Annual report of the Sarawak Government Medical Department.

COLONY OF SARAWAK

ANNUAL REPORT

OF THE

MEDICAL AND HEALTH DEPARTMENT

FOR THE YEAR

1949

BY

JAMES M. LISTON
M.B., Ch.B., D.T.M. & H., D.P.H.
DIRECTOR OF MEDICAL SERVICES

SINGAPORE:
PRINTED AT THE MALAYA PUBLISHING HOUSE LIMITED.

1951.

COLONY OF SARAWAK

ANNUAL REPORT

OF THE

MEDICAL AND HEALTH DEPARTMENT

FOR THE YEAR

1949

BY

JAMES M. LISTON
M.B., Ch.B., D.T.M. & H., D.P.H.
DIRECTOR OF MEDICAL SERVICES

SINGAPORE:
PRINTED AT THE MALAYA PUBLISHING HOUSE LIMITED.

1951.

CONTENTS.

APPENDICES.

I. INTRODUCTION.

The Colony of Sarawak, its shores washed by the China Sea, is a strip of territory from thirty to one hundred and sixty miles wide situated on the north coast of the Island of Borneo between, roughly, the 110th and 116th parrallels of longitude east of Greenwich, and betwen 1° and 5° north latitude. It has a coastline of some 500 miles and in area is about 50,000 square miles, roughly the size of England and Wales. In the north and east, its boundaries march with those of the State of Brunei and the Colony of North Borneo, while to the east, south and west it shares a common boundary with the former Dutch Borneo, now part of the United States of Indonesia.

There is a wide, low-lying coastal plain which narrows towards the north of the territory. Through this plain wind innumerable rivers from their sources in the mountainous interior. These rivers are the main arteries of trade and, virtually, the only means of communication but they are not ideal for the purpose as rapids in the higher country of the interior and bars at the river mouths in certain cases render navigation hazardous and restrict usage. Nevertheless, fair sized vessels, up to about 2,000 tons, can ascend the Sarawak River as far as Kuching sixteen miles from the river mouth. The Rejang River, the largest and most important waterway in the Colony, can be used in its lower reaches by vessels of almost unlimited tonnage and by fair sized vessels as far as, and beyond, Sibu which is some sixty miles from the sea.

The estimated mid-year population in 1948 was 555,020 (Census 1947—546,385). There are three main population groups, namely, the Pagan Tribes, the Malays and the Chinese. The Pagan Tribes, which include Ibans or Sea Dayaks, Land Dayaks, Muruts, Kayans, Kenyahs, Punans and many others, constitute about fifty per cent of the Colony's population. The other two groups, approximately equal, constitute the other fifty per cent.

The population density throughout the territory as a whole is only approximately eleven per square mile but large tracts of country are uninhabited and the population is almost entirely concentrated in small settlements, on the coast and along the rivers and, in the case of the Pagan Tribes, in "Longhouses" on the banks of the upper reaches of the rivers. These longhouses are, in effect, villages under one roof and, in most instances, they are separated from each other by many miles. Roughly speaking the Malays and Melanos inhabit the coastal areas, the Chinese the towns and trading centres the Dayaks the interior of the country.

Trade, wholesale end retail, is almost entirely in the hands of the Chinese. The Malays and Melanos are fisher folk and sago growers while the Dayaks engage in subsistence agriculture, and collect forest products for sale to the Chinese traders.

The country's most important export, to which its economy is closely linked, is rubber, which comes from small holdings, mainly owned by Chinese. There are only three large rubber estates in the country.

The three main towns are Kuching, the Capital, on the Sarawak River, Sibu on the Rejang River, and Miri, the centre of the oil-fields, in the north. The 1947 Census gave the population of Kuching as 37,949, of Sibu 9,983, and of Miri, as 10,951.

Communication between the main centres and elsewhere is by sea or river and there are very few roads. In the First Division, in the environs of Kuching, there is something less than one hundred miles of roads. The only other road of significance in the Colony runs from Miri to the Brunei border and on to Serai and Brunei Town.

The climate is tropical but the heat is never extreme. Temperatures are uniform througout the year and thermometer readings greatly exceeding 90° F. are rare. Humidity is high and renders the climate a trying one for Europeans. The average rainfall at Kuching is 160 inches. There is no clearly marked division into wet and dry seasons, rain falling throughout the year, but there is considerably more rain during the period of the North East monsoon from October to March.

II. ADMINISTRATION.

(a) Staff.

The Department commenced the year with senior staff considerably below the approved establishment, there being vacancies for four medical officers, a dental officer, two nursing sisters, a sister tutor, a health visitor and a sanitary superintendent. It was the shortage of medical officers which was particularly felt and the situation was rendered even more acute by the departure, in January, of the Lady Medical Officer on leave pending retirement, and, by the loss of a medical officer in February through sickness. With such a small establishment these losses were proportionately very great and for some months the situation was serious.

The losses were borne by the General Hospital, Kuching. which for a time, had only one medical officer and one assistant medical officer, both of whom had additional duties outside the hospital, namely, in the Central Dispensary and the Leper Settlement. However, some relief was obtained in mid-March by the local employment of a European lady doctor, the wife of a planter, who generously came to Kuching and, for two and a half months, helped to tide over a very difficult period. When, perforce, she had to leave at the end of May, the situation reverted to its previous state. During this period of acute shortage, to free the available medical officers for clinical duties, the Director of Medical Services took over the administration of the hospital.

At last , in mid-August, the situation eased with the arrival of a medical officer recruit from the United Kingdom and when, in October, a Lady Medical Officer arrived, the crisis was felt to be passed for the time being. Nevertheless, a staff of four medical officers is little enough to deal with hospital and clinic work in Kuching, and need for an officer to deal with public health matters remained great.

The position with regard to senior nursing personnel was very much better and the approved establishment was filled from overseas by the arrival of a sister tutor, a health visitor and two nursing sisters.

A dental officer and a sanitary superintendent also joined the department, and, by the end of the year, a further medical officer had left the United Kingdom but still had not reached the Colony.

The assistant medical officers who were on contract were admitted to the permanent establishment as medical officers.

The post of Deputy Director of Medical and Health Services was sanctioned but was vacant when the year closed as were two medical officer posts. In Appendix I is set forth approved establishment and vacancies existing at the end of the year. Appendix II lists qualified medical staff.

The position with regard to local personnel, nurses and hospital assistants, continued throughout the year, to cause concern. Development of medical services, being dependent on the availability of such personnel, was hampered, as recruitment was very slow and hardly sufficed to make good normal wastage from sickness, etc. Other departments of Government commenced employing women and posts demanding ordinary working hours and no night duty apparently appeared more attractive than nursing although the latter holds out much better prospects of a good career. Be that as it may, there was not a single recruit to the nursing service between February and December. In the latter months of the year, the seriousness of the shortage of nurses being fully realised, Government took steps to limit temporarily the opportunity for employment of girls in Government offices, etc., in the hope that this would lead to an increased number of recruits to the nursing service.

Hospital assistants, too, were substantially under strength although the shortage did not make itself felt immediately as the personnel in training for the Colonial Development and Welfare Travelling Dispensary Scheme was available in the hospitals. However, in view of the long distances and poor communications, it was necessary, in November, to commence posting these men to their stations to ensure that they would be at their posts a reasonable period before 3rd January, when, it was planned, the fourteen additional travelling dispensaries would commence operating simultaneously. From then till the end of the year the shortage of hospital assistants in the hospitals, and especially the Kuching General Hospital, made itself felt acutely, and there was very little margin to compensate for sickness.

The shortage of nurses had its effect on maternal and child welfare services. Experienced nurses could not be released to train as health visitors and it was thus necessary to recruit mid-wives for this work as a temporary expedient.

(b) **Training of Personnel.**

(i) **Hospital Assistants and Nurses,**

The training of hospital assistants and nurses although handicapped by the shortage of teaching staff, nevertheless made progress. A nursing sister continued to act full time as Sister Tutor until the arrival of the substantive Sister Tutor in October, and the syllabus of lectures initiated in 1948 was adhered to. Ward teaching

was intensified especially after the arrival of the Sister Tutor and there was appreciable improvement in nursing standards.

In March the first Final Qualifying Examination was held, there being two candidates. They passed the examination and were thus the first two nurses in the Colony itself to achieve the status of trained nurse by formal examination of a standard which compares favourably with that in other colonies.

Intermediate examinations were held in March and October and the second Final Examination in October. Three nurses and seven hospital assistants sat for the latter examination and all passed.

(ii) **Midwives.**

Throughout the year there were, continuously, five midwives in training in the General Hospital, Kuching, and the Maternity and Child Welfare Clinic. Four completed their training during the year and received certificates.

With present facilities it is necessary to limit the number of midwife trainees and thus preference is given to girls from outstations, sponsored by the Local Authorities, who are likely to return and work in their districts after training. The Department, at the moment, does not employ midwives as such but there is in operation a scheme of subsidisation of midwives working in outstations to help them establish themselves in practice. However, one Local Authority already employs a midwife and others are likely to do so, and it will doutbless be necessary to accept, in future, larger numbers of trainees.

(iii) **Health Inspectors.**

In view of the lack of facilities during the greater part of the year there was little formal teaching of health inspectors. Two men, however, attended the nine months' course in Singapore for the Certificate of the Royal Sanitary Institute and were successful in the examination. Arrangements were made for five additional men to attend the course in Singapore commencing in January, 1950.

With the arrival of the Sanitary Superintendent in July, a small start was made with teaching and the aim will be to develop a syllabus of training which will satisfy the Royal Sanitary Institute and enable examinations for the Certificate to be held in Kuching.

(iv) **Health Visitors.**

With the arrival of the Health Visitor in March, a small start was made with training of local personnel in this work. The intention was to base training on the United Kingdom system, allocating suitable nurses who had completed general and midwifery training and giving them a year's special training in public health work. However, it was only found possible to select and spare from the hospitals one senior staff nurse and it was then decided that, in the first instance at least, less highly trained personnel would have to be used. Four girls, trained midwives, were thus engaged and their training in health visiting was commenced. They are designated as district midwives and it was planned that they would have two years training in public

health work followed by six months practical experience in the children's and general wards of the hospital.

However, by the end of the year, only two district midwives were in training as the other two had been found to be temperamentally unsuitable for the work. No further recruits were available and thus only three health visitors were in training at the end of December, namely, one trained nurse and two district midwives.

(c) **Legislation.**

The Births and Deaths Registration Ordinance, 1948, was brought into operation on 1st August, 1949. It worked somewhat imperfectly as District Registrars were still unfamiliar with the provisions of the Ordinance and lacked experience of its administration. Nevertheless there was improvement by the end of the year and the operation of the Ordinance should be more efficient and effective next year.

No major public health legislation was enacted during the year. Minor provision was made for the control of certain anti-biotics and for extending the range of notifiable infectious diseases.

(d) **New Buildings.**

There was considerable new medical department building during the year. At the General Hospital, Kuching, a tuberculosis ward for women was erected and a second wing was added to the Nurses' Home, which now can accommodate fifty-two nurses. Considerable internal alterations were undertaken in the Hospital to provide improved sanitary accommodation, ward pantries, duty rooms, etc. Additional staff quarters were built and, lastly, at the expense of the Kuching Rotary Club, an extension to the Children's Ward was erected as a play room.

At the Central Medical Store a new building was constructed to provide separate storage for inflammable materials.

In Sibu, a maternity ward was built, providing sixteen beds and a labour room. The cost of this construction was met from a gift to Government for the purpose of $23,000 from the Sibu Annual Regatta Fund.

New dispensaries were built at three stations to replace inadequate existing dispensaries and to provide rest bed accommodation, and a further station was provided with a new dispensary. Two of these structures were part of the Colonial Development scheme for the provision of new dispensaries. In the implementation of this scheme eighteen quarters for hospital assistants were erected at the stations upon which the travelling dispensaries would be based.

(e) **Finance.**

The estimated expenditure for 1949 on Medical and Health Services was $1,189,640 which was the equivalent of 9.3% of the Colony's total estimated revenue. Actual expenditure was not as great as was estimated as all personnel budgetted for were not available. The expenditure for the year was as follows:—

Sub-Head	Estimated 1949	Actual 1949	Expenditure 1948
Personal Emolments ..	$441,845	$371,435.41	$273,060.77
Annual Recurrent ..	703,231	722,516.24	626,318.17
Special Expenditure ..	44,564	67,798.89	90,152.66
	1,189,640	1,161,750,54	989,531.60

Figures of expenditure for 1948 are shown for comparison.

The table below shows annual expenditure on medical services since 1938, excluding the years of Japanese occupation.

Year	Medical Departmental Expenditure.	Percentage of Colony's Revenue.
1938	$300,160	7%
1939	299,333	6.3%
1940	366,118	4.9%
1946	430,608	7.7%
1947	970,258	7.8%
1948	989,531	6.3%
1949		

(f) **Central Medical Store.**

A heavy burden of work fell on this institution during the year not only as a result of ordinary departmental expansion but also because of the great deal of preparation necessary to enable the Colonial Development and Welfare Travelling Dispensary Scheme to be launched in early January, 1950. The Store met the heavy demands placed upon it but, with outstation requirements very nearly doubled it will clearly not be long until expansion will be necessary.

These figures are not final but are the closest to actual expenditure available at the time of writing.

The supply position was reasonably good but delays between order and delivery were sometimes longer than expected and some embarrassment resulted. By the end of the year some orders placed early in the year were still outstanding and isolated items ordered in previous years also had still to be delivered. It was still necessary to make fairly substantial local purchases and the aim in 1950 will be to eliminate such as far as possible.

III. **VITAL STATISTICS.**

(a) **Population.**

The last Census, the first comprehensive one to be carried out, was held on the night of 26/27th November, 1947. At that time the population of the Colony was 546,385 made up of the following racial components:—

European	691
Malay	97,469
Melano	35,560
Sea Dayak	190,326
Land Dayak	42,195
Other Indigenous	29,867
Chinese	145,158
Other Asiatic	5,119
	546,385

It has not yet been possible to estimate the population at 31st December. 1948, as in previous years, owing to the bringing into operation on August 1st of the Registration of Births and Deaths Ordinance, 1948. District Registrars are still inexperienced in the new system provided for in the Ordinance and delays in making returns have resulted. Thus in the circumstances the mid-year population has been estimated and is as follows:—

Estimated Population at 30th June, 1949. Race	Number
European	841
Malay	98,997
Melano	35,797
Sea Dayak	190,345
Land Dayak	42,554
Other Indigenous	30,117
Chinese	151,230
Other Asiatic	5,139
	555,020

This total figure represents an increase of approximately 1.58% on the Census population figure.

(b) **Births and Deaths Registration.**

Registration of births and deaths has been in operation in Sarawak for more than twenty years. The system of registration being found to be unsuited to present conditions, a new Registration of Births and Deaths Ordinance (No. 9 of 1948) was enacted and came into operation on 1st August, 1949. The Registrar-General of Births and Deaths for the Colony is the Director of Medical and Health Services, while Officers in Charge of Administrative Districts are Registrars for those districts. The organisation up to the end of the year operated imperfectly and registration remains incomplete. For the reasons mentioned already figures for the whole of 1949 are not yet available and thus the data recorded below relates to the year ending 30th June, 1949.

(i) **Births.**

The total number of births registered as having occurred during the twelve months ending 30th June, 1949, was 6,838. The racial distribution of the registered births was as follows:—

	Male	Female	Total
European (including Eurasian)	23	22	45
Chinese	1,649	1,251	2,900
Malay	968	891	1,859
Melano	284	246	530
Sea Dayak	242	207	449
Land Dayak	294	229	523
Other Asiatic	64	57	121
Other Indigenous	224	187	411
	3,748	3,090	6,838

The small numbers of Sea Dayak and Land Dayak births registered compared with the numbers in these population groups indicates how incomplete registration is. Among the Malays and Chinese relatively few births remain unregistered.

(ii) **Stillbirths.**

The Births and Deaths Registration Ordinance (Cap. 77 Revised Edition of Laws of Sarawak), whch remained in operation until 31st July, 1949, made no provision for the recording of still births.

(iii) **Deaths.**

The total number of deaths registered during the year ending 30th June, 1949, was 2,583, racially distributed as follows:—

	Male	Female	Total
European (including Eurasian)	2	1	3
Chinese	548	301	849
Malay	430	396	826
Melano	133	126	259
Sea Dayak	132	88	220
Land Dayak	100	61	161
Other Asiatic	28	27	55
Other Indigenous	114	96	210
	1,487	1,096	2,583

Virtually the only certified deaths were those occurring in the hospitals in Kuching, Sibu and Miri.

(iv) **Infant Mortality.**

Deaths under 1 year registered during the twelve months ending 30th June, 1949, numbered 756. From this figure an infant mortality rate of 110.56 per 1,000 live births is calculable. The corresponding figures for the calendar year 1948 were 660 deaths and an infant mortality rate of 104.53.

The racial distribution of the infant deaths was as follows:—

	Infant Deaths	Births	Infant Mortality Rate
European (including Eurasian)	1	45	22.22
Chinese	236	2,700	81.38
Malay	305	1,859	164.07
Melano	67	530	126.41
Sea Dayak	42	449	93.54
Land Dayak	35	523	66.92
Other Asiatic	14	121	115.70
Other Indigenous	56	411	160.47
	756	6,838	110.56

IV. GENERAL SANITATION.

(a) Sewage Disposal.

There are no major schemes for the water borne disposal of sewage. In the residential areas of Kuching, Sibu and Miri a few premises have septic tank installations but general nightsoil disposal is by the double bucket system. During the year there was marked improvement in the efficiency of this work which is carried out as satisfactorily as circumstances, for example the absence of sanitary lanes and inadequate access to premises, allow. There is no doubt that this system of nightsoil disposal, unsuited as it is to urban conditions, will have to continue for many years, but every encouragement will be given to the installation of septic tanks in new buildings where practicable. In the kampong areas and less congested areas, riparian latrines or pit latrines are the rule.

In Kuching nightsoil disposal is undertaken by the Municipality and the nightsoil is treated in a series of three septic tanks before discharge into the river below the town. In Sibu and Miri the work is carried out by contractors and sewage is discharged into the rivers when the tide is ebbing. However, there is good reason to believe that all nightsoil was not disposed of as intended and that some found its way into the hands of Chinese market gardeners for use as manure.

In the smaller stations and trading centres disposal may be by the bucket system, or riparian latrines, but here too a great deal of nightsoil finds its way into cultivated land.

Houses in rural areas on the coast are very frequently built over creeks or streams and disposal is directly into the water. The Dayak "longhouses", however, are as a rule on high ground away from the rivers. They are raised high above the ground and disposal or nightsoil is through the floor to the space below the house where are congregated the pigs. These effectively complete disposal.

(b) **Refuse Disposal.**

In Kuching refuse collection and disposal is undertaken by the Municipality and is efficiently carried out. Practically all premises have refuse bins and where possible the service is a direct dustbin to lorry one. However, in some areas, inaccessible to the lorries, double handling is necessary, the refuse being collected from the bins in baskets. Disposal was by controlled tipping in various areas where it was desired to reclaim land.

The scavenging organisation in Sibu was greatly improved with the provision of mechanical transport and now operates as does that in Kuching. There too, disposal is by controlled tipping in low lying areas of land.

In all other towns and townships refuse removal services of varying degrees of effectiveness are in operation and, during the year there was general improvement in these services.

(c) **Water Supplies.**

Efficient piped water supplies exist in Kuching, Sibu and Miri. In several other small townships there are simple piped supplies but some of these townships have to rely on wells, river water or rain water storage. With the exception of the Sibu supply, no treatment is undertaken, but catchment areas are carefully controlled. The Sibu supply is drawn from the heavily polluted Rejang River and is thus treated by storage and chlorination. Kuching's supply is gravitated from a controlled catchment area in a range of hills some eight miles or so to the west of the town. The quality of the water is excellent but during the drier periods of the year the quantity available is not sufficient to meet the needs of the town's present population and thus in some districts an interrupted service has to be resorted to.

Replacement of the pipeline continued throughout the year but was not completed and water shortage continued at times. Nevertheless, it being realised that the present water source cannot meet present needs or those of the future, considerable thought was given to alternative sources of supply and it would seem that the most practicable solution will be to draw from the Sarawak River, above the town where the water is still brackish at certain states of the tide, and to treat the water.

In the rural areas the rivers are the most common source of supply but in some places wells are used. The latter are almost invariably unprotected and unsatisfactory, and the rivers, too, being subject to contamination, water supplies in the rural areas are certainly a threat to the public health.

(d) **Food.**

In all towns and townships food premises operate under licence and are subject to inspection by public health staff when available. There has been a slight improvement in conditions, especially in the towns, but, in too many instances, methods of manufacture, storage and preparation for sale remain primitive.

Food hawkers present a major problem the solution of which is difficult to find. Their food handling methods are, more often than not, crude and their numbers make control almost impossible. Numbers of licensed food hawkers are limited but unlicensed hawking is anything but uncommon and prosecution appears to act little as a deterrent. It is inevitable that, in the circumstances obtaining, typhoid endemicity and incidence of intestinal infections remain considerable.

The standard of the markets in the towns was reasonably good as they were subject to departmental inspection and municipal control.

There are very few cattle in the country and milk production is so small as to be of little consequence. Imported powdered milk or condensed milk meet the needs of the people.

(e) **Housing.**

The housing shortage continued and the amount of building during the year can have done little to affect the position. Overcrowding remains serious in the towns especially in the bazaar areas but a great deal of this would be liable to continue even were there an abundancy of accommodation. The Chinese occupying the bazaar "shophouses" appear to accept such conditions as natural, and even essential, that they may live on the site of their employment. Often every available foot of floor space is occupied, not only by the owner and his family but also by labourers, hawkers, etc. Again the size of the family unit is so great that it would be economically difficult to house them to a reasonable standard and thus overcrowding is inevitable. These circumstances are clearly inimical to the public health and matters are made a great deal worse by the nature of the premises in which this overcrowding occurs. The long rows of bazaar "shophouse" plots with very narrow frontage and great depth render adequate lighting and ventilation extremely difficult and produce conditions very suitable to the spread of infection. One of the Colony's major and growing problems is tuberculosis and there can be little doubt that the "shophouse" contributes materially to this problem, and will continue to do so until there is radical redesigning and radical alteration in the way of life of this section of the community.

An attempt has been made to encourage a new design especially in the townships where rebuilding of bazaars, destroyed by the operations of war, was undertaken, but the conservatism of the Chinese trader and the urgency of rehabilitating trade militated against it.

In rural areas the housing shortage was not so acute as land is more plentiful and the type of construction favoured very much cheaper. The standard of housing in such areas, although not high, is considerably better than in the bazaars. Design and materials used, although, primitive, lend themselves to better lighting and ventilation and healthier living. This applies especially to the Malay type of house which, built of local materials, is raised some eight to ten feet above the ground and is well ventilated.

In the interior the Dayak villages take the form of the "long house" which is essentially a village under one roof. It consists of a row of rooms, sometimes as many as fifty, each occupied by a family, and a long wide enclosed verandah where all communal activities are undertaken and where the bachelors live. The "longhouses" are raised above the ground, sometimes twenty feet or more, and they are often of massive construction. They are usually very ill lit and the people live in semi-darkness. Sanitation is very primitive and all refuse and nightsoil is disposed of through the floor to be devoured by the pigs on the ground below. Several hundred people living under one roof in such circumstances would appear vulnerable from the point of view of epidemic infection and records suggest that this is the case. Exact information regarding tuberculosis incidence is lacking but it is probably considerable. Thus from the public health angle, the trend, to break up the longhouse into villages, which has been resisted for years but which is now considered may be desirable, is one to be encouraged.

V. COMMUNICABLE DISEASES.

(a) Endemic Diseases.

(i) Acute Poliomyelitis.

One of the most outstanding events of the year was the occurrence, for the first time in the Colony's recorded history, of an epidemic of acute poliamyelitis. The first case was diagnosed in March and came from a rural area in the interior fifteen miles from Kuching. The next case diagnosed occurred on 1st July in Kuching and immediately thereafter there was a rapid occurrence of further cases in the Kuching Municipality and in the surrounding rural areas. During the third quarter of the year 9 cases were recognised in Kuching and 11 cases in adjoining rural areas.

It was not until late August that a foyer was established by the recognition of a case from the Second Division. This was, however, the prelude to a sharp outbreak in the Third Division, in Sibu and its immediate neighbourhood. Later sporadic cases occurred at the northern end of the Colony, in Miri and Limbang but there the incidence was never alarming.

In the last quarter of the year the incidence in Kuching and the First Division declined markedly but continued in Sibu and its environs. Yet even in Sibu there was a decided slackening off as the year closed.

The age incidence was what used to be considered classical, namely, in the age range one to twelve, although the occasional adolescent case was recorded and also some infants under one year. The mortality rate in diagnosed cases was 9%. An interesting but unexplained fact was the preponderance of Chinese in the recognised cases. The first Kuching case was a Malay youth of eighteen. All other cases recorded were Chinese. Only a single Dayak case has so far been seen in the Third Division.

The number of cases recognised during the year, and their distribution, was as follows:—

	Cases	Deaths
Kuching	14	1
1st Division (other than Kuching)	9	1
2nd Division	1	—
Sibu	6	1
3rd Division (other than Sibu)	31	3
Miri Town	3	—
Limbang	3	—
Total	67	6

In addition, one case was reported from Brunei Town. At the end of the year the infection continued to smoulder in the Third Division and to a very much lesser extent, in the First Division, but no fresh case had been reported from the Northern divisions for six weeks.

All cases and, as far as was practicable, child contacts were isolated or kept under observation and excluded from school. How far, if at all, this affected the epidemic it is impossible to say but it was the only practicable step which could be taken and, certainly in Kuching, where isolation was most rigidly enforced, the occurrence of cases rapidly declined.

The hospitals, short staffed as they were, were put to even greater strain but they dealt with the situation adequately. Cases with respiratory paralysis were not infrequent and only the General Hospital, Kuching, had a mechanical respirator which was much used. An additional machine was obtained from Singapore for Sibu Hospital and its presence gave comfort to the harrassed medical officers there. In anticipation of a further spread of the infection two additional respirators were ordered. One of these was generously provided by the Government of the Gold Coast, and the other was purchased in the United Kingdom. Both were on their way ot the Colony by the end of the year. They may well be most useful for there is possibility that there will be increase in case incidence once more in the second quarter of 1950 when warmer and relatively drier weather occurs.

(ii) **Malaria.**

There was no unusual incidence of malaria during 1949. All available information indicates that rural areas exhibited their customary endemicity, the towns and trading centres were largly free from the disease and no major epidemic occurred either in the coastal or interior areas.

The total number of cases diagnosed at hospitals and dispensaries as malaria was 10,389. The comparable figure for 1948 was 13,176. The great majority of these cases were diagnosed on clinical grounds as microscopes are available in few outstation dispensaries.

General anti-mosquito measures in the towns continued as in the previous year and certainly played their part in maintaining the towns very nearly malaria free. In rural areas no specific anti-malaria measures were undertaken other than the treatment of cases presenting themselves at dispensaries.

Little is yet known about malaria in Sarawak. Few spleen or parasite surveys have been undertaken, the main vectors are not all known with certainty and there is, thus, as yet, no sound basis upon which to organise anti-measures. So, with the exception of the organisation in Miri which resulted from the sharp epidemic in the 1946/1947 season, no large scale specific measures were initiated or carried on. Investigation, as far as slender staff resources permitted, was pursued, near Kuching, in the Lower Rejang and in Miri. In the latter place, for the first time in Borneo, salivary gland infected *A. sundaicus* was recorded, an observation of great practical significance which adds strong support to the expressed opinions of various observers that this mosquito was responsible for the coastal epidemics of malaria.

No investigation was carried out in Sarawak by the Borneo Malaria Research Unit financed from Colonial Development and Welfare funds, the activities of the unit being limited to the Colony of North Borneo. The necessity for investigation in this Colony was emphasised by the Malariologist of the United Nations International Children's Emergency Fund who visited Sarawak to find out whether the World Health Organisation could help by the initiation of a malaria conrtol demonstration. He agreed that the Colony is not yet in the position to benefit from such help and that investigation of the intensity and extent of the disease, and the identification of its vectors were a necessary prelude to such help.

Thus, as the Colonial Development and Welfare Malaria Research Scheme is coming to an end, an application, which is now being considered by the Secretary of State, was made for a two years extension of the scheme to permit the Research Unit to work in Sarawak, to provide the information necessary for rational control and to train the nucleus of a local organisation which will continue research and control with local funds after the termination of the Colonial Development and Welfare Scheme. Approval of this application will enable rapid strides to be taken towards the goal of malaria control.

(iii) **Tuberculosis.**

This infection continued to be of major significance. The number of tuberculosis cases reported was 1,108 and deaths attributed to this cause numbered 280. The corresponding figures for the previous year were 1,096 and 370. With very few exceptions the cases were of the pulmonary type.

The number of cases discovered on medical examination of applicants for employment in the Government Service suggests strongly that a systematic survey would reveal a considerably higher incidence. Such a survey could not, during the year, be undertaken with local resources and, assistance in this regard from the World Health Organisation, which was hoped for, has not yet materialised.

Bed accommodation for the isolation and care of the tuberculous still falls far short of what is necessary and, because of budget limitations, must necessarily continue to do so for some time. Kuching General Hospital has the only special hospital beds for these cases and this is inadequate in spite of the number of beds being increased during the year by the erection of a ward with twenty beds for female cases, making the total number of tuberculosis beds fifty. These beds were constantly occupied and in addition other cases had to be accommodated in general wards.

In Sibu, although there are no special beds in the hospital, a voluntary organisation provides care for a number of cases of chronic tuberculosis, but active treatment is not undertaken. During 1950, Sibu Hospital will be provided with X-ray facilities and it is planned to build a special ward of twenty beds for tuberculosis cases.

(iv) **Leprosy.**

There is no reason to suspect any change in incidence of leprosy. The number of cases diagnosed and admitted to the Leper Settlement was 59 as compared with 67 in 1948. The Settlement population at 31st December was 418 as compared with 382 at the end of 1948.

Treatment of cases with sulphetrone gave apparently promising results but, however effective this treatment may prove to be in rendering cases non-infectious, treatment of cases already segregated cannot be expected to affect the continuing incidence of the disease in the Colony. This can only be achieved by development of medical services leading to the early recognition of cases and also by a general improvement in the standard of living.

(v) **Yaws.**

This remains one of the commonest and most widespread infections. During the year a total of 15,378 cases were diagnosed and treated as compared with 18,730 in the previous year. Regular treatment is difficult when the population is so dispersed but it is hoped that the regular visits of the travelling dispensaries to the more remote areas will encourage yaws infected persons to continue treatment and that there will be a reduction in incidence. There has already been some indication of this from reports of the hospital assistants in the boat and vehicle regularly travelling in the First Division.

(vi) **Diphtheria.**

There was a marked reduction in the incidence of this infection. The number of cases reported was 82 as compared with 249 in 1948. Kuching and Sibu accounted for the vast majority with 29 and 44 respectively, and there were a few isolated cases in other widely separated areas

(vii) **The Enteric Fevers.**

The decline in the incidence of these infections seen in 1948 continued during 1949, when 107 cases were diagnosed as compared with 153. As in previous years the disease occurred in higher incidence in Sibu than in any other centre but here, too, there was substantial

reduction in the number of cases which may have been due, in part, to the general improvement in sanitation in the town and an energetic inoculation drive.

(viii) **Dysentery and Diarrhoea.**

Intestinal infections are very common, especially in rural areas and, as in the past, the number of persons seeking treatment for these conditions at outstation dispensaries was high. However there were no major outbreaks of dysentery during the year although the primitive living conditions outside the towns make the occurrence of epidemics likely.

(ix) **Helminthiasis.**

A very large proportion of the population constantly harbour intestinal worms, especially ascaris, which is only to be expected in view of the unsatisfactory sanitary environment and habits of the people. Ancylostomiasis is also common, being associated too with defective sanitation and the use of nightsoil as fertiliser in agriculture.

(x) **Venereal Diseases.**

Except in the towns, the incidence of venereal disease is relatively low and in some outstation dispensaries cases are not often encountered. Even in the towns the incidence is not unduly high. During the year a total of 839 cases of gonorrhoea and 1,883 cases of syphilis was diagnosed at Government hospitals and outstation dispensaries.

(b) **Non-endemic Diseases.**

No case of small-pox, plague, cholera or typhus occurred in the Colony during the year and, in fact, Sarawak has been free from these infections for many years. In the case of small-pox it is twenty years since the disease last occurred and at least equally long since plague or cholera recorded. There is no record of epidemic typhus ever having occurred in the country but it is possible that endemic typhus is present although no case has yet been diagnosed with certainty.

The country's long freedom from the major pestilences is remarkable in view of the their endemicity in neighbouring countries in communication with the Colony, communications which have increased in recent years and continue to increase.

Since the war a considerable amount of vaccination against small-pox has been undertaken but the major portion of the population is still non-immune and introduction of the disease could be unfortunate. Similarly, the low hygienic standards in many parts of the country would clearly favour the establishment of cholera were the disease to slip passed the maritime defences.

VI. PORT HEALTH ADMINISTRATION.

Port health administration is based upon the Quarantine Rules (1932) which are not in accord with recent international conventions and are thus in some respect out of date. It was still not found possible to enact new rules but, in practice as far as possible the spirit of the International Sanitary Convention was followed.

Three ports in the Colony, namely, Kuching, Sarikei and Miri are first ports of call for vessels from overseas. Health inspectors are stationed at these ports and formalities are conducted by them. Medical officers are, however, in each case available to deal with infection should it be encountered.

Epidemological intelligence was received weekly by radio from the Regional Officer of the World Health Organisation in Singapore and also by mail from Geneva. During the year quarantine measures were declared against Batavia, Riaw Archipelago, Semarang, Tegal, Cheribon and Pakalongan and, at the end of the year continued in force.

No infected vessels entered the Colony's ports during the year.

Shipping statistics for the port of Kuching are set forth in Appendix III.

VII. MALNUTRITION AND DEFICIENCY DISEASES.

Gross nutritional deficiency is not very commonly encountered but a very considerable proportion of the population shows signs of undernourishment. This is true both of rural and urban areas. In the former the cause is a combination of actual food shortage at certain seasons, poverty and ignorance. In the latter, the cause is partly poverty but, mainly ignorance. There is no measure available of the degree of malnutrition in the rural areas but in Kuching, the importance of the problem is indicated by the experience of the Maternity and Child Welfare service. In the records of this organisation it is assessed that 22% of some 1,200 babies, attending during nine months of 1949, showed undernourishment in varying degree, and malnutrition among pregnant women and nursing mothers was not uncommon.

In the hospitals under-nourished children were frequently seen and, apart from cases of frank beri beri which did occur but not with great frequency, signs of nutritional deficiencies in adults were frequently observed. During the year arrangements were made to supply the hospitals with vitamin enriched rice to mix with the rice supplies ordinarily used.

Shortage of staff still precluded the carrying out of nutritional surveys and no feeding schemes were undertaken. However, milk and fat supplements were provided at the clinics to mothers and babies whose need was great.

VIII. MATERNITY AND CHILD WELFARE SERVICES.

This activity has encountered many difficulties some of which have still to be overcome. When the year began there was one health centre in Kuching which was adequately accommodated and, even without a Health Visitor, was making some progress. In January, however, the Lady Medical Officer left the Colony and the work virtually came to a standstill, being just kept going by a staff nurse. Then owing to a general shortage of office space the Maternity and Child Welfare Centre had to give up its accommodation and the organisation had to be fitted in, in the best way possible, in the Central Dispensary. It was maintained as a separate working entity but the

space available was inadequate and the waiting room was shared with general female outpatients. To these circumstances the Health Visitor arrived in March. Her activities increased attendances and accommodation difficulties became even more acute. In spite of this progress was rapid, so much so that soon the volume of work to be done became somewhat of an embarrassment to the limited staff available. Unfortunately, it was not possible to provide additional staff as suitable personnel could not be obtained but the year's experience has made it clear that development of this important service will be rapid when the staff position improves. Nevertheless a small start was made with the training of local personnel.

Ante-natal and child welfare work was firmly established and attendances steadily increased. The vast majority of those attending were Chinese but latterly there were signs of growing appreciation of the value of the clinics by other sections of the community. A subsidiary centre was opened in a school in the heart of the Malay kampongs and, after a slow start, is now running smoothly with a good attendance. Clinics were held each week, ante-natal sessions alternating with child welfare.

The child welfare clinics were very popular but tended to be regarded as places to which to bring sick children. However, the newly delivered mothers are gradually and with some success, being educated to bring their children to the clinics regularly. Post-natal clinics have had to be incorporated in the Child Welfare Clinics and still the majority of women attending do so because of definite complaints. Separate post-natal clinics are very necessary with gynaecological treatments and birth control advice which is eagerly sought, but staff and accommodation difficulties preclude this in the meantime.

Not as much attention as is desirable was paid to health education because the staff found it all they could do to deal with the ordinary work of the clinic with little time for talks and demonstrations. Nevertheless health education was stressed as much as the circumstances permitted, some lecturing was carried out and, with the co-operation of the Information Officer, it was, for a period, possible to have weekly sessions when health educational films were shown and enlarged upon by the Health Visitor.

Home visiting, an activity entirely new in this country, was initiated by the Health Visitor and her staff in March, and these visits were, on the whole, well received. In Malay and in many Chinese homes neither mother nor infant are permitted to leave the house, in which the confinement took place, for a period of forty days. During this period many difficulties to mother and child are likely to arise and home visiting is thus especially important at this time.

The arrival of the Lady Medical Officer in October gave an added fillip to the work and it is clear that when the two main obstacles of accommodation and lack of suitable trainees are overcome this service will develop rapidly.

Towards the end of the year it was decided to extend the work to a rural area fifteen miles from Kuching. Suitable premises were

rented in a small rural bazaar serving a fairly well populated Land Dayak area and preparations were well advanced to open a welfare centre there in the first week of January, 1950.

Figures of attendances, etc., at the various clinics from April, when they became organised on a proper basis. until the end of the year are shown in Appendix IV.

IX. HOSPITALS, DISPENSARIES AND OTHER INSTITUTIONS.

By the end of the year there were in operation three Government owned hospitals, twenty-four outstation dispensaries and three travelling dispensaries, two of which were river craft and one a road vehicle. The outstation dispensaries are provided, in all but exceptional cases, with rest beds and inpatient treatment of a simple nature can be provided. The average number of beds is about six and the maximum is twelve. Some of the larger dispensaries, staffed by senior hospital assistants and more elaborately equipped are, in effect, miniature hospitals.

The Sarawak Oilfields Limited at Miri operates its own hospital of 124 beds for its employees, but by arrangement with the Company its medical facilities are available to the public on repayment by Government which recovers costs as far as possible from the patients concerned.

A similar arrangement with the Government of Brunei enables the peoples of the Fifth Division of Sarawak to receive treatment in the Brunei Hospital to which hospital assistants in the three out station dispensaries in the Division may send patients.

Appendix V lists the hospital beds available at 31st December, 1949, and Appendix VI the number of dispensary rest beds.

The following table summarises the numbers of inpatients treated at Government Hospitals, the inpatients admitted to dispensary rest beds and outpatients treated at hospitals and dispensaries.

	1949			
	Outpatients			
	New	Repeat	Total	Inpatients
General Hospital, Kuching ..	27,735	77.522	105,257	5,207
Sibu Hospital	17,802	12,030	29,832	2,550
Simanggang Hospital ..	13,990	2,641	16,631	621
Dispensaries	97,680	22,900	120,580	858
Travelling Dispensaries (River)	32,811	3,232	36,043	—
Travelling Dipsensaries (Road)	15,133	1,861	16,994	—
Itinerant Dressers	9,210	—	9,210	—
	214,361	120,186	334,547	9,236

In addition, at the Sarawak Oilfields Limited Hospital, Miri, a total of 1,842 inpatients were treated and total outpatient attendances were 22,435. Rather more than four-fifths of the inpatients treated in Miri were employees of the Company. Admissions to the Brunei State Hospital from the Fifth Division numbered 45:

The total number of outpatient attendances is fifty per cent higher than that of the previous year and there has been a ten per cent increase in the number of inpatients.

(i) **General Hospital, Kuching (Including Mental Section).**

This is the largest and most elaborate medical institution in the Colony and it finished the year with three hundred general and special beds and one hundred mental beds. This is an increase on the previous year in the number of beds available partly accounted for by new building and partly by bringing into operation an additional existing ward. There are still two wards not in use but staff shortage prevented them being opened.

The hospital is the training centre for hospital assistants, nurses and midwives.

The volume of work undertaken was larger than in previous years although for the greater part of the year only two medical officers were available. The strain thrown upon them and upon the senior nursing staff was very considerable and it is to their credit that so much was done and, in fact, that there was a steady raising of hospital standards. Ward equipment is now generally satisfactory and, towards the end of the year when more medical and senior nursing staff became available, there was noticeable improvement in standards of care and treatment.

A considerable and exceptional strain was thrown on the hospital by the outbreak of acute poliomyelitis as not only were cases isolated there but also child contacts.

The vast majority of the patients treated were again Chinese who accounted for 3,429 of the 5,207 admissions, i.e. 65.85% which is almost exactly the same proportion as in the previous two years. The proportions of the other main groups, the Dayaks and Malays also remained as in previous years at approximately 18% and 10% respectviely.

Deaths in hospital numbered 294 which is the equivalent of 5.6% of admissions.

There was a further increase in the number of births in hospital, the figure being 753 as compared with the previous year's 722. This is quite a remarkable performance and is the equivalent of approximately forty births per bed per year. As in the past the vast majority of the births were Chinese.

In the latter part of the year the long awaited new X-ray diagnostic plant arrived and was installed. Arrangements were made for the old machine to be dismantled and reconditioned for installation in Sibu Hospital during 1950. The new plant is a great improvement and adequately meets the needs of the hospital.

The laboratory was greatly improved. Essential equipment and apparatus was installed, an animal house was erected and colonies of rabbits, guinea pigs and mice were successfully established. Manufacture of vaccines was commenced and sufficient anti-typhoid and anti-cholera vaccine was prepared to meet the needs of the Colony.

The volume of work undertaken increased substantially. However, it was not possible owing to shortage of staff, to detail a medical officer, even part time, to the Laboratory and thus pathology remained weak and no research work was possible.

The mental section it not satisfactory. The standard of accommodation is poor and by the end of the year, with 135 patients, there was serious overcrowding. The type of accommodation and staff shortage rendered close and active treatment impracticable although all that was possible in the circumstances was done. Although during the year agreement in principle was reached regarding the siting, near Kuching, of the proposed interterritorial mental hospital the scheme had not been finally agreed to when the year closed.

Details of admissions to the General Hospital and causes of admission are detailed in Appendices VII and VIII. Details of surgical work carried out are shown in Appendix IX and of the work of the laboratory in Appendix X.

(ii) The Central Dispensary, Kuching.

This is the outpatient department of the General Hospital and is sited in the centre of the town, at some distance from the hospital. It consists of two sections, male and female, as it has been found desirable to separate the sexes. An ambulance service links the Central Dispensary with the General Hospital one and a half miles distant.

The accommodation available, which is shared with the headquarters of the Maternity and Child Welfare organisation, is inadequate and not entirely suitable. Work was carried out under difficulties especially when daily attendances rose markedly. If it is possible, as is hoped, to find separate accommodation for the Maternity and Child Welfare work next year, the situation will be eased but, nevertheless, new and more spacious accommodation for the Central Dispensary will remain a necessity.

As far as medical staff shortages permitted daily sessions were conducted by medical officers. Total daily attendances were in the region of six hundred although there was some falling off late in the year when the charging of nominal fees was instituted. This was a substantial increase on the previous year's performance as the following figures show:—

	1948			1949		
	New	Reutrn	Total	New	Return	Total
Male ..	6,732	13,477	20,209 :	10,502	51,806	62,308
Female ..	24,257	21,561	45,818 :	17,233	25,716	42,949
Total ..	30,989	35,038	66,027 :	27,735	77,522	105,257

(iii) The Dental Clinic, Kuching.

This is located in the General Hospital and consists of two adequately equipped dental surgeries and a laboratory. At the end of the year the staff available consisted of a Dental Officer, a local dentist trained in the U.S.A. and a Singapore trained Dental Mechanic. With this staff it was, for the first time since the war possible to provide

limited but efficient dental service to the vulnerable population groups in Kuching and to employees of Government and others who desired skilled attention.

Surveys of school children were commenced and defects found were rectified. Close liasion with the Maternity and Child Welfare service was established and dental care provided for expectant and nursing mothers attending the clinics.

Twice during the year it was possible to arrange for a dentist to visit Sibu on two-weekly visits when his services were greatly made use of by Government staff, school children and others.

Although there are some one hundred and sixty registered dentists practising in the Colony, there are none, with the exception of the Government dental staff, holding any dental degrees or diplomas. The majority of the dentists now practising in the Colony have picked up their knowledge under a loose apprenticeship system. Although the general standard of dentistry is poor by Western standards, the registered dentists do fulfill a public need and will, for many years to come, provide the only dental care which will be available outside the main towns. However, their replacement by qualified dentists will be the aim but achievement must remain in the distant future.

Details of work carried out during the year by the dental staff are shown in Appendix X.

(iv) **Lau King Howe Hospital, Sibu.**

This hospital, which serves the largest administrative division of the Colony, at the beginning of the year, had in operation eighty-four general and special beds. At the end of the year beds numbered one hundred and four, there having been erected a sixteen bedded maternity ward with labour room, etc. The cost of erecting this ward was met from a gift to Government of $23,000 from the Sibu Regatta Fund. Equipment was provided by Government and the ward was brought into use in December.

There was a marked improvement in general standards in this hospital, and, with two medical officers available throughout the year the volume of work done was considerable, much larger than in previous years. Although there was a slight falling off in the numbers of outpatients treated, there was more than a forty per cent increase in the number of inpatients, and there was more major surgery undertaken than ever before. Operating theatre and ward equipment was brought up to reasonable standard and laboratory facilities greatly improved. No X-ray plant was available, but with the arrival of the new apparatus for the General Hospital, Kuching, and its installation towards the end of the year, it will be possible to install the old apparatus in Sibu in 1950.

The complement of hospital assistants and nurses was increased and, although staff is not yet entirely adequate, this hospital was relatively better off than the General Hospital, Kuching.

In mid-December a nursing sister was posted to the hospital. This is the first appointment of its kind to Sibu and should lead to great improvement in nursing standards.

There was again an increase in the number of births in this hospital, there being 171 as compared with 157 in 1948, which was a very creditable performance as, for virtually the whole year, only six maternity beds were available.

During the year inpatients treated numbered 2,550. New outpatient attendances were 17,802 and total attendances 29,832. The correpsonding 1948 figures were 1,785, 18,524 and 30,907.

In approved Estimates for 1950 a substantial sum has been provided to permit of extension of this hospital. A tuberculosis ward, a mental block, a new outpatient department, nurses' home, etc. are planned.

Details of admissions to this hospital are shown in Appendix, XI.

(v) **Simanggang Hospital.**

This institution was the largest of the outstation dispensaries and with the posting to it in December of a medical officer, the first posting of its kind to Simanggang, the conversion of outstation dispensary to small hospital commenced. Additional staff was provided and much equipment, and by the end of the year twenty beds were in use. It is still a somewhat primitive institution but, although additional bed accommodation will not be provided immediately, new construction is planned early in 1950 to provide for stores, laboratory and outpatient department. The intention is gradually to add to the institution to develop it into a forty to fifty bed hospital and it is hoped to achieve this in 1951.

(vi) **Outstation Dispensaries.**

At the end of the year these numbered twenty-five, one more than in the previous year. Figures of attendances are as follows:—

Total attendances	137,211
Number of patients admitted to rest beds	1,479

Various improvements were effected in the dispensaries and three were replaced by new buildings providing better accommodation. Sarikei and Binatang Dispensaries which previously functioned in single rooms in the District Offices are now accommodated in separate buildings and each has accommodation for six male and four female inpatients. In Belaga also a new building was erected providing for six rest beds.

Good work was done but, through shortage of medical staff, supervision was slight and certainly less than is desirable to ensure the maintenance of the enthusiasm of the hospital assistants. However, enthusiasm was maintained in all but exceptional cases and the work done by the hospital assistants often under difficult circumstances, was admirable.

In spite of great distances and difficult communications supplies to the dispensaries were maintained and shortage of essentials hardly occurred.

(vii) **The Travelling Dispensaries.**

(C. D. & W. Medical Scheme No. D.830).

The first two dispensaries, planned to work during the first two years of travelling and preparation for the full scheme, to provide information and experience in operating this new type of dispensary, performed their function well and, at the same time gave good service to large numbers of the population in the deltas of the Rejang and Sarawak Rivers. Schedules covering five days each week were maintained with remarkable regularity throughout the year as a whole but, there was trouble with both boats necessitating major over-hauls to replace portions of hulls honey-combed by the borer beetle. Also, towards the end of the year, the engines of the Sibu boat were put out of action and could not be immediately repaired as, owing to limited gold dollar exchange, spare parts were not easily available.

However, these, and other troubles had their value in indicating the necessity for great care in the selection of hard woods for the construction of the remaining fourteen perahus, in arranging for skilled engine maintenance and so on. Nevertheless, it is clear that the closest possible supervision, and much hard work, will be essential in future to maintain the scattered fleet of travelling dispensaries on the remote rivers of the Colony. Interruptions to schedules will doubtless occur through breakdown, floods, accidents and so on but the people understand very well the hazards of river travel and, if the interruptions are minimal they will detract little from the value of the service.

The experience gained during the year, and in 1948, has been invaluable. It has indicated many difficulties and made it clear that there will be many more, but it has also shown that the scheme is a practicable one and immensely popular with the people. The number of persons receiving treatment from these dispensaries during the year was as follows:—

	New Attendances	Repetitions	Total
Travelling Dispensary No. 1 (Sibu)	12,710	1,183	13,893
Travelling Dispensary No. 2 (Kuching	20,101	2,049	22,150

Apart from providing curative treatment these boats are also intended to serve as river ambulances bringing those requiring more elaborate treatment to the hospitals. This function is slow in developing. In Dayak areas subsistence agriculture without a margin makes even a sick man loathe to consider absence from his farm during burning, planting or reaping. In Malay areas there is the customary Muslim reluctance to leave home for medical treatment and the serious economic effect of lost time also weighs heavily. Nevertheless, if, as is intended, schedules are short and regularly maintained, there is confidence that, in time, the people will be more ready to make use of the perahus to take the sick to hospital, in the knowledge that they will be returned to longhouse or kampong or a known day in the next, or a following, week.

Again, the Travelling Dispensaries provided valuable medical intelligence and located cases of poliomyelitis along their routes during the sharp outbreak of this infection in the second half of the year, especially in the environs of Kuching and Sibu. It is clear that when all sixteen perahus are operating the area of terra incognita as far as the occurrence of infectious disease is concerned will be very greatly reduced.

But the main pre-occupation during the year was with training of staff, recruitment of men for the General Hospital, Kuching, to replace those who would be drafted to man the boats, the building of quarters and of perahus in remote stations, the preparation of supplies of medical and other stores, organising of supplies of petrol and oil, discussion and agreement with Administrative Officers regarding itinaries and schedules, and so on. Because of public holidays, 3rd January, 1950, was fixed as the day upon which the fourteen additional perahus would set off on their maiden journeys.

Towards the end of the year the tempo of preparation increased. Final examinations were held in October, and, in November, posting of hospital assistants to the more remote stations commenced. In November also supplies for each dispensary, estimated to suffice for upwards of six months, were dispatched from the Central Medical Store, Kuching.

As the end of the year approached it was clear that there was every chance that the complete scheme would be fully operative on the planned date. Although in one station the hospital assistant's house had not been built, this was deliberate, occasioned by reasons outside the scheme, and would not delay the operation of the particular travelling dispensary. Similarly, other minor matters would clearly not be finalised until the early months of 1950. But there was confidence that by the planned date there would be sixteen dispensaries travelling and working on the rivers of the Colony.

The scheme also provides for two orthodox outstation dispensaries. Although one of these was still structurally incomplete both were functioning well before the year ended.

(viii) **The Leper Settlement,**

This institution, situated thirteen miles from Kuching, operated smoothly although staff shortage made itself felt here as elsewhere in the department. About three visits per week were paid to the Settlement by medical and senior nursing staff from Kuching but the day to day management was vested in the Chief Hospital Assistant who acted as Superintendent.

There were 418 inmates at 31st December, 1948, compared with 382 at the end of 1948, living in conditions not very dissimilar from that of normal village communities in the Colony. On the whole it can be said it was a reasonably happy community, although inevitably there were minor frictions and crises from time to time. In the early part of the year the restriction in administration of sulphetrone to one hundred selected cases caused some resentment especially when clinical improvement in these cases was observed. Later, however, sufficient

supplies of the drug were made available for it to be administered to all who could be considered likely to benefit.

The report of the Medical Officer supervising this trial of sulphetrone therapy is not yet available but his preliminary observations are encouraging and there has been undoubted and obvious clinical improvement in many cases. The patients themselves, that is those who still wish to return to normal living outside the Settlement, have confidence and new hope as they observe the clearing of cutaneous lesions after years. But, even if they are rendered non-infectious, or even if they are cured, their troubles will not be over. Fear of leprosy is strong in all communities and the arrested case is not welcome back, especially in the Dayak longhouse. Thus, effort will be necessary to educate the public at large to the knowledge that the disease may be cured, before the person discharged from the Settlement can return confidently to, and be absorbed in, the environment from which he originated.

There was still no extensive replacement of buildings during 1949 as discussion regarding the establishment of a Settlement to serve the British Broneo Territories continued. When, late in the year this proposal was abandoned, at least for the present, it was decided to improve the Settlement buildings as and when funds could be appropriated for this purpose. In fact, it was possible to carry out extensive repairs and several very dilapidated buildings were rebuilt.

A pleasing feature was the development of social welfare activity. The Settlement School became solidly established especially when it became, in effect, a boarding school with the small boys, who were being exploited by certain adult patients, largely segregated in a relatively remote building. A Boys' Scout Troop was formed and the local branch of the British Red Cross Society organised a working group in the Settlement and, by weekly visits of officers, did much to encourage community effort. The Rotary Club, too, did good work especially organising and financing periodic cinema shows which were extremely popular.

But, probably most important of all, was the formation of a Settlement Advisory Committee to represent to the Superintendent the views and wishes of the inmates and to assist him in the administration of this complex group of people.

It can be said that medical care was better than in the past and that this, together with the increased social welfare activity, went far to produce a higher standard of morale than had been previously observed.

Figures of admissions, discharges, etc., are shown in Appendix XIII.

X. VOLUNTARY AGENCIES CONCERNED WITH THE PUBLIC HEALTH.

(a) British Red Cross Society—Sarawak Branch.

The Sarawak Branch of the British Red Cross Society was very active during the year and did much to help, and supplement the activities of, the Medical Department. The Branch's largest single

venture was the establisment of an ambulance service which was closely co-ordinated with that of the Medical Department. The fine ambulance vehicle, costing $10,000, was a gift to the Branch from the Society and it commenced operating in August. Till the end of the year it ran each week to Serian working in conjunction with the Department's Travelling (Road) Dispensary and, in the five months of its operation, it transported fifty-three convalescent patients to their homes along the road to Serian and brought to the General Hospital eighty-seven sick persons. It stood by on three days each week at the Airfield and was also a reserve for the Government ambulance.

The Branch's blood transfusion service was of the greatest help to the General Hospital, Kuching, and never failed to produce a donor when asked to do so.

A Red Cross First Aid Post was established and conducted by the Branch at the 15th Mile, Simanggang Road and provided good service.

In the General Hospital and the Leper Settlement a great deal of welfare work was done and sewing and occupational handicrafts were taught. This latter was especially beneficial in the mental section of the General Hospital where it had real therapeutic value.

A very useful library of textbooks and reference books was presented by the Society to the Nurses' Training School.

(b) **The Sibu Benevolent Society.**

This organisation continued to do most useful work in caring for destitute aged and also chronic tuberculosis cases in their Home near Sibu and their Nursing Home in Sibu itself. Medical supervision of the Nursing Home, which accommodates some fifty chronic invalids, was undertaken by the Department's officers in Sibu. The Society is supported by public subscription and a monthly contribution from Government.

During the year the Society proposed, in view of the dilapidated condition of the Sibu Nursing Home Buildings and the fact that, they do not belong to the Society, that Government erect a new home on land to be provided by the Society, the Home to continue to be run by the Society. Negotiations had not been finalised by the end of the year but it is probable that a new home will be erected in 1950.

(c) **Missions.**

There are still no medical missions in the Colony but simple out-patient treamtent continued to be provided at several mission stations and, at two, inpatients were cared for by nuns who are also qualified nurses.

XI. **METEOROLOGY.**

Meteorological records are maintained by the Department of Lands and Surveys. Available data for the year is detailed in Appendix XIII.

Appendix I.

ESTABLISHMENT.

	Aprroved	Available at 31. 12. 49	Remarks
Director of Medical & Health Services ..	1	1	
Deputy Director of Medical & Health Services	1	—	
Medical Officers	9	6	1 for Brunei.
Lady Medical Officer	1	1	
Dental Officer	1	1	
Sanitary Superintendent	1	1	
Matron	1	1	
Sister Tutor	1	1	
Health Visitor	1	1	
Nursing Sisters	4	4	1 for Brunei
Medical Storekeeper	1	1	
Chief Laboratory Technician	1	1	
Government Dentist	1	1	
Hospital Assistants	112	99	
Nurses	47	41	
Laboratory Attendants	5	4	
Superintendent, Leper Settlement	1	1	
Chief Health Inspector	1	1	
Health Inspectors	23	19	
Health Overseers	6	6	
Electrician	1	1	
Clerks	16	16	
Office Boys	5	5	
Menial Staff	—	203	

Appendix II.

QUALIFIED MEDICAL STAFF.

	Name and Qualification.	Appointmnet.	Date of Appointment to Present Post.	Date of Appointment to Service.	Remarks.
1.	J. M. Liston, M.B., Ch.B., (Glas.), D.T.M., & H., (Lond.), D.P.H., (Lond.).	Director of Medical & Health Services	23. 7. 47	29. 7. 35	
2.	L. J. Clapham, M.R.C.S., (Eng.), L.R.C.P., (Lond.), M.B., B.S., (Lond.), D.T.M & H. (Liverpool).	Medical Officer	1. 1. 49	29. 3. 40	Seconded to Brunei. Was previously on secondment-ment from Malaya.
3.	E. H. Wallace, M.B., B.S. (Glas.)	" "	30. 5. 48	—	On contract from India Medical Service which he joined on 27. 12. 35.
4.	J. P. Bennett, M.B., B.S. (Durham), Dip. Obs., R.C.O.G.	" "	16. 7. 48	24. 6. 48	
5.	Jozef Lomaz, M.B., B.S. (Polish School of Medicine, University of Edin.).	" "	17. 8. 49	—	On contract.
6.	Elizabeth Gemmell, M.B., B.S. (Edin.)	Lady Medical Officer	2. 10. 49	19. 9. 49	
7.	P. P. Gopala Pillai, M.B., B.S. (Madras).	Medical Officer	15. 10. 49	15. 10. 49	Three years previous service on contract as A.M.O.
8.	Wong Mook Foo, M.B., B.S. (Hongkong).	" "	2. 11. 49	2. 11. 49	"
9.	M. A. Rozalla, M.B. (Calcutta).	" "	—	16. 12. 49	Appointed but had not arrived in Colony by 31. 12. 49.

Appendix III.

SHIPPING STATISTICS—PORT OF KUCHING

1949.

ARRIVALS.

Ports	Trips	Tonnage	Crew	Passengers
Singapore	174	67.979	5236	2443
British North Borneo ..	11	10,438	772	435
Labuan	21	4.676	553	45
Brunei	5	961	142	5
Bangkok	3	2.903	157	—
Malacca	8	76	34	—
Pulo Bukom	9	1.694	188	—
Natuna Islands	35	477	275	1
Australia	1	289	18	—
Sambas	469	1.588	1253	—
Permangkat	81	240	214	—
Singkawan	5	63	18	—
Johore	3	45	15	—
TOTAL	825	91.429	8875	2929

DEPARTURES.

Ports	Trips	Tonnage	Crew	Passengers
Singapore	161	61.356	4931	1244
British North Borneo ..	2	122	27	63
Labuan	11	2.795	292	24
Brunei	13	1.370	178	8
Malacca	8	76	34	—
Pulo Bukom	6	790	78	—
Natuna Islands	35	226	136	1
Johore	3	45	15	—
Sambas	473	1.704	783	—
Permangkat	78	312	207	—
Pontianak	1	309	33	—
Singkawang	5	37	8	—
TOTAL	796	70.162	6802	1340

Appendix IV.

MATERNITY & CHILD WELFARE SERVICES, KUCHING.

Infant Attendances during 1949 (beginning April).

	Main Centre	Kampong Clinic.
Number of cases entered in File	1,210	97
Total number of Attendances	4,292	277
Malays	699	277
Chinese	3,274	—
Dayaks	107	—
Others	212	—

Number of Home Visits paid to Infants.

Total number of visits	1,142
Newly born	369
First visits	432
Repeat visits	341
Malays	415
Chinese	680
Dayaks	22
Others	25

Post Natal Attendances (beginning April).

	Main Centre	Kampong Clinic.
Number of cases entered in File	870	69
Total Attendances	3,424	157
Malays	774	157
Chinese	2,450	—
Dayaks	79	—
Others	120	—
Referred to Lady Medical Officer	315	—

Ante Natal Attendances (from April, 1949).

	Main Centre	Kampong Clinic.
Number of Ante-Natal Cases entered in File	621	63
Total number of Ante-Natal Attendances	2,528	208
Malays	432	208
Chinese	1,949	—
Dayaks	57	—
Others	90	—
Number of Ante-Natal Cases known to have delivered	233	—
Normal	221	—
Abortion	3	—
Stillbirths	3	—
Other complications	6	—
Deliveries unverified	119	—
Number of Anet-Natal Cases in File at end of 1949	269	—
Number of Ante-Natal Cases referred to Medical Officer	611	—
Number of Home Visits to Ante-Natal Cases.	98	—

Appendix V.

HOSPITAL BEDS AVAILABLE AT 31st DECEMBER, 1949.

Name and Location of Hospital.	Number and Category of Beds.								Remarks
	General	Obstetric	Children	Tuberculosis	Infectious	Mental Observation	Mental	Total	
General Hospital, Kuching, 1st Division.	189	19	26	50	—	16	—	300	
Mental Hospital, Kuching.	—	—	—	—	—	—	100	100	This is in the same compound as G.H.
Lau King Howe Hospital, Sibu. 3rd Division.	52	16	8	—	18	10	—	—	
Simanggang Hospital, 2nd Division	20	—	—	—	—	—	—	20	

Appendix VI.

DISPENSARY REST BEDS AT 31st DECEMBER, 1949.

Name of Dispensary	Division.	No. of Beds.
Tebakang (C.D. & W.)	1st Division	6
Lingga	2nd Division	6
Betong	"	4
Lubok Antu	"	4
Saratok	"	—
Sarikei	3rd Division	10
Binatang (C.D. & W.)	"	10
Kanowit	"	8
Kapit	"	8
Matu	"	6
Belaga	"	6
Meluan	"	2
Dalat	"	6
Mukah	"	6
Bintulu	4th Division	8
Marudi	"	6
Limbang	5th Division	12
Sundar	"	4
Lawas	"	6
	TOTAL	118

Appendix VII.

GENERAL HOSPITAL, KUCHING, 1949.

IN-PATIENTS.

Total number of admissions during the year	5,207
Total number of male patients admitted during the year	2,772
Total number of female patients admitted during the year	2,435

NATIONALITIES.

Americans	3
Arabs	3
Australians	4
Bataks	5
Bisayaks	1
Chinese	3,429
Dayaks, Land	512
Dayaks, Sea	402
Dusun	1
Eurasians	20
Europeans	67
Indians	179
Japanese	1
Javanese	29
Kedayan	1
Kelabits	6
Kenyahs	9
Malays	509
Melanos	16
Menadonese	6
Murut	1
Punan	1
Sekapan	1
Philipino	1
TOTAL	5,207

BIRTHS.

Total number of births for the year	801
Male	406
Female	395

NATIONALITIES.

Chinese	734
Dayaks	26
Eurasians	2
Europeans	8
Indians	16
Malays	14
Melano	1
TOTAL	801

DEATHS.

Total number of deaths for the year	294
Male	194
Female	100

NATIONALITIES.

Chinese	229
Dayaks, Land	28
Dayaks, Sea	10
Eurasian	1
European	1
Indians	6
Javanese	2
Kayans	2
Kenyah	1
Malays	12
Melano	1
Menadonese	1
TOTAL	294

Appendix VIII.

GENERAL HOSPITAL, KUCHING. 1949.

Diseases Treated and Deaths.

			Cases.	Deaths.
A	1	Tuberculosis of respiratory system	265	53
A	2	Tuberculosis of meninges and central nervous system	9	9
A	3	Tuberculosis of intestines, peritoneum and mesenteric glands	2	—
A	4	Tuberculosis of bones and joints	13	—
A	5	Tuberculosis, all other forms	19	1
A	6	Congenital syphilis	13	6
A	7	Early syphilis	34	—
A	8	Tabes dorsalis	—	—
A	9	General paralysis of insane	18	6
A	10	All other syphilis	2	—
A	11	Gonococcal infection	27	—
A	12	Typhoid fever	29	3
A	13	Paratyphoid fever and other Salmonella infections	—	—
A	14	Cholera	—	—
A	15	Brucellosis (undulant fever)	—	—
A	16	Dysentery, all forms	66	4
A	17	Scarlet fever	—	—
A	18	Steptococcal sore throat	—	—
A	19	Erysipelas	4	—
A	20	Septicaemia and pyaemia	6	1
A	21	Diphtheria	12	4
A	22	Whooping cough	4	—
A	23	Meningococcal infections	4	3
A	24	Plague	—	—
A	25	Leprosy	14	—
A	26	Tetanus	10	6
A	27	Anthrax	—	—
A	28	Acute poliomyelitis	23	2
A	29	Acute infectious encephalitis	1	—
A	30	Late effects of acute poliomyelitis and acute infectious encephalitis	—	—
A	31	Smallpox	—	—
A	32	Measles	1	—
A	33	Yellow fever	—	—
A	34	Infectious hepatitis	20	1
A	35	Rabies	—	—
A	36	Typhus and other ricketsial diseases	—	—
A	37	Malaria	157	7
A	38	Schistosomiasis	—	—
A	39	Hydated disease	—	—
A	40	Filariasis	7	—
A	41	Ankylostomiasis	86	—
A	42	Other diseases due to helminths	153	1
A	43	All other diseases classified as infective and parasitic	155	—
A	44	Malignant neoplasm of buccal cavity and pharynx	3	2
A	45	Malignant neoplasm of oesophagus	—	—
A	46	Malignant neoplasm of stomach	6	—
A	47	Malignant neoplasm of intestine, except rectum	8	4
A	48	Malignant neoplasm of rectum	—	—
A	49	Malignant neoplasm of larynx	3	1
A	50	Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	6	2
A	51	Malignant neoplasm of breast	6	3

			Cases.	Deaths.
A	52	Malignant neoplasm of cervix uteri	5	1
A	53	Malignant neoplasm of other and unspecified parts of uterus	5	1
A	54	Malignant neoplasm of prostate	1	—
A	55	Malignant neoplasm of skin	2	—
A	56	Malignant neoplasm of bone and connective tissue	3	1
A	57	Malignant neoplasm of all other and unspecified sites	24	4
A	58	Leukaemia and aleukaemia	6	2
A	59	Lymphosarcoma and other neoplasms of lymphatic and haematopoietic system	2	—
A	60	Benign neoplasms and neoplasms of Unspecified nature	53	—
A	61	Nontoxic goitre	32	2
A	62	Thyrotoxicosis with or without goitre	2	1
A	63	Diabetes mellitus	24	—
A	64	Avitaminosis and other deficiency states	68	8
A	65	Anaemias	72	2
A	66	Allergic disorders, all other endocrine, metabolic and blood diseases	48	—
A	67	Psychoses	103	2
A	68	Psychoneuroses and disorders of personality	15	2
A	69	Mental deficiency	4	—
A	70	Vascular lesions affecting central nervous system	8	7
A	71	Nonmeningococcal meningitis	6	4
A	72	Multiple sclerosis	—	—
A	73	Epilepsy	5	—
A	74	Inflammatory diseases of eye	131	—
A	75	Cataract	20	—
A	76	Glaucoma	—	—
A	77	Otitis media and mastoiditis	17	—
A	78	All other diseases of the nervous system and sense organs	48	2
A	79	Rheumatic fever	7	1
A	80	Chronic rheumatic heart disease	8	3
A	81	Arteriosclerotic and degenerative heart disease	15	3
A	82	Other diseases of heart	32	7
A	83	Hypertension with heart disease	2	—
A	84	Hypertension without mention of heart	5	—
A	85	Diseases of arteries	5	—
A	86	Other diseases of circulatory system	46	1
A	87	Acute upper respiratory infections	38	—
A	88	Influenza	82	—
A	89	Lobar pneumonia	10	—
A	90	Bronchopneumonia	27	13
A	91	Primary atypical, other and unspecified pneumonia	37	10
A	92	Acute bronchitis	24	—
A	93	Bronchitis, chronic and unspecified	42	—
A	94	Hypertrophy of tonsils and adenoids	50	1
A	95	Empyema and abscess of lung	3	—
A	96	Pleurisy	16	—
A	97	All other respiratory diseases	43	2
A	98	Diseases of teeth and supporting structures	19	—
A	99	Ulcer of stomach	73	—
A	100	Ulcer of duodenum	10	1
A	101	Gastritis and duodenitis	46	—
A	102	Appendicitis	54	3
A	103	Intestinal obstruction and hernia	30	4
A	104	Gastro-enteritis and colitis, except diarrhoea of the newborn	95	12
A	105	Cirrhosis of liver	13	3
A	106	Cholelithiasis and cholecystitis	11	—

			Cases.	Deaths.
A	107	Other diseases of digestive system	95	7
A	108	Acute nephritis	7	2
A	109	Chronic, other and unspecified nephritis	36	2
A	110	Infections of kidney	24	—
A	111	Calculi of urinary system	6	—
A	112	Hyperplasia of prostate	—	—
A	113	Diseases of breast	6	—
A	114	Other diseases of genito-urinary system	113	1
A	115	Sepsis of pregnancy, childbirth and the puerperium	20	4
A	116	Toxaemias of pregnancy and the puerperium	15	1
A	117	Haemorrhage of pregnancy and childbirth	8	—
A	118	Abortion without mention of sepsis or toxaemia	55	—
A	119	Abortion with sepsis	3	—
A	120	Other complications of pregnancy, childbirth and the puerperium	49	4
A	121	Infections of skin and subcutaneous tissue	331	—
A	122	Arthritis and spondylitis	6	—
A	123	Muscular rheumatism and rheumatism unspecified	17	—
A	124	Osteomyelitis and periostitis	32	—
A	125	Ankylosis and acquired musculoskeletal deformities	—	—
A	126	All other diseases of skin and musculoskeletal system	158	—
A	127	Spina bifida and meningocele	2	—
A	128	Congenital malformations of circulatory system	1	1
A	129	All other congenital malformations	17	5
A	130	Birth injuries	1	1
A	131	Postnatal asphyxia and atelectasis	—	—
A	132	Infections of the newborn	3	1
A	133	Haemolytic disease of newborn	—	—
A	134	All other defined diseases of early infancy	11	4
A	135	Ill-defined diseases peculiar to early infancy, and immaturity unqualified	35	30
A	136	Senility without mention of psychosis	8	5
A	137	Ill-defined and unknown causes of morbidity and mortality	2	2
		"E" Code. Alternative classification of Accidents, Poisonings, and Violence (External cause).		
AE	138	Motor vehicle accidents	8	1
AE	139	Other transport accidents	7	—
AE	140	Accidental poisoning	14	—
AE	141	Accidental falls	10	—
AE	142	Accident caused by machinery	7	—
AE	143	Accident caused by fire and explosion of combustible material	3	—
AE	144	Accident caused by hot substance, corrosive liquid, steam, and radiation	10	—
AE	145	Accident caused by firearm	4	1
AE	146	Accidental drowning and submersion	—	—
AE	147	All other accidental causes	2	—
AE	148	Suicide and self-inflicted injury	2	1
AE	149	Homicide and injury purposely inflicted by other persons (not in war)	49	—
AE	150	Injury resulting from operations of war	—	—
		"N" Code. Alternative classification of Accidents. Poisonings, and Violent (nature of injury).		
AN	138	Fracture of skull	2	1
AN	139	Fracture of spine and trunk	4	1
AN	140	Fracture of limbs	20	—
AN	141	Dislocation without fracture	6	—
AN	142	Sprains and strains of joints and adjacent muscles	14	—

			Cases.	Deaths.
AN	143	Head injury (excluding fracture)	8	—
AN	144	Internal injury of chest, abdomen and pelvis ..	3	—
AN	145	Laceration and open wounds	162	—
AN	146	Superficial injury, contusion and crushing with intact skin surface	21	—
AN	147	Effects of foreign body entering through orifice ..	2	—
AN	148	Burns	17	2
AN	149	Effects of poisons	4	—
AN	150	All other and unspecified effects of external causes	4	—
		Normal Pregnancy	153	
		Observation	181	
		Pregnancy	87	
		Shelter	84	

Appendix IX.

GENERAL HOSPITAL, KUCHING, 1949.

OPERATIONS PERFORMED.

Major Operations	.. ..	216
Minor Operations	.. ..	1377
Total	.. ..	1593

Operation.	*No. of Operations.*	*Chinese.*	*Dayak.*	*Malay*	*Others.*
Incision abscess	151	106	25	10	9
Aspiration Liver abscess	1	—	1	—	—
Wound suture	151	98	19	20	13
Curettage ulcers	3	3	—	—	—
Excision sinus	16	11	2	2	1
Evacuation haematoma	3	1	—	2	—
Skin grafting	5	5	—	—	—
Aspiration haematoma	2	1	1	—	—
Excision keloid and skin grafting	1	1	—	—	—
Excision keloid	1	1	—	—	—
Nail avulsion	14	7	1	3	3
Subcutaneous cysts	26	13	7	5	1
Excision simple tumours, skin and subcutaneous tissue	32	12	10	6	4
Biopsy skin	5	5	—	—	—
Removal subcutaneous F.B.	32	17	2	9	4
Amputation leg	3	3	—	—	—
Amputation digits	7	5	2	—	—
Aspiration joints	3	—	3	—	—
Sequestrectomy	11	8	2	—	1
Reduction compound fracture and toileting	9	2	3	3	1
Open reduction fractures	2	—	2	—	—
Open reduction and wiring fracture	1	—	1	—	—
Open reduction dislocation	1	1	—	—	—
Open reduction and plating of fractures	3	1	1	1	—
Suturing fractured patella	2	1	1	—	—
Insertion Kirschner's pin	1	1	—	—	—
Skin traction	1	1	—	—	—
Reduction simple fracture and P.O.P.	49	19	11	15	4
Application hip joint plaster spica	9	9	—	—	—
Application plaster jacket (spine)	5	4	—	—	1
Application plaster bed	1	1	—	—	—
Reduction dislocation	5	4	—	1	—
Excision bursae	1	—	—	—	1
Injection local anaesthetic (fibrositis)	1	—	—	—	1
Excision ganglion	3	1	—	1	1
Cataract extraction	15	8	2	2	3
Iridectomy	2	1	1	—	—
Enucleation eye	2	2	—	—	—
Repair entropian	2	1	1	—	—
Removal F.B. eye	3	1	1	1	—
Curettage meibomian cyst	2	2	—	—	—
Excision staphyloma eye	1	1	—	—	—
Excision pterygium	20	10	6	—	4
Repair harelip and cleft palate	1	1	—	—	—
Repair harelip	4	1	1	1	1
Excision haemengioma tongue	1	1	—	—	—

Operation.	No. of Operations.	Chinese.	Dayak.	Malay	Others.
Excision sublingual cyst	1	—	1	—	—
Removal F.B. palate	1	1	—	—	—
Lobuloplasty	4	1	2	1	—
Removal nasal polypi	18	16	2	—	—
Removal F.B. Nose	4	3	—	1	—
Nasal examination	3	1	2	—	—
Excision nasal septum	3	2	1	—	—
Separation tongue tie	2	2	—	—	—
Enlargement of orbit and fixation artificial eye	1	1	—	—	—
Removal F.B. ear	2	1	—	—	1
Tonsillectomy	5	2	—	—	3
Tonsillectomy and curettage adenoid	2	1	—	—	1
Curettage adenoid	1	—	—	—	1
Laryngoscopy	5	1	1	—	3
Tracheotomy	6	5	1	—	—
Mastoidectomy	3	2	1	—	—
Subtotal thyroidectomy	15	2	12	1	—
Partial thyroidectomy	15	1	14	—	—
Dissection glands neck (T.B.)	7	1	1	1	4
Herniorrhaphy and orchidectomy (strangulated)	1	1	—	—	—
Herniorrhaphy (inguinal)	21	11	9	1	—
Herniorrhaphy (strangulated)	1	—	—	1	—
Laparotomy	15	12	3	—	—
Gastro-enterostomy	5	3	2	—	—
Repair perforated duod. ulcer & appendicetomy	1	1	—	—	—
Partial gastrectomy and colostomy	1	—	1	—	—
Partial gastrectomy	5	3	—	2	—
Appendicectomy	36	30	1	1	4
Appendicectomy, ovarian cystectomy & slapingectomy	1	1	—	—	—
Appendicectomy and drainage	6	5	1	—	—
Drainage appendicular abscess	5	5	—	—	—
Appendicectomy & salpingectomy	3	2	—	—	1
Drainage pelic abscess	2	1	1	—	—
Drainage general peritonitis	3	2	1	—	—
Simple release abdominal adhesion and drainage	1	1	—	—	—
Simple release abdominal adhesion	4	2	1	—	1
Reducing intestinal intususception	2	2	—	—	—
Reducing adhesions and intestinal resection	4	4	—	—	—
Suturing wounded intestine and drainage	1	—	1	—	—
Evacuation retroperitoneal haematoma	1	1	—	—	—
Separation hypogastric nerve from scar	1	1	—	—	—
Drainage liver abscess	2	1	1	—	—
Drainage psoas abscess	4	2	2	—	—
Dilation oesophageal stricture	1	1	—	—	—
Incision imperforated anus	1	—	—	—	1
Suturing burst abdominal wound	1	1	—	—	—
Closing of colostomy	1	1	—	—	—
Splenectomy	1	—	1	—	—
Haemorrhoidectomy	25	19	4	—	2
Proctoscopy	5	5	—	—	—
Excision fistula in ano	3	2	—	—	1

Operation.	No. of Operations.	Chinese.	Dayak.	Malay	Others.
Evacuation haematoma pile ..	2	1	—	—	1
Incision ischic rectal abscess ..	3	1	—	2	—
Sigmoidoscopy	2	2	—	—	—
Supra pubic cystostomy	4	3	1	—	—
Supra lithotomy	2	—	2	—	—
Supra exploration & drainage ..	1	1	—	—	—
Drainage of scrotum	1	1	—	—	—
Operation cure of hydrocele ..	3	2	—	—	1
Circumcision	66	8	—	58	—
Cystoscopy	2	2	—	—	—
Pan hysterectomy	7	5	2	—	—
Drainage and ovarian cystectomy	2	—	—	1	1
Ruptured tubal pregnancy ..	2	2	—	—	—
Nephrectomy and drainage ..	1	1	—	—	—
Subtotal hysterectomy	3	3	—	—	—
Subtotal hysterectomy and appendicectomy	1	1	—	—	—
Total hysterectomy	4	3	1	—	—
Ovarian cyst	7	3	3	—	1
Ventro suspension	1	1	—	—	—
Ant, post colporrhaphy, amp CX and perineorrhaphy	2	1	1	—	—
Ant. post colporrhapny, and amp CX	1	1	—	—	—
Ant. post colporrhaphy and perineorrhaphy	1	1	—	—	—
Ant. post colporrhaphy	1	—	1	—	—
Ant. post colporrhaphy and repair CX	1	1	—	—	—
Salpingectomy	2	2	—	—	—
Amputation cervix	2	1	—	—	1
Caesarean section	16	12	—	2	2
Caesarean section and subtotal hysterectomy	3	2	—	—	1
Caesarean section and sterilization	2	2	—	—	—
Salpingectomy, Gillian's and perineorrhaphy	1	1	—	—	—
Dilation & curettage uterus ..	46	32	5	2	5
Dilation, curettage and biopsy ..	1	1	—	—	—
Repair vesico vaginal fistula ..	1	1	—	—	—
Removal ruptured placenta ..	4	4	—	—	—
Dilation, curettage and cauterization cervix	3	3	—	—	—
Anteversion and Hodge pessary ..	8	8	—	—	—
Tapping hydrocele and inj. Sod. Morrhuate	1	1	—	—	—
Drainage breast abscess	7	4	1	2	—
P.V. examination under anaesthetic	7	7	—	—	—
Excision urethral caruncle and cautery of Cx.	1	1	—	—	—
Repair ruptured urethra	1	1	—	—	—
Urethral dilation	3	2	—	—	1
Urethroscopy	1	—	—	—	1
Repair of perineal tear	2	1	1	—	—
Mastectomy	1	—	1	—	—
Radical mastectomy	1	1	—	—	—
External urethrotomy	1	1	—	—	—
Fulguration & cautery undyloma	1	1	—	—	—
Drainage periurethral abscess ..	2	—	1	—	1
Drainage perinephric abscess ..	1	1	—	—	—
Removal fibroid (from uterus P.V.)	1	—	—	1	—

Operation.	No. of Operations.	Chinese.	Dayak.	Malay	Others.
Implanatation of ureters in recto sigmoid	1	1	—	—	—
Orchidectomy	1	—	1	—	—
Repair lacerated cervix	1	1	—	—	—
Excision vulva	2	1	1	—	—
Amputation penis radicle	1	1	—	—	—
Dorsal slit	1	1	—	—	—
Excision vaginal cyst	1	1	—	—	—
Sounding of bladder	1	1	—	—	—
Excision epithelioma of vulva ..	1	—	1	—	—
Aspiration T.B. abscess	2	1	1	—	—
Arthrotomy	2	2	—	—	—
Blood transfusion	41	30	6	3	2
Cauterization papilloma	1	1	—	—	—
Lumbar puncture & Streptomycin	17	17	—	—	—
Lumbar puncture & Penicillin ..	1	1	—	—	—
Lumbar puncture diagnostic ..	45	43	9	2	—
Paracenthesis thoracis	54	46	3	3	2
Exploratory incision	15	9	4	1	1
Cleaning of burns under anaesthetic	2	1	1	—	—
Paracenthesis abdominis	37	31	3	—	3
Freeing of brachial plexus from scar	1	1	—	—	—
Exploratory puncture	16	12	3	—	1
Application P.O.P. asteomyelitis leg	5	3	2	—	—
Application P.O.P. talipes ..	4	3	—	1	—
Repair punctured trachea	1	1	—	—	—
Venesection	1	1	—	—	—
Secondary suture wound	6	4	1	1	—
Excision protruding bone	1	1	—	—	—
Removal F.B. throat	2	1	—	1	—
Excision bony growth	2	2	—	—	—
Removal of plates	1	—	1	—	—
Excision Baker's cyst	1	1	—	—	—
Plastic operation nose	2	—	2	—	—
Excision patella	1	1	—	—	—
Evacuation spontaneous pneumothorax	2	2	—	—	—
Induction artificial pneumothorax	25	18	—	4	3
Refillings	169	127	2	26	14

Appendix X.

RECORD OF WORK CARRIED OUT IN THE LABORATORY, KUCHING, DURING 1949.

BACTERIOLOGY.

There was again a considerable increase in the specimens submitted.

	No.	No. Positive
Swabs cultured for C. diphtheria	2056	103
Smears examined for M. tuberculosis	3986	1147
Guinea pig inoculation for tuberculosis	14	4
Smears examined for M. leprae	408	230
Blood cultures on suspected cases of Enteric Fever	198	6
Stools cultured for enteric organisms	70	6
Urines cultured for enteric organisms	38	2
Stools cultured for dysentery organisms	56	9
Smears examined for N. gonorrhoea	702	165
Cerebro-spinal fluids examined:—	68	
D. pneumoniae		5
Meningococci		2
M. tuberculosis		4
H. influenzae		2
Conjunctival smears examined:—	269	
Koch-Weeks bacillus		114
Morax-Axenfeld bacillus		12
Xerosis bacillus		36
N. gonorrhoea		6
Urines cultured	42	15
Dark ground examination for spirochaetes	10	8
Water analyses	38	—
Food examination	14	11
Vaccines manufactured:—		
Cholera vaccine	60,940 c.c.	
Typhoid/paratyphoid vaccine	60,000 c.c.	
Autogenous vaccine prepared	6	
Cultured media prepared (15 types)	230 litres	

PARASITOLOGY.

	No.	No. Positive
Stool Examination:—	6984	
(a) Entamoeba histolytica		158
(b) Entamoeba coli		2
(c) Lamblia intestinalis		40
(d) Blastocystis hominis		21
(e) Ascaris lumbriocoides		2386
(f) Ankylostoma duodenale		834
(g) Oxyuris vermicularis		12
(h) Trichocephalus dispar		749
(i) Hymenolepis nana		1
Blood Examination:—	7864	
(a) Subtertian malaria		229
(b) Benign tertian malaria		210
(c) Quartan malaria		198
(d) Mixed infections (S.T. & B.T.)		4
(e) Mixed infections (B.T. & Q.)		2
(f) Microfilaria		21

ENTOMOLOGY

Larval collection and identification during the year were as follows:—

Specimen	Stream	Swamp	Well	Pond	Drain	Pool	Total
A. barbirostris	13	81	1830	2479	155	115	4673
A. hyrcanus	—	—	1038	1557	83	88	2761
A. Kochi	—	15	194	28	111	832	1180
A. Kaswari	2	112	146	10	326	648	1244
A. separatus	12	158	1008	111	195	347	1831
A. tessellatus	—	7	186	18	64	137	412
A. umbrosus	12	281	23	28	34	—	388

PATHOLOGY

	No.	No. Positive
Specimens sectioned	20	8
(a) Epithiloma		3
(b) Carcinoma		4
(c) Fibroma		1
Pregnancy tests (Friedman's)	14	9
Autopsies on unclaimed bodies	5	
Brain (dog) examination for suspected rabies ..	1	

CHEMISTRY

Water examination	32
Milk examination	15
Arrack examination	23
Biochemical examination (quantitative)	407
Biochemical examination (qualitative)	12,360
Rubber coagulants	133 samples
Soil examination	11 samples

BLOOD WORK

Bloods examined by Kahn's reaction	3164	635
C.S.F. " " " "	18	4
Bloods " " Widal "	198	32
" " " Weil-Felix Reaction ..	198	—
Blood typings carried out	218	
Leucocyte enumerations	819	
Differential leucocyte enumerations	814	
Erythrocyte enumerations	3498	
Haemoglobin estimation	3562	
Blood films for abnormal cells	44	
Reticulocyte enumerations	3	
Bleeding time estimation	5	
Clotting time estimation	3	
Blood sedimentation rate estimation	1322	

MEDICO-LEGAL WORK

Toxicological examinations	38
Blood stain examination	10
Seminal stain examination	2
Smears for gonococci	3
Miscellaneous	4
Autopsies (police cases)	7

Appendix XI.

GENERAL HOSPITAL, KUCHING,

DENTAL DEPARTMENT, SUMMARY OF WORK 1949.

No. of Patients		Fillings	Extractions	Dentures	Repairs
Official (including Government Officers & Families, Hospital patients etc.)	1,201	2,899	537	64	12
Non-Official (including paying patients)	42	55	69	6	—
TOTAL	1,242	2,954	606	70	12

Appendix XII.

LAU KING HOWE HOSPITAL, SIBU. 1949.

Total number of patients remaining from last year	63
" " " admissions during the year	2550
" " " discharges during the year	2403
" " " deaths during the year	91
" " " patients remaining at the end of the year	82

Classification of Admissions.

	Males	Females	Children	Total	
Natives	362	223	96	681	
Others	657	818	394	1869	2550

Classification of Discharges & Deaths.

Discharges	2403
Absconded cases	17
Transferred to Kuching Hospital	19
Transferred to Singapore	1
Deaths	91

Total number of births during the year	168
" " "" major operations performed during the year	342
" " " minor operations performed during the year	2054
" " " others (e.g. P.V. aspirations in operating theatre etc.	448
" " " lepers transferred to Kuching Leper Settlement	28
" " " lunatics transferred to Kuching	16
" " " lepers admitted to Sibu Leper Ward	29

Out-patients Returns for the Year 1949.

Total number of new cases treated during the year	17802
" " " repetitions during the year	12030
Grand total	29832
Daily average	81.73

Diseases Treated & Deaths.

			Cases	Deaths.
A	1	Tuberculosis of respiratory system	52	6
A	3	Tuberculosis of intestines, peritoneum and mesenteric glands	6	1
A	4	Tuberculosis of bones and joints	6	—
A	5	Tuberculosis, all other forms	19	—
A	6	Congenital syphilis	8	1
A	7	Early syphilis	4	—
A	10	All other syphilis	34	1
A	11	Gonococcal infection and other V.D.	14	—
A	12	Typhoid fever	55	7
A	13	Paratyphoid fever and other Salmonella infections	9	—
A	16	Dysentery, all forms	40	3
A	18	Streptococcal sore throat	12	—
A	20	Septicaemia and pyaemia	1	—
A	21	Diphtheria	43	4
A	22	Whooping cough	15	—

			Cases.	Deaths.
A	23	Meningococcal infections	6	3
A	25	Leprosy	4	—
A	26	Tetanus	8	4
A	28	Acute Poliomyelitis	54	3
A	30	Late effects of Poliomyelitis	2	—
A	34	Infectious Hepatitis	11	4
A	37	Malaria	93	4
A	40	Filariasis	9	—
A	41	Ankylostomiasis	29	—
A	42	Helminthetic diseases	58	—
A	43	All other diseases classified as infective and parasitic	52	—
A	44	Malignant neoplasm of buccal cavity and pharynx	8	—
A	45	Malignant neoplasm of oesophagus	4	—
A	46	Malignant neoplasm of stomach	11	1
A	47	Malignant neoplasm of intestine	9	—
A	48	Malignant neoplasm of rectum	31	—
A	50	Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	1	—
A	51	Malignant neoplasm of breast	4	—
A	52	Malignant neoplasm of cervix uteri	5	1
A	53	Malignant neoplasm of other and unspecified parts of uterus	10	—
A	55	Malignant neoplasm of skin	3	—
A	56	Malignant neoplasm of bone and connective tissue	2	—
A	57	Malignant neoplasm of all other and unspecified sites	13	4
A	58	Leukaemia and aleukaemia	1	—
A	59	Neoplasms of haematopoietic system	10	1
A	60	Benign neoplasm and neoplasms of unspecified nature	53	—
A	61	Nontoxic goitre	53	—
A	62	Thyrotoxicosis with or without goitre	5	1
A	63	Diabetes mellitus	2	1
A	64	Avitaminosis and other deficiency states	36	—
A	65	Anaemias	22	—
A	66	Allergic disorders, all other endocrine, metabolic and blood diseases	37	—
A	67	Psychoses	46	—
A	68	Psychoneuroses and disorders of personality	16	—
A	70	Vascular lesions affecting central nervous system	6	2
A	73	Epilepsy	9	—
A	74	Inflamatory diseases of eye	40	—
A	75	Cataract	55	—
A	76	Glaucoma	13	—
A	77	Otitis media and mastoiditis	9	—
A	78	All other diseases of the nervous system and sense organs	54	—
A	79	Rheumatic fever	4	—
A	81	Arteriosclerotic and degenerative heart disease	15	2
A	82	Other diseases of heart	9	—
A	85	Diseases of arteries	3	—
A	86	Other diseases of circulatory system	20	1
A	87	Acute upper respiratory infections	14	—
A	88	Influenza	17	—
A	89	Lobar pneumonia	42	2
A	90	Bronchopneumonia	28	4
A	91	Primary atypical, other & unspecified pneumonia	3	3
A	92	Acute bronchitis	45	—
A	95	Empyema and abscess of lung	9	—
A	96	Pleurisy	18	—
A	97	All other respiratory diseases	17	2
A	98	Diseases of teeth and supporting structures	7	—
A	99	Ulcer of stomach	58	2

		Cases.	Deaths.
A 100	Ulcer of duodenum	7	—
A 101	Gastritis and duodenitis	15	—
A 102	Appendicitis	21	1
A 103	Intestinal obstruction and hernia	33	2
A 104	Gastro-enteritis and colitis, except diarrhoea of the new born	11	3
A 105	Cirrhosis of liver	4	—
A 106	Cholelithiasis and chocystitis	5	2
A 107	Other diseases of digestive system	51	1
A 108	Acute nephritis	19	—
A 109	Chronic, other and unspecified nephritis	9	—
A 110	Infections of kindney	2	—
A 111	Calculi of urinary system	9	—
A 114	Other diseases of genito-urinary system	93	—
A 115	Sepsis of pregnancy, childbirth and the puerperium	196	2
A 116	Toxaemias of pregnancy and the puerperium	8	2
A 117	Haemorrhage of pregnancy and childbirth	4	—
A 118	Abortion without mention of sepsis or toxaemia	24	—
A 120	Other complications of pregnancy, childbirth and the puerperium	25	—
A 121	Infections of skin and subcutaneous tissue	131	—
A 122	Arthritis and spondylitis	7	—
A 123	Muscular rheumatism and rheumatism unspecified	10	—
A 124	Osteomyelitis and periostitis	18	1
A 125	Ankylosis and acquired musculoskeletal deformities	2	—
A 126	All other diseases of skin and musculoskeletal system	58	—
A 128	Congenital malformations of circulatory system	3	—
A 129	All other congenital malformations	9	—
A 130	Birth injuries	4	4
A 133	Haemolytic disease of newborn	1	—
A 134	All other defined diseases of early infancy	4	—
A 136	Senility without mention of psychosis	11	—
A 137	Ill-defined and unknown causes of morbidity and mortality	17	—
A 131	Postnatal asphyxia and atelectasis	1	—
A E139	Other transport accidents	4	—
A E140	Accidental poisoning	1	—
A E142	Accident caused by machinery	4	—
A E143	Accident caused by fire and explosion of combustible material	9	—
A E144	Accident caused by hot substance, corrosive liquid, steam and radiation	9	2
A E145	Accident caused by firearm	2	—
A E147	All other accidental causes	180	2
A E148	Suicide and self-inflicted injury	7	1
A E149	Homicide and injury purposely inflicted by other persons (not in war)	23	—

Appendix XIII.

LEPER SETTLEMENT ANNUAL REPORT — 1949.

Total number of inmates beginning on 31.12.48	384
New admissions during the year	59
Re-admissions during the year	13
Died during the year	26
Parole leave during the year	8
Returned from parole leave during the year	2
Absconded during the year	7
Returned from absconding during the year	1
Number of births during the year	6
Number of newly born babies transferred to General Hospital during the year	7
Remaining on 31.12.49	418

Remaining on 31.12.49.

Nationalities

	Male	Female	Total
Chinese	136	28	164
Dayaks	134	61	195
Malays	44	14	58
Indian (Sikh)	1	—	1
Total	315	103	418

Patients Admitted during the year.

	Male	Female	Total
Chinese	25	1	26
Dayaks	27	12	39
Malays	4	3	7
Total	56	16	72

Deaths During the Year.

	Male	Female	Total
Chinese	6	2	8
Dayaks	12	5	17
Malays	—	1	1
Total	18	8	26

Cause of Death.

Pulmonary Tuberculosis	14
Pneumonia	5
Pneumonia — Malaria	1
Chronic Nephritis	1
Chronic B.T. Malaria	1
Cardiac Failure	1
Gross Leprosy and Diarrhoea	2
Congestive Heart Failure	1
Total	26

Number of Births during the year.

Malays	3
Dayaks	2
Chinese	2
Total	7

Babies transferred to General Hospital.

	Male	Female	Total
Chinese	—	2	2
Dayaks	1	1	2
Malays	1	2	3
Total	2	5	7

Inmates admitted from:

1st Division	15	
2nd "	10	
3rd "	31	(mostly from Ulu Julau)
4th "	13	
Brunei	3	
Total	72	

Appendix XIV.

ANNUAL ABSTRACT OF METEOROLOGICAL OBSERVATIONS, SARAWAK, 1949.

1st Division.

1949	1°12′N 110°32′E TARAT			1°17′N 110°24′E S. SERIN			1°25′N 110°22′E QUOP			1°33′N 110°20′E KUCHING			1°35′N 110°11 E MATANG		
	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date
	ins.	ins.		ins.	ins.		ins.	ins.		ins.	ins.		ins.	ins.	
January ..	11·29	2·51	31	18·50	3·89	31	20·92	4·53	18	17·29	3·74	18	34·81	5·80	16
February ..	14·28	3·40	2	12·46	1·74	17	10·59	1·66	10	15·57	2·15	25	16·88	2·20	28
March ..	20·46	4·17	21	16·27	3·79	9	12·43	2·10	6	13·93	1·96	5	14·55	4·00	1
April ..	14·71	2·12	4	19·06	2·94	14	21·94	3·95	25	14·38	2·28	4, 23	12·99	3·06	4
May ..	12·87	2·54	13	16·49	2·37	14	15·50	2·88	15	12·32	2·69	13	13·49	1·40	23
June ..	7·53	2·41	20	8·21	2·08	20	9·56	1·85	23	8·30	1·94	29	4·92	1·10	29
July ..	4·71	0·86	16	5·59	1·50	4	5·45	1·56	26	11·55	3·91	12	7·67	2·30	4
August ..	10·60	1·58	4	11·74	1·79	27	11·27	2·32	20	10·37	2·30	19	11·00	3·60	27
September ..	10·67	2·28	9	9·70	2·40	8	14·68	4·92	2	10·34	2·03	15	7·95	1·60	4
October ..	18·27	2·97	23	16·44	2·21	9	16·20	3·13	21	18·45	2·09	13	19·42	2·90	18
November ..	11·73	1·93	25	10·66	1·39	22	11·36	1·85	29	11·97	1·54	11	14·80	2·10	5, 13
December ..	13·20	2·50	5	14·30	2·95	23	20·37	3·06	18	12·79	2·30	13	16·54	4·10	5
Total	150·32	..	..	159·42	..	..	170·27	..	..	157·26	..	..	175·02	..	..
Extreme	..	4·17	..	..	3·89	..	..	4·92	..	..	3·91	..	..	5·80	..

2nd Division.

1949	1°36 N 110°12′E SG. CHINA			1°14 N 111°27 E SIMANGGANG			1°21′N 111°09′E LINGGA		
	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date
	ins.	ins.		ins.	ins.		ins.	ins.	
January ..	34·16	9·40	31	7·65	2·46	25	7·98	4·85	26
February ..	17·10	2·25	19	17·55	2·98	9	14·52	4·20	10
March ..	25·35	5·60	1	15·52	2·74	25	15·73	2·71	20
April ..	19·00	3·80	4	16·55	1·89	19	12·13	2·03	22
May ..	14·54	1·50	23	19·62	2·82	14	14·14	3·67	14
June ..	9·63	3·40	23	8·15	3·95	24	8·17	1·66	28
July ..	4·99	1·16	25	11·17	4·70	26	7·25	2·92	25
August ..	9·96	3·40	25	19·86	2·15	22	11·20	3·84	25
September ..	11·55	4·15	15	10·39	2·19	30	6·15	2·05	15
October ..	14·76	1·61	18	15·08	3·00	6	11·06	1·80	15
November ..	21·55	5·23	5	12·24	2·76	18	10·01	2·54	28
December ..	23·76	5·20	5	27·32	3·76	5	17·38	3·84	15
Total	206·35	..	..	181·10	..	..	135·72	..	..
Extreme	..	9·40	..	..	4·70	..	..	4·85	..

3rd Division.

1949	2°00 N 112°56 E KAPIT			2°06′N 112°09 E KANOWIT		
	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date
	ins.	ins.		ins.	ins.	
January ..	7·80	2·00	26	9·97	2·89	26
February ..	12·60	2·40	4	13·12	2·22	10
March ..	15·70	2·40	27	4·64	0·93	5
April ..	16·60	2·20	1	17·80	3·52	18
May ..	9·70	1·80	4	21·20	5·88	4
June ..	9·55	3·07	28	11·53	2·89	30
July ..	11·33	1·82	25	10·83	4·39	18
August ..	13·81	2·02	27	6·70	1·31	31
September ..	12·76	2·21	15	11·99	3·28	21
October ..	12·37	2·11	13	15·15	3·42	12
November ..	14·51	4·42	23	10·14	3·56	29
December ..	11·32	1·54	17, 18	18·48	2·36	10
Total	148·05	..	..	151·55	..	..
Extreme	..	4·42	..	..	5·88	..

4th Division.

1949	2°17 N 110°40 E SIBU			2°42 N 113°47′E BELAGA			2°54′N 112°06 E MUKAH			3°10 N 113°02 E BINTULU			4°10′N 114°19′E BARAM		
	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date
	ins.	ins.		ins.	ins.		ins.	ins.		ins.	ins.		ins.	ins.	
January ..	10·55	3·32	25	5·80	1·05	24	10·57	2·41	26	8·85	1·90	3	2·64	0·98	26
February ..	5·61	1·11	9	18·17	3·40	20	22·34	5·76	18	6·54	2·22	5	5·94	1·10	6
March ..	6·06	1·80	30	8·36	1·13	9	12·75	3·86	2	12·68	2·89	2	13·94	2·38	11
April ..	17·16	5·46	4	18·24	2·75	28	4·32	1·42	10	12·66	4·77	8	14·90	2·37	16
May ..	10·92	1·93	16	9·34	1·64	28	10·80	3·35	14	13·26	2·92	2	13·84	2·72	20
June ..	6·32	1·29	11	10·60	3·30	30	9·39	2·67	30	16·71	6·41	28	15·27	5·56	30
July ..	9·23	1·52	25	11·28	1·72	20	5·10	1·36	24	17·38	2·92	4	5·16	1·00	6
August ..	13·60	2·10	4	9·48	1·49	1	8·92	1·81	27	17·91	4·15	25	9·05	2·46	20
September ..	14·30	1·73	12	8·78	1·49	5	7·34	2·42	9	9·30	2·25	8	12·80	2·86	17
October ..	12·60	3·24	5	11·66	1·95	11	7·07	1·29	22	12·21	2·22	17	13·28	2·99	17
November ..	11·74	2·70	23	12·76	3·08	20	7·46	0·94	8	11·62	1·86	5	14·73	6·55	29
December ..	17·96	3·65	1	12·87	3·08	15	16·22	2·73	24	17·83	4·88	4	13·36	2·69	17
Total	136·05	..	..	137·82	..	..	122·28	..	..	156·95	..	..	134·91	..	..
Extreme	..	5·46	..	..	3·40	..	..	5·76	..	..	6·41	..	..	6·55	..

5th Division.

1949	4°23 N 113°59 E MIRI			4°33′N 114°51 N UKONG			4°38 N 115°02 E KUBONG			4°45 N 115°00 E LIMBANG			4°49 N 115°26 E LAWAS ESTATE		
	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date	Amount of Rainfall	Greatest Fall	Date
	ins.	ins.		ins.	ins.		ins.	ins.		ins.	ins.		ins.	ins.	
January ..	13·76	5·50	17	13·35	2·15	26	5·98	1·11	24	9·32	2·30	22	13·22	5·89	18
February ..	5·55	1·16	18	8·28	4·70	6	3·67	0·76	12	7·69	3·50	6	9·60	3·99	6
March ..	7·18	1·89	21	10·17	2·13	2	6·61	1·67	14	8·80	2·02	1	12·98	3·95	2
April ..	9·27	2·95	15	20·97	3·58	6	17·69	2·32	5	18·35	3·03	4	22·16	3·29	16
May ..	8·35	1·78	19	16·17	3·33	25	19·03	4·17	3	18·06	3·03	14	25·65	3·07	28
June ..	11·92	3·94	29	18·40	6·71	30	22·95	5·72	23	17·81	5·78	30	19·15	11·02	30
July ..	6·61	2·28	31	12·37	2·45	18	12·59	2·50	31	8·73	1·96	14	16·81	3·00	22
August ..	13·26	2·58	19	16·10	2·45	31	12·51	3·86	28	15·52	2·84	1	25·33	4·74	23
September ..	16·81	1·48	29	11·25	2·20	9	17·69	2·29	29	14·61	2·62	4	19·58	3·23	28
October ..	20·69	4·17	14	11·23	3·04	29	12·66	1·43	11	14·66	2·76	12	17·42	4·71	17
November ..	17·08	9·00	28	11·48	3·10	29	15·53	4·00	17	6·44	1·44	30	15·86	4·03	29
December ..	10·44	1·50	27	18·48	3·88	18	14·79	2·92	14	8·04	1·78	17	11·02	1·63	17
Total	140·92	..	..	168·25	..	..	161·70	..	..	147·31	..	..	208·78	..	..
Extreme	..	9·00	..	..	6·71	..	..	5·72	..	..	5·78	..	..	11·02	..

ANNUAL METEOROLOGICAL FIGURES, 1949.

KUCHING.

Lat. 1° 33′ N
Long. 110° 21′ E
Height above M.S.L. 40 Ft.

1949	Air Temperature 1.30 p.m. Dry Bulb	Air Temperature 1.30 p.m. Depression of Wet Bulb	Humidity 1.30 p.m. Vapour Pressure	Humidity 1.30 p.m. Relative Humidity	Rainfall. Total	Rainfall. Greatest Days fall	Rainfall. Date	Rainfall. Number of Rainfall Days
January	83·5	5·0	29·5	79	17·29	3·74	18	25
February	84·5	5·1	30·4	79	15·57	2·15	25	19
March	85·7	5·7	30·6	79	13·93	1·96	5	19
April	85·7	4·8	32·2	80	14·38	2·28	4 & 23	22
May	87·2	6·1	31·6	76	12·32	2·69	13	24
June	86·0	6·2	30·1	75	8·30	1·94	29	20
July	86·6	7·1	29·3	72	11·55	3·91	12	17
August	87·7	8·4	28·3	67	10·37	2·30	19	20
September ..	85·9	6·9	28·9	72	10·34	2·03	15	20
October	85·5	7·3	27·9	72	18·45	2·09	13	29
November	85·0	7·8	26·6	69	11·97	1·54	11	25
December	84·7	7·3	27·1	71	12·79	2·30	5	24
Year Totals ..	..	..	..	..	157·26	..	..	264
Year Means	85·7	6·5	29·4	74·3	..	3·91	..	..
Year Extremes								

SIBU.

Lat. 2° 18′ N
Long. 111° 40′ E
Height above M.S.L. 15 Ft.

1949	Air Temperature 1.30 p.m. Dry Bulb	Air Temperature 1.30 p.m. Depression of Wet Bulb	Humidity 1.30 p.m. Vapour Pressure	Humidity 1.30 p.m. Relative Humidity	Rainfall. Total	Rainfall. Greatest Days fall	Rainfall. Date	Rainfall. Number of Rainfall Days
January	86·1	7·4	28·3	71	10·55	3·32	25	18
February	87·0	8·3	27·8	68	5·61	1·11	9	15
March	89·1	9·6	27·9	64	6·06	1·80	30	17
April	88·1	8·3	28·9	68	17·16	5·46	4	22
May	87·6	7·5	29·6	71	10·92	1·93	16	24
June	88·7	8·7	28·9	67	6·32	1·29	11	19
July	87·6	8·3	28·4	68	9·23	1·52	25	14
August	88·3	8·8	28·3	66	13·60	2·10	4	21
September ..	..	..	..	..	14·30	1·73	12	19
October	89·0	9·3	28·2	74	12·60	3·24	5	22
November	88·7	8·9	28·6	66	11·74	2·70	23	18
December	88·0	8·6	28·3	67	17·96	2·65	1	23
Year Totals ..	..	..	..	..	136·05	..	..	232
Year Means or Extremes	..	..	..	..	..	5·46	..	..

BINTULU.

Lat. 3° 11′ N

Long. 113° 02′ E

Height above M.S.L. 9 Ft.

1949	Air Temperature 1.30 p.m. Dry Bulb	Air Temperature 1.30 p.m. Depression of Wet Bulb	Humidity 1.30 p.m. Vapour Pressure	Humidity 1.30 p.m. Relative Humidity	Rainfall. Total	Rainfall. Greatest Days fall	Rainfall. Date	Rainfall. Number of Rainfall Days
January	81·7	4·5	28·6	81	8·85	1·90	3	16
February	81·4	4·6	28·1	81	6·54	2·22	5	16
March	83·8	6·5	27·4	73	12·68	2·89	2	18
April	84·0	6·2	28·1	75	12·66	4·77	8	17
May	83·8	5·8	28·6	76	13·26	2·92	2	18
June	84·5	6·5	28·2	74	16·71	6·41	28	12
July	84·4	6·6	27·9	74	17·38	2·92	4	16
August	84·4	7·0	27·2	71	17·91	4·15	25	20
September	83·3	6·1	27·5	75	9·30	2·25	8	18
October	84·1	6·1	28·4	75	12·21	2·22	17	19
November ..	83·2	5·4	28·6	77	11·62	1·86	5	18
December ..	84·4	6·4	28·2	74	17·83	4·88	4	21
Year Totals ..	..	..	..	..	156·95	..	..	209
Year Means or Extremes	83·6	6·0	28·1	7·55	..	6·41	..	..

MIRI.

Lat. 4° 23′ N

Long. 113° 59′ E

Height above M.S.L. 8 Ft.

1949	Air Temperature 1.30 p.m. Dry Bulb	Air Temperature 1.30 p.m. Depression of Wet Bulb	Humidity 1.30 p.m. Vapour Pressure	Humidity 1.30 p.m. Relative Humidity	Rainfall. Total	Rainfall. Greatest Days fall	Rainfall. Date	Rainfall. Number of Rainfall Days
January	84·3	5·4	29·6	77	13·76	5·50	17	10
February	84·0	5·2	29·7	78	5·55	1·16	18	15
March	84·3	5·4	29·6	77	7·18	1·89	21	10
April	84·7	5·6	29·8	77	9·27	2·95	15	17
May	84·0	5·3	29·5	78	8·35	1·78	19	19
June	84·6	5·3	30·2	78	11·92	3·94	29	15
July	84·8	5·7	29·7	77	6·61	2·28	31	18
August	84·7	5·6	29·8	77	13·26	2·58	19	18
September	84·5	5·5	29·7	77	16·81	7·20	8	19
October	84·0	5·0	30·0	79	20·69	4·34	14	19
November ..	84·7	5·2	30·4	78	17·08	9·00	28	14
December ..	84·6	5·9	29·2	76	10·44	1·50	27	19
Year Totals ..	..	..	..	..	140·92	..	..	193
Year Means or Extremes	84·4	5·4	29·8	77·4	..	9·00	..	..