of water on the ground between himself and his patient. The water was thought to draw off evil spirits or the evil eye. Facing the pan, the *ojha* held a broom in his right hand throughout the curing ritual. As he and his patient sat on the floor, the *ojha* waved the broom in front of the patient and recited five verses to get the spirit or evil eye to come down into the water. The patient squeezed pieces of rock salt in his right fist and dropped salt into the water at the end of each verse. After the fifth verse, the patient threw the remaining salt into the water. Then the basin of water was emptied in a spot where no one could step over it. The *ojha* said that the basin of water together with the salt drew off the sickness. Among the verses were an Islamic prayer in Urdu and a hymn from the religious book of the Sikhs. Another cure to draw off the evil eye was to circle the head of the sufferer with grain and then to throw it into the fire of a cookstove. These rituals were called *jhara*, a treatment which was compatible with beliefs in intrusive spirits and Unani Prophetic medicine.

#### SPIRIT POSSESSION

Spirit possession was considered a form of illness in which a ghost possessed a person and tried to take its victim away with it. If the ghost was successful, the person died. For example, if an individual fell ill shortly after a friend or a relative had died, it was often believed that the ghost of the deceased was causing the illness. If a person had been eating good food and then fell ill, it was believed that the ghost had become jealous of the good food and possessed the living person because the ghost had not been fed. Elements of envy and

anxiety ran through accounts of the evil eye and spirit possession, especially if there had been a dyadic contact in which one person had something which the other person desired, or when there were elements of guilt resulting from the dyadic relationship.

Cases of spirit possession resembled the psychological condition known as hysteria (S. Freed and R. Freed, 1964). In these cases two conditions were present: (1) a basic condition due to the patient's psychic tension, which we define as a psychological condition of illness; and (2) a precipitating condition due to the social environment and chain of events or situation in which the patient found himself. Such a situation was one of unusual stress or emotion. The cultural events which might precipitate an attack of hysteria (spirit possession) involved a family, kin, or household group which was alien or tension ridden and from which an individual had little expectation of aid or support. An individual might endure the stress from this general situation awhile but specific stressful events could precipitate an attack.

For example, a young bride who had previously experienced spirit possession had been given a sewing machine, a prestige item, as part of her dowry. In her presence, an affinal kinsman stated that women should not sew because sewing was men's work. Tailoring and sewing had previously been the domain of men. The person who made the statement was a man whose own livelihood was threatened. Following her kinsman's remark, the young girl began to moan, shiver, breathe hard, and complain about being cold. Her mother-in-law, who had witnessed her previous possessions, immediately put some quilts on her. The girl lost consciousness; spectators said that the ghost had come.

The spectators tried to get the ghost to talk and, if possible, to exorcise it. After a man brought burning cow dung, three of her affinal relatives pulled the girl into sitting position and wafted the dung under her nose. She jerked awake. The relatives immediately began to question the ghost, asking, "Who are you?" "Are you going?" and the like. The ghost answered giving names other than the girl's and confusing identities. Every time they released

the girl she would fall back unconscious. To bring her to, they pulled her into sitting position, wafted burning cow dung under her nose, pulled her braids, and put hookah water, which stings, in her eyes.

When the girl again became unconscious, the bystanders believed they were unable to drive out the ghost so they called a shaman to cure her. This man was said to have supernatural power from Hindu and Islamic deities and saints. In the process of curing he called on his familiar spirits and they removed the ghost. Important acts in the curing process were to identify the ghost, make a deal with it, and drive it out by shock treatment, such as wafting burning cow dung or pig's excreta under the nostrils of the victim, pulling her hair, putting hookah water in her eyes, and squeezing rock salt between her fingers. All of these activities were considered inimical to evil spirits. Eventually, the girl returned to consciousness so the family believed that the ghost had been driven off. They made offerings to whatever shrine the shaman suggested, usually the one for Kalka, goddess of the cremation grounds, located in Chirag Delhi, within the urban area of Delhi.

Victims of spirit possession in Shanti Nagar were often young brides who were afraid to have sexual relations with their husbands, who had not adjusted to their new and lower status as wives, and who were unaccustomed to abiding by the rules of married women and being subject to their mothers-in-law. These young girls not only had to adjust to a new husband, but to a husband and in-laws who had been selected by their fathers, and whom they did not know until after marriage. Widows and widowers in joint families might also suffer from spirit possession because their situation in such families could involve considerable tension and anxiety due to their lack of normal sexual activity, jealousy among family members, and the ever-present possibility that the joint family could divide into nuclear families in such a way that widows and widowers would receive little or no support from kinsmen. Older wives might incur spirit possession when relationships with their husbands and mothers-in-law were poor. In such cases, wives

had little support because of the patrilineal and patrilocal family structure.

The symptoms shown in spirit possessions were similar to those for hysteria: (1) physical symptoms without ascertainable structural lesion; (2) complacency with physical disability; (3) episodic disturbances in which an ego-alien personality seems to take over the patient (the ghost in spirit possession); (4) complaints of pain; (5) bodily symptoms such as unconsciousness, convulsions and reactions of deafness, dumbness, blindness, and dizziness. Convulsive hysteria occurs only in the presence of spectators and the victim is not endangered; (6) a sensation of a globular mass coming up from the stomach to the throat, called *globus hystericus* (Abse, 1959, pp. 274, 276, 279; Warren, 1934, p. 116; Committee on Nomenclature and Statistics, 1968, pp. 39-40).

The foregoing symptoms were verified by the conversations held with ghosts at the time of possession and by later interviews with the victims and members of their family. Both psychological and socio-cultural conditions contributed to spirit possession. Belief in spirit possession provided an outlet for intra-psychic and cultural tensions and probably conditioned susceptible individuals to these attacks. If these beliefs did not exist, the manifestations of psychological tension might have taken a different form. The attacks were by no means intentional, feigned, nor was the victim conscious of them while they occurred.

There were gains from the attacks which contributed to the cure and to resolving the problems of the victim's life situation. The patient was able to discharge tension and obtain sympathy from the family and other kin. The attacks provided a means by which the patient might manipulate, defer, or gradually adjust to the life situation. Most of the victims of spirit possession recovered and functioned in everyday village life. Some of them had a series of attacks over a long period; others had a few attacks in a short period of time and never thereafter. The lower status of women as compared to males, their relative confinement to the village, the authoritarian position of the male head of the household, the dominance-submission pattern of behavior in a hierarchical and

prestige oriented society, and the discontinuity of social relations experienced by young females when they moved to their husband's village contributed to spirit possession, or hysteria, among them. In the case of young brides, they would visit their parents frequently, sometimes for lengthy periods, which gradually permitted them to adjust to their married life.

Although dietary deficiencies of calcium and vitamins may have contributed to stress, the recent research of Foulks tends to refute Wallace's theory based on cases of Arctic Hysteria, that the hysteria of Freud's time, associated with the Oedipal situation, may have been due to dietary deficiencies rather than the Oedipus complex (Wallace, 1972). Quite specifically Foulks (1972, p. 81) stated:

... the behaviors seen in Arctic Hysterias are not accompanied by states of chronic hypocalcemia. This finding does not exclude the possibility, however, that hyperventilation with anxiety, or alterations in calcium rhythms, might play a role in precipitating the attacks, especially in view of low normal levels in several subjects.

At least one of the cases of spirit possession, that of a woman in her mid-forties who had borne eight children and appeared to have indices of calcium and vitamin deficiencies in addition to an enormous load of tension and stress within the family, could have been classified as a case of hyperventilation with anxiety. It was treated by a holy man from a nearby hermitage when she had a long spell of unconsciousness. Family life, however, held many characteristics of the classic Freudian definition of the Oedipal situation; cases of spirit possession or hysteria seemed to be related not only to the early learning situations in the family, the numerous taboos regarding mating and marriage, and the maturation process in growing up, but also to fears and anxieties about family relationships especially when lived in close quarters.

#### SPEECH LOSS

A case of mental disturbance, which occurred in a nearby village, was much discussed in Shanti Nagar. A teen-age male of the Nai

Barber caste was said to have been possessed by a spirit, to have suffered the evil eye, or to have an undiagnosed ailment. He had been sick; his family had promised to offer to some goddess but forgot to do so. The boy then was unable to speak. He was literate and would write notes about his condition. Most villagers believed that the goddess herself had visited this ailment on the boy because the family had not fulfilled its vow. No one thought that the boy was feigning. He was supposedly cured after a series of curers treated him and after offering to the goddess. Village opinion as to the cause of the ailment was divided three ways: spirit possession, the evil eye, or an undiagnosed condition due neither to the evil eye nor spirit possession.

#### FRIGHT AND NIGHTMARE

One family reported two cases of children who were believed to have fallen ill because they were frightened by nightmares. A girl of about 12 years of age recurrently became frightened and fell ill. She would be asleep, wake suddenly, and start crying or even singing because she was frightened. When his father-in-law died, her older brother took her with him to his father-in-law's village, and the girl slept in a strange cattle shed. While she was asleep, something frightened her so she awoke, cried out, then ran a fever for 10 days. On this occasion, the girl said that she did not know what she had seen or dreamed when she was frightened. However, once she dreamed that she had fallen down a well. Then she jumped out and was all right in the dream. Since stories circulated endlessly about young wives drowning in wells, being drowned in wells by their husbands, and committing suicide in wells, the dream was not surprising. The girl was already married but had not yet gone to her husband for mating as she had not attained her menses. Possibly sleeping in a cattle shed had contributed to her fright because females, especially at her age, usually did not sleep in cattle sheds.

Her older brother became frightened from his dreams when he stayed at his mother's parents' house. His mother's sister-in-law held the

boy in her arms and he clawed her. Then his mother's brother took the boy in his arms and asked him what he saw. The boy said, "Some woman is eating me." He was 10 or 11 years old at the time and afterward was sick with a high fever. The mother of these two children said that she did not believe there was any power that made these children frightened and then sick, but rather that if they were frightened they would fall sick. Social relationships may have been a factor. The boy may have been aware of animosity between his mother and his mother's brother's wife and been afraid of her. She, in turn, may have objected to the visit of the child and his mother and expressed her animosity in some way to the child. Since both of these cases occurred in one family, it is probable that a complex of family relationships contributed to the behavior of the two children.

These two incidents are similar to illness caused by fright which among Latin Americans is called *susto*. Both Rubel (1977) and Uzzell (1977) have provided recent analyses of this cultural illness, in addition to the classical analysis by Gillin (1948). Topley (1976, p. 255) has reported that in Hong Kong when a child behaves peculiarly in sleep and thereafter refuses to eat or be left alone, the mother suspects the child is suffering from fright and that the fright is caused by an imbalance among the animating forces. This etiology is perhaps closer than that of *susto* to the medical beliefs of the people in Shanti Nagar, that is, the idea of imbalance causing illness whatever the reasons rather than a specific spirit causing the illness. Moreover, the animating forces of Topley are similar to the intrusive spirits of Shanti Nagar. Uzzell suggested that the *susto* of children is somewhat different from the fright of adults, for the adults diagnose the fright of children and the children are passive actors in the diagnosis of the illness. This is not to say that the child may not be suffering from anxiety or from a specific biologically induced illness. The disorder might just as well be described as due to the evil eye. However, the influence of the Arya Samaj and its taboos on beliefs in spirits, the evil eye, and ghosts was so pervasive that it is probable that quite a number of beliefs of this sort had either been

eradicated or repressed among the population.

The belief that fright causes illness may be very ancient and possibly could be universal, for infants may well be frightened by numerous activities as they gradually learn about the world. Indonesia has the "startle" complex which is considered to cause illness; Kutumbiah (1969, pp. 199-200) in describing ancient Ayurvedic illnesses, depicts how malignant planets or demons frighten a breast-fed child and cause illnesses which are associated with each of the planets and with demons and deities. These supernaturals are similar to Topley's animating forces and Rubel's (1977, p. 122) *susto* focus. Although in Shanti Nagar infant illnesses were attributed to supernaturals of various sorts or to the evil eye, the symptoms, except for the two children who were frightened in their dreams, did not fit into the fright pattern of illness.

#### PARANOID PSYCHOSIS

A woman about 50 years of age was considered to be insane. Originally, she was believed to have been possessed by a spirit; when it proved impossible to drive out the spirit or cure her, the villagers concluded that she was mad. The woman had a daughter-in-law who was believed to have been possessed by a ghost prior to the illness of the mother-in-law. Before the daughter-in-law's possession, the young bride was described as having lived in harmony with her mother-in-law. The usual description of this kind of relationship was that "one will not take a meal without the other," implying great closeness but also reifying an ideal pattern of behavior between a mother-in-law and daughter-in-law which might exist in the first year or so of marriage. The honeymoon period in a marriage in Shanti Nagar was between mother-in-law and daughter-in-law; both tried to please each other. The daughter-in-law would be instructed by her own mother as to how to act, and there was a kind of courtship between her and the mother-in-law.

In this case when the daughter-in-law fell ill, she went home to her father to be cured because he was a shaman who drove out ghosts. She recovered, but stayed in her family's village for some time before returning to her husband. When she did so, the young cou-

ple lived separately from his parents. By this time, the mother-in-law was considered to be insane. The symptoms evidenced by the woman were a fairly consistent disassociation from a great deal of what was going on around her, except for extreme jealousy when any females talked to her husband. She saw flying insects and other amorphous forms in front of her eyes, was suspicious of everyone but particularly females, and believed that people had used poison to cause her illness. She was also very aggressive in her conversations, indicating that she thought people were attacking her and that she had to fight back. Her disposition was irritable and unpredictable. Her husband said he had spent two or three thousand rupees trying to have her cured by bhagats, *siyanas*, and fakirs, all the curers who were believed capable of driving out spirits, the evil eye, and undiagnosed ailments of women.

#### EPILEPSY

An elderly woman had a daughter who had died a few years previously at the age of 13. One of her sisters-in-law said that she had fits, fell unconscious, and then talked. A woman who was on unfriendly terms with the mother of this girl said that the girl was insane from birth. She would wander and ask for food from anyone. At night she would go into the fields, eat sugarcane, and sleep there. She could tell at least half an hour beforehand when an airplane was coming. She would have attacks, foam would come from her mouth, and then she would fall down unconscious. Later she died during one of these attacks. Her mother arranged a marriage for her to a man 70 or 80 years of age who was crazy about women. The girl was only 12. When she went to her husband, he tried to have her treated to keep her from wandering. He wanted to have children, but he could not have her cured so she returned home to her mother.

When asked about her appearance, a female bystander said she looked like all children. The husband of the woman informant said she was beautiful, a comment made by others in the village. This may well have been a case of epilepsy. The villagers differentiated between spirit possession as herein described, the in-

sanity of the paranoid-like older woman, and the illness of this young girl. A few villagers knew the Hindi term for epilepsy and applied it to describe her affliction.

### INFECTIOUS-PARASITIC

Infectious-parasitic diseases produce morbid symptoms in the host (the person who becomes ill) and are caused by a biotic agent. The causes of these diseases include parasites of the animal kingdom, bacteria, and viruses which may be transmitted to the host by various animal vectors (Alland, 1970, pp. 19-29).

The two most dreaded diseases in India have been cholera and smallpox which often occurred in epidemic proportions. Neither of these diseases was any longer a serious threat in Shanti Nagar, or in the Union Territory of Delhi (Lewis, 1965, pp. 269, 278). Smallpox had been almost eliminated because of vaccinations given regularly in the villages, especially to infants and children. In Shanti Nagar, the only individuals with smallpox pits were older people, who had contracted the sickness before the introduction of vaccinations. When smallpox vaccinations were first introduced there was a negative reaction to them. One of the standard expressions was that, "The Smallpox Goddess will be angered and will kill the child if a vaccination is given." But in Shanti Nagar vaccinations were accepted at least 20 years before the period of our fieldwork, for one Brahman had worked for the government program of vaccination against smallpox that long ago.

### CHOLERA

Shanti Nagar had experienced no cases of cholera for 10 or more years. Lewis (1965, p. 278) reported a similar situation in another village in the Union Territory of Delhi along with the fact that only two of his informants discussed the illness. In Shanti Nagar we heard a number of brief discussions of cholera, but it was no longer an illness that recurred seasonally beginning with the hot weather, as it had done formerly.

Epidemics occurred by late summer or at times of pilgrimage, but the Indian government

took special precautions during the pilgrimage periods. The reduction in the incidence of cholera appears to have resulted from a combination of inoculations, a program for keeping wells and drinking water clean, and an attempt to educate villagers to be careful of the cleanliness of fruits and vegetables.

In general, the symptoms for cholera were vomiting, fever, and increasingly frequent diarrhea which resulted in quick death. The direct cause is an infectious agent (Lyght et al., 1956, pp. 919-920); the vectors are contaminated food and water supplies. For example, melons grown in river valleys or on irrigated land may become contaminated by human fecal material in the water. Various vegetables and fruits might be washed with contaminated water. Because there had been no cases in the village in recent times, remedies were not discussed. The general belief was that it was contagious, but at the same time, the villagers thought it came about from eating melons and fruit in the hot weather. Taylor (1976, pp. 291, 292) indicated the wide variety of beliefs regarding the causes of cholera in India. The paucity of causes recounted by villagers was probably related to the fact that there had been no recent cases in Shanti Nagar.

In the event of cholera, the shrines which would be propitiated in Shanti Nagar, in order of probable importance, would be the Seven Sisters, Kali Mata because of her death giving potential, and the Crossroads Mother because of her overall protectiveness. Because the villagers were afraid of cholera, they would seek the services of a doctor, *vaid*, or swami to give them injections. In general, when a person became ill, not much was done until the illness showed signs of extreme seriousness. As a result, a curer might not be called until a person was close to death. Because cholera often resulted in death, the goddess associated with it was Kali, goddess of death and destruction. The offerings made to her were black: bangles, headcloth, pulses, and paper.

### SMALLPOX

Although there had been no recent cases of smallpox, villagers remembered its symptoms,

fever and suppurating blisters, and what should be done to treat it. Smallpox was attributed to one or more of the following: food, women working in the fields and becoming so exhausted that their milk was bad, flies, the clothing of persons who had had smallpox, and by contact. The spread of the disease was attributed to dirty air from the sickness. Some informants mentioned that no medicine should be given or Chechak Mata would not like it. The patient should be kept in a dark room to protect the eyes. Leaves from nim trees were not only put over the doorway but under the cot. The poxes on the skin were described as larger than those of typhoid; they were like blisters all over the body and contained fluid. The excretions from the blisters spread the disease. The blisters were painful and ash should be applied to them. The patient also should lie on sifted ashes, which would absorb the drainage from the blisters. One should try to keep flies off the patient, and observe cleanliness near the sick person. However, the patient was not bathed, shaved, nor was his hair cut until recovery. Neither were the patient's clothes washed. The room in which the patient lay was sprinkled with Ganges water.

A patient's mother would offer at the local shrines of the Seven Sisters and the one to Kali. If the patient was a child and the child recovered, she might also offer at the Cross-roads Mother shrine and promise to go to Gurgaon to worship at the shrine of Gurgaonwali Mata, a well-known deity for the welfare of children.

#### TYPHOID

During the rainy season in the summer of 1958, at least 10 people, children and young adults mainly, were reported to have typhoid. We consider this number of cases to constitute a mild epidemic. One young Chamar woman said that typhoid and cholera stayed within the bones; smallpox and measles broke through the bones and appeared all over the body. She could not describe the diseases but said that she called a bhagat to determine and cure the sickness. A number of people called a doctor or a swami who gave injections and prescribed a

light diet to cure typhoid. One well-off family whose daughter had typhoid was advised to feed her leavened white bread rather than heavy unleavened wheat cakes. Typhoid was generally associated with the goddess Kanti, and women said, "Kanti [typhoid] is a pox which comes out on children. These poxes are small or invisible, sort of like small seeds. Very small blisters appear on the chest and shine like sequins. The first symptoms are hot skin and fever, then the rash or pox comes out." After a few days the pox began to fade and women offered food to Kanti Mata. The food was puris (puffed bread), *batashas* (white sugar candies), or *ladooos* (sugar and coconut candies). The puris were smaller than the usual size. The reduced size may have been a reflection of the size of the pox or to save flour since dogs eventually ate the food. The women said the puris were small because they had to be given to the goddess.

#### MEASLES

Villagers did not differentiate between measles (rubeola) and German measles (rubella). A few women confused measles with smallpox. One person reported that when her child had measles she propitiated Deshali Mata. Other women used Khamera Mata. The main difference between measles and smallpox was that measles did not worry a mother as much. It was treated as a minor disease of childhood, like chicken pox.

#### CHICKEN POX

As far as we know, chicken pox did not occur during the period of our fieldwork, but villagers mentioned it as one of the childhood illnesses. "The Merck Manual of Diagnosis and Therapy" indicates that formerly it was difficult to differentiate between smallpox and chicken pox but now smallpox is rare (Lyght et al., 1956, pp. 836-837, 847).

#### TREATMENT OF POXES

Some informants reported specific treatment for each of the poxes, but on comparison all treatments were found to apply to all the poxes

and diseases related to mother goddesses. Specific foods and methods of cooking were proscribed. During the illness, food was boiled and not cooked in ghee. Also, cumin was not put in food when it was cooked. Some people said that no spices were used. Others said that cumin was prohibited because of its identification with Kali; before it is ground, the seed is black or dark. Those who followed this precept said that the reason for boiling food rather than cooking it in ghee was because food cooked in ghee required cumin seed. No one suggested that ghee and spices were difficult to digest or bad for someone with a fever. Women said that no ghee should be put on wheat cakes. Another rule prohibited Sweepers, particularly Sweeper women, from coming near or into the household when someone had a pox. The rationale was that they were polluting and dirty, characteristics which contributed to the illness. On the other hand, since they worked at a number of houses, they could spread the disease. But contagion was not well understood. Other villagers barred all polluting and dirty individuals: Sweepers, menstruating women, or people in dirty clothes. Some informants said that such individuals should not cast their shadows on the household or doorway; other informants said that the shadow of a stranger or of any non-member of the lineage should not be cast in the doorway or house. The shadows were evil (dangerous) because a non-lineage member or a stranger was an unknown quantity so far as purity and cleanliness were concerned. It was believed that *nim* and *nim chambeli* leaves should be placed outside of the house above the doorway. *Nim* leaves were considered to be purifying and to ward off evil; in addition, their presence notified people that a sick person was in the household.

#### SCARLET FEVER

This disease was not specifically reported. One woman described a disease where the face became red but she did not know what it was called. In a Chamar Leatherworker family, a small boy was reported to have a sickness which caused the lower part of his body to become red. Other than these cases, none of

the people discussed symptoms that appeared to resemble those of scarlet fever.

#### MUMPS

Mumps was treated as a minor disease of childhood; a child might not even be put to bed. We saw only one case of mumps. Two brothers were walking around the village; the smaller one's face was swollen as was typical of mumps.

#### OTHER DISEASES ASSOCIATED WITH MOTHER GODDESSES

In addition to the foregoing infectious-parasitic diseases, boils, blisters, and tetanus were also called mother goddess diseases or poxes. Tetanus was treated by injections given in a hospital. The disease occurred at childbirth because the sickle formerly used to cut the umbilical cord was used in agricultural work. The government midwife had instructed the village midwife to ask each family at childbirth to provide a new knife instead of a sickle which she did, but did not sterilize it. Gordon, Gideon and Wyon (1965, pp. 159-161) found in a study of childbirth and its illnesses that death from tetanus was associated with the use of sickles and cow-dung ash as a dressing on the severed cord, but that the length of labor was another factor in an infant's death at birth, most frequently among primiparous mothers. It was not uncommon in Shanti Nagar for women to state that their first child had died at birth.

The goddess of boils and blisters was called *Phul Ki Mata*, but there was no shrine to her in the village. A great number of children had boils; these were treated with applications of mud or plasters made out of an unidentified purplish reddish powder. Another poultice for boils consisted of the shell of an egg which was burnt and ground into a powder. This poultice drew out the infection and liquid.

#### KHELNIMELNI MOTHER GODDESS

The name of the mother goddess for minor illnesses of children which did not incapacitate them or keep them in bed was *Khelnimelni*

Mata, meaning that the children could play because the sickness did not bother them.

#### HEPATITIS, DIARRHEA, DYSENTERY, CONSTIPATION, AND STOMACH COMPLAINTS

Among the most debilitating diseases in the village were hepatitis, diarrhea, and dysentery. Hepatitis and dysentery (amoebic and bacillary) were endemic in the population; therefore, everyone expected occasionally to have them. Hepatitis was recognized by fever and the yellowing of the eye balls. Nothing was given for it except lime juice (possibly providing vitamin K), sugarcane juice (necessary carbohydrate for this wasting disease), and ginger. Youngsters who had contracted hepatitis would appear emaciated for a long time, but such an appearance was also characteristic of typhoid sufferers. The village did not supplement the diet of children once the fever had passed.

Diarrhea and the dysenteries posed serious problems because "loose movements" as the villagers described their symptoms were often part of another illness, such as cholera and typhoid, or might be a stomach disturbance of unidentified origin. A small child might have typhoid and then diarrhea. The two diseases would so waste the child that death might result. Parents would then report that the child died of diarrhea.

Diarrhea and the dysenteries were believed to result from faulty food, although some urbanized and educated villagers were aware that the dysenteries as well as hepatitis might result from dirty food or water. For dysentery or diarrhea, the usual remedy was a powder given by a swami. If a person had diarrhea for a number of days, he would have his wife cook rice pudding, which, because it was cooked in milk, was believed to be binding; then he would eat the pudding and take the powder.

Constipation, diarrhea, and stomachaches were often related to eating the wrong foods; however, they were also considered to be due to the displacement of a nerve or pulse situated near the navel. To cure the displacement of this nerve, the patient lay on his back, flat on the ground. The curer, any of the two or three individuals in the village who had learned to do this, took a glass and placed it upside down

over the navel, after having first put a little alcohol in the glass and heating it. The glass was placed to the side of the navel where the dislocation was considered to be. This displacement of the nerve was determined by tension around the navel. The heated glass caused the nerve or pulse to relax and go back into place. This technique was cupping. One man performed this cure for a younger sister, who was said to have the ailment from lifting heavy weights. In her case, her stomach ached. If there was only a slight dislocation, then the leg veins were pressed instead of using the cupping remedy which was reserved for more severe cases. If the pain occurred on both sides, then two people sat on opposite sides of the patient and kicked his buttocks. In such a case, cupping was not employed. Lewis (1965, pp. 282-284) reported that displaced navel was associated with diarrhea in Rampur, a village near Shanti Nagar. The cupping technique used as a cure was similar in both villages.

The cupping treatment in Shanti Nagar was similar to that found in California among Mexican Americans (Clark, 1959, p. 169), and probably in Shanti Nagar it is ancient, derived from Ayurvedic medicine, for Kutumbiah (1962, pp. 62-63) described cupping of blood, sacrifice, and cauterizing in ancient India. In the cases of the New World, the derivation is probably from the Spaniards. The main principle behind this cupping technique is that the heat forms a vacuum in the glass and produces suction which pulls the navel in place.

Another method used for stomach problems was a "do-it-yourself" cure. The sufferer tied strings to both of his big toes and then pulled them. The strings were short so by bending over to pull them the nerve went back into place. A simpler version was to tie a string around a big toe to cure a pain in one's stomach.

If a child had a stomachache, the mother put a little sugar or sweet syrup in a small dish and offered it at the Crossroads Mother shrine, but did not tell anyone. Additional remedies for diarrhea, constipation, and pains in the stomach were aspirin or patent medicines. People took vinegar or tablets for constipation and avoided rice pudding and halva (both made with boiled milk). Curd was a general cure for digestive

complaints. Some older married women said that they had formerly suffered stomachaches until they started smoking the hookah, an activity which allowed them to relax, thereby indicating that their aches may have been psychologically induced. Although the villagers recognized diverse causes of diarrhea, dysentery, and stomach pains, they often saw a relationship between bad food and these ailments; hence their classification partly agrees with our placement of these diseases in the infectious-parasitic category where many of them belonged.

#### TUBERCULOSIS

The conditions fostering the spread of *Mycobacterium tuberculosis* were prevalent through close, crowded, and unhygienic living quarters and other conditions described in the earlier section on ecology. In addition, though all milk was heated over a slow fire, it is questionable whether it reached 60° C. and stayed at that temperature for 30 minutes for pasteurization or that it was boiled for 2 minutes to kill the bacilli (Lyght et al., 1956, p. 1516). It was possible that cattle and human tuberculosis existed within the village but that many cases were never diagnosed. Deaths from tuberculosis, especially in small children, may have been called death from fever, cough, influenza, or pneumonia since there was no certification of the cause of death by physicians.

Two villagers, however, were known to have pulmonary tuberculosis. One was a middle-aged Chuhra Sweeper woman whose husband, a railway worker entitled to regular medical treatment, brought her medicine from the city. She worked only in the household in contrast to many Sweeper women who performed traditional services outside the household. No one in the household was isolated from her. The other person with tuberculosis was an elderly man who was considered to be dying. He was segregated from the rest of the household in a cattle shed.

#### RHEUMATIC FEVER

A young girl about 10 was extremely thin and had intermittently been ill with fever and pains in the joints and chest. She may have had

rheumatic fever. A small boy, her father's brother's son, had a similar complaint. The family members said that he, too, had been ill a long time. Although the mothers of these two children treated them gently, they were never taken to any curers. Their mothers massaged and bathed them in hot or cold water depending on the season whenever they had fever and aches in their limbs.

Any of a number of possible classifications of the illnesses of these two children could be made. If they both had the same disease, it may have been infectious or genetic. If infectious, it may have been a streptococcal infection, or any of a number of contagious diseases. Without an examination by a physician or medical life histories for the children and other family members, it was impossible to identify the disease or diseases of these children. This example conveys the difficulties encountered in identifying diseases.

#### PNEUMONIA

Some people believed that pneumonia as well as influenza, colds, and fevers resulted from being too hot or too cold, or from eating foods that were too hot or too cold or taken in the wrong season. Others said that a sickness was pneumonia when there were fever and congestion of the lungs. In such cases, they consulted an Ayurvedic physician, went to a swami in a nearby hermitage for injections, or consulted a Western physician in Delhi. For example, a small infant was ill with a disease that her family thought might be influenza or pneumonia. Her father called an Ayurvedic physician who was related to the family through marriage and who came to the village by motorbike. He examined the infant, gave her an injection, and told the parents that the child had pneumonia. The child recovered. This was the only case of pneumonia that we recorded.

#### INFLUENZA

In May 1958, there was a very large wedding party in the village. Toward the end of the wedding, people began to come down with fever. In a few days at least a third of the villagers had this fever, which turned out to be

influenza. The healthy villagers arranged for bullock carts to carry the sick to the nearby hermitage where the swamis injected them with penicillin. Some people were so sick that they could not be moved, so three swamis visited the village to attend them. They examined the patients in turn primarily by looking at them and feeling their pulse. Then they administered an injection of penicillin. There was no charge for the services but each person gave at least a rupee as a charitable act. All recovered.

#### MALARIA

The villagers recognized that there was some relationship between malaria and mosquitoes, but very few of them took preventive measures. A young Jat father, who was in military service where he had learned the practice, used a mosquito net when he visited his parents. Individuals did not distinguish between the first attack of malaria and the reasons for it, and recurrences due to the first attack. Initial and recurrent malaria attacks occurred in July, August, and September, the rainy season, when mosquitoes were in greatest abundance. One woman said she might have malaria in the summer but not always. All of her children also had malaria. She believed that if they ate rice pudding just before the rainy season or in the fall after the rainy season they would get the fever. She described malaria as sometimes occurring on alternate days, or with a lapse between the alternate days of fever. One man wore an amulet with a mantra written on a piece of paper enclosed within it as a charm against malaria. He also went to a physician in Delhi for tablets when the fever recurred. Most people covered themselves with quilts and sweated out the fever. Some obtained tablets for the illness; others said they took quinine in various forms. Although prior to our fieldwork we had been informed that malaria was no longer a problem in India, such was not the case. A recent article in "World Health" indicates that malaria is now resurgent in India (Rowe, 1976, p. 19).

#### PUERPERAL FEVER

Puerperal sepsis, usually identified as fever in Shanti Nagar, results from a number of

sources of infection at birth and villagers worried about it and tetanus equally. The first six days after delivery were considered to be the most dangerous time for both mother and child; if the two lived, then on the sixth day after birth there were two celebrations, the worship of Mother Sixth by all but the Ayra Samajis, and a Sing in the evening for female relatives and friends of the mother to celebrate the birth, if the infant was a son. The two events indicated a belief that the dangerous stage had passed. However, the mother and child did not attend the Sing. Lying-in was from six to 10 days among the low castes and the poor, and 40 days for those who were high caste and could afford it. The seclusion of the mother and child during these periods may have contributed to other forms of illness, however. Table 2 indicates that one infant was stillborn and another died within the six-day period. The first death was due to an exceedingly difficult and delayed delivery; the second was from fever, but we had no way of knowing whether it was tetanus or puerperal fever. In the Punjab study of Gordon, Gideon and Wyon (1965, p. 161) one of the surprising findings was that the puerperal sepsis and toxemia of pregnancy were not common occurrences despite conditions that appeared to favor such illnesses. However, various types of unidentified fever were associated with postpartum conditions (Gordon, Gideon and Wyon, 1965, table 1, p. 164).

At the time of our study, the facilities for childbirth consisted of the village midwives, the government-trained midwife, and the hospital in Delhi. The village midwives served in at least 75 percent or more of the deliveries; the government midwife, to a limited degree. Two women had borne children in the government hospital in Delhi. In one case, the woman and her husband were living in Delhi and had relatives who had access to the hospital; in the second case, the woman's mother and father lived in Delhi, had access, and arranged for the lying-in. India (1961, pp. 66-68) noted that Jhatikra, also in the Union Territory of Delhi, 22 miles south of the City, had good medical facilities available to it including the Chhawla Health and Maternity Centre 3 miles from the village, from which a mobile medical unit visited the village on alternate days. Although the

villagers had modern maternity services at their disposal, they still used the village midwife 72 percent of the time. This village may be illustrative of a trend which had begun at the time of our study, but which had since been implemented by the increasing use of mobile units attached to health centers throughout the area. One of the aspects of child delivery at home, which militates against the use of clinics and hospitals, is that the seclusion period is practically the only time that a woman gets attention, luxuries, is taken care of, and does not have to work. Also, the round of ceremonies at childbirth reinforces village midwifery practices. With the enormous population of India, it would be more economical and practical to concentrate on training village midwives than to train obstetricians and similar specialists for delivery.

#### VENEREAL DISEASES

We have no information on gonorrhea and venereal syphilis. One young married man was reported to have yaws and his in-laws were said to have made him submit to treatment shortly after his marriage. Afterward, the man and his wife had children. Since yaws derives from *Treponema pallidum* as does venereal syphilis, it has been included here (Hudson, 1965).

#### STERILITY AND FERTILITY

Sterility and fertility might be due to infectious diseases, to congenital or genetic causes, as well as to functional or behavioral disorders. Scientific knowledge regarding sterility and fertility was relatively little understood in the village. One man obtained birth control tablets but planned to have at least four children. A woman who had been sterile consulted a physician in Delhi, subsequently bore two sons, then said she had arranged to have no more children through the same physician's services. Most of the villagers considered her decision to have no more children to be very risky and thought that she was a little odd. Men believed that infertility was the fault of the woman, or at least refused to find out if they themselves might be deficient in some respect.

In a forthcoming monograph on the rites of

passage we explore the attitudes and values surrounding birth and the desire for children, especially sons. At the time of our fieldwork, we did not believe that a survey on attitudes toward birth control would be conducive to the main scope of our study. Therefore, we asked questions about birth control only when it seemed feasible in the context of discussing birth or other subjects. Mamdani's (1972) analysis of the Khanna study would tend to support our decision. It would have been possible, though, to find out more than we did had our project been specifically oriented toward the problem. Mandelbaum's recent study (1974) provides, to our knowledge, the best presentation of current attitudes toward birth control and also shows how the situation has changed from the period of our study when the subject was not easily discussed with villagers. However, the desire for children, especially sons, still holds; the government slogan "two or three children, enough!" will seldom work unless at least two of the three are sons.

#### SWOLLEN GLAND

Treatment for a swollen gland was mentioned in the context of having long fingernails. The villagers did not approve of long fingernails; they believed that they were dirty and could cause infection. In any case, when a small child had a swollen gland in its throat, one formerly could have a Chuhra Sweeper woman prick it with her fingernail. The only person that mentioned this treatment said that some woman had called a Sweeper for her child's swollen gland and that the child had an infection as the result of the treatment and died. This treatment, therefore, had fallen into disuse. We classify a swollen gland as being due to an infection though it possibly may have other causes.

#### FUNCTIONAL DISORDERS

Under functional disorders come bone and joint diseases, problems with the eyes, ears, and teeth, and physiological malfunctions of major organs of the body. Some of these disorders might well have been classified in the infectious-parasitic category or may have started as a result of infectious diseases, but they

have been placed here when there were insufficient data to determine whether there were other causes, such as nutritional, psychosomatic, and genetic, as well as infectious-parasitic.

#### BONE AND JOINT

Two boys, a man, and two women reported broken arms. One boy had his arm set in a Delhi hospital because he was there for another related injury, hemorrhaging in the stomach. His injuries were due to a bad fall. The adult man fell getting off a train at a time when he was under excessive strain. Because he worked for the railroad, he had access to and used the regular government medical services. Another boy fell from a tree. His grandmother took him to a bonesetter in another village. The arm was not set well and had to be broken again and reset by the bonesetter. The woman's break was more probably a sprained wrist. She placed a heavy plaster around it and recovered the use of her arm within a short time. Another older woman told us she had broken her arm, did not use it for about three days, and then had regained full use. This "break" was either a sprain or a wrenched wrist because apparently not much damage was done. She went to a wrestler in Delhi for treatment. Sprains and dislocations of joints and muscles in fingers, feet, and arms were sometimes called breaks. These so-called breaks often were not treated by a bonesetter or a physician, nor did the individuals go to any curers or to clinics or hospitals. Instead they used a plaster usually made of flour or mud, or bound the sprain with cloth. One person said he ate halva when he had bent his finger back almost double. This treatment would be classified as a form of imitative magic. As the halva stiffens, the finger is straightened; but the halva is also a psychological support, for it is tasty. Even well-off villagers who consulted physicians in Delhi preferred bonesetters to having broken bones set in a hospital.

#### HERNIA

A boy four years of age who had a hernia was treated at a clinic some miles from Shanti

Nagar. During the treatment he stayed at the clinic. An American physician operated successfully, and the child seemed to have been very pleased with the experience. However, an older brother stayed with him during the ordeal, and the family provided him with clarified butter, milk, and other foods from the household. This child was the last in a long line of children and the darling of the household.

#### RHEUMATISM AND ARTHRITIS

Older men and women complained of pains in their joints and bones for which, usually, little was done. Sufferers might take aspirin and put on more clothing, especially in the winter months. They also might massage their aching parts with oil and tie rags around them. One old man in his eighties was accustomed to taking a mixture of honey and marijuana to forget his pain. He had learned about the drug while with the police. The Indian government outlawed the use of drugs, but his sister's son had a source of supply for the old man. Only one other person in the village was known to take this drug; he, too, had learned its use in police service and had subsequently been dismissed for using it. No one drank alcoholic beverages to relieve pain although an urbanized young man who worked in the city suggested it to our male interpreter as a remedy for colds. There were no known or recognizable addictions to alcohol or other forms of drugs, but a few high-caste men in their late twenties and early thirties drank fairly regularly, in privacy in the village where the practice was frowned upon and more openly in the city where they often went to attend the cinema or to pass the time with friends.

#### SKIN

There were numerous disorders of the skin which were not easily identified. A few which were identified were scabies, eczema, and vitiligo, a piebald skin discoloration (Lyght et al., 1956, pp. 1603, 1611, 1615, 1584-1585). Others, called "itch," may have been the result of various infections or due to psychosomatic or hereditary causes.

### ASTHMA

One elderly man had asthma and was treated by a Western physician in Delhi. In the hot dry season from March to July, a hot wind (*loo*) and dust storms resulted in excessive dust in the air which caused coughing and eye infections. The dust was irritating for everyone but especially for this elderly man.

### EYES, EARS, AND TEETH

There were a number of disorders of the eyes and ears, some due to infections or abrasives in the case of eyes; others may have been either congenital or hereditary. Eye infections and irritations were endemic. One small two-year-old boy was virtually blind. His parents took him to a physician who said that he had no vision in one eye and almost none in the other. His father said that an operation might improve the child's sight sufficiently for him to be able to go to the fields and relieve himself. This child died (see table 2). He suffered from neglect, his family's poverty, and typhoid.

Women, who spent a considerable amount of time cooking over smoky fires, reported eye disorders from the smoke. One belief held that if a woman failed to observe the customary restrictions during the 40 days after childbirth and started to cook prematurely, she would have permanently weak eyes. A woman whose husband worked in the city and who lived in a nuclear household with no one to help her when her fourth child was born had to cook almost immediately after childbirth; she attributed her eye trouble to so doing. Her 11-year-old son also had an eye infection. He asked us what to do about it, obtained from us the name of a penicillin ointment for the eyes and the address of a Delhi pharmacy where it could be purchased, and resourcefully proceeded to Delhi to buy it. Various powders and liquids were used as remedies for eye irritations and infections. The worst irritations seemed to result from flies and smoke. We used penicillin ointment for eye infections, told villagers where it was sold, and shortly thereafter a few villagers began to use it. The price was relatively cheap—one rupee. Thus, popular pharmaceuti-

cal medicine influenced us as well as the villagers.

People who complained that their vision was clouded obtained powders from the swamis in the nearby hermitage. One man reported that a Brahman Priest woman in a more distant village had a medicine which always cured this malady. The villagers had been going to her for 20 years. She was said to have been given the gift of this medicine from an old grandfather as a boon. Because this was a gift from God, she did not charge for medicine. A quite urbanized Jat who had an eye infection said he would cure it with a plaster made from a special kind of mud in which an unidentified flying insect called *gaunjahni* made its home. A woman said that whenever there was a fair at Beri, she worshiped the Beri Goddess who cured eye and other ailments.

A young Brahman who worked in a factory in Delhi and whose family used all kinds of remedies including hospitals for operations, took his family to Gurgaon in the Punjab to worship the Gurgaonwali Mata as the fulfillment of a vow. His wife had suffered from *chobb*, an eye infection, six months previously, and he had vowed to worship this goddess if she recovered. In order to remember, he had tied a knot in her headcloth. She recovered, but he forgot his vow. The eye infection returned and he again knotted her headcloth. When the infection again cleared up, he, his wife, small daughter, and mother, his father's younger brother and wife, another Brahman and his wife, and two Chuhra women went to Delhi where they took the train to Gurgaon. This was at least a 3½-hour trip by bus and train. When they arrived in the evening, the two Chuhra women got lost in the railway station. His family and relatives stayed at a hostel and in the morning the women worshiped Gurgaonwali Mata. Then they returned via Delhi and stopped there to take a dip in the Jumna River because it was Baisakhi, the national spring holiday (R. Freed and S. Freed, 1964, p. 85). Thus, the party accomplished two meritorious and religious acts, completed the final stage in a cure, and had a good time, all of which was, no doubt, more satisfactory to them than going

to a Western physician in the City of Delhi!

Mothers outlined the eyelids of infants and small children with kohl, a black preparation of soot or antimony, to strengthen their eyes. Whether this application was for infections of the eye due to the process of birth (ophthalmia neonatorum resulting from gonococcus, staphylococcus, streptococcus, pneumococcus, or other bacteria), we did not ask because outlining a child's eyes with the black substance was believed to prevent eye infections from flies, ward off the evil eye, and make the child attractive looking. Black antimony (kohl) is reported as being applied to infants' eyes in the Punjab due to the risk of conjunctive eye disease in infants in the birth process (Gordon, Gideon and Wyon, 1965, p. 160). One college student was myopic and wore glasses while studying or when in Delhi. His sister was nearsighted, too, but had no glasses. Few other villagers wore spectacles although some people were noticeably shortsighted. Shortsightedness was more easily discerned than farsightedness in a population in which 49 percent of the adult males and 89 percent of the adult females were not literate (Freed and Freed, 1976, p. 46). With growing literacy a few people found that they could not read easily, especially if they had urban jobs that involved reading and were growing older. Some of these people bought spectacles that would enlarge print without consulting an ophthalmologist, optometrist, or optician. They did not wear them when walking around the village, only when reading; but one aged Brahman wore his glasses while grazing cattle because he simultaneously read religious tracts.

There were probably cases of glaucoma and trachoma but none were diagnosed or reported as such. A few older people in the 70 to over 90 year range were reported as being blind or almost blind, or as having failing vision.

There were one man and two women with known hearing defects. The man was about 60; his hearing was sufficiently impaired to have affected his social interactions to the extent that he had difficulties in family and village life. A woman of about the same age had such difficulty in her social interactions that she was actively disliked. Although she lived with a

large extended family and was adequately supplied with the material needs of life, she tended to stay in her quarters by herself. From what was known of her life history, it is probable that she may have had her hearing defect for a long time. She was not only disliked but suspected of a number of evil deeds, a not uncommon characteristic of a person who is cut off from the rest of the community and who, as a result of isolation, develops a difficult personality. The third person was a young, married woman who had contracted measles in childhood and thereafter had a hearing loss. Her natal family arranged a marriage for her in Shanti Nagar because two older classificatory sisters (her father's brother's daughters) had been married into the village. The idea behind this arrangement was that the two older women could help and take care of her if necessary. She did not appear to be suffering from her disability. Her husband was absent from the village a great deal because he owned and farmed land in another village. His absences may have been related to her hearing.

Toward the end of the rainy season a number of people complained of earaches and took aspirin. When the remedy did not help they went to the swamis at the hermitage for medicine to relieve the pain. The complaints were not diagnosed.

On the whole, women had worse teeth than men, doubtless because of bearing children and associated dietary deficiencies. A few families used the services of dentists. One family reported the following costs for dental work during one year: two women, Rs. 100 each for bridgework; one man, Rs. 60 for bridgework; one younger man, Rs. 6 for tooth repair. Some women had "store bought" dentures.

In contrast to these remedies, dentistry and false teeth, one Chamar woman with a toothache and swollen jaw went to the Chuhra who acted as an *ojha*. He said he "took off" the pain by a series of ritualistic acts. This *ojha* had a limited repertory of ceremonies to cure toothache, headache, and the vomiting of small children. In this curing session, the woman squatted before the curer while the curer held her finger and pressed it on the sore tooth. Then he squatted down and drew a grid of lines

(five horizontally, five vertically) on the ground with a short-bladed knife. Next he touched her swollen jaw with the knife, then the grid of lines, back and forth repeatedly about 40 to 50 times chanting hymns all the time. Finally, he stopped and asked if she was feeling better. She replied affirmatively. This treatment might best be classified as suggestive and hypnotic.

#### FALLING OF UVULA

The falling of the uvula (the small conical, fleshy mass of tissue suspended from the center of the soft palate above the back of the tongue, behind the hard palate, somewhat above the epiglottis) was believed to occur as a result of excess heat of any sort, or as a result of heat after an individual had recovered from another illness, was still weak from it, and therefore susceptible to the falling of the uvula. Another cause given for it was that it would occur to a child if nursed by its mother when she was hot after working in the fields or cooking.

A man who 20 days previously had caught a fever received medicine from a doctor and recovered, but because of his weakness and the hot weather, his uvula fell. He could not eat or swallow. This illness occurred in late May, the hottest time of the year. He was told by another man that the best remedy was to put a plaster on top of his head. He prepared a plaster of lentils that when ground and cooked become sticky and thick and put it on his head. The idea was that the plaster would cause the uvula to return to position.

The description of the malady and its treatment suggest a relationship to *caida de molera* found in Latin American populations. Werner (1976, pp. 313-314) described this illness as "fallen fontanelle." He attributed it to severe tissue dehydration in infants as a result of severe diarrhea, which then causes the fontanelle or unclosed portion of the cranium to sag inward. The cure is to moisten the baby's head with hot oil and to suck upward three times at the position of the fontanelle to lift the baby's brain into position. Although the sucking is a form of cupping without the cup, cupping may have developed long ago from the sucking cures of shamans.

Clark (1959, pp. 170-172) classified fallen fontanelle or *caida de molera* as one of a number of ailments resulting from the displacement of organs, whether real or imaginary, and identifies the symptoms as diarrhea and vomiting in infants. As a result of the fallen fontanelle, moreover, a little ball is felt in the roof of the mouth. Clark similarly attributes fallen fontanelle to dehydration. There are a number of cures to put the fontanelle back into place such as sucking on the area and putting a thick paste on the baby's fontanelle and leaving it there all day.

Early Ayurvedic medicine used cupping for a mild form of blood-letting, and for inflammations a variety of pastes might be used, but it is not clear whether the pastes were also used for dislocations (Kutumbiah, 1969, pp. 162-164). However, it is worth noting that these two techniques were employed.

#### HEADACHES

Although headaches might be an early symptom of a number of illnesses, slight headaches were never mentioned. Both mild and severe headaches might be helped by aspirin. Males would wrap a turban around their heads when they had headaches. The Chuhra who served as an *ojha* employed the same kind of ritual cure for headaches that he used for toothaches, backaches, and pains in the chest.

A woman about 50 to 55 years of age said that she had suffered severe headaches for seven years. They signaled an onslaught of a disease which had first appeared in the rainy season. After the advent of the splitting headache, her skin became swollen and she had pain. She had the disease treated by a doctor in a Delhi hospital and said that she used a lot of medicine before she was cured. However, the disease appeared again the following year, also in the rainy season. She believed that it was triggered by bathing in cold water in rainy weather. The doctor told her that she had something wrong with her blood. She drank lemon or lime juice in water to reduce the pain. This description of her illness was as much as she knew about her malady. Without the headache, it might be classified as a heat rash; with

the headache it might be the result of hypertension or any one of a large number of ailments aggravated by heat and humidity. This complaint was characteristic of the problems encountered in finding out what an illness was when the people themselves had no name for it and when it did not fit into their own concepts of sickness. In this case, the city doctor had declared that the ailment involved the blood; the woman appeared to have accepted this diagnosis, perhaps because blood is important in the village concepts of disease as a result of both Ayurvedic and Unani concepts.

#### LIVER/SPLEEN AND CIRCULATION

A 45-year-old woman and a 30-year-old man had disorders which were reported to us as having been diagnosed as malfunctioning of the liver. Both of them died. Although members of different families, they were treated similarly by their kin. When each of them became so ill that their kin were afraid they would die, they were taken to hospitals in Delhi where the physicians said that there was no use in their staying in the hospital, for they would soon die. They then returned to the village. From information obtained and observed about both individuals before their deaths, it appears that the main cause of death was a general physiological decline along with a lack of diagnosis or treatment of the illness. In the woman's case, she had recently borne the last of a long series of children, was nursing the child, working in the household and in the fields, and had arisen from the delivery bed a few days after birth, rather than observing the traditional 40-day lying-in period. This woman quite literally worked until she dropped dead. Although land-owning Jat Farmers, her family was nuclear; there was only one son, a young boy, and her husband, a hard-driving worker. There was no other adult female in the house to help her. How much childbirth at an advanced age together with the hard labor she had performed for most of her life contributed to her death would be difficult to determine without a medical history. We had less information about the man, also a Jat Farmer. His family was well-off but had problems which neighbors constantly alluded to but the nature of which they

never specified. In any case, when he died the villagers were very much surprised because of his age.

The attribution of both of these deaths to malfunctioning of the liver may have been accurate. Almost every villager at one time or another had hepatitis which could result in permanent liver damage. Malaria might also contribute to trouble with the spleen as might a number of childhood illnesses (Lyght et al., 1956, pp. 1057, 1095). It is also possible that either or both of these individuals could have been poisoned accidentally or intentionally, but only three cases of intentional poisoning were ever discussed (Freed and Freed 1976, p. 65). In all probability, the villagers reported the deaths as malfunctioning of the liver because the circulatory system broke down. Generally, a complete circulatory breakdown was attributed to the liver. In Ayurvedic theory, the liver/spleen are always mentioned together as one organ, considered essential to the circulation of the blood (Kutumbiah, 1969, pp. 43, 45-50). Unani influence similarly combined the liver and spleen, for Aristotle believed that the liver/spleen supplied heat for the food in the stomach (Kutumbiah, 1969, pp. 54-55).

These two deaths illustrated the common village failure to consult physicians in time. Such delay in seeking medical aid was partly due to slowness in recognizing a disease as such. Moreover, the cultural value for stoicism in the face of aches and pains militated against reporting them or complaining unless they were quite severe. Since both men and women worked in the fields at hard and exhausting tasks, they expected bodily discomfort and pain throughout the seasons and years of agricultural labor. In addition, the changes in climate from hot to cool and from wet to dry without any heating or cooling in houses contributed to discomfort and pains.

Although the symptoms of the illnesses which led to these two deaths may have been apparent long before death, the villagers lacked the training to recognize them. They saw illness as illness only when it incapacitated an individual. The stoicism that was a part of correct behavior, together with lack of funds and knowledge of what is illness, contributed to the attitude that when they took a patient to

a physician he should cure the patient. If he did not, what was the use of having a curer? This attitude may have developed at a time when the majority of serious illnesses were quickly developing diseases, such as cholera. In such cases, one recovered immediately or quickly died. When as a last resort a patient was taken to a physician and then died, that result could be attributed to fate. Even so, the failure to cure destroyed faith in a curer.

### GENETIC OR CONGENITAL

The only serious congenital disorder known to us was the case of a clubfooted boy. His condition was attributed to a combination of prenatal and solar influences. The belief was that the actions of a mother during pregnancy influenced her child. In this case, the mother had been grinding grain during a solar eclipse and this activity caused her infant to be born clubfooted. The position taken when grinding grain is cross-limbed sitting on the ground; clubfootedness is considered to be similar. There were taboos against many activities during solar and lunar eclipses and one such was grinding grain. Such beliefs may once have been far-flung or worldwide, for Werner (1976, p. 313) indicated that birth injuries are attributed to lunar eclipses in the Sierra Madre of Mexico. A few individuals in Shanti Nagar had been born with six digits, a genetic trait. The sixth digit was an extra appendage on the thumb. This known genetic trait has been reported previously as distributed in the Asian population.

### NUTRITIONAL

Without physical examinations it was difficult to determine the degree of nutritional deficiencies that may have existed in Shanti Nagar. However, one type of food deficiency was quite apparent. Whenever children had such illnesses as dysentery, typhoid, or an infectious disease in which there was a high fever and which lasted for a period of two or more weeks, the child lost considerable weight, and if quite small might die. Large weight loss did not seem to occur when adults had typhoid. Weight loss due to an infectious disease with high fever was particularly apparent for chil-

dren under four years of age. Moreover, children in poor families, where food supplies and resources were limited, took a much longer period to regain lost weight and more often died, which indicated a lower nutritional level. When small children contracted an illness such as typhoid with associated diarrhea, there was a very good chance that they would be weakened by the disease, become emaciated, and die. Hepatitis, which results in starvation since a sufferer finds it difficult to eat and digest food unless provided with a special diet, also had this effect on small children.

Pica, broadly defined as "the practice of ingesting unusual substances," or medically defined as a pathology, "the perverted craving of substances unfit for food" (Hochstein, 1968, pp. 88-89) existed in Shanti Nagar and consisted of women eating clay during pregnancies. The men said that women followed this practice so their offspring would be fair. Whether pica is defined as a disease or a custom, it has been studied by microbiologists and physiological scientists, as well as by anthropologists and psychologists. Probably it consists of a complex of factors or explanations. Hochstein (1968, pp. 90-94) listed six: psychological, anthropological, sensory, nutritional, microbiological, and physiological. Thus, the answers to why women ate clay in Shanti Nagar may have been multiple, and not all of them need come under the heading of illness. The practice seems to be long-standing and widespread according to Hochstein (1968, p. 89) who cited an earlier, well-known survey by Laufer, who for India said that the custom became so refined that clay figurines were made to be eaten and sold in the market place. In Shanti Nagar our data indicate that eating clay was related to a cultural value, psychological, and probably due to dietary and other physiological reasons including pregnancy.

In most families, males were generally favored over females in food consumption, a difference that was enhanced when a family's supply of food was low. During pregnancy, the diet of women was not supplemented in any way; it was only after birth that the women had special delicacies to eat. The diet during the postnatal days consisted of *gond*, prepared from gum, sugar, and coconut mixed with ghee, and

an assortment of sugar, fruits, and nuts. The regular unleavened wheat cakes were tabooed, but the new mother could have rice and vegetable dishes and also milk to drink. The diet during this period is best described as having a higher preponderance of carbohydrates than usual, somewhat less protein especially in the first few days after birth, and luxury foods such as sweets, fruits, and nuts which were not regularly eaten. During the pregnancy period, the most appropriate diet for the health of mother and fetus is still to be determined, as a great variety of diets exist cross-culturally. However, there is evidence that the food habits of the mother both before and during pregnancy affect the development of the infant (Robson, 1975). Katona-Apte (1975) noted that Indian women have a history of insufficient nourishment from birth onward and that this cannot help but affect their health and the health of their children.

The regular daily diet consisted principally of unleavened whole wheat bread, milk products, and occasionally vegetables, fruit or rice. Bread was usually eaten with butter or ghee, and sometimes with a cooked vegetable. The vegetable was prepared with spices and sauteed in ghee. Sometimes a chutney or pickled fruit or vegetable was substituted for the cooked vegetable. Everyone drank milk, buttermilk, or *lassi* depending on the season, and ate curd regularly. *Lassi* is curd thinned with water and sweetened. Warm milk was usually drunk in the cool months, buttermilk and *lassi* in the summer. Two meals a day were taken in the winter, three in the summer. Everyone ate snacks of sugarcane, parched gram or other grains, sweets, fruits, and vegetables when they were available or in season. Coffee and tea were drunk, always mixed with milk and sugar, primarily by urbanized villagers but not with their meals. They might be drunk in the course of a special event; tea, especially, was frequently taken at the end of the business day, either at the bus stand in Delhi or just after arriving in the village.

The dairy products and wheat bread provided the main protein, carbohydrates, and fats. Lentils and legumes were cooked in a variety of ways and provided additional protein. Fats

came from milk, butter, ghee, vegetable oil pressed from mustard seeds, or from Dalda, a commercial margarine manufactured from vegetable fats. Foods cooked in ghee, Dalda, or vegetable oil, helped to provide fats in the diet. Because most villagers ate a strictly vegetarian diet, fat and protein from meat were not available to them.

Members of the Potter, Leatherworker, and Sweeper castes ate flesh foods, but in different degrees. Potter females did not eat meat; the males would eat lamb or mutton, perhaps goat. The Leatherworkers, although inclined toward vegetarianism, sometimes ate meat. The Sweepers raised pigs and chickens, many of which they consumed. They also ate chicken eggs, caught and ate fish from ponds and a nearby canal, and ate pigeons. Even so, their diet was predominantly non-meat. A pig would be killed in the Sweeper community about every two or three months; its owner sold the parts that his family could not consume to other Sweepers. If the pig was quite large, parts of it might be sold to Sweepers in other villages. Chicken eggs were consumed in the village; some were sold to those high-caste individuals who would eat them. Although the Sweepers raised pigs and chickens for food, they also hoped to profit from their sale; this practice reduced the amount of meat they consumed. A few males among the Jats hunted and occasionally ate meat, but most Jat men did not eat meat. Jat females never did so.

Before 1947, the villagers neither grew nor ate many vegetables. Since 1947, the great urban population growth of Delhi had resulted in a growing demand for vegetables, fruits, and flowers. These products consequently became more important in the economy of Shanti Nagar. As a result, villagers told us they generally ate vegetables daily in the evening with their bread. Some men boasted that they drank two or more seers of milk a day. Although women and children did not drink as much milk, they did drink some milk daily. During the lying-in of a woman she was supposed to drink several glasses of milk a day. However, the amount of milk drunk in any one family depended on the number of cows and buffalo they had, the number of people in the family,

and whether they sold milk either in the city of Delhi or in the village. Sixteen families, all but two of them low-caste, had no water buffalo or cows so they either bought milk and ghee or went without. These families were generally among the poorest of the village and had the greatest diet deficiencies. Poverty and nutritional deficiencies were probably positively correlated.

A wide variety of grains, lentils and

legumes, spices, fruits, and vegetables were grown or available in the region. Most of the daily cookery was relatively simple, but at weddings, festivals, and for noteworthy family or religious events a number of special foods were prepared and eaten. There was a rather remarkable array of sweets, mainly made from sugar with milk, fruit, or other added ingredients. The villagers were very fond of sweets of any kind.

## CHANGE AND PERSISTENCE

Referring in a recent article to the concepts derived from Ruth Benedict of Apollonian and Dionysian patterns of culture, Mandelbaum (1975) suggested that the two opposite types form a continuum and that different societies through time swing back and forth between them as changes occur in their cultures. The Dionysian pattern of culture would be more characteristic of a society where changes in its culture had resulted in social disharmony. As these changes were absorbed into the culture, the society would become more harmonious, its culture approaching the Apollonian type. This idea summarizes what may well have occurred through the centuries in Shanti Nagar, as well as in other parts of India, with regard to concepts of sickness and health and related supernatural beliefs.

Shanti Nagar and other villages in India, although often depicted as conservative and unchanging, have for centuries been exposed to innovations from urban centers and, ultimately, from foreign cultures. Muslim influence was felt in north India for centuries. It was succeeded by the effects of British rule, principally in the century preceding Indian political independence, and finally by the impact of the worldwide life style gradually penetrating all nations as a result of mass media. The period during which we were in Shanti Nagar could best be described as the beginning of a time of accelerated change during which new ideas and modes of life were being introduced and absorbed into the cultural stream. The concepts of sickness in Shanti Nagar reflected the way in which the disparate ideas from these various

influences through time may gradually become molded into a harmonious whole. At the time of our study the village way of life was closer to the Apollonian end of the scale than to the Dionysian, despite the potential for considerable culture change that appeared to exist.

It is worthy of note that the individual who had contributed to a kind of change in Shanti Nagar which resulted in the incorporation of his tenets into the earlier matrix of belief but at the same time liberated the village as a whole from an excess of ritual was Swami Dayanand Saraswati, the founder of the Arya Samaj. His life also exemplified the alternation between a Dionysian and Apollonian style of life; he wandered as a holy man for many years before settling down in his later years to teach and perpetuate Arya Samaj beliefs. In his earlier years as a wandering sadhu or swami, he can be described as freeing himself from the circumscription of being a twice-born Brahman; it was this freedom which allowed him to re-think his earlier enculturation into Hinduism and to develop his Arya Samaj teachings. Thus, the period during which he was a holy man is best characterized as Dionysian; whereas, in his later years of spreading his teachings, he again turned toward the Apollonian. Just so, it appeared that his followers in Shanti Nagar at first liberated themselves from Brahmanical influence and then gradually began to swing toward the Apollonian type, to the extent of using Brahmins as their priests. The lives of individuals both effect changes and are affected by them. As Mandelbaum indicated, the holy man's life is better suited to freedom than it is

to the following of dharma (ethical behavior), particularly caste dharma. On the other hand, a swami or sadhu can try a variety of ways of life and become an innovator (Mandelbaum, 1975, pp. 51-52).

In Swami Dayanand's case, his behavior may have been the result of a number of events, such as his accidental revulsion against Shiva worship in his youth and his resistance to a youthful marriage (Rai, 1967, pp. 10-11, 14-15). But such events could happen to anyone. They become significant only in the context of a particular personality and historical period. From the point of view of his philosophical ideas and attempts at social reform, it is significant that Swami Dayanand was born in a place and time when the British had already begun to influence India considerably, and the changes so introduced had resulted in a swing within India toward the Dionysian rather than the prescribed Apollonian way of life. It is interesting to note that Swami Dayanand did not begin to spread his teachings until after the Mutiny in 1857, certainly a Dionysian rather than an Apollonian event. Regardless of its origins, the Arya Samaj is best described as a rationalistic nativistic movement, one which revived old teachings, strengthened Hindu beliefs, and at the same time provided new concepts which could combat the teachings of the British and Christian missionaries (Ghosh, 1976, p. 118). Thus, the movement which had its impetus as Dionysian ended in a somewhat Apollonian form and depended on the earliest substratum of Hinduism—Vedic thought. The perpetrator of the movement, Swami Dayanand, himself, became more Apollonian than Dionysian in his planning, political activities, and teachings of Arya Samaj precepts. How then do we explain these swings in terms of curing practices and concepts of sickness in Shanti Nagar?

The answer lies in two major attributes of Indian culture: the first is that the concepts of Hinduism have persisted for centuries in spite of multitudinous changes. The second is that from the time of the Harappan culture (2500 B.C.), India has been urbanized. Urbanization implies cultural pluralism. The experience of constantly integrating new concepts into the

matrix of Indian culture is part of the Indian way of life. Thus, in a small village of only 799 people, there were a variety of cures and curers for illnesses, not to mention theories and concepts of illness from different traditions.

The extent to which the system of health care of Shanti Nagar accords with changes that have recently been introduced into India indicates both the extent of change in Shanti Nagar and the potential for future change. Any significant difference between local and urban or national health care systems would suggest that a considerable amount of change in the village system is foreseeable. On the other hand, the failure to adopt new measures is as significant as their adoption, for unaccepted innovations often indicate, not backwardness, but unsuspected strength of the indigenous system, unperceived weaknesses of the proffered innovations, and unanticipated cultural incompatibility.

India (1975, ch. 8) provides a condensed statement of the eradication and control of diseases since 1951. "Epidemics like malaria, TB, smallpox, cholera, and plagues, which took a heavy toll of life, are now no more great killers" (India, 1975, p. 78). A number of programs exist at both the urban and rural level to bring health facilities to the people. For example, primary health centers have been located throughout the rural regions. In 1974, 5250 of these centers functioned in the country (India, 1975, p. 81). Considering the estimated size of the population in mid-1974, 581,500,000 (India, 1975, p. 1), the number of centers was still quite small. However, it is what was being done in these centers and how they were accepted that matters. Basic health services were provided in 2897; over 1200 were to be upgraded for 30-bed rural hospitals (India, 1975, p. 81).

An example of these rural health centers is provided by India (1961, p. 68) in a study of Jhatikra, a village in the Union Territory of Delhi, where it was stated that "all the 97 households in the village depend on Allopathic treatment and only 27.8 percent of them also depend on Ayurvedic or other indigenous treatment." Two types of health care readily available to the villagers were described. One type

was for general health care and the other, for maternity care with mobile units working in the villages. Maternity care offered by the government was not so readily used as general health care. Most women (72%) still used the services of the village midwife (India, 1961, p. 68). The rural health centers dispensed Western medicine. This shift toward the use of Western medicine was probably occurring during the period of our study although at that time the government had opened schools for training in Ayurvedic medicine and was promoting the use of Ayurvedic physicians. This apparent support of Ayurvedic medicine may have been a stopgap until such time as a sufficient number of Western physicians and associated medical centers could be established throughout the country. However, it was also a means of building national pride based on a unifying tradition.

Shanti Nagar, perhaps because it was near Delhi, did not have facilities for Western medicine in its more immediate vicinity. The description of Jhatikra indicates that rural medical centers would provide quicker and more convenient service than would facilities located in Delhi for an individual from Shanti Nagar. If the government now provides free Western medical treatment within immediate access to Shanti Nagar, the villagers probably will have begun to make use of it just as the people of Jhatikra were doing. But we would expect that women would still prefer the midwife's services and the lying-in at home. Because of the advantages of rest and the ceremonial and social life during the 40-day lying-in period at home, it is dubious that the women will willingly change these customs. The best plan would be to have the government midwives or nurses train the village midwives in techniques and regularly check their work and retrain them.

Prenatal care is another area for potential change. Probably some ideas regarding prenatal care will gradually seep into the village, but rapid and significant changes will depend on the education of females. A few females began to attend school in the late 1930s in Shanti Nagar, but, by the end of the 1950s, most females who had attended school went only as far as the fifth grade. If we exclude children who were too young to attend school, 64 per-

cent of the males were literate. The proportion of literate males was highest among the young. The majority of men 40 years of age and older were illiterate. When the females who were too young to attend school were subtracted from the total number of females, 21 percent of the remainder were literate. Only 11 percent of those females 16 years of age and older were literate (Freed and Freed, 1976, pp. 46-48). The people who then made the decisions about where to go for a cure and the care of the sick within the household generally were relatively elderly and often illiterate. However, the trend has been toward greater education in this village from the beginning of this century onward, and we assume that this trend will continue. Thus, by now, there should be more men and women 40 years of age and over who have been educated and who should be influencing decisions about health care.

With the increase in education and in urban employment, which will in all probability accompany better education, there should be attendant use of urban facilities for health, as was indicated for those males who were in the urban milieu in 1958 and 1959. Being in an urban environment, however, does not necessarily indicate that one will use Western medicine. In fact, studies from different parts of India indicate that cities, towns, and villages are pluralistic in their choices of both medical practitioners and type of health care (Beals, 1976; Montgomery, 1976). Moreover, India appears to have undergone revivals of Ayurvedic medicine in previous times and should continue to do so (Gupta, 1976). Leslie (1976a, pp. 363-367) quite rightly pointed out that the eclectic use of medical theories and beliefs characteristic of India presently exists in many parts of the world, including the United States. The media in America have resuscitated beliefs in exorcism and other supernatural cures, and in addition, we have a whole roster of different medical theories, including homeopathy, naturopathy, Ayurveda, and others.

Western medicine will have to prove itself more applicable to the thinking, needs, and economic circumstances of villagers and of relatively poor nations than it has heretofore. If Western medicine is touted as infallible, which

nothing ever is, then with each failure there will be a decrease in the belief in its efficacy. Furthermore, there are people who feel uncomfortable in a system of thought which is not their own, so that Western medicine may not appeal to them. The greatest problem of Western medicine is its costliness; the training of physicians and the equipment and institutions necessary for the practice of Western medicine often put it beyond the means of individuals and nations. Epidemiological studies of mental health, for example, indicate that at the rural level mental illness is as prevalent as in cities. The practitioner of choice, except for somatic complaints associated with such illnesses, is most often an indigenous curer or shaman (Carstairs and Kapur, 1976, ch. 13). Certainly it is beyond the economic capacity of the Indian government to furnish psychiatrists and mental institutions for such large numbers of people. It may even be better to continue to follow indigenous treatment with some input from psychiatrists in the large majority of these cases, as, for example, in Nigeria where the psychiatrist, Dr. T. A. Lambo, originated the world famous Aro Village Scheme, known particularly through the film illustrating how rural patients lived in a village community, consulting indigenous practitioners while receiving treatment under the supervision of modern psychiatric personnel. Another example is that of the Navajo reservation, where Navajo medicine men have been trained to work in conjunction with the Department of the Interior's Public Health Service, and with Dr. Robert L. Bergman, a psychiatrist, in particular (Leighton et al., 1963; Bergman, 1976; Luce, 1971).

Physicians of any specialty once they have been trained in Western medicine prefer to practice where they can obtain a financial return commensurate with the cost of such training. Therefore, the rural areas of India may continue to have relatively few practitioners of Western medicine.

A recent study of two regions of India, Kerala and the Punjab (Neumann et al., 1971) has shown that indigenous curers, who were classified as *vaid*s (Ayurvedic system), *hakims* (Unani system), or the homeopaths or generalists, borrowed concepts and treatments from all

of the systems and that many of them also used the drugs of Western medicine. These indigenous curers, first having been located through the help of villagers, were interviewed and observed while diagnosing and treating patients. Most of them were educated through higher secondary school or beyond with a few having gone to college but not having obtained degrees. Although a number of them had attended Ayurvedic or Unani institutions, some of them had only been apprenticed to other indigenous curers. The most interesting finding was that many of the practitioners used some drugs of Western medicine, and more than half of them used all kinds of Western medicines, including some quite strong biotics. In the Punjab region, a number of the practitioners were found to be primarily priests and shopkeepers. Some of these men were among the wealthiest in their village. "The busier and financially most successful I.M.P.s [Indigenous Medical Practitioners] were with few exceptions those who used modern medicines most extensively" (Neumann et al., 1971, p. 143). The data indicate that the practitioners based most of their diagnoses on patients' complaints although some used stethoscopes and gave limited examinations. The study also reports that most of the patients traveled no more than 2 or 3 miles for the services and paid on the average Rs. 2, or slightly less. This study indicates that the "wonder drugs" of the West have inundated India, but that the associated Western medical system has not necessarily been a part of this inundation. Whether Western medicine will catch up to the spread of the drugs is still to be seen.

Major governmental programs that reduce disease are the provision of adequate sanitation facilities, especially the proper handling of sewage and a supply of pure water, the systematic inoculation of the population against serious contagious diseases, such as smallpox, and the suppression of animal vectors carrying disease. India (1975, p. 85) reported that in March 1974, only 4.3 percent of the rural population had a piped water supply. The rest of the population used hand pumps, wells, or springs. Some villages did not have any water supply within 50 feet or as far as 1 mile. To

the extent that pure drinking water is unavailable to a large majority of villagers, it will be difficult to control a number of endemic and epidemic diseases, some of which are not as yet preventable by inoculations. Inoculations, however, are not infallible, nor does everyone receive them even when they are available.

One of the most serious diseases that appears to be resurgent is smallpox. Anyone who has not had the disease or has not recently been vaccinated can come down with this illness, and it can be particularly virulent for those who have never been inoculated against it. Because vaccination does not give lasting immunity, it is not possible to eradicate the disease completely. The disease has three forms, and it is possible that it has shifted genetically over time. Regardless of its form, it is transmitted in the same way as cold viruses, that is, through the air from host to host (Imperato, 1975, pp. 8-11). Thus, should there be an outbreak in a population with little or no immunity, a very bad epidemic could result. With inoculations, people come to believe that diseases such as smallpox have been eliminated; they then no longer continue with vaccinations and as a result the population may be subject to an epidemic. When such epidemics occur, faith in public health measures is lost, because people incorrectly assume that vaccination was ineffective. It is obvious from this example alone that education for sound health practices would seem to be essential if contagious diseases are to be controlled.

Successful public health programs such as those to exterminate malaria, get rid of rats, provide clean drinking water, and the like depend on many variables, including the number of people involved, their cultural backgrounds, shifts in the genetic bases of diseases, and resistance to insecticides, making it difficult to

provide an immunizing agent. The recurrence of famines in India as a result of excess population, exhaustion of the soil, and the failure of the rains also can contribute to epidemics through the lowering of resistance to disease, which in turn can contribute to lack of faith in Western medicine and a return to reliance on the beliefs of Hinduism and on traditional medical theories. For these reasons, although the trend in Shanti Nagar appeared to be away from such beliefs as the evil eye and spirit possession as causes of illness, in times of stress they may be revived if they provide relief from anxiety.

When people are ill, they search for the simplest, most available and effective remedy for their suffering. On the basis of these criteria, Western medicine will have to compete with other theories of illness and methods of treatment. In some respects and for some ailments, Western medicine has an advantage; in other respects and for other illnesses, indigenous treatment may be viewed as superior by villagers. Its "wonder drugs" probably give Western medicine an edge in demonstrable effectiveness. If Western medicine can improve its position with regard to availability and cost, and can adapt itself to Indian cultural concepts of illness, it should increasingly be used. However, the drugs of Western medicine have been incorporated into other systems of treatment. Therefore, for the foreseeable future, all current medical systems will probably continue in use. In the long run, the various medical systems might tend to lose their distinctiveness and merge into a single integrated system of Indian medicine, or aspects of Western medicine may become a part of the folk tradition of curing as has been the case with humoral theory in many parts of the world.

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1. This index also serves as a glossary. Each Hindi word used in the text, not listed in Webster's *Third New International Dictionary of the English Language, Unabridged*, has its own entry. The reader should refer to the listed pages, usually the earlier ones, for a definition.

- curers. *See* Ayurvedic physician, bhagat, bonesetter compounder, dentist, exorcist, fakir, hakim, midwife, Navajo medicine man, obstetrician, *ojha*, ophthalmologist, optician, optometrist, sadhu, shaman, *siyana*, swami, vaccinator, *vaid*, veterinarian, Western physician
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