

LEPER COLONIZATION OF KENGTUNG STATE, BURMA

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To attack the leprosy problem from the public health point of view it is desirable to get the infectious leper away from contact with nonleprosy persons, and to prevent noninfectious cases from becoming infectious so far as our present knowledge allows. In order to prevent the infectious individual from coming into contact with nonlepers, he must be isolated either in a special compound or in an asylum or colony. With regard to the Kengtung Shan State in Upper Burma, the large number of lepers—over 4,000 in a population of 230,000—and the general ignorance of the people make colonization the only practical public health method, at least for the time being. As time goes on and a general program of education of the public is advanced, it may be possible to undertake individual isolation on a large scale.

The establishment of leper colonies in this region has many special difficulties. In the first place adequate funds are not available. The state, some 12,000 square miles in area, has no large industries or other means of getting a large income from taxes. The density of population is about 20 to the square mile, the people living in small villages of 20 to 300 people each except in a few large centers. The country is one series of mountains after another, with fertile valleys between them. So far as the leper is concerned the mode of travel is by foot. From the outside districts on the border of the state it takes six days to come to the center, and lepers may take two to six days longer. Thus to the lack of funds is added the difficulty of communication.

There are many different peoples in Kengtung, all with different customs and languages. It happens that the major numbers of cases of leprosy appear among the Shans and the Lahu; but even among these people there are different dialects, causing considerable difficulties in administration.

Finally, there is the difficulty of obtaining sufficient and proper food. There are only three sections of the state which produce sufficient rice or other foods to supply colonies of over

100 or 200 inmates. One colony in the northern part of the state, situated where leprosy has its highest incidence, has grown so large that the demand for food is greater than the supply, with the result that for two to four months of the year the inmates are underfed.

GENERAL NATURE OF THE COLONIES

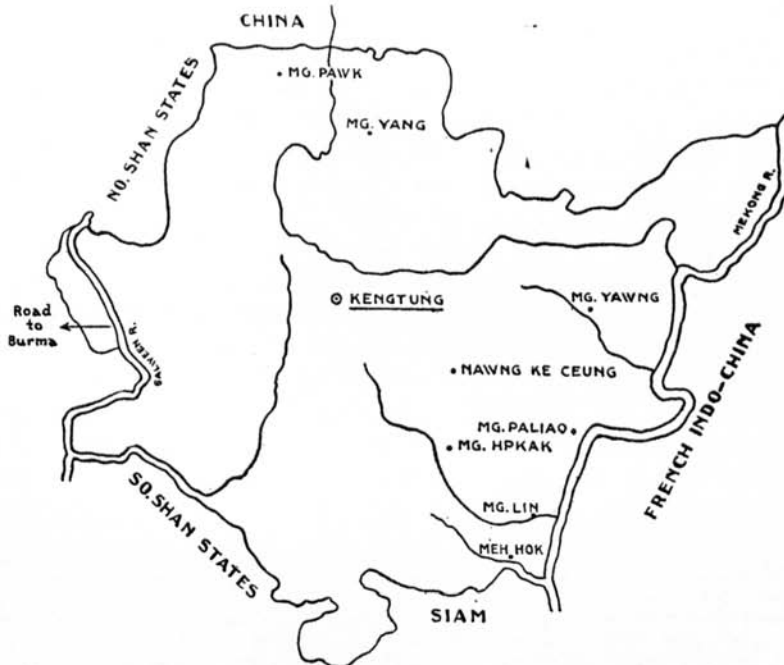
The general nature of the colonies that we undertook to establish was based on two principles: (a) the inmates should be made to feel contented, and (b) the colony should be run at minimal expense, the amount of money available being very limited. The farm colony was adopted as the type. At first it was possible to use medical assistants paid from other funds to organize the institutions and administer treatment. This, however, could not be permanent and these workers have been entirely replaced by leper assistants trained in the central colony. At first assistance was given for building the houses, and injections are given freely. As funds increased, rice and salt were given. Gardens were made by all, supplying the necessary vegetables.

In general the routine of all the colonies is the same, due to the fact that all of them are managed by men trained in the central one at Kengtung. When possible these men were accompanied by two to twenty others from the central colony, who lived in a section of the new one. Without exception the most successful colonies are those which have a good nucleus of inmates who have had that experience. The great difficulty of this step was that it was much like living in the Court of the King and then having to go out and make one's own living by farming. In the central colony all physical needs were provided for, even to a small sum of money for meat each week. Clothes were given. In case of serious illness a trained doctor could be called. In the outside colony only injections and rice were given. In spite of this difficulty the satisfaction of living among people of their own dialect and in their own home surroundings seemed to offset the deficiencies.

ESTABLISHMENT OF THE CENTRAL COLONY

The central colony was started in 1929 under the most favorable circumstances—that is, under circumstances most favorable in which to learn. There was no money, there was no place for the lepers to live, but there were plenty of them asking for help. The colony started with two patients and three dependent non-

leper children, supported by the writer's personal funds. By the end of six months there were five patients. In 1930 a total of 23 were established in and near a graveyard at the town of Kengtung. Two years later there were 80 inmates and in 1938 the number was 225.



TEXT-FIG. 1. Keng Tung Shan State, Burma (width and length approximately 150 miles), showing locations of the American Baptist Mission leper colonies.

This small beginning gave the fundamental information needed in all of the colony work. How much rice was needed for one inmate for one week? Easy as the answer to this question may seem, it took three months to determine without prejudice what was the fair amount. This single point is the most important one for the most strictly economical operation of a colony. It is desirable, if possible, to add a little extra for the needs of the watch dog, and for the chickens and pigs which are so essential to the farm colony. Other questions were the amount of salt needed per month, the rate of wear of different kinds of cloth when made into clothes, and of blankets. Ordinary cloth made in India or Japan would do for six months. Native home-spun cloth made suits which would last a year. Cotton blankets of the cheapest kind would last nearly a year,

and as there are only four cold months it was satisfactory to give a new blanket at the beginning of the cold season. Home-spun blankets could be made to last two years without difficulty.

The food question was not disposed of once we determined the weekly amount needed. The stock of paddy for the year must be bought within three months after the crop is harvested; a saving of 20 to 50 percent can thus be made. It would be easiest for all concerned if several months' supply could be given the lepers, they to store it in their own houses. After several attempts it was discovered that more than one-half of the people of this country cannot conserve a limited amount of food. Repeatedly when a month's supply was given the patients would come back hungry after three weeks, with absolutely nothing left to eat. Though they would be reproved and warned it did no good; the psychology of the people was against such a procedure. We could hardly let the leper go hungry for a whole week, neither would our limited finances allow for issuing this increased amount of paddy. Weekly distribution had to be resorted to, because it was found that if the leper could not keep a seven days' ration it was possible for him to go hungry for one or two days without serious consequences. In fact that situation was an excellent disciplinary measure.

The matter of medical treatment, both that specific for leprosy and that for other sicknesses, was developed slowly and the most effective as well as fool-proof methods possible were evolved. At first everything was done by the doctor and needles were properly sterilized. That which was easy for the doctor was incomprehensible to those ignorant of the germ theory. Carefully sterilized needles would be touched by fingers, or wiped on dirty clothes. Based on the supposition that once a man has leprosy the injection of a few more leprosy germs would in no wise alter the status of his disease, a method of keeping the needles and syringes covered with hydnocarpus oil with 4 percent creosote was tried out. These implements were first sterilized, but thereafter they were kept wet with the medicine. Abscesses of course develop at times with any technique, but it was found with this one there were fewer than with hot oil sterilization under the same circumstances. This of course does not mean that the latter method is not superior, but in the hands of ignorant assistants the one adopted proved very satisfactory.

The giving of other medicines had to be done in the simplest of ways. Bottles labeled "quinine mixture," "stomach mixture,"

"diarrhea mixture," etc., are provided, the formula being such that the dose of each is one teaspoonful. This is the extent of medical treatment that can be expected. With malaria, the most frequent ailment, this simple method has proved fairly satisfactory. Treatment of ulcers and abscesses consists of routine cleansing and the application of such ointments as may be supplied.

Evolution of discipline.—Discipline has had its secret from the small beginning. The earlier inmates learned that every rule established must be followed if they were to live together. They learned to respect the persons conducting the work. When at one time a "walk out" was threatened it was the old standbys who turned the tide and reestablished peace. In each colony a group of influential men is selected to whom are brought all of the problems of the place—as, for example, how many hours each day they shall work, and what time everyone must be in his house—and any cases of wrong-doing are taken up and punishment inflicted by them. If for any reason it is felt that the management is failing to do something that it should do, this group of men can bring the matter before the superintendent. Certain problems too large for them to settle will finally be brought before the superintendent, but the majority of questions are settled in this council of respected men.

One of the most important aims that any colony has is the happiness of the inmates. Any such institution with adults living in it, whether they are limited to one sex or not, will have problems of morality. It has been the policy to make these farm colonies as much like model villages as possible. This results in practically all of them having some unmarried individuals. Married couples are allowed to live together. At the outset if leper couples came to us with uninfected children we felt it better to take the children with the parents rather than have the parents continue to live in the village with nonleprous people. Homes for uninfected children of lepers have been started in three places, and in time these children will be properly cared for. Any leper man who wishes to marry must first be sterilized (this is done under local anesthesia, the vas being cut and tied). Lepers who are already married when they come to us are not required to have this operation performed, but many have submitted to it voluntarily. Frank immorality is dealt with as the most serious of crimes. This was necessary because in their home villages immorality is more or less universal. Public chastisement in the form of a whipping is the expected punishment.

Religion is another important factor in the growth and happiness of the colony. No leper is required to become a Christian; the dictates of his conscience are the guide for every person. Over eighty percent of the lepers have accepted Christianity and find therein great comfort. The ideal that people should live together in love and helpfulness adds much to the morale of the institutions.

DEVELOPMENT OF OUTSIDE COLONIES

Two years after the establishment of the central colony, when it had grown from the original two patients to 80, attention was turned to the establishment of several "outside colonies." In order that we might better know the general distribution of leprosy in Kengtung State, and also to have some sort of basis by which to estimate the total number of cases, a census was undertaken. Because of lack of funds we could only send a single man to the various villages, where he simply inquired about the number of known lepers; no attempt was made to make diagnoses or to seek for contact cases.¹ On the basis of the information thus obtained the locations of the outside colonies were decided. The leaders of these places were trained in the central colony, which it is to be understood serves as the headquarters of the work. Any new custom or medicine is tried out there, and if found to be of general value it is made a permanent thing in the others.

The Mong Hpayat colony.—The first colony was started at Mong Hpayat, situated a three-day journey from Kengtung. This place was chosen because a dispensary was maintained there and the man in charge could oversee the colony without added expense. As with all of the outside colonies, a grant of land was obtained from the local official. Free treatment and a little help in building their houses was all that was offered the patients to induce them to stay there. In this section there were Lahu as well as Shan lepers. The Lahu lived in a place chosen by themselves while the Shans lived in the area given by the officials.

From 40 to 60 lepers came to this colony for treatment, some from as far as a three-day journey away. There are many more in the area, but those who came first discovered after a few months that they were not completely healed—in fact most of

¹The numbers of lepers found in such surveys, to date, are given in an addendum at the end of this article.

them showed only slight improvement—and they also found that the food problem was more than they could master, and in consequence many of them returned to their homes, where food was plentiful. It was realized that the reason for establishing the colony, to keep lepers from living with uninfected relatives, was being defeated. There having been a slight increase of funds available for the leper work we began to give paddy to the colonists. This held the remaining ones, but the psychological time for establishing a large colony had been lost; even those lepers who had come and gone back home did not return. In 1938 there were 43 patients here.

Two years after this colony was started it was realized that the Lahu inmates, people who naturally live in the hills, were not doing well in the malarious plains of Mong Hpayat. We therefore transferred them, about 15 in number, to a mountain-top some fifteen miles away. This colony (Nawng Ke Ceung) will be described shortly.

For the next two years Mong Hpayat showed no increase, and a leper trained in the central colony was placed in charge. A year later it was decided that the colony should be moved. When that was done, after many undesirable places had been suggested, the transfer was only for a distance of about 50 yards, but the new situation allowed for new interest and an increase of the gardens, and new patients at once began to come in. The colony of 25 has increased to 45. Moving is one of the dreads of the administration, for it costs about five rupees per house besides various extras unexpected at the time of making a budget. With the moving, however, there is usually an increase in the numbers of inmates as well as improvement of morale, so all is not lost.

The Mong Yang colony.—This colony, also, was started because there was a dispensary situated in this valley and the man in charge could develop the place without added expense. In Mong Yang the Roman Catholic Mission had a leper village to which they gave small grants at irregular intervals. Our offer to treat these lepers free until such time as the Catholic mission should be able to carry on treatment work was accepted, and our colony was started within a quarter of a mile of their village. Mong Yang is within two days of the Chinese border, in a section where the incidence of leprosy is much less than at Mong Hpayat. The total number of inmates, including those of the Catholic village, was about 20. For three years this colony failed to grow. There were other lepers about, but the site chosen

was poor; it did not allow for adequate growth, was hard to get to, and was generally undesirable. At first a little help was given in the way of paddy, but this was not a sufficient attraction.

After three years of poor development a new site was given by the local ruler. A leper assistant was placed in charge of the work, and some 15 patients from the central colony who had originally lived in this area were transferred to the new site, together with most of the old inmates. An adequate paddy supply was provided for and the colony began to grow, and within a year's time the number of inmates had reached about 70. This number seems to be about the maximum that can be expected in that section unless official orders force the few remaining lepers into the colony. All these patients are Shans. According to an agreement with the local official none from China are to be accepted.

The Mong Pawk colony.—This colony of Lahu lepers is located nearest the Chinese border—about two days travel from it—and four to five days from Kengtung, in a section from which more patients have come to the central colony than from any other one place. The lepers from there assured us that they were only a fraction of the actual number. The beginning of this colony, which was started from the first by a patient trained in the central one, helped us to lay down general principles by which all outside colonies could be established. The lepers in the central institution belonging to the area of the new colony to be established would be told that they must return as soon as the colony was started. The leader would go and make arrangements with the local rulers for a plot of ground. Paddy would be bought and then, at a favorable time of year, the lepers would go and build their houses. Once this nucleus is started other lepers who come slowly can live with some one there until their own houses are finished. The assistant in charge has his house built for him, usually by the lepers, the mission paying for the materials which must be bought. A reasonable number of hoes, dahs and axes are supplied.

More than 25 lepers were sent from the central colony to Mong Pawk as soon as the site had been chosen. The jungle was cleared and houses grew, as it were, in the place of trees. Lepers began to come. The colony was started in March, 1935, and by the end of the year there were 86 inmates and 54 outpatients, a total of 140 under treatment. Six months later there were 136 residents, the total under treatment being 186. After

reaching a total of 200 the increase began to slow up, not because there were no more lepers wishing to enter the colony but because there was not enough paddy in that section of the country to feed so many. The number in 1939 is over 250, those in the colony being 200 and the outpatients being about 50. Besides making gardens the lepers have highland fields, and a few lowland rice fields are also worked. In this colony, besides a limited amount of paddy, salt and clothes are also given. With an unlimited food supply it could easily reach 300 inmates.

The Mong Lin colony.—The next one to be started was Mong Lin, a Shan colony two days from the Siamese border and five days from Kengtung. A leper from this locality who had been trained in the central colony was sent to start the work. This man was admirably fitted for the purpose and under his care the colony grew to some 50 inmates, but he was not fitted to strengthen and establish the institution once it was started, so after one and one-half years another man better qualified for teaching and writing was sent there. It became necessary to move, because when the high waters came the area proved to be too low. Even the second location was not entirely satisfactory, for twice last year a foot or two of water flooded the place. The paddy has always been supplied the inmates here, but building conditions have been difficult and it is because of this fact, and also the fact that Shan lepers are allowed by their relatives to live at home, that many of those in this section have not come to the colony. It has remained with 70 inmates for two years.

The Mong Yawng colony.—This colony, with a Shan population, is the one most distant from the central institution. It was started by a local preacher who had had some medical experience. Lepers were treated in his house, and at best the colony was very poorly conducted. Later a trained leper assistant was placed in charge and it grew to 35. This assistant, of peculiar mind, suddenly decided to move and took leave without permission and left the place without supervision. The lepers then began to leave. Recently a new leper assistant was sent out and the support for the place was markedly increased—that is, more paddy was given and a little money was offered—and the lepers began to come back rapidly. There were 70 of them in 1938, with indications that the number may reach 100 within a short time, which will make it our largest outside Shan colony. Because of the rapid increase, the old site has

become inadequate and the colony is now in the pains of moving, which should result in marked improvement.

The Mong Pa Liao colony.—This place, one day from Mong Lin, was started by the same man who started the latter colony. He has never been able to bring in more than 15 to 20 patients, so it has never prospered; there has been no increase in three years. The inmates have been urged to join the Mong Lin colony, but so far they have persisted in remaining where they are. With so few inmates the relative cost of supervision is too great, and it is undesirable to maintain so small a colony.

The Nawng Ke Ceung colony.—The establishment of this Lahu colony, half way between Kengtung and Mong Hpayat, as an offshoot of the latter colony has been mentioned. A native of the region, a leper in excellent condition, was put in charge but he proved too lazy to keep the place going efficiently. Some 12 patients were then sent from the central colony, among them a new leader. In six months time there were 80 inmates, and 122 in 1938. Paddy has been very difficult to obtain, about one-half of it being secured from Mong Hpayat and carried two miles up a steep hill on the lepers' backs. Unlike the situation at Mong Pawk, there are no outpatients coming for injections. This colony is unfortunate in having two kinds of Lahu, the black and yellow, with the result that there are many internal difficulties and peace is not yet established. About every three months something has to be done to settle their political troubles.

The Meh Hok colony.—The last colony to be formed, in a Shan valley with a few Lahu, was established because of the large number of lepers in the area and is now two years old. It is within five miles of the Siamese border and about six days from Kengtung. The first leader was unable to keep accounts or buy paddy. A new leader from the central colony was sent there and marked improvements and increase in the colony has taken place, but the old leader is jealous and is leading a minor revolt. The present number of 40 inmates should be doubled if all the available lepers come in.

PRESENT CONDITION OF COLONIES

The general routine of the colonies is much the same. Injections are given twice a week with a rest of a month after three or four months of continuous treatment. A work period of two hours each day is required except on "big bazaar day" (which occurs every fifth day) and on Saturdays and Sundays.

In the central colony morning exercise is taken for twenty minutes. Monthly reports from each of the outside colonies, giving the numbers of inmates, new cases, deaths, discharges, and injections given are brought in by the lepers themselves. These people take back the money required for salaries, to buy paddy and for any special building that may be going on. So far it has been impossible to supply clothes to all the inmates. This is not important for the first year or two but after that the need for new clothing is acute.

The assistants in charge receive five to seven rupees (about two to three dollars) per month, besides their food. For every 25 to 40 patients a trained injector is provided. The training of the injector consists in some lectures on the diagnosis and treatment of leprosy, besides practical supervision in injecting. These injectors receive one rupee (about forty cents) a month.

Without question, the most important single factor for keeping the outside colonies in shape and for settling the troubles that arise in them has been personal contact. This contact has been supplied by the cosuperintendent, Rev. Mr. Raymond Buker, the brother of the superintendent. His knowledge of the Lahu and Shan languages and of several of the Shan dialects makes it possible for him to talk directly to those concerned. In his frequent visits to the colonies he gives instruction in hygiene and has one week a year of Bible study, which involves the teaching of the patients to read by the latest short method. They are also encouraged to have regular study periods, and as a result over one-half of them can read and some can write, a circumstance which adds greatly to their independence.

SUMMARY

With at first a budget of less than one rupee (forty cents, U. S. currency), per month per leper, which amount has been increased by one-half and in some cases doubled, we have established nine colonies in which more than 900 lepers are receiving treatment at the present time. Medical treatment has not been the best, because the expense of providing trained doctors is prohibitive. It is hoped that as the state and central governments become more interested, there may be financial aid to make more medical supervision possible. Until that time the plan is to emphasize the public health aspects of the work, together with a slow strengthening of the present colonies. Routine bacteriological examinations and other laboratory procedures must await

an increase of trained medical personnel. So long as the lepers remain happy the rest of the work can proceed according to the funds in hand.

ADDENDUM

The numbers of lepers found during the sample surveys that have been made in Kengtung State are given in Table 1. The cases are classified as to race, and also sex of adults, children under 16 years of age being listed together. No age grouping is attempted for the reason that the ages given by these people are always relative and inaccurate; they may be at least five years off from the actual, at least in the older age groups. Under the conditions of the surveys it is impossible to arrive at incidence figures of any accuracy.

TABLE 1. *Data on lepers discovered in sample surveys in Kengtung State.*

Race	Men	Women	Children	Total
Lahu.....	167	121	25	313
Shan.....	148	64	11	223
Kaw.....	27	8	2	37
Kachin.....	24	9	3	36
TOTALS.....	366	202	41	609