LEAGUE OF NATIONS

Health Organisation

INTERGOVERNMENTAL CONFERENCE OF FAR-EASTERN COUNTRIES ON RURAL HYGIENE

PREPARATORY PAPERS :

1. Note on Public Health Organisation in Burma
2. Note on Medical Organisation in Burma

GENEVA, 1937.

European Conference on Rural Hygiene

(June 29th-July 7th, 1931.)

REPORT OF THE PREPARATORY COMMITTEE on the Principles governing the Organisation of Medical Assistance, the Public Health Services and Sanitation in Rural Districts. (C.H.1045.) (Ser. L.o.N. P. 1931.III.7.)... 2/- $0.50

PROCEEDINGS.

Volume I. RECOMMENDATIONS on the Principles governing the Organisation of Medical Assistance, the Public Health Services and Sanitation in Rural Districts. (C.473.M.202.1931.III.) (Ser. L.o.N. P. 1931.III.11/I.) 2/- $0.50

Volume II. MINUTES. (C.473.M.202.1931.III.Vol.II.) (Ser. L.o.N. P. 1931.III.11/II.) 6/- $1.50

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REPORT ON THE WORK OF THE CONFERENCES OF DIRECTORS OF SCHOOLS OF HYGIENE held in Paris, May 20th to 23rd, 1930, and in Dresden, July 14th to 17th, 1930, with a Memorandum on the Teaching of Hygiene in Various European Countries submitted to the Dresden Conference by Professor Carl Prausnitz and an Introduction by Professor Léon Bernard, Chairman of the Commission on Education in Hygiene and Preventive Medicine. (C.H.888.) (Ser. L.o.N. P. 1930.III.10.)... 5/- $1.25

The following articles on Rural Hygiene will be found in the *QUARTERLY BULLETIN OF THE HEALTH ORGANISATION:*

Volume II, No. 1 (*Typhoid Fever in Rural Areas*).

Volume III, No. 1 (*The Best Methods of Treating Manure-heaps to prevent the Hatching of Flies*).

Volume III, No. 2 (*Fly-free Manure-heaps*). (*Fly Control in Denmark.*)

Housing Policy.

LA QUESTION DE L'HABITATION URBAINE EN FRANCE, par Etienne Dennery, professeur à l'Ecole libre des Sciences politiques (Paris). (French text only.) (C.H.1165.) (Sér. P. S.d.N. 1935.III.3.) 5/- $1.25

THE HOUSING POLICY IN THE NETHERLANDS, by H. van der Kaa, General Inspector of Health, The Hague. (C.H. 1165(*a*).) (Ser. L.o.N. P. 1935.III.4.) 102 pp..... 2/6 $0.60

RAPPORT SUR LES HABITATIONS POPULAIRES ET ÉCONOMIQUES EN ITALIE, par le Service technique central du Conseil supérieur du Ministère des Travaux publics d'Italie. (French text only.) (C.H.1165(*b*).) (Sér. P. S.d.N. 1935.III.5.) 3/- $0.75

LA QUESTION DE L'HABITATION URBAINE EN POLOGNE. Ouvrage rédigé sous la direction de Jan Strzelecki, directeur de la Société des Habitations ouvrières. (French text only.) (C.H.1165(*c*).) (Sér. P. S.d.N. 1936. III.1.) 5/- $1.25

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INTERGOVERNMENTAL CONFERENCE OF FAR-EASTERN COUNTRIES ON RURAL HYGIENE

(*Bandoeng (Java), August 3rd to 13th, 1937.*)

NOTE ON PUBLIC HEALTH ORGANISATION IN BURMA

by

Major C. A. BOZMAN, I.M.S., Offg. Director of Public Health, Burma.

INTRODUCTION.

The area under regular registration in Burma comprises 116,848 square miles with a population of about 12 million people, of whom about 10½ millions reside in rural areas. Besides the above, there are certain districts where registration of vital statistics is either defective or non-existent. These comprise an area of 114,737 square miles with a population of about 2½ millions.

There is a separate service of public health under a Director of Public Health, whose department comes under the Ministry of Education and Public Health of the Local Government.

There are forty districts in Burma, in each of which is a district headquarters situated, usually, in the principal town of the area. The next subdivision is the township with its administrative officers, while for purposes of district council board administration there is a unit smaller than a township called a circle.

Public health problems in this country change considerably as one passes from Lower Burma—*i.e.*, the wet zone—to Upper Burma, the so-called dry zone.

S. d. N. 1.405. 3/37. Imp. J. d. G.

PERSONNEL OF THE DEPARTMENT.

A. Headquarter Staff.

The Director of Public Health.

The position of the Director of Public Health may be briefly summed up by stating that he is the head of a department serving directly under Government, and is the adviser to the local Government on all questions concerning public health. The nature and full scope of his duties were laid down in General Department Circular No. 24, dated April 27th, 1908.

Assistant Directors of Public Health.

There are at present two Assistant Directors of Public Health ; they have their headquarters in Rangoon at the office of the Director of Public Health. They divide between them duties in connection with sanitation of urban and rural areas, accounts, epidemiology, propaganda and publicity, statistics, vaccination, epidemics, school medical inspection, maternity and child welfare and port health measures. Both these officers are, also, partly employed in teaching, and they tour throughout the country as necessity demands. In the report of the Burma Public Health Department Reorganisation Committee in 1929, it was stated that the existing staff of two Assistant Directors sanctioned in 1913 was insufficient and that an additional Assistant Director was necessary if the activities of the department were not to suffer. The necessity of appointing a third Assistant Director of Public Health was again referred to the local Government at the beginning of this year.

Hygiene Publicity Officer.

This appointment originated in 1924 and lasted up to the end of February 1932, when it was held in abeyance owing to financial stringency and has remained vacant ever since. The primary duties of this officer were (1) to prepare all necessary health publicity materials, including type lectures, pamphlets,

Press articles, magic-lantern slides and cinema films, (2) to organise special educative campaigns in the presence of epidemics and (3) to work with and assist voluntary health education organisations throughout the province, such as the Health Education Section of the Red Cross and various child welfare societies, etc. A sub-assistant surgeon has been entrusted with this work during the past five years. Recently, he has found it impossible to comply with all the requests he has received for his services in the districts. This illustrates the considerable and steady development in this form of health activity that has been taking place.

B. Field Staff.

The information contained in the report published in 1928 by the Health Organisation of the League of Nations, inasmuch as it refers to the whole-time field staff whose services are available under the Director of Public Health, has to be considerably modified, as recent years have seen many fundamental changes and a slow but steady advance.

District Health Officers.

There are at present four whole-time district health officers in Burma. The first three were appointed in 1930, and the most recent appointment has been made possible by Insein District Council agreeing to avail itself of the services of the officer in charge of the Hlegu Health Unit that has functioned in a township of that district for some years. These four officers have special post-graduate training and hold diplomas in public health. The authority for their appointment is contained in a Government notification made under Section 21 of the Rural Self-government Act.

It should be explained that the Burma Rural Self-government Act of 1921 has been applied to twenty-eight out of the forty districts in the country. Section 21 of the Act authorises the designation of a civil surgeon as district health officer in these twenty-eight districts ; in four, however, this officer has been relieved of his district public health duties by the appointment

of whole-time district health officers. The duties of the twenty-four civil surgeons who serve as district health officers and the four whole-time district health officers are laid down in Note 3 of sub-section (6) of Section 21 of the Burma Rural Self-government Act of 1921, which runs as follows :

> " Most district councils, therefore, employ as health officer the civil surgeon of the district. The position of the civil surgeon as district health officer is that of an executive officer of the Council and as such he has no direct powers of control over the district sanitary, vaccination and conservancy staffs, who are employed and paid by the district council unless such powers are delegated to him by the council under Section 80 (1) (*e*) of the Act. The civil surgeon in his capacity as civil surgeon is of course, in a position to report either to the Commissioner or to the Director of Public Health any failure on the part of the district council in regard to its duties in connection with public health administration. Beyond this, however, he is not in a position to interfere with the subordinate staffs who are employed by the district council and are, therefore, subject only, in the absence of further regulations, to the orders of the council. Unless such powers are delegated to him, his functions as district health officer are advisory only."

In the eleven districts out of twelve to which the Act does not apply, a civil surgeon is designated by custom district health officer.

Whole-time Assistant District Health Officers.

A cadre of five was sanctioned in 1924, but, since 1931 until the present year, one post has been held in abeyance on account of financial stringency. It is now proposed to fill this appointment. Of the four officers serving in this capacity, three have received special post-graduate training in public health work, in which they hold a diploma, and it is hoped that the fourth, the latest recruit to this cadre, will shortly go to Calcutta to study for the diploma in public health. The idea behind these appointments is that these officers should be promoted in due course to the status of whole-time district health officers.

Civil Surgeons as District Health Officers.

It should be understood that the Burma Rural Self-government Act of 1921, in the twenty-eight areas to which it has been extended, places the control of the district health staff under the district council. The civil surgeon of each district, who is *ipso facto* district health officer, may be delegated under Section 80 (1) (*e*) of the Act with the powers invested in the district council, and in all these twenty-eight districts most of the district council's powers in respect of public health duties have, in fact, been thus delegated. In the eleven districts to which the Act does not apply, the present position is that the civil surgeon is considered by the local Government to be the district health officer, and in his hands are placed direct and complete powers of control over the district health staff, who in this case are employees of the Deputy Commissioner's Local Fund. The above represents the position of the civil surgeon as district health officer on paper. It should be remembered that these officers have onerous medical duties to perform, and have at their disposal insufficient staff for public health work ; their cordial collaboration in all public health measures is, therefore, a matter for commendation. It has been the view of successive heads of this department that the ultimate and desirable development of the department should lead to these hard-worked officers being relieved entirely of their public health duties in rural areas.

Civil Surgeons as Urban Health Officers.

In those cases where the municipality employs a whole-time health officer, the civil surgeon may be called upon to act in the temporary absence of that officer. The conditions of such additional temporary duties are clearly laid down by the local Government. The Government, further, impresses upon all civil surgeons that it is their duty to be ready at any time with advice on health matters to municipal committees should such be required. In municipalities which do not employ a whole-time health officer, the civil surgeon may be a co-opted member of the committee, and, in such a case, may have delegated to him

the executive powers conferred upon the committee by municipal or other Acts in regard to health matters. In any health matters in respect of which he has not been given such powers, it is his duty to draw the attention of the committee of which he is a member to any action he considers desirable. In those few municipalities without whole-time health officers in which the civil surgeon is not a co-opted member of the committee, it still remains his duty to advise on all sanitary matters. He has, of course, in such circumstances no executive authority.

Responsibilities of District Councils in respect of Public Health Administration in Rural Areas.

District Councils are responsible under Section 48 (*d*) of the Rural Self-government Act of 1921 for " the proper carrying out of all improvements to sanitation and the protection of public health, including prevention of the spread of contagious and infectious diseases among human beings ". The collection and compilation of records for vital statistics is, however, directed from the central office of this department through Deputy Commissioners and village headmen under the Burma Village Act of 1907. We have noted above the necessary limitations consequent on the fact that civil surgeons in those areas to which the Act applies have dual duties entrusted to their charge.

Sub-assistant Surgeons employed on Sanitary and Epidemic Duty.

In December 1924, the local Government sanctioned the temporary transfer of sixteen sub-assistant surgeons from the Medical to the Public Health Department for employment on sanitary, epidemic, vaccination and health publicity work. 1927 saw the inauguration of the Government licence in hygiene class held at the Harcourt Butler Institute of Public Health. These sub-assistant surgeons received training for this licence, it being considered that those of them who passed the examination at the end of the course would be held to have passed their promotion examination. In 1930, a permanent cadre of twenty-two sub-assistant surgeons was sanctioned to this department for employment on sanitary and epidemic duties

throughout the district ; to this there were added later five temporary posts. In 1933, owing to financial stringency, these five temporary posts were abolished, and the permanent cadre was reduced from twenty-two to nineteen. The local Government, however, agreed that, should the epidemic situation require it, three men could be employed on a temporary basis. These three posts, owing to the demands from the districts, were actually filled continuously from January 1935, and, in that month, it became necessary to get sanction for five extra temporary posts, which, with the exception of short intervals, were also continuously filled. In 1936, representations were made to the local Government to the effect that the total of sub-assistant surgeons was inadequate (five of them had to be employed in special posts, details of which are given later). A proposal to increase the permanent cadre of sub-assistant surgeons to thirty-four was recently agreed to by the local Government. At the moment, the department employs thirty-one sub-assistant surgeons, of whom twenty-five are on a permanent basis and six on a temporary basis awaiting confirmation. From this total of thirty-one, five are now employed on special duties :

(1) Assistant to the bacteriologists of the Harcourt Butler Institute of Public Health ;

(2) Assistant to the officer in charge of the Malaria Bureau of the Harcourt Butler Institute of Public Health ;

(3) Officer in charge of the Rural Uplift Centre, Tatkon ;

(4) Sub-Assistant Surgeon in charge of hygiene publicity work ; and

(5) On special deputation to Rangoon Corporation.

The Burma Public Health Department Reorganisation Committee, which sat in 1929, visualised the employment of forty-eight sub-assistant surgeons in Burma, and there is no doubt but that this total of forty-eight should still be aimed at. New recruits are always given a course of training at the rural Health Unit, Hlegu, before proceeding to the districts. For the type of work in the districts on which these men are

employed, it is the policy of this department to utilise the services of Burmans only. It is hoped that the placing of the cadre of the sub-assistant surgeons of this department on a permanent basis will remove one of the main difficulties of recruiting which has been experienced in the past.

Public Health Inspectors.

The employment of these officials in municipalities is governed by Section 43 of the Burma Municipal Act of 1898 as subsequently amended. The policy of the local Government may be summed up by explaining that it insists that properly qualified public health inspectors be appointed in sufficient number in every municipality. In 1913, a sanitary inspectors' training-class was opened under the control and management of the health officer of the Rangoon Municipality. In 1921, this arrangement had to be altered. The control of health affairs in Rangoon City had, by then, been placed in the hands of a corporation, and the development of district councils under the Act of 1921 created a demand for many more public health inspectors in urban and rural areas. A training-class was therefore opened by this department in 1923. This class was held regularly from 1923 to 1933, by which time 213 public health inspectors had been trained. Originally held at the Government Medical School, Rangoon, the class was transferred in 1927 to the Harcourt Butler Institute of Public Health, which had then been opened with the idea that the training of these men should be one of its activities. In 1934, the class was discontinued, as investigations showed that all the public health inspectors trained had not been employed. It was, however, reopened in 1936, and this year, 1936/37, there are twenty-four men under training. The various subjects taught are allotted to carefully selected teachers, and the syllabus has been approved by the Royal Sanitary Institute, London. A period of one month is spent at the Rural Health Unit for practical field work. The whole course is conducted under the direction of the Director of Public Health himself.

In 1929, the Burma Public Health Department Reorganisation Committee recommended the appointment of a public health

inspector for every circle. This would mean the appointment of 320 public health inspectors in the rural areas ; the total employed at the present moment is sixty-three.

Vaccinators.

A total of 392 vaccinators are employed for duty in municipal and rural areas. These men are trained at a class held at the Vaccine Depot, Meiktila, by the Director of the depot. In both rural and municipal areas, they are the servants of the local bodies concerned, but their technical direction remains the function of the Public Health Department. Originally, a staff of inspectors of vaccination was maintained, but in 1933 it was decided to replace these officials by public health inspectors. In municipal and rural areas, the duties of public health inspectors include maintaining a check on the work of vaccinators, and they receive special training for this purpose. The duties of vaccinators were laid down in 1908 and revised in 1933 in a publication of this department entitled " Notes for the Use of Vaccinators ".

Whole-time and Assistant Municipal Health Officers.

A first-class municipality is one dealing with a population of over 25,000 ; a second-class municipality deals with a population of from 10,000 to 25,000. In the case of Rangoon City, these appointments are solely the responsibility of the corporation. Candidates on first appointment to other first-class municipalities must hold a certificate of competence granted by the Director of Public Health.

Second-class municipal health officers, before appointment, undergo a course of training at the Harcourt Butler Institute of Public Health for the Government Licence in Hygiene and they are expected to pass the examination at the end of the course. Ten health officers have received this instruction, and, of these, six are now employed.

Port Health.

A whole-time staff is employed at Rangoon and part-time staff in other ports of the country. The whole of this work is under the control of the Public Health Department.

Provincial Public Health Board.

Under the advice of the Government of India, a Provincial Public Health Board was formed in 1922 and reconstituted in 1924. The functions of this Board were two-fold, advisory and administrative. In the former instance, it was to aid Government and local authorities with advice on all such matters as pertain to public health. In its administrative capacity, the idea was that funds should be placed at its disposal by Government for contributions to public health projects, such as water supply, conservancy arrangements, etc. For some years until the coming of the financial crisis, this Board rendered valuable service to the country. The present condition is best summarised by the following quotation from Appendix B to the report on the Public Health Administration of Burma for the year 1935 :

> " The Board remained in a state of suspended animation as during the previous year. As no funds were placed by Government at the disposal of the Board, no new sanitary engineering works were financed. The Board's past commitments having been already fully discharged, the allotment of Rs. 500 for unforeseen charges in the budget estimate for 1935/36 was surrendered."

BUDGETS.

For the year 1936/37, the last year for which figures are available, a total of Rs. 10,17,000 was sanctioned for the budget of the central Public Health Department.

In 1934/35, a total of Rs. 62,18,481 was spent by local authorities on public health services. Of this, Rs. 54,39,960 was spent in towns and Rs. 7,78,521 in rural areas. The percentage of income expended by all local bodies on these services was 16.85, the figure for towns being 21 and for districts 7.08. Of the total income of these local bodies from all sources, 2.71% was spent on construction and maintenance of waterworks, 0.88% on drainage and 7.33% on conservancy. A detailed account of these expenditures is attached to this report.

In past years, public health activities in Burma have received steady support from the Burma Branch of the Indian Red Cross Society, and, in 1936, this society made a contribution of Rs. 68,812 towards the following :

(1) The pay of the Adviser on Child Welfare ;

(2) The establishment of the Burma Health School ;

(3) Rangoon Health Week Exhibition ;

(4) Assistance to voluntary infant welfare societies throughout the country ;

(5) Assistance in connection with the Arakan Cyclone Disaster Relief Fund ;

(6) Grants for medical comforts for civil and military hospitals ;

(7) Medical relief in certain distressed areas ;

(8) Publicity and propaganda.

As is noted later, the financial assistance of the Rockefeller Foundation made possible the establishment of a Rural Health Unit in this country in 1929.

Voluntary Contributions.

Infant welfare societies exist in forty-three places in this country. These are voluntary societies maintaining themselves by means of local contributions, contributions which they receive from the municipalities concerned, grants-in-aid by the Public Health Department from its sanctioned budget and contributions, as noted above, from the Red Cross Society.

Health Curative and Preventive Activities.

In this country, the administration of curative medicine is in the hands of the Civil Medical Department under the direction of the Inspector-General of Civil Hospitals.

The policy of the Public Health Department, as far as preventive activities in rural areas are concerned, is to aim at the employment in each district, at any rate where there is no

whole-time district health officer, of a Burmese sub-assistant surgeon on whole-time general sanitary and epidemic duties, to increase the number of public health inspectors employed in the rural areas, to maintain a sufficient staff of vaccinators and to try and increase the cadre of whole-time assistant district health officers, so that, in due course, the number of whole-time district health officers may be augmented. These aims are being slowly realised. In the past, it has been found that the arduous nature of the conditions under which the sub-assistant surgeons of this department have to work and their status as temporary Government employees rendered recruiting very difficult. This latter stumbling-block has now been removed. But there still exists a real difficulty in recruiting Burman sub-assistant surgeons for this work. It must also be admitted that it has not been easy to obtain qualified Burmese graduates of the best type for the post of assistant district health officer.

The duties of the epidemic sub-assistant surgeons are laid down in the Government of Burma (Ministry of Education) Public Health Department letter No. S 29 (R. N. 756), dated October 15th, 1929. They may be summarised briefly as follows : During non-epidemic periods, his time is devoted to general sanitation, verification of vital statistics and vaccination, and public health propaganda work. He is to see that all village headmen are in possession of the necessary registers and are maintaining them properly. He is to inspect school-children in the vernacular schools for physical defects and personal cleanliness ; spleen counts are taken in areas where malaria is endemic and, if considered necessary, free quinine is distributed. In the event of an outbreak of epidemic disease, he is to proceed without delay to the area concerned, investigate the origin and extent of the outbreak and, in consultation with the local authorities, take all possible steps to check the spread of infection in accordance with the instructions contained in the Burma Epidemic Diseases Manual.

The above brief summary is also applicable to the work of whole-time assistant district health officers.

The basis of all preventive work in this country is, of course, education and propaganda. The work carried out by the hygiene publicity branch in the last few years may be said to be resulting

in a steady increase in the health idea of the people of this country, as is evidenced by the response now met with in most areas when epidemic disease breaks out and also by the experience of the officers of this branch when they attend pagoda festivals and mission meetings and agricultural shows.

In Rangoon City, a Health Week Exhibition has been held since 1924, under the direction of the Burma branch of the Indian Red Cross Society, and it is worthy of note that, in 1935, this exhibition was awarded the Bostock Hill Memorial Shield. The example thus set in Rangoon is being copied elsewhere. To the last Health Exhibition there came twenty-five delegates from local bodies, all of whom expressed their intention to attempt to organise similar exhibitions on a smaller scale in their respective towns.

The posters and the various exhibits used in the Rangoon Exhibition were made at the Harcourt Butler Institute of Public Health under the direction of officers of this department, and they are lent to those places that may require them. This department has also maintained a close co-operation with voluntary rural uplift efforts, such as those organised by the Judson College of the Rangoon University and the Rangoon Rural Reconstruction League, who work in various villages in the districts.

Maternity Work.

In 1935, municipalities and district councils in Burma employed 186 midwives, while thirty-four were employed by eleven voluntary child welfare societies. A section of the Burma Midwives and Nurses Act empowers municipalities and district councils, in those areas where it has been adopted, to prohibit untrained midwives from practising. On the whole, experience tends to show that, where the services of a properly trained midwife are available, the people are only too glad to utilise her. It should be understood, however, that no Government organised rural midwifery service exists in this country. The difficulties in supplying the personnel, arranging for transport and financing a scheme of this nature are tremendous. District councils attempt to meet the demands for

this type of service by employing midwives on a system of payment whereby their monthly emoluments are augmented according as they attend cases over and above a certain fixed minimum. This is known as a Results System Midwives Service. Recently, in the rural health unit area, an experiment has been started whereby midwives are employed on a scheme which really amounts to paying a small individual subsidy to each woman. Their work is under the supervision of a trained health visitor and the officer in charge of the health unit. It is too early as yet to ascertain whether this scheme is a success, but, up to date, the results are encouraging. It may be possible gradually to extend this scheme and thus bring more people in the rural areas within the scope of trained midwifery assistance.

Child Welfare Work.

In 1929, the financial co-operation of the Burma branch of the Indian Red Cross Society made it possible to appoint an officer as adviser on child welfare. An English trained health visitor came to Burma that year to take up this duty. Since then, steady progress has been made in this activity throughout the larger and smaller municipalities of Burma. The work, with the exception of the maternity and child welfare scheme of the Rangoon Corporation and the Rural Health Unit, Hlegu, has been left in the hands of voluntary child welfare societies, of whom a total of forty-four now exist. The number of health visitors employed in Burma in 1936 was thirteen. The arrangement whereby this department's relation with these societies is advisory has been found to be very satisfactory. The adviser on child welfare visits these societies regularly, and her reports show that a creditable standard of work is maintained.

One of the great difficulties that had to be faced was the lack of suitable trained personnel for this type of work. In 1935, at the instigation of the Burma branch of the Red Cross Society, a Burma Health School was inaugurated with the assistance of grants from that society, from the local Government, the Rangoon Corporation and the Maternity and Child Welfare Bureau of the Indian Red Cross Society. The adviser on child

welfare is the superintendent of this school, which, on the completion of its first course, turned out eight health visitors with the diploma. In 1936, ten students completed the course, and this year, 1937, there are twelve attending.

Collection and Record of Vital Statistics.

This activity is controlled from the central office of the Director of Public Health. In urban areas, registrars are appointed by municipal committees. In rural areas, the headman of the village tract acts as registrar. In urban areas, vital statistics returns are compiled and submitted by the health officer direct to the Director of Public Health, Burma, by the 10th of the following month. Where there are no whole-time health officers, they are compiled and submitted by the President, Municipal Committee, through the district health officer and the Deputy Commissioner.

In rural areas, the headman sends the birth and death counterfoils within three days of the end of the month for which they are due to the township officer, unless the Deputy Commissioner directs otherwise, in which latter case he sends them to the nearest police-station as follows :

(*a*) From villages within 5 miles of a police-station, monthly ;

(*b*) From villages over 5 miles and under 20 miles from a police-station, quarterly ;

(*c*) From remote village tracts, half-yearly (January and July).

The township officer, when he has received the counterfoils from the village headmen or the local police-stations, prepares a return for each month of the preceding quarter separately and sends this to the district health officer not later than the 20th of the month succeeding the quarter to which the counterfoils relate. On receipt of all the township returns, a complete return for the whole district is prepared by the district health officer and sent through the Deputy Commissioner to

the Director of Public Health. These returns are to be despatched not later than one month and fifteen days after the close of the quarter concerned. The township officer also prepares returns for remote village tracts in July and January of each year and sends them to the district health officer on or before July 20th or January 20th respectively. They are included by the district health officer in the complete return referred to above. On the whole, a steady improvement in the registration of vital statistics has been noted over the past ten years.

Rural Reconstruction in Collaboration with the Population.

The most important advance made in this respect in this country in the past few years was the opening in 1929 of the Rural Health Unit at Hlegu. Hlegu is a small village in the township of that name in Insein District, and is situated about 30 miles from Rangoon. The formation of the unit was made possible by the Rockefeller Foundation, and it was placed under the charge of an officer of this department, whose training in public health in America in 1930 was financed by the Foundation. The activities of the unit in the area allotted to it have included the collection and study of vital statistics, health education, vaccination, school medical inspection, maternity and child welfare work, control of acute communicable diseases, refuse and sewage disposal, improvement of water supplies and abatement of nuisances. In all these activities improvement has been noted from year to year, and in the seven years of its existence much valuable information has been collected. The staff of the unit, when it was inaugurated, consisted of the health officer in charge, whose pay and allowances were those of an assistant district health officer, one nurse, four sanitary inspectors, four midwives, one clerk, one caretaker and one peon. The area served covered 603 square miles with a population of 63,383. The Rockefeller Foundation most generously placed the services of Dr. J. F. Kendrick at the disposal of the Director of Public Health to direct the work of the unit during the first 3½ years of its existence in

conjunction with the Director of Public Health. In 1934, owing to financial stringency, the budget allotment for the health unit had to be curtailed. This resulted in a reduction of the cadre of the field staff from four inspectors to two and from four midviwes to two, and this in turn necessitated a reduction in the size of the area in which ordinary routine activities would be carried out. The area was therefore reduced to approximately 224 square miles around the headquarters at Hlegu town. The health officer, however, continued to be in charge of the whole township (603 square miles) as hitherto, and the staff, in addition to their duty in the concentrated area, rendered service in other parts as was required from time to time. In spite of these adverse conditions, the unit continued to flourish, and has been a centre of public health activities in a rural area with great advantage to the population concerned. The Unit has also served as a field training-centre for public health personnel, such as public health inspectors and epidemic sub-assistant surgeons, students of the Government of Burma Licence in Hygiene class, and health visitors training-class, and has given demonstrations to the students of the Medical College and School. Many useful practical experiments in the application of public health principles are carried out at Hlegu, and the results of these are available for utilisation throughout the country.

Rural Uplift Centres.

In 1935, the Government of India allotted to Burma a sum of five lakhs for the improvement of rural conditions. The local Government decided to establish rural uplift centres in different districts, and, in this scheme, the Public Health Department, the Education, Agricultural, Veterinary and Medical Departments have all collaborated. A centre has already been opened at Tatkon in Yamethin District, its care having been entrusted to the sub-assistant surgeon, whose record in the Hygiene Publicity Branch for the past five years showed him to be eminently suitable for this work. The opening of a second centre is expected to take place in the very near future.

Sanitation and Sanitary Engineering.

The functions of the Provincial Public Health Board, already referred to in this note, in regard to matters of housing, water supply and disposal of refuse, are laid down in Local Government (Municipal) Circular No. 50 of 1926, dated November 22nd, 1926, as amended. It should be explained that, where the cost of any new work or repair exceeds one-tenth of the estimated annual income of the municipality, such work must not be undertaken until the technical approval of the Chief Engineer, Public Works Department, has been obtained. Any public health scheme costing less than one lakh requires the technical approval of the Superintending Engineer, Public Health Circle, and has to be submitted to the Director of Public Health for scrutiny from the public health point of view. Approval is withheld if the scheme is not passed by the Director of Public Health.

A committee that proposes to embark on any sanitary expenditure other than that required for the mere maintenance of its existing services is instructed to see that its proposals are approved by the health officer or, if there be no health officer, by the civil surgeon before such scheme is passed by the committee. The health officer is responsible for seeing that the plans and specifications submitted conform to the latest type and is instructed to obtain the advice of the Director of Public Health for any scheme for which he considers that the latter department should be consulted. Larger municipalities who have their own engineers can carry out ordinary projects with their own staff, and, in fact, do so ; but, for the execution of sanitary improvements in rural areas and in small municipalities, we have to look to the Public Works Department. Progress in these matters has of necessity been restricted in recent years owing to financial difficulties. Schemes for the improvement of public health are also controlled by sections of the Burma Rural Self-government Act. Rules thereunder are laid down for the guidance of district councils.

Housing.

In municipalities, the construction and erection of houses is governed by bye-laws made under the Burma Municipal Act. Model bye-laws for this purpose have been framed by this department for the guidance of committees in this respect. They have been adopted by most of the municipalities. Housing in rural areas is controlled by the rules of the Burma Village Manual. Owing to the poverty of the people, housing in rural areas presents a serious problem. The type of house in general use in Burma is supported on wooden piles, has a wooden floor and a thatch roof with mat walls. The very nature of these buildings makes them difficult to keep clean, and the people are inclined to crowd their houses together for protection.

Water Supply.

The problem of water supply in rural areas is a difficult one in this country. Owing to financial stringency, the improvement of rural water supply is proceeding very slowly. Educative propaganda by officers of this department is, however, slowly making the people realise the necessity of attempting to procure pure water for domestic purposes, and the necessity for protecting tanks and wells from at any rate the grosser forms of pollution. It must be admitted that, when district councils are urged by the authorities to improve water supplies, the usual answer is that no funds are available.

Destruction of Refuse and Other Wastes.

Here, again, the lack of funds holds up many projects designed to improve these matters. However, a satisfactory development in this respect in recent years has to be noted in many areas in the increased installation of bored-hole latrines at the instigation of propaganda carried out by this department. This form of latrine goes a long way towards solving the problem of the disposal of human excreta in this country, and its general adoption in rural areas is being actively encouraged. Recently, an experiment was inaugurated by the health officer, Mandalay Municipality, to see if the Indore method of composting could

be satisfactorily worked. Advice was sought and obtained from the health authorities at Indore, but it has to be admitted that, so far, the matter remains in an experimental stage owing to difficulties which have to be investigated. In the larger villages of rural areas, the district council is responsible for providing the necessary conservancy staff, but, owing to lack of funds, the staff is in most cases insufficient and the work correspondingly unsatisfactory.

Flies.

The campaign against flies in this country is directed by the Hygiene Publicity Section. A series of pamphlets and posters has been prepared, and these are distributed by the officer in charge of the Hygiene Publicity Section when he is on tour. They are also distributed by epidemic sub-assistant surgeons and other members of the staff of the department. At fairs and pagoda festivals, which are attended for purposes of propaganda work by the Hygiene Publicity staff, lectures are given impressing on the people the necessity for preventing fly-breeding and preventing the contamination of food by flies. These lectures are usually accompanied by magic-lantern slides. The department also possesses two cinema films, one purchased from the National Motion Pictures Company, United States of America, and the other from the Indian Red Cross Society.

In the past, when markets were being constructed throughout the country, this department stressed the necessity of providing fly-proof buildings for the sale of meat and fish. Recently, these efforts have been abandoned, as it has been realised that to build a fly-proof stall is comparatively easy, but to keep it fly-proof is so impracticable that it might be styled as impossible. Accordingly, we now advocate the erection of a type of building which, by the nature of its construction, discourages flies.

As far as the contamination of food supplies by flies is concerned, we are up against a stiff problem in this country. It is a common custom for people to set up small stalls by the road-side for the sale of articles of food and drink. In the

various municipalities, bye-laws exist to prevent this activity, and so some degree of control is possible. In the villages in rural areas, this problem is difficult. Lectures to school-children on this subject are one of the measures undertaken by the Hygiene Publicity staff.

When the Hygiene Publicity staff hold, as they do from time to time, small exhibitions in the districts, they exhibit models and posters intended to educate the people on this point.

The growing use of bored-hole latrines in rural areas is helping to remove one important source of fly-breeding.

Nutrition.

Food and Drugs.

In 1928, a Food and Drugs Act was passed. Standards have been fixed for a few articles. Unfortunately, the post of Public Analyst was retrenched, owing to financial stringency, in 1933, and the state of affairs in this country, as far as the control of the sale of food and drugs is concerned, can only be described as far from satisfactory.

Milk and Dairies.

Model bye-laws with regard to the production and sale of milk are published by the local Government, and in urban areas real attempts have been made to deal with this problem. The whole question is very complicated. The Burman himself does not go in for keeping cows ; this he leaves to the Indian community. Nor does he consume fresh milk in any appreciable quantity. Of recent years, there has been throughout the country a considerable increase in the sale of dried and tinned milk products, and the Rangoon Corporation have framed regulations to control the importation and sale of these articles.

Sections 139, 142 and 182 of the Burma Municipal Act, 1898, as subsequently amended, give powers to municipalities to control slaughter-houses and the manufacture and sale of foodstuffs. District councils possess similar powers under Sections 48 (*d*) and (*f*) and 80 (*d*) of the Burma Rural Self-

government Act. These sections also control the manufacture and sale of bread, biscuits, confectionery, ice, aerated waters, ice-cream, sherbet, preparations of tea or coffee, cooked rice, paratta and chow-chow. The majority of the municipalities have framed bye-laws under the Act based on the model bye-laws drawn up by this department.

The Burma Ghee Adulteration Act.

This was passed in 1917, but is believed to be widely evaded. Vendors of adulterated ghee avoid prosecution by describing their wares as "grease and oil mixture". This question is engaging the attention of this department and the local Government at the present moment.

Deficiency Diseases.

In March 1928, in the Indian Medical Research Memoirs, there was published a preliminary enquiry into beri-beri in Burma by Colonel TAYLOR, I.M.S., assisted by other officers of the Pasteur Institute, Burma. Their conclusions as summarised in the report were briefly :

"1. Over the greater part of the populous agricultural areas of Burma, beri-beri is not endemic or epidemic to any extent and, although cases do occur, their total number is very small.

"2. Outbreaks of beri-beri frequently occur in certain small communities living under special conditions. These epidemics occur in timber-felling camps in forests, military police posts, schools, lock-ups, lighthouses and lightships, etc.

"3. The diet of the average Burman, both in towns and villages, is generous and varied and comprises a good allowance of other articles of diet in addition to rice. In the villages, a good quality of freshly hand-pounded rice is used and in the towns undermilled rice is usually eaten. Under normal circumstances, the rice-mills only mill up to immediate requirements and the rice is usually not stored for long in the milled state.

"4. The diet of vegetarian Hindus is similar to that of the same class in India and shows the use of considerable quantities of atta as well as the use of milk and milk products. The use of atta will be of value in replacement of any vitamin deficiency in the rice used.

"5. The meat-eating Hindus form a large class with somewhat varied diet habits. Their dietary is distinctly inferior to that of Burmans, and, in the case of certain groups, is extremely badly balanced. Large groups of Indian immigrant coolies, chiefly Hindus from Madras Presidency working in the larger coastal towns, consume large quantities of rice, frequently 2½ lb. daily, and use extremely small quantities of any supplementary articles of food.

"6. The outstanding feature of beri-beri in Burma is its incidence amongst the Hindu labourers in the larger towns, large groups of whom use an almost exclusive rice diet.

"7. There is a definite seasonal prevalence of beri-beri in Burma commencing about two months after the establishment of the monsoon, reaching its height about October and diminishing during the cold-weather months.

"8. The deterioration of rice from damp and moulds appears to be a very important factor in the outbreaks we have had an opportunity of investigating. It is not possible to form a definite opinion, on the evidence obtained, as to whether the production of any toxic substance in the rice may influence the occurrence of beri-beri or whether the necessary washing of the friable mouldy rice to make it fit for consumption results in such loss of the outer layers of the grain as will materially reduce its vitamin content.

"9. The varied and generous dietary of the average Burman under normal circumstances would appear to be a very important factor in preventing the occurrence of beri-beri under ordinary town and village conditions."

In 1929, an outbreak of this disease occurred in one of the isolated islands on the Arakan coast, and a report on this was written by Colonel Jolly, the then Director of Public Health. Figures for this disease are not reported separately for rural

areas, and the only information available is that contained in the annual reports of some of the health officers. The consumption of damp and deteriorated rice has been stated to be associated with this disease on frequent occasions. In 1935, there was an intensive outbreak of epidemic dropsy in the City of Rangoon, and the Health Officer, Corporation of Rangoon, in his annual report on the working of his department, refers to several possible causative factors.

Beri-beri and epidemic dropsy are now notifiable diseases in all towns in Burma, under Local Government Notification No. 91, dated April 20th, 1933. A pamphlet on this disease has been issued by the Hygiene Publicity Section.

Goitre.

This disease appears to be widely prevalent in certain areas. In 1931, its occurrence and endemic character was brought to the attention of the Public Health Department by the then District Health Officer, Meiktila, and a special survey was carried out by an officer of this department. The result of this survey goes to show that the disease was certainly endemic in some of the hill tracts of this district and that, while the disease was more or less equally distributed between boys and girls, yet, after puberty, the incidence among females became greater, and, as years went on, greater still. Its occurrence in a township in Minbu district has again recently been drawn attention to by the district health officer of that area, who is at present engaged in an attempt to investigate it. The disease is believed to be very prevalent in the Northern Shan States and also in the Southern Shan States and the Kachin Hill tracts.

An attempt has been made at the Harcourt Butler Institute of Public Health to draw up various diets suitable for the use of the people of this country with due regard to the basic requirements of an individual family. Cost has also been considered and is included in the chart. This aspect of public health propaganda attracted considerable attention at the last Health Exhibition in Rangoon.

During the past year, this department was in communication with Dr. AYKROYD, of the Central Research Laboratories,

Coonoor, and a nutritional survey into the condition of children in the schools in the Hlegu Health Unit area and Rangoon was started on the lines of the work already done by Dr. Nicholls and Dr. Aykroyd. A preliminary report is in process of preparation for publication. It is hoped to continue with this work and to fully expand it, as the local Government has agreed to the deputation of an officer from this department to the course proposed to be held in Coonoor this year.

Measures for combating Epidemic Diseases.

Epidemic Diseases.

Outbreaks of epidemic diseases are investigated by the Public Health Department and are dealt with mainly by the agency of local urban or district authorities under departmental supervision. Notification of cases or deaths of plague, cholera and smallpox is compulsory. In the rural areas, the village headman reports the case or death of any of these diseases to the township or sub-divisional officer. The rules made under the Burma Village Act give to village headmen powers to deal with cases of epidemic disease in regard to such points as isolation, disinfection, segregation, etc. Information of outbreaks of epidemic diseases is passed on to the Deputy Commissioner and district health officer. These latter officials arrange for the area concerned to be visited by the epidemic staff and for the necessary measures to be taken to ensure the suppression of the outbreaks. Should the situation demand it, a request is made to the Director of Public Health for additional trained assistance; in which case, further sub-assistant surgeons are drafted into the area and one of the Assistant Directors of Public Health visits to advise on the necessary precautions.

Malaria.

The control of this disease presents a major problem in this country, as malaria is endemic throughout the province, though, of course, its specific importance varies from area to area. The central machinery for dealing with this disease is the Malaria

Bureau of the Harcourt Butler Institute of Public Health, Rangoon. The Bureau originated in 1927 and, until his recent death, was in charge of a military assistant surgeon who had specialised in this work. His assistant is a Burman sub-assistant surgeon who was trained at Saharanpur. These two officers between them have carried out twenty malaria surveys throughout the country, and much valuable data has now been collected on this question. In the plains of Burma, where there is extensive cultivation of rice, the malaria-carrying anopheline mosquito is practically absent, though in certain irrigated areas constant supervision has to be exercised to prevent malaria from assuming grave proportions. As soon as the country gets broken up by low-lying hills, malaria at once appears. In several districts, the disease assumes epidemic proportions, particularly after the outbreak of floods. These areas are, of course, carefully watched. Certain urban areas show high death rates from this disease, but there has been a progressive improvement in these death rates in towns since 1928.

Anti-Malarial Operations.

Circulars have been issued by this department from time to time to advise local bodies on the desirability of taking steps to control the local mosquito population by filling in borrow pits, preventing new borrow pits from being created and attending to the general sanitation of houses with a view to keeping down the breeding of mosquitoes as far as possible. Measures are undertaken only after a proper malaria survey. In one area, Kyaukpyu and neighbourhood, in which work has been carried on continuously since 1929, the spleen census, which was 31.25% in 1930, was found to have been reduced to 5.59% in 1935.

Cinchona febrifuge tablets are distributed through district treasuries either for free issue where authorised or for issue on payment. Village headmen, vaccinators, postmasters, etc., are appointed by the Deputy Commissioner as vendors, and packets are only issued to such authorised persons. The average consumption of cinchona febrifuge per head of population was 0.87 grain in 1933 and 1.2 in 1935, the last year for which figures

are at the moment available. In 1935, the local Government allotted out of a special grant received from the Government of India a sum of Rs. 1,15,000 for anti-malarial measures, the principal of which it was decided is to be the extensive issue of free quinine. A free gift of 5,000 lb. of quinine sulphate was also made to this country by the Government of India. The distribution of this was started last autumn and has been proceeding at a highly satisfactory rate. The scheme places the onus of the distribution on district health officers acting through their staff. With the concurrence of the local Government, the co-operation has been sought and obtained of the Education, Agriculture, Veterinary, Forest, Police and Public Works Departments.

A sum of Rs. 25,000 has been set aside for the breeding and distribution of larvivorous fish. This had been undertaken on a small scale in the Malaria Bureau of the Harcourt Butler Institute of Public Health for years past, and much valuable information has been gathered as to the way in which these fish should be handled for breeding and transport purposes. A central nursery is now started, and it is intended to establish subsidiary nurseries at strategic points throughout the country. In 1935, the Rangoon Corporation inaugurated and organised an intensive campaign against the mosquito problem of that city. They are employing fourteen anti-mosquito inspectors, who have been specially trained at the Harcourt Butler Institute of Public Health and are under the supervision of an assistant health officer, whose whole-time duty it is to supervise this work.

Cholera.

This disease appears in epidemic form in the country from time to time, usually between the months of April to July. During the remainder of the year it is, as a rule, found only sporadically. It may be confidently stated that the population of this country, both rural and urban, has now come to appreciate the value of preventive measures directed against this disease. The response to inoculation campaigns is satisfactory (in 1935, a total of 576,216 inoculations was carried out by the epidemic staff). While undoubtedly that year was a bad year for cholera

in Burma, this total so far surpasses the greatest number of inoculations performed in any previous year as to afford proof that our propaganda work throughout the districts is bearing good fruit.

Plague.

Rules for the prevention of the spread of plague into Burma by land were originally framed under Local Government General Department Notification No. 301, dated August 7th, 1908. The situation was reviewed by the local Government from time to time. Large sums of money were expended upon measures for the control of plague. In 1934, the rules mentioned above were superseded by the Regulations for the Control of Dangerous Diseases. The idea was that the control of plague should be brought into line with that of other epidemic diseases. The local Government, however, in these rules, have reserved the right to take over the functions of the local bodies normally responsible for the control of epidemic diseases in their areas should the necessity for such action arise owing to either the inadequacy of the control exercised or the gravity of the local situation.

The control of plague, which is now endemic, and frequently epidemic, in many towns and districts of Burma presents a grave problem. The great industry of this country, the growing of rice, and the important subsidiary trade in cotton, along with the customs and domestic conditions of the people, create conditions very difficult to deal with. The control of rats, living practically altogether overground, is a problem that engages the constant attention of this department. Various experiments have been carried out by the Hlegu Health Unit, with, unfortunately, up to date, no satisfactory results. The control of burrowing rats is mainly attempted by the use of cyanogas, and a circular on this subject has been issued to all municipal and district councils. The experience of controlled operations of this nature in this country tends to prove that this is a very valuable method of dealing with this type of plague-carrier. However, in the forefront of the campaign against this disease, this department stresses the urgent necessity for the improvement of general sanitation in urban and rural

areas and lays special stress on the improvement of existing conditions in and around markets. Free inoculation against plague when the disease occurs is actively undertaken by members of the district staff.

Ankylostomiasis.

The following extract from the report on the Public Health Administration of Burma for the year 1926 gives a brief summary of the extent of this problem in this country :

> " Dr. Asa. C. CHANDLER, Hookworm Research Worker of the Calcutta School of Tropical Medicine and Hygiene, visited Burma in July in connection with a field enquiry on hookworm diseases financed by the Indian Research Fund Association. The investigations lasted nearly the whole of July 1926. His main conclusions are as follows :
>
> > " ' The amount of hookworm infection varies a great deal in different parts of Burma. In the delta and coast divisions it is modified, among the native peoples, by the use of latrines, but is moderately severe among the Indians who do not use latrines. Among the latter and in intermediate zones between the flooded delta country and the dry central zone, the amount of hookworm infection is greater than anywhere in Bengal or Assam. In the northern division, the infection is greater than in Bengal (except the Darjeeling District) and about equal to that of the upper part of the Assam Valley, and the hills of Eastern Assam. The Shans are lightly infected. In the dry central zone, hookworm infection is practically absent.' "

The active propaganda, on the part of the Hygiene Publicity Bureau of this department and the activities of the rural health unit are leading to the increased use of the bored-hole latrine by the villagers, and this should help to solve the problem.

Tuberculosis.

A complete investigation as to the extent of the tuberculosis problem in this country has not yet been undertaken. The problem has, however, recently been tackled locally by the

Rangoon Corporation, which opened a tuberculosis dispensary in 1935. The Burma branch of the Indian Red Cross Society is considering a scheme for the opening of a sanatorium. It will be appreciated that, until dispensaries exist in other places than Rangoon in which the necessary data on this disease can be collected, no effective measures for its control will be possible. Model bye-laws exist for the improvement of housing conditions in the urban and rural areas, and the adoption of these is tending to raise the housing level of the population.

Yaws.

As revealed in a survey conducted in the years 1927 and 1928, this disease is very prevalent in the Tenasserim Division and also in the Lower Chindwin District, Katha District and Mandalay District. The paucity of funds has been in the past, and is still, one of the chief difficulties in tackling this problem. The Burma branch of the Indian Red Cross Society made a grant in 1935 of Rs. 1,000 towards the purchase of drugs for treating this disease in two townships. The treatment of this disease has been the function of the Civil Medical Department.

Leprosy.

The control of this disease is governed by the Leper Act of 1898 as subsequently amended, and rules made by the local Government under this Act and the Burma Village Act. The latter Act gives powers of segregation to village headmen in this connection. In 1926, a leper clinic was opened by the Rangoon General Hospital, and an officer of this department was specially trained in leprosy work in Calcutta in 1931. On his return, surveys were carried out by him in Meiktila, Minbu and Hlegu. A leper colony was established at Monywa in 1927 and a colony was opened at Minbu in 1933. At Kengtung, a colony is run by a Roman Catholic mission. A third colony was opened a few weeks ago in Meiktila, and a plan is in existence for two colonies in Magwe District. There exist throughout the country nine clinics. In 1932, the Special Leprosy Officer inaugurated a campaign against leprosy by propaganda, treatment and survey. The results of the first survey he

conducted showed that the incidence of this disease was far higher than had previously been suspected. It is now known in the areas that have been surveyed to be about 16 per 1,000. Although it is not suggested that this ratio applies to the population of the whole province, what does seem to be the fact is that the problem of this disease is an urgent one for Burma. The present view of this department is that in the establishment of leper colonies lies the most effective measure for the control of this disease. It is hoped that several colonies will be started throughout the province in the course of time. In this connection it should be pointed out that the Burma Leprosy Relief Committee of the British Empire Leprosy Relief Association gives financial support to these colonies on the basis of a capitation grant. District councils and municipalities have also given financial assistance for the establishment of these colonies, and a certain amount of money has been forthcoming in the shape of private contributions.

Smallpox and Vaccination.

The technical direction of vaccination is the function of the Public Health Department. As has been noted elsewhere, the vaccination staff are all trained at the Vaccine Depot at Meiktila. This depot is in charge of a military assistant surgeon and is responsible for the manufacture of all the vaccine used in the province. The staff employed on vaccination consists of the Director of Public Health as Superintendent-General of Vaccination, district health officers as superintendents of vaccination, inspectors of vaccination, public health inspectors and the actual vaccinators. Inspectors of vaccination are being replaced by public health inspectors, to whom special training in this work is given. The cadre now consists of twenty-eight inspectors of vaccination, eighty-eight public health inspectors acting as inspectors of vaccination and 392 vaccinators on duty in the rural areas.

District vaccinators submit monthly returns to the district health officers through the inspectors of vaccination or public health inspectors acting as inspectors of vaccination. The district vaccination and verification returns which are prepared monthly

by the inspectors are forwarded to the Director of Public Health by the district health officers with their remarks. The district health officer is responsible for drawing up a tour programme for the public health inspector acting as inspector of vaccination and the vaccinator and for arranging the area allotted to district vaccinators. In addition to its routine work, the vaccination staff is required from time to time to carry out duties in connection with the suppression of epidemic disease. Vaccination in this country is controlled by three Acts : (1) the Vaccination Act, 1880, as subsequently amended, (2) the Burma Prohibition of Inoculation and Licensing of Vaccinators Act, 1908, as subsequently amended, and (3) the Burma Vaccination Law Amendment Act, 1909, as subsequently amended. The local Government is at present considering a revision of the vaccination law in this country, and a Vaccination Bill with that object in view is under preparation.

Many immigrants enter Burma every year from India, chiefly through the Port of Rangoon. The port health authorities vaccinate or revaccinate, as the case may be, all of those who do not bear obvious signs of recent vaccination or of having suffered from smallpox.

One of the difficulties experienced in this country in dealing with smallpox is that the custom of inoculation in this country dies hard in the rural areas. This department carries out active propaganda against this iniquity and may be said to be meeting with slow but steady success. Epidemics of smallpox, however, break out from time to time, and in some districts the disease is highly virulent. When such happens, a strenuous vaccination campaign is invariably launched with the employment of such extra staff as is considered necessary.

Venereal Diseases.

The Suppression of Brothels Act, 1921, is in force in seventy-two municipalities, notified areas and districts. In 1926, a deputation from the British Social Hygiene Council visited this country and submitted a report. In the report on the Public Health Administration of Burma for 1935, it is stated :

"It is impossible to give any accurate estimate regarding the prevalence of venereal disease in the province. The general opinion amongst medical practitioners is that its incidence is very high. As the public health statistics only relate to deaths, they afford no clue, for a death is rarely ascribed to syphilis or gonorrhœa. Public health reports state that the majority of venereal cases get treated by quacks. The information that is being collected by child welfare centres goes to show that a large number of the mothers attending the centres are infected with syphilis, which accounts for a high number of abortions."

Harcourt Butler Institute of Public Health, Rangoon.

This Institute was opened in 1927 by Sir Harcourt Butler, the then Governor of Burma. The idea that led to its inception was that it should act as a training-school in hygiene for public health officials throughout the province, medical students and school-teachers, as a laboratory for public health work and as a centre for propaganda. This Institute has now survived early difficulties associated with lack of funds and inadequate staff. The range of its activities is expanding slowly but steadily, and it is impossible to overstress its value in the scheme of preventive medicine for this country. It is now in the charge of a whole-time Director, who is a trained bacteriologist.

Its activities include the manufacture of cholera vaccine for the whole province, bacteriological examinations in connection with epidemic or other diseases that may be necessary from time to time, and the examination of water supplies and foodstuffs. It houses the Malaria Bureau and also the Burma Health School. A department deals specially with plague. Research work is also one of its features. Until the year 1934, the chemical section was in charge of a public analyst. Owing to financial stringency, this post is now held in abeyance.

STATEMENT SHOWING TOTAL INCOME FROM ALL SOURCES
THE FINANCIAL

Name of divisions	Total receipts, including opening balance	Total expenditure on public health purposes	Amount spent on		
			Water supply		Drainage
			Capital outlay	Establishment repairs, etc.	Capital outlay
Towns in :	Rs.	Rs.	Rs.	Rs.	Rs.
Arakan Division	5,31,426	2,14,865	95,421	12,848	173
Pegu Division	1,80,34,706	33,43,146	330	6,57,615	22,841
Irrawaddy Division . . .	16,03,616	4,59,609	1,111	21,376	4,620
Tenasserim Division . . .	16,66,094	3,83,160	1,504	25,410	...
Magwe Division	9,12,388	2,50,562	34,461	46,803	...
Mandalay Division	25,32,279	6,48,283	22	64,671	...
Sagaing Division	6,23,353	1,40,335	3,291	9,546	...
Total	2,59,03,862	54,39,960	1,36,140	8,38,269	27,634
Districts in :					
Arakan Division	6,92,019	44,061	...	433	...
Pegu Division	25,29,784	1,71,672	559	2,102	...
Irrawaddy Division . . .	24,14,566	1,69,229	468	1,538	...
Tenasserim Division . . .	14,95,440	56,790	300	17	...
Magwe Division	10,96,893	1,02,006	502	4,895	...
Mandalay Division	12,60,468	1,08,906	6,756	3,046	...
Sagaing Division	15,04,174	1,25,857	2,713	3,572	...
Total	1,09,93,344	7,78,521	11,298	15,603	...
Grand total, Burma . .	3,68,97,206	62,18,481	1,47,438	8,53,872	27,634
Federated Shan States :					
Towns	2,73,264	72,270	...	11,438	...
Rural areas	43,28,994	69,191	1,120	1,741	...
Total	46,02,258	1,41,461	1,120	13,179	...

AND EXPENDITURE ON PUBLIC HEALTH PURPOSES DURING YEAR 1934/35.

Amount spent on							
Drainage	Conservancy (including road-cleaning and watering) and latrines	Epidemic charges (including plague)	Vaccination	Registration of births and deaths	Market and slaughter houses	Charges on account of health officers and public health inspectors	Other sanitary requirements
Establishment repairs, etc.							
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
182	71,438	456	2,508	1,466	13,687	12,300	4,386
2,36,280	15,56,915	5,879	54,884	58,386	3,02,353	3,18,327	1,29,336
4,025	2,09,156	10,918	9,460	3,986	1,45,101	43,871	5,985
5,110	1,96,206	2,855	7,317	7,495	1,01,422	30,099	5,742
8,595	91,237	4,043	5,559	1,917	39,590	14,683	3,674
39,104	3,14,183	11,380	13,482	7,794	1,24,173	57,795	15,679
1,665	79,529	637	3,135	1,586	23,298	9,489	8,159
2,94,961	25,18,664	36,168	96,345	82,630	7,49,624	4,86,564	1,72,961
...	7,019	656	20,078	...	7,392	7,849	634
...	37,471	1,406	47,809	...	56,832	24,140	1,353
...	36,923	2,037	59,920	...	42,975	23,778	1,590
...	5,568	1,421	39,600	...	836	7,962	1,086
...	26,872	2,588	40,244	...	17,407	8,225	1,273
...	32,357	2,243	30,695	...	20,103	12,474	1,232
464	40,989	5,435	48,108	...	14,864	6,622	3,090
464	1,87,199	15,786	2,86,454	...	1,60,409	91,050	10,258
2,95,425	27,05,863	51,954	3,82,799	82,630	9,10,033	5,77,614	1,83,219
11,677	32,368	779	571	656	10,233	4,222	326
...	27,957	...	28,640	...	...	4,988	4,745
11,677	60,325	779	29,211	656	10,233	9,210	5,071

Medical Inspection of School-Children.

Education Department Circular No. 22, of 1923, as amended up to August 1st, 1931, contained the previous scheme for school medical inspection in this country. All recognised schools other than vernacular schools, whether under Government or private management, had to provide, as a condition of recognition, regular medical attendance and supervision by either a Government medical officer or a private practitioner. Approval of the appointment lies with the Director of Public Instruction in relation to schools directly under him, and the inspector of schools in the remaining Government schools. Only one routine examination was prescribed—viz., when the child was admitted to school. In 1923, thirty-nine schools submitted reports. This number in 1931 increased to 176. In 1932, the Government grant for the scheme was withdrawn and the number of schools submitting reports fell to sixty-eight, and in 1935 the number was as low as seventeen. At the end of 1936, this department submitted a proposal which, if it is accepted by the local Government, it is hoped will revive the question of school medical inspection in Burma and place it on satisfactory ground. The scheme which is now under consideration suggests that the work should be confined at first to the larger towns outside Rangoon. The appointment of a whole-time school medical officer and one or more nurses is advocated. The lines on which work should be carried out have been elaborated and it is hoped that a restart in this important work will shortly be made. At present in rural areas district health officers and other officials of the public health staff when on tour examine school-children as often as circumstances permit.

NOTE ON MEDICAL ORGANISATION IN BURMA

by

Colonel N. S. Sodhi, M.C., I.M.S.,
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The Public Health Administration of the province is a "transferred" subject under the control of the Minister of Education, local Government and public health. It is divided into two branches—viz., the Medical and the Public Health, independent of one another, but working, as far as it is possible, together. The Medical Department broadly deals with "curative medicine", while the Public Health Department deals with "preventive or prophylactic medicine". The Inspector-General of Civil Hospitals, Burma, is the head of the Medical Department, while the Director of Public Health, Burma, is in charge of the Public Health Department.

There are just a little over three hundred hospitals and dispensaries in Burma, with the exception of two private non-aided hospitals and the railway hospitals, which are under the control of the Chief Medical Officer of the Burma Railways. All the other hospitals are subject to inspections or visits of the Inspector-General of Civil Hospitals, Burma (see Appendix 1).

One of the first acts of the Government after the establishment of settled government in India or any part thereof has always been to provide for the medical needs of its military and civil servants; and, to enable this to be done, it became necessary to open medical schools (and later medical colleges) for the training of military and civil assistant surgeons and sub-assistant surgeons. As a corollary to this decision, it was necessary to open Government hospitals and dispensaries, where medical aid, necessarily free, could be obtained by the employees of the Government and their families. Thus, at a very early date in the modern history of India, the Government became

committed to the opening of medical colleges and schools, to the building, equipping and staffing of hospitals and dispensaries, and to providing free medical relief for Government servants. This period in the evolution of medical policy was associated with the creation of the class of hospitals (Class I) known as State Public Hospitals, such as the Rangoon General Hospital, and with the opening of State Special Hospitals (Class II), such as military police hospitals, canal and forest dispensaries.

It was, however, soon realised that a Government actuated by humanitarian motives and beneficent intentions must also bring the benefits of modern medical science within the reach of the civil population. With this object in view, medical schools were enlarged and a cadre of civil assistant surgeons and sub-assistant surgeons was created, whilst Government hospitals and dispensaries (Class I) were established in important towns for the benefit of the civil population.

As the result of giving effect to this policy in Burma, Class I hospitals and dispensaries were opened in Rangoon and other towns in Upper and Lower Burma, and, later on, in the frontier districts of Bhamo, Myitkyina, and the Chin Hills. At the same time, or even earlier, various religious bodies established mission hospitals, which, in spite of their sectarian character, were freely resorted to by the civil population. These private institutions, when assisted by the Government, were denominated Private-aided Hospitals (Class IV), of which the Leper Asylums at Rangoon, Mandalay, and Moulmein, the Ramakrishna Mission Hospital, and the Bishop Bigandet Home at Rangoon, and the Dufferin Hospital, Rangoon, are examples. (The Dufferin Hospital was provincialised on April 1st, 1934.)

The third or final stage, which, however, accompanied in point of time the preceding stage, was associated with the establishment of civil hospitals and dispensaries in important towns and villages. These institutions were for the most part originally built, equipped and staffed by the Government, but were, in process of time, handed over, in accordance with the policy of local self-government, to the local bodies in whose jurisdiction they were located. These hospitals, which are known as Local Fund Hospitals (Class III), are now maintained

either by municipal committees (municipal fund dispensaries), district councils (district council hospitals), Deputy Commissioners (local funds or by hospital committees appointed under Section 72 (I) (*c*) of the Burma Municipal Act. These several classes of local fund institutions are, however, usually in receipt, directly or indirectly, of substantial grants-in-aid from the Government, and on this account the Government still exercises over them a general supervision and control. At the end of the year 1935, there were in Burma 301 hospitals—viz., 47 Class I hospitals, 41 Class II hospitals, 168 Class III hospitals, 11 Class IV hospitals, 4 Class V Private Non-aided hospitals, and 30 railway hospitals and dispensaries (Class VI).

The largest hospitals in the province are the Rangoon General Hospital (State), the General Hospital, Mandalay (State), the Civil Hospital, Akyab (Local Fund), the Civil Hospital, Bassein (Local Fund), and the Civil Hospital, Moulmein (Local Fund). There are also four leper asylums run by missionaries and two mental hospitals maintained solely by the Government, also a Pasteur Institute *cum* Bacteriological Laboratory, to the former of which the Government makes a contribution, the cost of the maintenance of the latter being met by the local Government. A Chemical Examiner's Laboratory also exists at the headquarters of the province.

Appendix 2 indicates the medical personnel (both doctors and auxiliary staff) employed in the hospitals and dispensaries enumerated in Appendix 1. The pay of all medical officers attached to State and local fund hospitals is met by the local Government, while that of doctors attached to private-aided hospitals and private non-aided hospitals and railway hospitals is met by the management concerned.

In addition to the above, there are doctors employed by the larger commercial concerns in Burma to look after the staff employed by them—*e.g.*, the Burma Oil Company have a complete medical organisation with well-equipped and up-to-date hospitals and a separate, well-qualified staff.

There is one other point relating to the employment of doctors which deserves mention. There is a scheme called the Subsidised Medical Practitioner's Scheme whereby a private practitioner is posted to an outlying or remote area within

which no hospital exists. This subsidised medical practitioner is given a subsidy in the form of a stock of medicine and a honorarium ranging from Rs. 50 to Rs. 125 per mensem (in accordance with the remoteness of the place). He is expected to treat Government servants, if any, free and to charge only usual fees or treat pauper patients free. At one time there were fourteen such practitioners appointed ; but, owing to retrenchment and partly to the scheme not being very successful, the number has now been reduced to two. Both these practitioners have proved to be very successful, and the question of extending the scheme is being reconsidered, and it is possible that more of these practitioners will be set up in rural areas, so as to bring medical relief to the doors of those sections of the population which are without the means at present of securing medical treatment.

There are two medical institutions in the province—viz., the Government Medical College and the Burma Government Medical School.

The Government Medical College, which was established in 1924 for the training of the M.B.B.S. students, is a constituent college of the University of Rangoon. It is regrettable to have to state that the number of Burmans who pursue this course is disproportionately small, the reason being that the young educated Burman finds " Medicine " a lengthy affair, while it is comparatively easy to secure a footing on the various provincial sister services. The total number of passes per annum is about nine, while the total annual admission averages twenty. The cost of maintaining this institution is, in the main, met by the local Government. The expenditure is about Rs. 1,10,000 per annum.

The Medical School.

This institution is owned, maintained and controlled by the Government, with the Inspector-General of Civil Hospitals as the controlling authority. The school was established in 1907, since Burma, like the other Indian provinces, felt the need of a practical man trained in the elements of medicine, surgery and midwifery, so that he could take his place in

subordinate positions in larger Government hospitals and propagate Western medical science and treat that section of the population which inhabits the remote areas of Burma.

The number of admissions each year to this institution is about thirty-five, and the number of passes is about thirty-five. The number of Burmans who take up this course of four years is proportionately larger than the number who seek admission to the longer course at the Medical College.

Training of Auxiliary Staff.

(a) *Compounders.*

In almost every headquarters hospital in Burma, training is given to probationary compounders. The length of the course is one year, and the examination is required to be conducted by an Indian Medical Service officer.

(b) *Nurses* (*General Sick-nursing*).

The course for this training is of three years' duration. It is held at the Rangoon General Hospital; the General Hospital, Mandalay; the Civil Hospital, Akyab; the Civil Hospital, Bassein; the Civil Hospital, Moulmein; and the Ellen Mitchell Memorial Hospital, Moulmein. The last-named institution is a private non-aided hospital.

(c) *Midwives.*

The course for an untrained girl is of eighteen months' duration, while the course for a qualified nurse is only six months. The course is tenable at the Dufferin Hospital, Rangoon, the General Hospital, Mandalay, and the Ellen Mitchell Memorial Hospital, Moulmein.

Expenditure.

The total expenditure for the maintenance of all hospitals and dispensaries in 1935 which submitted returns to this office was Rs. 42,69,629, which works out to Rs. 1/5/6 per patient treated and Rs. -/4/8 per head of population. I set out below,

for information, a synoptical statement of receipts and expenditures for 1935 :

Particulars	1935
Income.	Rs.
1. Cash balance	12,71,518
2. From Government	23,90,722
3. From local and municipal bodies	14,95,388
4. Fees and contributions from patients	3,55,930
5. Funds collected by hospital committees, charitable contributions and donations	2,32,455
6. Miscellaneous, including interest on investments, sale of securities, etc.	2,90,855
7. Total receipts	60,36,868
Expenditure.	
1. Medical officers [1]	11,34,927
2. Nurses	5,31,612
3. Other servants	8,47,558
4. Medicines	3,50,937
5. Diet	4,43,881
6. Apparatus, repairs and renewals	23,491
7. New buildings, addition to apparatus and other capital expenditure	2,32,240
8. Repairs to buildings	98,771
9. Miscellaneous charges	6,06,284
10. Total expenditure	42,69,629
11. Closing balance, including investments, etc.	17,67,239

Hospitals.

The Rangoon General Hospital, which was opened in 1884 and which moved into new buildings in 1911, is the premier medical institution in the province. This hospital is fully equipped with a laboratory, X-ray and other up-to-date facilities, having an accommodation of 540 beds, is a teaching unit both for the graduate and the licentiate students, and its efficiency attracts patients from all parts of the province. The total number of outdoor patients in 1935 was 106,018, with an average daily attendance of 1,185 ; while the total number of indoor patients was 11,949, with a daily average of 567. The total number of operations performed in 1935 was

[1] Excluding pay and allowances of civil surgeons.

19,228, with a death rate of 2.38%. These figures speak for themselves, and it is not strange, therefore, to relate that the question of more accommodation has been given serious consideration by the local Government. A noteworthy addition in the administration of this hospital is that, in 1935, a blood-transfusion service was started and placed on an official basis. Also, one ward which was utilised for gynæcological cases was set free for ordinary cases by the opening of the gynæcological block in the Dufferin Hospital, Rangoon. The hospital is staffed by one medical superintendent, three physicians (two of which are I.M.S.), three surgeons (two of which are I.M.S.), one ophthalmic surgeon and one pathologist, both of whom are I.M.S. officers.

The Rangoon General Hospital also trains probationers in general sick-nursing, the course of which extends to three years.

The Dufferin Hospital, Rangoon, was established and opened in 1897 under the ægis of the Countess of Dufferin Fund. After 1923, however, the " Burma Association for supplying Medical Aid to the Women of Burma ", a newly formed trust for the purpose, took over from the Burma branch of the Countess of Dufferin Fund. This new association did not survive very long, and, as the Government was meeting almost the entire cost of maintaining the hospital, it was decided that that hospital be taken over altogether by the Government and controlled as a purely provincial institution. This decision was implemented on April 1st, 1934.

The hospital serves as a teaching institution in subjects of midwifery and gynæcology for both the degree and the diploma students of the Medical College and the Burma Government Medical School, Rangoon, respectively. It also functions as a training institution for probationer midwives.

The hospital provides accommodation for 132 (midwifery) beds and 72 (gynæcology) beds. The total number of patients treated in 1935 was : indoor, 4,033 ; outdoor, 13,420.

The average allotment of funds for this hospital is in the neighbourhood of 3 lakhs.

The gynæcological block, which was built some years ago, was, on account of financial stringency, opened only on December 1st, 1935, by Lady Stephenson and named after her.

The General Hospital, Mandalay, was a local fund hospital, but in 1933 the hospital was taken over by the Government and has since been run as a provincial institution. The hospital has an accommodation of 267 beds. It functions to an appreciable degree as the main medical institution for Upper Burma. The total number of indoor and outdoor patients treated was 5,672 and 40,447 respectively, while the number of operations performed was 3,604. The hospital trains probationers both for general sick-nursing and midwifery.

The Civil Hospital, Akyab, is a local fund hospital with a bed accommodation of 141. The total number of patients treated in 1935 was 3,273 indoor and 24,412 outdoor. The number of operations performed in 1935 was 3,825. The hospital is a training institution for nurses. An I.M.S. officer is in charge of this hospital.

The Civil Hospital, Moulmein, is a local fund hospital and it provides for 135 beds. The proposal to erect new buildings is under consideration. The total number of patients treated in 1935 was 3,027 indoor and 32,867 outdoor, the total number of operations performed being 1,530.

The Civil Hospital, Bassein, is a local fund hospital with accommodation for 128 beds. The total number of patients treated in 1935 was 2,402 indoor and 20,042 outdoor, there being 1,950 operations performed during that same period. The hospital is also a training institution for nurses.

Rural Reconstruction.

As the result of the grant made recently by the Government of India to local Governments, a Rural Uplift Centre has been started at Tatkon, in the Yamethin District. The Medical Department's contribution to this centre is in the form of a dispensary. The necessary buildings have not as yet been erected, the dispensary being accommodated for the present in a hired building. This dispensary was opened on October 1st, 1936. The dispensary is evidently popular, as indicated by the total number of out-patients—viz., 3,355 for the period October 1st to December 31st, 1936. It is interesting to record that, of the patients treated, Burmans formed 88%. Malaria accounted

for the greatest number of patients, diseases of the stomach and diseases of the respiratory system occupying second and third place.

Measures for combating Certain Diseases in Rural Districts.

As stated above, the Medical Department is concerned with "curative" treatment and all diseases are treated in hospitals and dispensaries in accordance with the facilities available. Malaria invariably heads the list of diseases from the point of prevalency; in 1935, there were 385,284 cases with 533 deaths. The statistics for the other diseases are as follows :

	Number of cases	Number of deaths
Plague	298	106
Ankylostomiasis	1,615	31
Tuberculosis of lungs	5,958	682
Other forms of tuberculosis	1,740	106
Pneumonia	6,630	866
Yaws	910	—
Leprosy	6,016	123
Mental diseases	474	13

Malaria.

The Public Health Department distributes quinine, and hospitals follow the quinine-alkali mixture (with plasmoquine) for treating in-patients. Every effort is being made to increase the number of hospitals in regard to laboratory facilities. Each hospital is also required to see that it has an adequate supply of quinine. Malaria has been recognised to cause a great deal of havoc in the health of the police force of Burma, and it is with the object of mitigating the degree of prevalence of malaria in this force that civil surgeons were instructed on certain lines to combat this disease.[1]

Tuberculosis.

This disease is treated as best as can be done in hospitals as a matter of routine, but in Burma the respiratory death rate in 1932 was as high as 5.2 per thousand, in comparison with

[1] *Vide* Medical Department Circular No. 12/8R.11.

Bombay, 4.2 ; Madras, 2 ; United Provinces, 0.7 ; Bengal, 1.2 ; Central Provinces, 2 ; Bihar and Orissa, 0.1 ; and Punjab, 2.5.

The above statistics are sufficient to indicate that the need for the establishment of tuberculosis clinics and tuberculosis sanatoria and colonies is self-evident. The Corporation of Rangoon has already given a lead by establishing, in November 1935, a tuberculosis clinic in Rangoon. The Burma branch of the Indian Red Cross Society has under consideration the question of establishing a sanatorium in a suitable climate in Burma. I was delegated with the task of drawing up a suitable scheme and estimates, including the selection of a site for the purpose. The scheme is at present under consideration.

Yaws.

Two surveys are undertaken annually in the Monywa District and in the Mergui District (both in rural areas). Both treatment and advice is given to those afflicted.

Leprosy.

The Government of Burma, in 1930, revised its policy regarding the treatment of leprosy. In brief, it sets out that, although leper asylums should continue, leprosy surveys should be undertaken by a special leprosy officer, and treatment followed up by the hospitals or dispensaries situated in the areas in which the survey is undertaken. Surveys have been undertaken in Hlegu, and in the Meiktila and Minbu Districts. The revised scheme may be considered to have fulfilled anticipations.

Leper colonies have also come to be recognised as very suitable, and a few of these have already been established and they are doing very good work.

Appendix 1.

NUMBER OF HOSPITALS IN BURMA DURING THE YEAR 1935.

	Rural [1]	Urban [1]
Class I. — State Public	36	11
Class II. — State Special :		
(*i*) Police	24	9
(*ii*) Forest and Surveys	—	—
(*iii*) Canals	3	—
(*iv*) Others [2]	1	4
Class III. — Local Funds [3] and Municipal Funds	90	78
Class IV. — Private Aided [4]	4	7
Class V. — Private Non-aided [5]	2	2
Class VI. — Railways	13	17
Total	173	128

Appendix 2.

DISTRIBUTION OF MEDICAL PERSONNEL ON DECEMBER 31ST 1935.

	State Public	State Special	Local and Municipal Funds	Private Aided	Private Non-aided	Railways	Total
Indian Medical Service	11	—	5	—	—	—	16
Indian Medical Department	1	—	4	—	—	—	5
Salaried graduates (or assistant surgeons)	33	—	39	3	—	2	77
Salaried licentiates (or sub-assistant surgeons)	53	30	219	8	—	30	340
Honorary graduates (or assistant surgeons)	20	—	4	—	—	—	24
Honorary licentiates (or sub-assistant surgeons)	10	—	2	—	—	—	12
Nurses: (*a*) Europeans and Anglo-Indians.	123	1	38	21	4	1	188
(*b*) Burmese	102	2	100	4	3	—	211
(*c*) Ward assistants (male nurses)	25	1	53	24	—	7	110
Midwives	40	1	135	4	2	—	182
Compounders	56	13	191	4	3	38	305

Notes : [1] The word " urban ", for statistical purposes, is used to denote municipal and town fund areas, while district council areas (under the Rural Self-government Act) are classed as " rural " areas.

[2] Including travelling dispensaries (State).

[3] Including travelling dispensaries (Local Fund).

[4] Including subsidised medical practitioners.

[5] Only where accurate information has been supplied have figures been included.

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