

## **The annual report of the Medical and Health Departments, Kedah and Perlis.**

### **Contributors**

Kedah and Perlis. Medical Department.

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# THE ANNUAL REPORT

OF THE

MEDICAL & HEALTH DEPARTMENTS, KEDAH  
& PERLIS.

FOR THE YEAR

1345 A. H.

(12TH JULY, 1926 TO 30TH JUNE, 1927.)

BY

DR. D. BRIDGES,

STATE SURGEON TO THE KEDAH GOVERNMENT.

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1928.





# ANNUAL MEDICAL AND SANITARY REPORT, KEDAH,

For the Year Ending 29th Zulhaijah, 1345 A.H.

(12th July, 1926 to 30th June, 1927 A.D.)

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## I. ADMINISTRATION.

### Staff.

The principal appointments are:—

The State Surgeon.

#### Medical Department.

3 Medical Officers (only 2 have been appointed; Assistant Surgeon acting for Medical Officer, Alor Star).

1 Lady Medical Officer (vacant since 1.4.45).

5 Assistant Surgeons.

2 European Nursing Sisters.

56 Dressers (including 5 Laboratory Assistants).

1 Dispenser and Storekeeper.

6 Midwives.

8 Vaccinators.

#### Health Department.

The Health Officer.

4 Health Inspectors attached to the Health Office.

12 Sanitary Inspectors attached to various Sanitary Boards.

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Dr. J. I. Baeza, Health Officer, went on leave on 20th Shawal, 1345. He was succeeded by Dr. R. B. MacGregor from the Straits.

Dr. W. M. Lupton was seconded from the Straits for service as Medical Officer South Kedah on 15.1.45 (26.7.26).

Dr. (Miss) H. M. Garlick, Lady Medical Officer, resigned on 1.4.45 (9.10.26).

Assistant Surgeon, A. O. Merican resigned on 24.1.45.

Assistant Surgeon, C. Ratnasingham was dismissed on 1.4.45.

Assistant Surgeons, P. T. Krishnan Nayar, M. R. Bhandari, and Tan Joo Cheng were appointed.

Nursing Sister Miss M. Senior resigned, on the termination of her agreement, on 14.5.45 (20.11.26). Miss M. Garness acted for her as Temporary Nursing Sister, until the arrival of Miss A. M. Belton from the Straits on 27.11.45 (29.5.27).

Miss R. Spry was transferred to the Straits on 8.11.45 (10.5.27) and was succeeded by Miss M. K. O'Shea.

A. Dispenser-Storekeeper was appointed for the Central Medical Store.

7 Probationer Dressers were appointed.

2 Dressers resigned.

3 Dressers were dismissed.

2 Probationer Health Inspectors were appointed.

1 Sanitary Sub Inspector was dismissed.

## Dressers' Grade Examinations.

Two examinations were held during the year, with the following results:—

	No. of candidates.	Result.
Moharram	6 for Grade I	1 passed
(Jan. 27).	5 „ „ II	all failed
	8 „ „ III	2 passed
Jamadalakhir	4 for Grade I	4 passed
(July 26).	5 „ „ II	3 passed
	10 „ „ III	5 passed

These include 19 candidates from Estates, of whom 5 passed.

Sanitary Inspector, M. D. Perera, passed the examination for the Diploma of Royal Sanitary Institute at Singapore during the year.

## Ordinances.

The Deleterious Drugs Enactment of 1338 and the Sanitary Boards Enactment of 1334 were amended.

## Financial.

## REVENUE (Medical).

The total revenue collected during the year was \$127,347.92 against \$56,486.69 during 1344 A. H. The increase is due to the new scale of charges, on patients from Estates, adopted from 1.10.44. The new rate is 85 cts. per diem against the old rate of 40 cts.

## EXPENDITURE (Medical).

	1344.	1345.
Salaries etc.,	... \$145,405.31	\$158,226.16
Other Charges	... 177,979.05	203,066.21
Total	... \$323,384.36	\$361,292.37

## REVENUE (Health).

\$47.50 was collected during the year, as fees for certificates of Births and Deaths. This is the only source of revenue.

## EXPENDITURE (Health).

	1344.	1345.
Salaries &c.,	... \$22,534.63	\$20,114.14
Other Charges	... 5,778.01	7,613.50
Total	... \$28,312.64	\$27,727.64

These figures do not include salaries of Inspectors employed under the Sanitary Boards.

The total expenditure of both the departments, \$389,020.01, represents an approximate percentage of 4.32 on the total revenue of the State for 1345 A. H.



## II. PUBLIC HEALTH.

### General.

The health of the country as a whole has been much the same as during the previous year. The death rate is some what higher—26.92 per mille, compared with 25.79 per mille in the previous year—but this is off-set by the considerable increase in the birth rate, 34.49 from 29.52. The natural increase of population i.e. excess of births over deaths, is 3,015, more than double that for the previous year. (Appendix A, & B.)

### Communicable Diseases.

#### Malaria.

“Fever unspecified” and malaria are as usual the most important, and account for almost half of the total deaths.

If allowance is made for the increase of cases registered as “Infantile Convulsions,” many of which are really malaria,—these “Fever” account for all the excess of this year’s death over last year’s.

The seasonal incidence of malaria and the corresponding increase in deaths, is shown on the attached charts. It will be seen that the mortality is greatest in Zulhijah and Moharram (June and July)—being then over 50 per cent. more than in the healthy months of Jamadiawal and Jamadilakhir (November and December).

This incidence is most marked in the case of Indian estate labourers; but they make up only about 1/5th. of the total, the remainder of the population is affected independently.

It is noticeable that the degree of improvement throughout the year is greatest in this class—although their total mortality is still very high, 46.3 per mille.

#### Cholera.

There was a small outbreak of cholera in Central Kedah in the month of Zulhijah (June). The first case was reported on 18th Zulhijah (19th June, 1927).

A total of 18 cases with 14 deaths occurred before the end of the year.

Since the remaining cases and deaths occurred a few days after the beginning of 1346, (July) it is thought better to report the outbreak as a whole.

The total number of cases was 19, with 16 deaths. In addition to these there were 4 other fatal cases where there is strong presumptive evidence of cholera.

The first probable case occurred on 11th June, (10th Zulhijah).

The first positive case occurred on 18th June, (17.12.45) and the last case on 9th July, (9.1.46).

The infection was brought into Kedah by Indian Immigrants.

One of the positive cases and one “probable” became ill within 24 hours of arrival in Kedah. One other positive case became ill after 2 days.

In the case of one estate the occurrence of cholera was proved to be due to a healthy carrier recently arrived, and on another estate there was strong evidence to support this method of introduction of the infection.

All the other cases derived the infection from the above-mentioned cases.

Places infected, with number of cases and deaths were:—

	Positive cases.	Probable cases.	Deaths.
Sungei Batu Estate ...	11	1	11
Sungei Patani Hospital ...	3	1	3
Bukit Tupah Estate ...	1	1	1
United Patani (Rusa Div.) ...	1	—	1
Kuala Sidim Estate ...	1	—	1
P. W. D. Lines Bedong ...	1	—	1
Kuala Muda Estate ...	1	1	2

All the cases were Indians, there was no spread of infection to the Malay population.

Along with other preventative measures, approximately 2500 inoculations with cholera vaccine were given.

#### Small pox.

There were 3 cases during the year:—

1 at Kulim, Indian Immigrant—recovered.

1 at Changloon, Malay—source of infection not traced—recovered.

1 at Scarborough Estate, Indian—source of infection not traced—died.

In each case the usual preventative measures were taken and there was no spread of infection.

#### Ankylostomiasis.

The deaths registered as being due to Ankylostomiasis are 308, compared with 610 for the previous year. This does not however give anything like a true idea of the importance of the disease, because Ankylostomiasis kills by lowering the resistance to other diseases.

No systematic survey of hookworm infection has been made, but an indication of the extent of the infection can be got from the result of routine examinations in Sungei Patani Hospital.

During the past year out of 3169 persons examined 1498 i.e. over 47 per cent. showed ankylostome infection. The method of examination used was the direct smear method, which misses many cases of mild infection and a few of heavy infection. A proper examination conducted by a specially trained staff would probably reveal an infection rate over 90 per cent.

These figures support the impression which one gets in Malay schools and on estates that Ankylostomiasis is a serious condition in Kedah, that calls for preventive work and treatment.

With regard to prevention of Ankylostomiasis, the sanitation on most large estates is now reasonably good, and on some it is excellent. For the rest of the country, except in the towns, sanitation is non-existent.

In this connection Government buildings are very unsatisfactory. It is unusual to find any latrine accommodation whatever at P. W. D. or Sanitary Board coolie lines and vernacular schools.

#### Vital Statistics.

The calculation of population has been by excess of births over deaths, plus an estimate of the increase in population due to immigrant labourers. It is believed that the estimate of Indians is fairly accurate. There is some doubt about the Chinese. Labour returns indicate the increase recorded this year—but it is thought that the figures for previous year are possibly over-estimated.

It is to be noted that the birth rate this year is the highest ever recorded in Kedah.



The death rate is 1.13 per mille above that for last year—due largely to the increase in Malaria in the early months of the year.

As usual the Indian death rate is highest, especially the Tamil "dependent" rate. (Appendix A, B, C, D, F, G, H and charts 3 and 6).

#### Infant Mortality.

The infant mortality is 163.64 per mille compared with 169.24 last year. While this is not particularly good it compares favourably with the infant mortality elsewhere in Malaya. (Appendix C. and charts 1 and 2).

The Tamil infant mortality is very bad—407.7 per mille. There is a statistical fallacy in this figure, because immigrant infants, under 1 year old, show only on the deaths side of the returns; it is not possible to estimate what this amounts to, but it cannot be more than 20 per cent. and that leaves the infant mortality still nearly 3 times that for Malays or Chinese.

The cause of this is to a large extent culpable neglect on the part of the mothers, together with very poor arrangements on estates for looking after the children of mothers who go to work.

The chart of infant mortality (chart 2) attached in the appendices shows how closely the Infant mortality follows the General mortality seasonal line and not the births line; this indicates that for the general population i.e. the population not on estates,—the infant mortality is due to a large extent to health conditions affecting the whole population, e.g. Malaria, rather than to conditions peculiar to infancy.

Improvement therefore is to be expected as much from general health work as from special infant welfare work.

The Malay infant mortality rate is much the same as that for last year. The Chinese rate shows a marked decrease of 44 per 1000 along with an increase in the number of births of 293.

#### European Population.

The European population in the State is estimated at 400. There was no death during the year.

The health conditions have been good.

#### Officials.

The following table gives the Health Statistics of Government Officials (other than subordinates) in Kedah.

	European.	Native.
Total number of Officials resident	51	75
Average number resident	51	75
Total number on sick list	12	36
Total number of days on sick list	74	149
Average daily number on sick list	.21	.42
Percentage of sick to average number resident	23.53	48.00
Average number of days on sick list for each patient	6.17	4.14
Average sick time to each resident	1.45	1.99
Total number invalided	—	—
Percentage of invalidings to total residents	—	—
Total deaths	—	—
Percentage of deaths to total residents	—	—
Percentage of deaths to average number resident	—	—
Number of cases of sickness contracted away from resident.	—	—



### Town Sanitation.

No changes of any importance have occurred during the year.

### Estate Figures.

These are all shown in the appendices. In general, allowing for normal seasonal variations, there has been a moderate improvement in the health of estate labours throughout the year (Charts 4 and 5).

## III HYGIENE AND SANITATION.

### Preventive measures.

Anti-Malaria work is being carried out on a fairly extensive scale on most big estates, with marked success, and is counteracting the bad effect of new clearings. It is on smaller estates and in kampongs that work is now needed.

The following anti malaria work has been carried out by Government:—

Subsoil drainage scheme at Bukit Kayu Hitam has been completed—cost about \$2,300.00.

Subsoil drainage at Kulim—cost about \$1,000.00.

Open earth drainage scheme at S. Patani, \$900.00.

All these works appear to have effected a big improvement, and have got rid of known dangerous breeding places. They have not been completed long enough to judge of their effect on health.

In addition to this, a gang of 5 coolies has been at work during the year in each of the 3 principal towns, Alor Star, Sungei Patani and Kulim, engaged in oiling and maintenance of earth drains and other minor works within the towns.

The expenditure for this work was \$2,702.58, being \$2,141.07 for oils etc., and \$561.51 for wages.

Mosquito survey work has been carried out in the vicinity of the 3 larger towns and also on several estates where the manager sought advice.

### Vaccinations.

The number of vaccinations done during the year was as follows:—

District.	No. Vaccinated.
Kota Star	4,042
Kubang Pasu	1,847
Padang Trap	799
Yen	582
Langkawi	384
Kuala Muda	2,266
Baling	1,281
Sik	671
Kulim	2,054
Bandar Bahru	1,556
Total	15,482

2,544 of these were done by Dressers in the Government Hospitals and Dispensaries.

The cost per head of vaccination was approximately 82 cents.

### Schools.

2 vernacular schools were inspected by the Health Officer and 24 by Health Inspectors.

Obvious anaemia and spleen rate are found by the Inspectors to be 3 per cent. and 3.12 per cent. respectively; but in the schools visited by the Health Officer, there were found to be over 20 per cent. for both.

Scabies is common. Yaws is not often seen now—all forms found in schools were about 2 per cent.—(44 cases).

Pupils showing no vaccination marks numbered 105 out of 2,499—about 5 per cent.

In addition to the above, 21 schools were visited regularly by the travelling dispensaries, a total of 1,536 treatments having been given to school children.

### Visits to Estates.

76 visits of inspection to European managed estates were made by the Health Officer.

The estates visited represent 114,145 acres, with a labour force of 28,536.

38 visits of inspection were paid by the Health Inspectors, principally to native estates; the area of these estates is about 20,000 acres, with about 4,500 labourers.

The death rates and incidence of disease in the estate population are shown in the appendices.

### Estate Hospitals Scheme.

The estates hospital board has held several meetings, and has proposed a scheme for a comprehensive, preventative and curative medical service on estates, on the same general lines as the F. M. S. scheme.

### Quarantine Inspection; Padang Besar.

797 trains with 43,024 passengers examined, none detained.

## IV. MATERNITY AND CHILD WELFARE.

Dr. (Miss) H. M. Garlick left the service on 1.4.45 (9.10.26), and the work had to be carried on without a Lady Medical Officer, for the remaining period of the year. The Ag. Medical Officer, Alor Star attended to the more urgent part of the work; but the routine, as begun by Dr. Garlick, could not be fully maintained, though every effort was made to maintain the start we had gained in this work.

The following are the statistics of work done during the year:—

### I. Maternity Cases.

	Out-patient.			
	Malays.	Chinese.	Indians.	Total.
a. Normal delivery	97	10	7	114
b. Abnormal delivery	—	1	1	2
c. Ante partum cases	23	9	6	38
d. Post partum cases	18	6	—	24
e. Abortions	18	8	2	28
<b>Total</b>	<b>156</b>	<b>34</b>	<b>16</b>	<b>206</b>



## 2. Maternity Case.

		Inpatient.				
		Malays.	Chinese.	Indians.	Others.	Total.
a.	Normal delivery	1	2	27	3	33
b.	Abnormal delivery	—	3	7	—	10
c.	Ante partum cases	—	1	2	—	3*
d.	Post partum cases	—	2	11	—	13
e.	Abortions	—	2	4	—	6
Total		1	10	51	3	65

These figures shew that the work increased during the year.

## 3. Attendances.

	Malays.	Chinese.	Indians.	Others.	Total.
Office, Hospital	32	18	14	4	68
Office, Town	38	187	61	3	289
Visited	93	71	22	7	193
Outstations	101	—	1	—	102
Hospital Inpatients	46	89	486	14	635
Total	310	365	584	28	1287

These figures are very satisfactory for a start.

## V. HOSPITALS AND DISPENSARIES.

The Kedah Medical Institutions in 1345 A. H. consisted of the

Hospital, Alor Star	360 beds.
„ Sungei Patani	300 „
„ Kulim	200 „
„ Kuala Ketil	150 „
„ Serdang	80 „
„ Bandar Bahru	30 „
„ Baling	40 „
„ Langkawi	50 „

The Gaols at Alor Star, Sungei Patani and Kulim have each a sick ward.

The Dispensaries are situated at

Alor Star (Town)	}	North Kedah.
Changloon		
<b>Yen</b>	}	Central Kedah.
Sik		
Kuala Muda		
Padang Serai	}	South Kedah.
Mahang		

Quarantine Station, Padang Besar.

Two Ambulance Dispensaries were working in North and Central Kedah throughout the year, and a third Ambulance was sanctioned for South Kedah for 1346 A. H.

## Inpatients Treated.

Statistics of patients treated in the hospitals and prison sick wards during the past 5 years are as follows:—

Year.	No. Treated.	Deaths.	Percentage of Deaths.
1341	13,020	945	7.25
1342	13,657	1,021	7.48
1343	16,659	1,246	7.47
1344	21,336	1,503	7.04
1345	21,472	1,841	8.57

Excluding 510 deaths, which occurred within 48 hours of admission, the death rate for 1345 A. H. was 6.19. The percentage of deaths occurring within 48 hours of admission was 27.70.

The number treated and the number of deaths in each hospital during 1345 A. H. were as follows:—

Hospital.	No. Treated.	Deaths.	Percentage of Deaths.
Alor Star	4,190	257	6.13
Sungei Patani	7,475	675	9.03
Kulim	4,593	415	9.03
Kuala Ketil	2,232	248	11.11
Serdang	1,322	130	9.83
Bandar Bahru	676	51	7.54
Baling	478	37	7.74
Langkawi	268	16	5.97
Prison Sick Wards:—			
Alor Star	169	8	4.73
Sungei Patani	46	1	2.17
Kulim	23	3	13.04
Total	21,472	1,841	8.57

The nationalities of Indoor patients were:—

Europeans	...	...	22
Eurasians	...	...	3
Malays	...	...	1,134
Chinese	...	...	5,875
Indians	...	...	14,287
Javanese	...	...	26
Japanese	...	...	1
Others	...	...	124
Total	...	...	21,472

The average daily number of inpatients in the various Hospitals was as follows:—

Hospital.	1341.	1342.	1343.	1344.	1345.
Alor Star	196.05	174.57	207.87	203.91	183.71
Sungei Patani	164.29	227.22	271.02	320.76	312.05
Kulim	121.12	134.23	157.52	161.12	184.45
Kuala Ketil	109.23	105.90	100.86	145.79	117.94
Serdang	49.55	44.93	40.01	68.30	76.80
Bandar Bahru	27.14	19.96	22.92	35.56	31.39
Baling	17.70	12.68	12.21	17.70	18.27
Langkawi	15.25	12.00	6.45	11.91	13.20
Prison Sick Wards.					
Alor Star	4.68	6.40	9.46	7.68	7.31
Sungei Patani	2.42	2.81	1.58	2.44	2.25
Kulim	2.81	1.36	1.03	.06	1.30
Total	710.24	742.06	830.93	975.23	948.67



## PREVAILING DISEASES.

Diseases.	1343			1344			1345		
	Cases.	Deaths.	Deaths %	Cases.	Deaths.	Deaths %	Cases.	Deaths.	Deaths %
Malaria	5994	301	5.02	8209	419	5.10	7984	544	6.81
Dysentery, Amoebic	427	88	20.60	466	97	20.81	759	206	26.74
.. Bacillary	615	123	20.00	731	155	21.20	485	116	23.71
Venereal Diseases	962	16	1.66	1050	22	2.09	804	14	1.74
Respiratory Diseases (other than P. Tuberculosis)	997	186	18.65	1128	221	19.59	1166	242	20.75
Pulmonary Tuberculosis	225	113	50.22	287	150	52.26	251	136	54.13
Ankylostomiasis	1221	128	10.48	1160	109	9.39	1457	125	8.57
Ulcers	972	6	.61	1410	7	.49	1355	9	.66
Wounds	732	14	1.91	1043	8	.76	976	23	2.35
Other Diseases	4514	271	6.00	5852	315	5.38	6235	426	6.83.
Total	16659	1249	7.47	21336	1503	7.04	21472	1841	8.57

## Malaria.

The total number of Blood films examined for Malaria in the various Hospitals was as follows:—

Hospital.	M.T.	B.T.	Quartan.	Negative.	Total.
Alor Star	290	816	9	2,125	3,240
Sungei Patani	674	1,297	67	2,992	5,030
Kulim	845	809	8	2,791	4,453
Kuala Ketil	199	405	5	1,381	1,990
Serdang	160	159	30	514	863
Bandar Bahru	49	31	2	93	175
Baling	31	101	—	295	427
Langkawi	10	57	—	154	221
Total	2,258	3,675	121	10,345	16,399

I am afraid these figures are by no means reliable as the examinations are nearly always done by the Dressers, who, I regret to say, are very inclined to treat this as a waste of time and do not pay the attention they should to the work.

## Dysentery.

Amoebic Dysentery, 759 cases with 206 deaths, a rate per cent. of 26.74, against 466 cases and 97 deaths during 1344 A.H.

Bacillary Dysentery, 485 cases with 116 deaths, a rate per cent. of 23.71, against 731 cases and 155 deaths during 1344 A. H.

The death rate in this disease is as usual high. Most of the patients come to Hospital after they have tried native treatment perhaps weeks after the attack, and are often, on arrival at Hospital very weak and emaciated.

## Respiratory Diseases.

These include 492 cases of Pneumonia with 214 deaths, a death rate of 43.49 per cent. as against 362 cases and 149 deaths, a death rate percentage of 41.16 during 1344 A. H.

There were more cases of pneumonia than in the previous year and the death rate is slightly higher.

## Venereal Diseases.

Gonorrhoea and Gonorrhoeal Sequelae	...	397
Syphilis and Syphilitic Sequelae	...	304
Bubo	...	103
		<hr/>
Total	...	804
		<hr/>

There seems to be greater tendency for the people to come up for early treatment.

## Yaws (Puru).

8,653 injections of Neo-Salvarsan were given during the year, against 7,723 in 1344, 5,995 in 1343, 7,620 in 1342 and 1,183 in 1341 A. H.

This treatment is willingly taken, generally recognised by the people as sound.

## Pulmonary Tuberculosis.

251 cases were treated with 136 deaths, against 287 cases and 150 deaths in 1344, 225 cases and 113 deaths in 1343, and 234 cases and 108 deaths in 1342 A. H.

Most of these cases, as usual, come for hospital treatment when they are in a hopeless state.

In addition to the three huts already opened at Langkawi, a small ward was completed during the year, and a separate kitchen was provided for these patients. 14 cases received treatment. There was only one death, that of an advanced case of an Estate Cooly; all others were benefitted by the treatment. In two cases, both Government employees, the cure was apparently complete. These were early cases and shewed no active signs on leaving the Hospital; but it is almost impossible to follow up these cases, as the Malay does not like being separated from his people and he does everything he can think of to avoid hospital treatment once he has experienced it. ?

## Ankylostomiasis.

There were 1457 cases and 125 deaths; almost all the cases came from Estates.

In certain parts of the country, where the land is low lying, ankylostomiasis is very prevalent. But I am glad to say that most Managers now realize the importance of getting these cases treated early, and also taking steps to avoid infection.

## Pregnancy and its Diseases.

193 cases connected with pregnancy and its complications were treated in the hospitals, with 24 deaths. In the whole State there were 214 deaths recorded under this heading, giving a percentage of 1.46 to the total births (including still births).

The maternity wards were fairly well patronised, but managers of estates will not, or cannot, compel their female labourers to come to hospital for confinement. This I hope, will be remedied when our Estate Health Board Enactments are passed.

## Mental Diseases.

There were 137 Kedah patients under treatment in Tanjong Rambutan Mental Hospital at the beginning of the year. 49 were sent in during 1345; 15 were discharged as cured, 10 at the end of the year was 149.



## Infectious Diseases Treated in Hospitals.

	Cases.	Deaths.
Cholera ...	8	7
Measles ...	61	4
Chicken Pox ...	20	—
Typhoid Fever ...	3	2
Erysipelas ...	8	2
Mumps ...	8	1
Hydrophobia ...	3	1
Septicaemia ...	6	5
Small Pox ...	2	—
Influenza ...	130	4
Total ...	249	26

The outbreak of Cholera is dealt with in the health report (Section II).

## Leprosy.

	Remained.	Admitted.	Total.	Discharged.	Absconded.	Transferred.	Died.	Remaining.
Pulau Jerajak	58	24	82	—	—	—	17	65
Pangkor Laut	9	3	12	—	—	—	2	10
Kedah Hospitals	9	38	47	6	7	27	4	3

## Out—Door Dispensaries.

The number of cases attending the various Dispensaries was as follows:—

Place.	Cases 1344.	Cases 1345.
Alor Star (Town) ...	10,387	8,494
Changloon ...	4,035	3,828
Yen ...	2,502	2,173
Sik ...	1,246	771
Kuala Muda ...	1,498	1,512
Padang Serai ...	1,762	1,963
Mahang ...	504	414
Motor Ambulance Dispensary, Alor Star ...	14,962	13,133
Motor Ambulance Dispensary, Sungei Patani ...	1,873	6,676
Total Cases ...	38,769	38,964
Repetitions ...	5,734	8,072

The Ambulance Dispensary, Alor Star, travelled 7,224 miles, and the Ambulance Dispensary, Sungei Patani, 7,442 miles during the year. They are much appreciated by the village people.

The nationalities treated were.

	1344.	1345.
Malays ...	19,753	23,589
Chinese ...	7,917	7,066
Indians ...	8,522	7,438
Siamese ...	145	157
Others ...	2,432	714
Total ...	38,769	38,964

## General Hospital, Alor Star.

This institution was under the charge of Dr. C. J. S. Nicholas, Assistant Medical Officer.

The number of indoor cases for the year was 4,190. There were 257 deaths, being a percentage of 6.13. Excluding 42 deaths, which occurred within 48 hours of admission, the death rate was 5.18 per cent. The daily average of inpatients was 183.71. The largest number of inpatients on one day was 227 on 11.10.45.

The figures for the previous year were: total cases 3,783; deaths 228; percentage of deaths 6.02; percentage of deaths excluding those occurring within 48 hours of admission 4.59; daily average 203.91; highest number on any one day 236.

## Indoor patients according to Nationality.

	No. Treated.	Deaths.	Percentage of deaths.
Europeans	20	—	—
Malays	533	16	3.00
Indians	2,063	85	4.12
Chinese	1,479	154	10.41
Others	95	2	2.10
Total	4,190	257	6.13

## Patients from Estates.

The total admissions from Estates numbered 468, of whom 14 died (2.99 per cent.), 2 from malaria, 1 from Pneumonia, 3 from Bowel complaints, 3 from Ankylostomiasis, 5 from other diseases.

## PREVAILING DISEASES.

Diseases.	1343			1344			1345		
	Cases.	Deaths.	Deaths %	Cases.	Deaths.	Deaths %	Cases.	Deaths.	Deaths %
Malaria	887	53	5.97	923	60	6.50	1250	52	4.16
Dysentery, Amoebic	22	3	13.63	62	15	24.19	69	8	11.59
.. Bacillary	55	10	18.18	49	6	12.24	36	8	22.22
Venereal Diseases	472	9	1.90	423	9	2.12	212	5	2.35
Respiratory Diseases (other than P. Tuberculosis)	196	33	16.83	153	18	11.84	166	30	18.07
Pulmonary Tuberculosis	87	41	47.12	75	43	57.33	72	46	63.88
Ankylostomiasis	272	14	5.14	225	16	7.11	309	19	6.14
Ulcers	366	1	.27	466	3	.64	353	3	.84
Wounds	295	8	2.71	302	4	1.32	227	4	1.76
Other Diseases	1148	66	5.74	1108	58	4.87	1496	82	5.48
Total	3710	238	6.41	3783	228	6.02	4190	257	6.13



There was an increase in the number of admissions for Malarial fevers during this year, but the death rate was less. A fair percentage of malaria cases died from lung complications, which accounts for the increased number of deaths from Pulmonary diseases.

#### Surgical Operations.

19 major and 374 minor operations were performed. Intravenous injections of Neo-Salvarsan to indoor patients numbered 583.

These injections were mostly for Syphilis, practically all Puru cases are treated 'out-door'.

#### Laboratory Work.

Blood films examined for malaria:—

Benign Tertian	...	...	816
Malignant Tertian	...	...	290
Quartan	...	...	9
Negative	...	...	2,125
Total	...	...	3,240

Other specimens (urine, sputum, faeces etc.,) examined—2,044.

Post Mortem examinations:—

Police cases	...	...	32
Hospital cases	...	...	30
Total	...	...	62

#### Out-door Department.

Number of new cases	...	...	5,757
Repetitions	...	...	1,056
Total	...	...	6,813

The nationalities who received treatment were:—

Europeans	...	...	349
Eurasians	...	...	111
Malays	...	...	2,718
Chinese	...	...	1,039
Indians	...	...	1,120
Others	...	...	420
Total	...	...	5,757

2,953 injections were given for Puru, and 1,400 injections for other diseases.

#### Buildings.

Two isolated 2 room buildings for Malays were completed.

The old kitchen was converted into a drug store, and a kitchen of a new pattern was constructed.

Part of the operating theatre building was converted into an X-Ray room.

#### Revenue.

The revenue collected during the year amounted to \$9,347.50, against \$4,149.30 in 1344 A. H.

The increase is due to the new rate of charges, introduced towards the end of 1344 A. H.

**Anti-Rabic Treatment.**

8 cases received treatment in the hospital during the year including 2 Europeans.

The injection of anti-rabic serum, which is obtained from the Institute of Medical Research, Kuala Lumpur, is now given in Alor Star.

**Sungei Patani Hospital.**

Dr. J. S. E. Manley was in charge of this Hospital throughout the year.

The number of indoor cases treated during the year was 7,475. There were 675 deaths being a percentage of 9.03. Excluding 214 deaths which occurred within 48 hours of admission the death rate was 6.14 per cent. The daily average of patients was 312.05. The largest number of inpatients on one day was 514 on 26.1.45. (6.8.26).

The figures for 1344 were: total treated 7,227; deaths 491; percentage of deaths 6.93; percentage excluding deaths within 48 hours 4.55; daily average 320.76; largest number on one day 490.

**Indoor patients according to Nationality.**

	No. Treated.	Deaths.	Percentage of deaths.
Europeans	2	—	—
Chinese	2,096	197	9.39
Malays	179	8	4.47
Indians	5,184	469	9.04
Others	14	1	7.14
Total	7,475	675	9.03

**Patients From Estates.**

The total admissions from Estates numbered 3,517 of whom 387 died, a percentage of 11.00. The causes of deaths were: Malaria 119, Dysentery 74, Other Bowel Diseases 28, Pneumonia 30, Ankylostomiasis 34, other diseases 102.

**PREVAILING DISEASES.**

Diseases.	1343			1344			1345		
	Cases	Deaths	Deaths %	Cases	Deaths	Deaths %	Cases	Deaths	Deaths %
Malaria	1996	91	4.55	3055	134	4.38	3100	249	8.03
Dysentery, Amoebic	85	24	28.23	104	23	22.11	262	64	24.42
„ Bacillary	146	38	26.02	216	54	25.00	109	22	20.18
Venereal Diseases	280	2	.71	298	6	2.01	275	7	2.54
Respiratory Diseases (other than P. Tuberculosis)	366	82	22.40	350	86	24.57	294	79	26.87
Pulmonary Tuberculosis	60	34	56.66	73	34	46.57	47	25	53.18
Ankylostomiasis	360	69	19.16	233	28	12.01	364	55	15.10
Ulcers	231	—	—	456	—	—	515	2	.38
Other Diseases	1660	117	7.04	2442	126	5.16	2509	172	6.85
Total	5184	457	8.81	7227	491	6.93	7475	675	9.03



**Surgical Operations.**

71 major and 184 minor operations were performed.

Intravenous injections to indoor patients numbered 580.

**Laboratory Work.**

Blood films examined for Malaria:—

Benign Tertian	...	...	...	1,297
Malignant Tertian	...	...	...	674
Quartan	...	...	...	67
Negative	...	...	...	2,992
			Total	5,030

Other specimens (sputum, faeces, urine etc.) examined—4,057.

Post mortem examinations:—

Police cases	...	...	...	30
Hospital cases	...	...	...	4
			Total	34

**Out-door Department.**

Number of new cases	...	...	...	6,671
Repetitions	...	...	...	217
			Total	6,888

The nationalities who received treatment were:—

Malays	...	...	...	3,100
Chinese	...	...	...	1,540
Indians	...	...	...	1,615
Europeans	...	...	...	167
Others	...	...	...	249
			Total	6,671

3,490 injections were given for Puru.

**Buildings.**

A temporary female ward was completed.

An Isolation ward, a Malay Ward and two Dressers' quarters were under construction at the end of the year.

**Revenue.**

The revenue collected during the year amounted to \$44,141.40 against \$20,599.98 in 1344 A. H.

## KULIM HOSPITAL.

Dr. W. M. Lupton was in charge throughout the year.

The number of indoor cases treated during the year was 4,593. There were 415 deaths being a percentage of 9.03. Excluding 114 cases which proved fatal within 48 hours of admission, the death rate was 6.55 per cent. The daily average of inpatients was 184.45. The highest number on one day was 261 on 24.11.45.

The figures for 1344 were: Total cases 4,122; deaths 379; percentage of deaths 9.18; percentage excluding deaths within 48 hours of admission 7.23; daily average 161.12; highest number on one day 269.

## Indoor patients according to Nationality.

	No. Treated.	Deaths.	Percentage of Deaths.
Malays	191	3	1.57
Indians	3,041	280	9.20
Chinese	1,358	132	9.72
Others	3	—	—
<b>Total</b>	<b>4,593</b>	<b>415</b>	<b>9.03</b>

## Patients From Estates.

The total admissions numbered 2,085 of whom 243 died (11.65 per cent.) The causes of deaths were:— Malaria 64, Dysentery 80, Ankylostomiasis 10, Pneumonia 35, Other diseases 54.

## PREVAILING DISEASES.

Diseases.	1343			1344			1345		
	Cases	Deaths	Deaths %	Cases	Deaths	Deaths %	Cases	Deaths	Deaths %
Malaria	1336	85	6.36	1525	89	5.83	1696	111	6.54
Dysentery, Amoebic	175	34	19.25	194	39	20.10	309	93	30.09
.. Bacillary	216	45	20.83	145	44	29.65	17	10	58.80
Veneral Diseases	175	2	1.14	217	9	4.14	155	6	3.87
Respiratory Diseases (other than P. Tuberculosis)	227	25	10.68	279	59	21.14	301	56	18.60
Pulmonary Tuberculosis	42	24	57.14	68	46	67.64	74	40	54.05
Ankylostomiasis	248	22	8.87	393	24	6.10	512	18	3.51
Ulcers	172	5	2.90	238	—	—	258	3	1.14
Other Diseases	830	47	5.66	1063	69	6.49	1271	78	6.13
<b>Total</b>	<b>3321</b>	<b>289</b>	<b>8.70</b>	<b>4122</b>	<b>379</b>	<b>9.18</b>	<b>4593</b>	<b>415</b>	<b>9.03</b>

## Surgical Operations.

21 major and 190 minor operations were performed. 935 injections of Neo-Salvarsan were given to Indoor patients.



## Laboratory Work.

Blood films examined for Malaria:—

Benign Tertian	...	...	...	809
Malignant Tertian	...	...	...	845
Quartan	...	...	...	8
Negative	...	...	...	2,791
Total				4,453

Other specimens examined (sputum, faeces, Urine etc.,) 5,759.

Post mortem examination:—

Police cases	...	...	...	30
Hospital cases	...	...	...	5
Total				35

## Out-door Department.

Number of new cases	...	...	...	3,737
Repetitions	...	...	...	328
Total				4,065

The nationalities who received treatment were:—

Malays	...	...	...	842
Indians	...	...	...	1,207
Chinese	...	...	...	1,436
Others	...	...	...	252
Total				3,737

908 injections of Neo-Salvarsan were given for Pura and Syphilis outside of the Hospital.

## Buildings.

A kitchen for second class ward and 4 servants' quarters were completed.

A temporary female ward was commenced towards the close of the year.

## Revenue.

The revenue for the year amounted to \$26,169.98 as compared with \$10,704.17 for 1344 A. H.

## KUALA KETIL HOSPITAL.

Special Grade Dresser, V. Veerakathy Pillai, was in charge of this hospital, under the supervision of the Medical Officer Central Kedah.

The total number of indoor cases treated during the year was 2,232. The number of deaths was 248, being a percentage of 11.11. The death rate, excluding 83 deaths which occurred within 48 hours of admission, was 7.39. The daily average of inpatients was 117.94. The largest number on one day was 243 on 7.1.45.

The figures for the previous year were:— Total cases 3,004, deaths 224; percentage of deaths 7.45; percentage excluding deaths within 48 hours of admission, 5.39; daily average of inpatients 145.79; largest number on one day 259.

The nationalities of inpatients were:—

	Total Treated.	Deaths.	Percentage of Deaths.
Indians ...	1,873	209	11.15
Chinese ...	325	36	11.07
Malays ...	22	2	9.09
Others ...	12	1	8.33
<b>Total ...</b>	<b>2,232</b>	<b>248</b>	<b>11.11</b>

#### Patients From Estates.

1520 patients were admitted from Estates. There were 200 deaths among them, or a percentage of 13.15. The causes of deaths were:— Malaria 57, Dysentery 49, Other Bowel Diseases 2, Pneumonia 32, Ankylostomiasis 11, Other Diseases 49.

#### Prevailing Diseases.

	Total Treated.	Deaths.	Percentage of Deaths.
Malaria ...	821	72	8.76
Dysentery, Amoebic ...	78	27	34.61
Dysentery, Bacillary ...	99	36	36.36
Venereal Diseases ...	61	—	—
Respiratory Diseases (other than P. Tuberculosis) ...	169	40	23.66
Pulm. Tuberculosis ...	17	9	52.94
Ankylostomiasis ...	107	15	14.01
Ulcers ...	85	—	—
Wounds ...	99	—	—
Other Diseases ...	696	49	7.04
<b>Total ...</b>	<b>2,232</b>	<b>248</b>	<b>11.11</b>

#### Laboratory Work.

Blood films examined for Malaria:—

Benign Tertian ...	405
Malignant Tertian ...	190
Quartan ...	5
Negative ...	1,381
<b>Total ...</b>	<b>1,990</b>

Other specimens examined (Fæces, urine, sputum, etc.) 4,870.

Post Mortem examinations:—

Police cases ...	9
Other cases ...	10
<b>Total ...</b>	<b>19</b>

#### Out-Door Cases.

2508 cases were treated, and the repetitions numbered 166.

The nationalities who received treatment were:— Malays 1,226, Indians 858, Chinese 307 other 117. 1,220 injections of Neo-Salvarsan were given for Puru and Syphilis.



**Buildings.**

A maternity ward was completed.

A new well, with pumping plant, was constructed and brought into use.

**Revenue.**

The revenue for the year amounted to \$27,299.06, as against \$11,895.89 for the previous year.

**SERDANG HOSPITAL.**

Special Grade Dresser, R. Subakrishnan remained in charge of this hospital, until he was succeeded by First Grade Dresser, M. D. Rajamoney in Zulkaidah. (May, 1927).

The total number of indoor cases treated during the year was 1322. The number of deaths was 130, being a percentage of 9.83 to total treated. Excluding 28 deaths, which occurred within 48 hours of admission, the rate was 7.71 percent. The daily average of in-patients was 76.80. The largest number on one day was 94 on 8.1.45.

The figures for the previous year were:— Total cases 1511; deaths 88; percentage of deaths 5.84; percentage excluding deaths within 48 hours of admission 4.56; daily average of in-patients 68.30; largest number on one day 94.

The nationalities of inpatients were:—Chinese 255, Indians 1057, Malays 7, Others 3.

**Patients From Estates.**

807 were admitted from Estates, of whom 93 died, or a percentage of 11.52. The causes of deaths were: Malaria 19, Dysentery 26, Other Bowel Diseases 5, Pneumonia 9, Ankylostomiasis 4, Other Diseases 30.

**Prevailing Diseases.**

Diseases.	Total Treated.	Deaths.	Percentage of Deaths.
Malaria ...	468	32	6.83
Dysentery, Amoebic ...	29	9	31.03
Dysentery, Bacillary ...	125	28	22.40
Veneral Diseases ...	41	1	2.43
Respiratory Diseases (other than P. Tuberculosis) ...	108	14	12.96
Pulm. Tuberculosis ...	9	7	77.77
Ankylostomiasis ...	60	4	6.66
Ulcers ...	57	1	1.75
Wounds ...	62	—	—
Other Diseases ...	463	34	7.34
<b>Total ...</b>	<b>1,322</b>	<b>130</b>	<b>9.83</b>

**Laboratory Work.**

Blood films examined for Malaria:—

Benign Tertian ...	159
Malignant Tertian ...	160
Quartan ...	30
Negative ...	514
<b>Total ...</b>	<b>863</b>

Other specimens examined (Faeces, sputum, urine, etc.) 1019.

Post Mortem:—Police cases 2, Other Cases 3.

### Out-door Cases.

808 cases were treated, and the repetitions numbered 189.

The nationalities who received treatment were:—Chinese 453, Indians 226, Malays 86 others 43.

89 injections of Neo-Salvarsan were given for Puru.

### Buildings.

A Dhoby house was completed.

A Verandah was built to the female ward.

### Revenue.

The revenue for the year amounted to \$13,257.86. The amount for 1344 was \$5,325.99.

### Bandar Bahru Hospital.

First Grade Dresser, M. D. Rajamoney was in charge until he was transferred to Serdang in Zulkaidah (May 1927). First Grade Dresser K. Ayadurai succeeded him.

The total number of inpatients treated during the year was 676. Deaths numbered 51, being a percentage of 7.54. Excluding 14 deaths which occurred within 48 hours of admission the death rate was 5.47. The daily average of inpatients was 31.39. The largest number of sick on one day was 41 on 8.4.45.

The figures for the previous year were:—Total cases 775; deaths 52; percentage of deaths 6.88; percentage excluding deaths within 48 hours of admission, 4.23; daily average 35.56; largest number on one day 50.

The nationalities treated were:—

	Total Treated.	Deaths.	Percentage of Deaths.
Indians	558	44	7.88
Chinese	93	6	6.45
Malays	23	1	4.34
Others	2	—	—
<b>Total</b>	<b>676</b>	<b>51</b>	<b>7.54</b>

### Patients From Estates.

There were 250 admissions from Estates of whom 27 died, or a percentage of 10.80. The causes of deaths were: Malaria 3, Dysentery 6, Other Bowel Diseases 1, Pneumonia 1, Ankylostomiasis 4, Other diseases 12.

### Prevailing Diseases.

	Total Treated.	Deaths.	Percentage of Deaths.
Malaria	158	8	5.06
Dysentery Amoebic	3	—	—
Dysentery Bacillary	36	9	25.00
Venereal Diseases	32	—	—
Respiratory Diseases (other than Pulm. Tuberculosis)	53	6	11.32
Pulm. Tuberculosis	4	2	50.00
Ankylostomiasis	56	8	14.28
Ulcers	23	—	—
Wound	68	—	—
Other Diseases	243	18	7.40
<b>Total</b>	<b>676</b>	<b>51</b>	<b>7.54</b>



### Laboratory Work.

A total of 489 specimens were examined.

### Out-door Patients.

555 new cases were treated, and the repetitions numbered 298.

The nationalities who received treatment were:—Indians 244, Chinese 152, Malays 148, Others 11.

16 injections of Neo-Salvarsan were given for Puru and Syphilis at the Hospital.

Cases for operation are transferred to Kulim Hospital.

### Revenue.

The revenue for the year was \$4,535.14, against \$2,790.22 in 1344 A. H.

### Baling Hospital.

First Grade Dresser V. Ragahava Pillai was in charge of this hospital up to Jamadalawal (November '26) when he was succeeded by First Grade Dresser V. Krishna Pillai.

The number of inpatients treated during the year was 478. Deaths numbered 37, being a percentage of 7.74. Excluding 11 deaths, which occurred within 48 hours of admission, the death rate was 5.43. The daily average of inpatients was 18.27. The largest number of sick on one day was 33 on 5.2.45.

The figures for the previous year were:—Total cases 475; deaths 26; percentage of deaths 5.47; percentage excluding deaths within 48 hours of admission 4.42; daily average 17.70; largest number on one day 33.

The nationalities treated were:—

	Total Treated.	Deaths.	Percentage of Deaths.
Malays	41	3	7.31
Chinese	133	16	12.03
Indians	303	17	5.61
Others	1	1	100.00
<b>Total</b>	<b>478</b>	<b>37</b>	<b>7.74</b>

### Patients From Estates.

There were 71 admissions from Estates, of whom 6 died, or a percentage of 8.45. The causes of deaths were: Malaria 3, Pneumonia 2, Bright's Disease 1.

### Prevailing Diseases.

	Total Treated.	Deaths.	Percentage of Deaths.
Malaria	189	10	5.29
Dysentery, Bacillary	10	2	20.00
Venereal Diseases	12	—	—
Respiratory Diseases (other than Pulm. Tuberculosis)	33	10	30.30
Pulm. Tuberculosis	9	6	66.66
Ankylostomiasis	16	2	12.50
Ulcers	59	—	—
Wounds	32	1	3.12
Other Diseases	118	6	5.08
<b>Total</b>	<b>478</b>	<b>37</b>	<b>7.74</b>

### Laboratory Work.

A total of 798 specimens were examined.

6 Post Mortems were performed, including 2 for pathological and 4 Medico-legal cases.

### Out-door Patients.

2,562 cases were treated, and the repetitions numbered 897.

The nationalities who received treatment were:—Malays 810, Chinese 455, Indians 1,289 others 8.

504 injections of neo-salvarsan were given for Puru and Syphilis.

### Buildings.

Repairs were done to all the buildings, and the roofs were re-shingled.

### Revenue.

The revenue for the year was \$676.20 against \$514.13 in 1944 A. H.

### Langkawi Hospital.

First Grade Dresser K. Ayadurai was in charge of this hospital up to Jamadalawal (November 1926), when he was succeeded by First Grade Dresser V. Raghava Pillai.

The number of inpatients treated during the year was 268. Deaths numbered 16, being a percentage of 5.97. Excluding 2 deaths, which occurred within 48 hours of admission, the death rate was 5.22. The daily average of inpatients was 1320. The largest number of sick on one day was 35 on 14.12.45.

The figures for the previous year were:—Total cases 210; deaths 9; percentage of deaths 4.28; percentage, excluding deaths within 48 hours of admission, 3.80; daily average 11.91; largest number on one day 31.

The nationalities treated were:—

	Total Treated.	Deaths.	Percentage of Deaths.
Malays	42	—	—
Chinese	51	7	13.72
Indians	173	7	4.04
Others	2	2	100.00
<b>Total</b>	<b>268</b>	<b>16</b>	<b>5.97</b>

### Patients From Estates.

There were 162 admissions from Estates, of whom 7 died, or a percentage of 4.32. The causes of deaths were:—Malaria 1, Dysentery 3, Other diseases 3.

Since the introduction of Tamil Estate labour on the Island, Malaria is much more prevalent, nearly all the cases coming from the Estates employing Indian labourers. The matter is being looked into and the Health Officer will see that steps are taken with regards anti-malarial measures on the Estate.



## Prevailing Diseases.

	Total Treated.	Deaths.	Percentage of Deaths.
Malaria	113	2	1.76
Dysentery Amoebic	7	1	14.28
Dysentery Bacillary	13	2	15.38
Venereal Disease	6	1	16.66
Respiratory Diseases (other than P. Tuberculosis)	12	3	25.00
Pulm. Tuberculosis	14	1	7.14
Ankylostomiasis	9	1	11.11
Ulcers	9	—	—
Wounds	18	—	—
Other diseases	67	5	7.46
Total	268	16	5.97

## Laboratory Work.

A total of 553 specimens were examined.

## Post Mortems.

3 Post Mortems were performed, including 2 pathological cases and 1 Medico-legal case.

## Out-door Patients.

1,997 cases were treated, and the repetitions numbered 691.

The nationalities who received treatment were:—Malays 1,080, Chinese 443, Indians 388, Others 86.

## Buildings.

A small ward of 4 beds, for phthisis patients, was completed, and a separate kitchen was provided for these cases.

A new meteorological shed was erected.

## Revenue.

The revenue for the year amounted to \$1,852.32, against \$352.64 in 1344 A. H.

The increase is due to the opening of an European-owned Rubber Estate on the Island and the introduction of Indian Labourers.

## VI. PRISONS.

There are 3 Prisons in the State, situated at Alor Star, Sungei Patani, and Kulim, each having a sick ward.

The Central Prison, Alor Star, has a whole-time dresser; other prisons are daily attended by a dresser from the Hospital. The Medical Officer in each place pays routine daily visits.

Cases treated in the sick wards during the year numbered 239; deaths 12, or a percentage of 5.02.

The number of prisoners who received indoor treatment, in the sick wards, during the past 5 years, was:—

Year.	No. Treated.	Deaths.	Percentage of Deaths.
1341	256	12	4.68
1342	246	2	.81
1343	317	17	5.36
1344	249	6	2.40
1345	239	12	5.02

#### Prevailing Diseases.

	Total Treated.	Deaths.	Percentage of Deaths.
Malaria	53	—	—
Dysentery Amoebic	10	3	30.00
Dysentery Bacillary	21	—	—
Other Bowel Diseases	16	1	6.25
Venereal Diseases	5	—	—
Respiratory Diseases (other than P. Tuberculosis)	14	—	—
Pulm. Tuberculosis	5	—	—
Ankylostomiasis	24	3	12.50
Other Diseases	91	5	5.55
Total	239	12	5.02

The daily average of inpatients for the last 3 years was:—

	1343		1344		1345	
	Prisoners.	Patients.	Prisoners.	Patients.	Prisoners.	Patients.
Alor Star	404	9.46	363	7.68	330	7.31
Sungei Patani	72	1.58	50	2.44	50	2.25
Kulim	27	1.03	28	.06	29	1.30
Total	503	12.07	441	10.18	409	10.86

Dispensary attendances totalled 13,199 and 8,112 repetitions. These figures include the administration of quinine to all prisoners during malarial seasons.

#### Appendices.

- A. The population of Kedah for the year 1345 from 1329 to 1345 A. H.
- B. Population according to races with deaths and death rate.
- C. Infantile death rate for the last 8 years.
- D. Births according to sex and nationality.
- E. Still births according to sex and nationality.
- F. Table showing Principal causes of deaths according to Register of Deaths.
- G. Distribution of deaths according to Sex and Nationality for the year 1345.
- H. Incidence of deaths according to ages, sex and nationality for the year 1345 A. H.
- I. Cases of Infectious Diseases reported.
- J. Indoor patients treated in Kedah Hospitals.

#### Charts and Diagrams.

1. Chart to show total Births and Deaths by months, in the State.
2. Chart to show Infants Mortality by months, in the State.
3. Diagram No. 3. to show proportion and causes of deaths in the State from Preventable diseases.
4. Diagram of General Systemic and Preventable diseases treated in Hospitals.
5. Diagram of Infective Diseases treated in Hospitals.



(A) The population of Kedah for the year 1345 A.H. is estimated at 398,222 against 384,124 for 1344 A.H.

The following is a comparative table for the last 10 years—

Year.	Estimated Population.	Births.	Birth-rate per mille.	Deaths.	Death-rate per mille.	Remarks.
1329	245,213					
1336	290,000	7,902	27.25	6,299	21.72	
1337	300,060	9,102	30.34	11,548	38.49	
1338	325,000	9,593	29.51	8,557	26.14	
1339	338,558	10,153	29.99	8,718	25.75	Census figure.
1340	340,000	10,305	30.30	8,656	25.40	
1341	341,596	9,454	27.73	7,834	23.41	
1342	350,000	11,095	31.70	7,877	22.41	
1343	375,500	11,152	29.69	8,648	23.02	
1344	384,124	11,342	29.52	9,910	25.79	
1345	398,222	13,738	34.49	10,723	26.92	

The increase in the balance of births over deaths is 3,015 compared with 1,432 for the last year.

The figures for population are based on last year's figures, with corrections for births and deaths and, in the case of Europeans, Chinese and Indians, allowance is made for immigration and emigration. These figures were arrived at in consultation with the Protector of Labour.

The increase in Indians on account of immigration is 8,875, of Chinese 1,200.

It is believed that the resulting estimate of population is reasonably accurate.

(B) Population according to races with deaths and death-rate.

Race.	Approximate Population.	Deaths.	Death-rate per mille.
European	400	0	—
Eurasian	153	1	6.53
Chinese	65,882	2,028	30.78
Malay	270,138	6,032	22.32
Indian	52,654	2,438	46.30
Others	8,995	224	24.79
Total	398,222	10,723	26.92

(C). There were 2,248 deaths among infants up to one year old against 1924 during 1345 A.H., the rate being 163.63 per thousand births, against 169.63 in 1344 A. H.

The infantile death rate for the last 8 years was:—

Year.	Deaths.	Rate per mille.	Age at Death.
1338	1,312	136.76	} Under one Year.
1339	1,980	194.98	
1340	1,704	165.35	
1341	1,530	161.73	
1342	1,401	126.27	
1343	1,689	151.45	
1344	1,924	169.24	
1345	2,248	163.64	

The infantile death rate per thousand births, among the principal nationalities was:—

Malays.	Chinese.	Indians.
144.30	122.61	407.7 (uncorrected for immigrant babies)

(D). Births according to sex and nationality:—

Nationality.	Males.	Females.	Total.
European ...	1	1	2
Eurasian ...	1	0	1
Chinese ...	1,127	903	2,030
Malay ...	5,267	4,968	10,235
South Indian ...	606	564	1,170
North Indian ...	10	2	12
Others ...	140	148	288
Total ...	<u>7,152</u>	<u>6,586</u>	<u>13,738</u>

Still births according to sex and nationality:—

Nationality.	Male.	Females.	Total.
European ...	0	0	0
Eurasian ...	0	0	0
Chinese ...	64	65	129
Malay ...	362	229	591
South Indian ...	80	63	143
North Indian ...	1	1	2
Others ...	28	16	44
Total ...	<u>535</u>	<u>374</u>	<u>909</u>

Percentage of still births to total births was 6.5.

Percentage of deaths of mothers in connection with child birth was 1.5.

(F). Table showing Principal causes of Deaths (according to Register of deaths.

Deaths from Preventible Diseases:—

Fever unspecified ...	4,219
Malaria ...	601
Tuberculosis ...	205
Dysentery Amoebic ...	166
Dysentery Bacillary ...	214
Ankylostomiasis ...	308
Conditions connected with child birth ...	214
Syphilis ...	19
Lobar Pneumonia ...	12
Septicaemia ...	13
Influenza ...	11
Other Infective Diseases ...	40



## General Diseases.

Death from:—					
	Digestive System	...	...	...	618
	Respiratory System	...	...	...	814
	Nervous System	...	...	...	30
4,701	Circulatory	...	...	...	25
	Tumours	...	...	...	19
	Infantile Convulsions	...	...	...	1,964
	Old age and ill defined conditions accidents etc.,	...	...	...	1,231

## (G). Distribution of Deaths according to Sex and Nationality for the year 1345 A.H.

Nationality	Male.	Female.	Total.
European	0	0	0
Eurasian	0	1	1
Chinese	1,661	367	2,028
Malay	3,108	2,923	6,031
South Indian	1,377	1,024	2,401
North Indian	35	3	38
Others	110	114	224
Total	6,291	4,432	10,723

## (H). Incidences of deaths according to Ages, Sex and Nationality for the year 1345 A.H.

Ages.	Euro- pean		Eurasian M. F.	Chinese M. F.	Malay M. F.	S. Indian M. F.	N. Indian M. F.	Others M. F.	Total
	M.	F.							
1 year and under	...	...	...	148-101	793-684	256-221	3-0	25-17	2248
5 years and under	...	...	1	68-52	517-507	208-225	0-1	12-20	1611
15 do	...	...	...	48-34	242-239	93-106	1-0	8-4	775
25 do	...	...	...	140-34	182-230	146-116	4-0	6-9	867
35 do	...	...	...	262-49	288-244	290-169	9-1	11-18	1341
45 do	...	...	...	265-37	268-214	206-96	12-0	14-13	1125
55 do	...	...	...	334-22	222-184	110-44	2-0	15-12	945
65 do	...	...	...	219-21	229-208	42-27	3-1	10-8	768
75 do	...	...	...	114-10	190-152	22-17	1-0	8-7	521
Over 75 years	...	...	...	63-7	177-261	4-3	0-0	1-6	522
Total	...	...	1	1661-367	3108-2923	1377-1024	35-3	110-114	10-723

## (I). Cases of Infectious Diseases.

Reported to Health Office during 1345 (12th July, 1926 to 30th June, 1927).

Chicken Pox	...	...	...	64
Measles	...	...	...	69
Enteric Fever	...	...	...	3
Small Pox	...	...	...	3
Cholera	...	...	...	18

## APPENDIX. J.

ANNUAL RETURN OF INDOOR PATIENTS TREATED IN HOSPITALS  
IN KEDAH DURING THE YEAR 1345 A. H.

Diseases.	Remained.	Admitted.	Died.	Total.	Remaining.	Remarks.
<b>INFECTIVE DISEASES.</b>						
Chicken-pox	...	20	...	20	...	
Cholera	...	8	7	8	...	
Dengue	...	1	...	1	...	
Dysentery Amœbic	47	712	206	759	7	
Dysentery Bacillary	40	445	116	485	12	
Enteric Fever	...	3	2	3	...	
Erysipelas	...	8	2	8	...	
Gonorrhœa	14	303	...	317	16	
Gonorrhœal Rheumatism	4	64	...	68	4	
Gonorrhœal Conjunctivitis	1	11	...	12	...	
Hydrophobia	...	3	1	3	...	
Influenza	4	126	4	130	2	
Leprosy	9	38	4	47	3	
Madura disease	2	7	...	9	1	27 of these were sent to Leper Asylums.
<b>MALARIA.</b>						
(a) Benign tertian	212	3599	144	3811	162	
(b) Quartan	4	108	15	112	3	
(c) Malignant tertian	126	2213	306	2339	90	
(d) Mixed infection	7	93	24	100	5	
(e) Type undiagnosed	68	1372	39	1440	116	
(f) Malarial cachexia	21	161	16	182	16	
(g) Blackwater fever	...	1	...	1	...	
Measles	3	58	4	61	...	
Mumps	...	8	1	8	2	
Phagedœna	1	8	3	9	2	
Pneumonia (Lobar)	25	400	185	425	16	
Pyæmia	...	8	5	8	...	
Pyrexia of uncertain origin	...	1	1	1	...	
Rheumatism	...	86	...	86	3	
Septicæmia	...	6	5	6	...	
Small-pox	...	2	...	2	...	
<b>SYPHILIS.</b>						
(a) Primary	3	59	...	62	11	
(b) Secondary	26	189	4	27	3	
(c) Inherited	...	27	10	2	...	
Tetanus	...	2	1	...	...	
<b>TUBERCULOSIS.</b>						
(a) General	...	4	4	4	...	
(b) Phthisis	17	234	136	251	18	
Whooping Cough	...	2	...	2	...	
Yaws	4	46	...	50	...	
Other Infective Diseases	...	20	6	20	4	
<b>INTOXICATIONS.</b>						
Alcoholism	...	9	...	9	...	



Diseases.	Remained.	Admitted.	Died.	Total.	Remaining.	Remarks.
GENERAL DISEASES.						
Anæmia	...	19	2	19	2	
Beri-beri	1	24	3	25	6	
Diabetes	...	4	...	4	...	
Leucocythæmia	...	1	...	1	...	
Other General Diseases	6	130	44	136	6	
CERTAIN MORBID CONDITIONS INCIDENT TO VARIOUS PARTS.						
Malformations	...	1	...	1	...	
New Growth, Non-malignant	...	10	2	10	...	
do. Malignant	...	9	...	9	...	
Cyst	...	4	...	4	...	
Other Morbid Conditions	...	7	2	7	...	
DISEASES OF THE NERVOUS SYSTEM.						
Neuritis	2	83	...	85	8	
Multiple neuritis	...	11	...	11	...	
Other Diseases of the Nerves	...	1	...	1	...	
Meningitis	...	4	1	4	2	
Locomotor ataxia	...	1	...	1	...	
Other Diseases of Spinal cord and Membranes	...	2	1	2	...	
Hæmorrhage	...	2	1	2	...	
Other Diseases of brain and Membranes	...	2	...	2	...	
Apoplexy	...	2	2	2	1	
Paraplegia	...	7	6	8	3	
Hemiplegia	4	19	2	23	1	
Chorea	1	...	...	1	...	
Convulsions	...	23	15	23	1	
Epilepsy	...	19	2	19	...	
Neuralgia	...	12	...	12	...	
Hysteria	...	3	...	3	...	
Other Nervous Disorders	2	33	1	35	...	
Mania	6	51	1	57	...	
Melancholia	...	7	...	7	2	
Other Mental Diseases.	1	7	...	8	...	49 of these were trans- ferred to Tg. Ram- butan.
DISEASES OF THE EYE.						
Conjunctivitis	2	60	...	62	...	
Trachoma	...	8	...	8	...	
Keratitis	...	7	...	7	...	
Ulcer of cornea	3	44	...	47	3	
Staphyloma	...	4	...	4	1	
Iritis	...	8	...	8	...	
Glaucoma	...	2	...	2	1	
Optic neuritis	1	...	...	1	1	
Cataract	5	4	...	9	4	
Panophthalmitis	...	5	...	5	...	
Amblyopia and Amaurosis	7	...	...	7	...	
Other Eye diseases	1	19	...	20	9	
DISEASES OF THE EAR.						
Inflammation	...	37	...	37	1	
Other Ear Diseases	2	8	...	10	...	

Diseases.	Remained.	Admitted.	Died.	Total.	Remaining.	Remarks.
<b>DISEASES OF THE NOSE.</b>						
Other Nose Diseases	...	1	...	1	...	
<b>DISEASES OF THE CIRCULATORY SYSTEM.</b>						
Pericarditis	...	2	2	2	...	
Endocarditis	...	2	...	2	...	
Valvular Disease	...	20	9	20	4	
Myocarditis	...	7	3	7	2	
Dilatation of Heart	...	2	...	2	...	
Syncope	...	2	1	2	...	
Aneurysm	1	3	2	4	...	
Phlebitis	...	2	...	2	...	
Other Diseases of the System	...	15	1	15	...	
<b>DISEASES OF THE RESPIRATORY SYSTEM.</b>						
Asthma	5	93	5	98	2	
Laryngitis	...	4	...	4	...	
Bronchitis	13	462	9	475	29	
Broncho-pneumonia	10	57	29	67	1	
Pleurisy	6	70	12	76	1	
Empyema	1	5	1	6	1	
Other Diseases of the System	...	15	1	15	...	
<b>DISEASES OF THE DIGESTIVE SYSTEM.</b>						
Stomatitis	...	13	...	13	...	
Gangrene of mouth	...	6	3	6	1	
Pyorrhoea alveolaris	...	12	...	12	1	
Caries of tooth	...	7	1	7	...	
Tonsillitis	...	9	...	9	...	
Inflammation of pharynx	...	7	...	7	...	
Gastritis	2	33	...	35	1	
Ulceration of stomach	...	1	1	1	...	
Dyspepsia	2	19	...	21	...	
Enteritis	3	137	48	140	6	
Appendicitis	...	7	...	7	...	
Colitis	...	6	...	6	...	
Ulceration of intestines	1	2	1	3	1	
Hernia	...	23	...	23	2	
Intestinal obstruction	...	2	1	2	...	
Diarrhoea	3	132	24	135	5	
Constipation	...	42	...	42	2	
Colic	1	48	...	49	1	
Ischio-rectal Abscess	...	12	...	12	...	
Ulcer of anus	...	3	...	3	...	
Fissure of anus	...	1	...	1	...	
Fistula in ano	...	5	...	5	...	
Hæmorrhoids	1	18	...	19	1	
Hepatitis	...	25	...	25	...	
Abscess of liver	...	14	4	14	...	
Cirrhosis of liver	5	42	18	47	7	
Congestion of liver	...	1	...	1	...	
Jaundice	1	17	4	18	2	



Diseases.	Remained.	Admitted.	Died.	Total.	Remaining.	Remarks.
Marasmus	...	9	7	9	...	
Peritonitis	...	8	6	8	...	
Ascites of unknown origin	...	7	2	7	...	
Other diseases of the system	2	46	9	48	1	
DISEASES OF THE LYMPHATIC SYSTEM.						
Spleen, Inflammation	...	8	...	8	2	
Spleen, Rupture	...	2	2	2	...	
Bubo	4	99	...	103	2	
Suppuration of Glands	...	5	...	5	...	
Lymphangitis	...	4	...	4	...	
Other diseases of the system	...	10	3	10	1	
DISEASES OF THE URINARY SYSTEM.						
Acute Nephritis	4	101	45	105	2	
Bright's disease	3	14	6	17	...	
Cystitis	...	9	...	9	...	
Calculus	...	1	...	1	...	
Retention of urine	1	7	...	8	...	
Incontinence of urine	...	1	...	1	...	
Other diseases of the system	2	5	...	7	...	
DISEASES OF THE GENERATIVE SYSTEM, MALE.						
Stricture	...	13	...	13	...	
Urethral fistula	...	2	...	2	...	
Phimosis	...	31	...	31	1	
Ulcer Penis	1	1	...	2	...	
Soft chancre	4	120	...	124	4	
Scrotum, Abscess	...	4	...	4	...	
Do. , Sloughing	...	5	3	5	...	
Hydrocele	...	19	...	19	...	
Orchitis	1	30	...	31	...	
Epididymitis	...	7	...	7	...	
Other diseases, Male Organs	...	26	...	26	...	
FEMALE.						
Metritis	...	2	1	2	...	
Erosion of cervix	...	1	...	1	...	
Displacements and distortions	...	2	...	2	1	
Other diseases, Female Organs	1	25	3	26	1	
AFFECTIONS CONNECTED WITH PREGNANCY AND PARTURITION.						
Natural Labour	1	105	...	106	4	
Difficult Labour	1	10	4	11	...	
Abortion	...	19	...	19	...	
Rupture perineum	1	3	...	4	...	
Retention of placenta	1	5	3	6	...	
Premature birth	1	14	9	15	...	
Post-partum haemorrhage	...	1	1	1	...	
Puerperal sapraemia	...	13	2	13	1	
Other Affections	...	18	5	18	...	
DISEASES OF THE FEMALE BREAST.	...	2	...	2	...	
DISEASES OF THE MALE BREAST.	...	1	...	1	...	
DISEASES OF THE ORGANS OF LOCOMOTION.						
Periostitis	1	12	...	13	2	

Diseases.	Remained.	Admitted.	Died.	Total.	Remaining.	Remarks.
Caries of bones	...	4	...	4	1	
Necrosis of bones	...	1	...	1	...	
Arthritis	5	77	2	82	3	
Synovitis	...	50	...	50	6	
Caries of spine	1	1	...	2	...	
Curvature spine	1	...	...	1	...	
Myalgia	...	25	...	25	...	
Other Diseases of Organs of Locomotion	1	30	...	31	1	
DISEASES OF THE CONNECTIVE TISSUE.						
Cellulitis	10	175	13	185	11	
Abscess	7	307	7	314	18	
Gangrene	1	10	4	11	1	
Oedema	...	6	1	6	1	
Other Diseases of the Connective Tissue.	...	34	...	34	...	
DISEASES OF THE SKIN.						
Urticaria	...	12	...	12	...	
Eczema	1	65	...	66	...	
Boil	...	4	...	4	...	
Carbuncle	...	10	1	10	1	
Herpes	...	4	...	4	...	
Herpes Zoster	...	1	...	1	...	
Psoriasis	...	9	...	9	...	
Ulcer	169	1186	9	1355	80	
Other Skin Diseases	8	36	...	44	3	
INJURIES.						
General	2	18	11	20	4	
Dog Bite	...	10	...	10	...	
Local	30	946	23	976	18	
(a) Wounds	3	43	...	46	...	
(b) Sprains	9	105	...	114	5	
(c) Fractures, simple	3	17	2	22	1	
(d) do compound	...	20	...	20	...	
(e) Dislocations	5	399	...	404	4	
(f) Other local injuries	...	13	...	13	...	
(g) Snake bite	...	...	...	...	...	
POISONS						
Opium	...	3	2	3	...	
PARASITES						
Ascaris Lumbricoides	16	417	14	433	15	
Ankylostomiasis	45	1412	125	1457	85	
Filaria	...	10	...	10	1	
Tinea Circinata	...	3	...	3	2	
Tinea Imbricata	...	4	...	4	...	
Other Vegetable Parasites	...	3	...	3	2	
Scabies	5	233	...	238	7	
Other Animal Parasites	...	63	...	63	1	
Under Observation	60	1060	...	1120	40	
No Discoverable Disease	14	79	...	93	...	
Total.	1163	20309	1841	21472	951	



Name of the person	Rank	Service	Date	Place	Remarks
John Smith	Private	1st Regt. Inf.	1861	Fort Mifflin	Discharged
James Brown	Sergeant	2nd Regt. Inf.	1862	Fort Mifflin	Discharged
William Jones	Private	3rd Regt. Inf.	1863	Fort Mifflin	Discharged
Thomas White	Private	4th Regt. Inf.	1864	Fort Mifflin	Discharged
Robert Black	Private	5th Regt. Inf.	1865	Fort Mifflin	Discharged
George Green	Private	6th Regt. Inf.	1866	Fort Mifflin	Discharged
Charles King	Private	7th Regt. Inf.	1867	Fort Mifflin	Discharged
Henry Lee	Private	8th Regt. Inf.	1868	Fort Mifflin	Discharged
John Adams	Private	9th Regt. Inf.	1869	Fort Mifflin	Discharged
James Wilson	Private	10th Regt. Inf.	1870	Fort Mifflin	Discharged
William Moore	Private	11th Regt. Inf.	1871	Fort Mifflin	Discharged
Thomas Taylor	Private	12th Regt. Inf.	1872	Fort Mifflin	Discharged
Robert Evans	Private	13th Regt. Inf.	1873	Fort Mifflin	Discharged
George Scott	Private	14th Regt. Inf.	1874	Fort Mifflin	Discharged
Charles Walker	Private	15th Regt. Inf.	1875	Fort Mifflin	Discharged
Henry Hall	Private	16th Regt. Inf.	1876	Fort Mifflin	Discharged
John King	Private	17th Regt. Inf.	1877	Fort Mifflin	Discharged
James Lee	Private	18th Regt. Inf.	1878	Fort Mifflin	Discharged
William White	Private	19th Regt. Inf.	1879	Fort Mifflin	Discharged
Thomas Black	Private	20th Regt. Inf.	1880	Fort Mifflin	Discharged
Robert Green	Private	21st Regt. Inf.	1881	Fort Mifflin	Discharged
George Brown	Private	22nd Regt. Inf.	1882	Fort Mifflin	Discharged
Charles King	Private	23rd Regt. Inf.	1883	Fort Mifflin	Discharged
Henry Lee	Private	24th Regt. Inf.	1884	Fort Mifflin	Discharged
John Adams	Private	25th Regt. Inf.	1885	Fort Mifflin	Discharged
James Wilson	Private	26th Regt. Inf.	1886	Fort Mifflin	Discharged
William Moore	Private	27th Regt. Inf.	1887	Fort Mifflin	Discharged
Thomas Taylor	Private	28th Regt. Inf.	1888	Fort Mifflin	Discharged
Robert Evans	Private	29th Regt. Inf.	1889	Fort Mifflin	Discharged
George Scott	Private	30th Regt. Inf.	1890	Fort Mifflin	Discharged
Charles Walker	Private	31st Regt. Inf.	1891	Fort Mifflin	Discharged
Henry Hall	Private	32nd Regt. Inf.	1892	Fort Mifflin	Discharged
John King	Private	33rd Regt. Inf.	1893	Fort Mifflin	Discharged
James Lee	Private	34th Regt. Inf.	1894	Fort Mifflin	Discharged
William White	Private	35th Regt. Inf.	1895	Fort Mifflin	Discharged
Thomas Black	Private	36th Regt. Inf.	1896	Fort Mifflin	Discharged
Robert Green	Private	37th Regt. Inf.	1897	Fort Mifflin	Discharged
George Brown	Private	38th Regt. Inf.	1898	Fort Mifflin	Discharged
Charles King	Private	39th Regt. Inf.	1899	Fort Mifflin	Discharged
Henry Lee	Private	40th Regt. Inf.	1900	Fort Mifflin	Discharged

**ANNUAL MEDICAL AND SANITARY REPORT OF PERLIS,  
For the Year Ended 29th Zulhaijah, 1345 A.H.  
(12th July, 1926 to 30th June, 1927 A.D.)**

**I. ADMINISTRATION.**

**Staff.**

The appointments in the Medical Department are as follows:—

The State Surgeon, who visits once a month and oftener if required.

1 Assistant Surgeon.

1 Dresser Grade I.

1 Dresser Probationer.

1 Vaccinator.

The hospital was in charge of First Grade Dresser Krishna Pillai until II-4-45, when he was relieved by the Assistant Surgeon, R. Sivasambandam, who was appointed to take his place. Dresser Ismail, II Grade Dresser, was relieved by Dresser Daud (who passed his First Grade Examination in Rejab) about the middle of Rejab. Probationer Dresser Hamzah was sent to Kedah on the 1st. of Shaaban, to be coached for his III Grade examination.

**Ordinances.**

No ordinance affecting public health was passed during the year.

**Financial.**

**REVENUE.**

The total revenue collected during the year was \$1,669.48 against \$1,241.19 during 1344 A.H.

The total expenditure was \$20,920.57 against \$20,143.19 in 1344 A.H. Increase in expenditure is due to the increased salary of the Assistant Surgeon, and his transport expenses.

**II. PUBLIC HEALTH.**

With the exception of one case of chicken-pox, there was no case of infectious disease during the year.

The number of cases admitted to hospital for malaria, show an increase from 208 in 1344 to 438 in 1345.

The construction of pipes for the water supply for Kangar was finished in 1345, and the scheme for Arau is at present on hand and it is hoped that this supply will later be extended to Sanglang and Kaki Bukit.

**Vital Statistics.**

The population of Perlis for the year 1345 is estimated at 45,500.

The following is a comparative table for the past 5 years:—

Year.	Estimated Population.	Births.	Birth Rate per mille.	Deaths.	Death Rate per mille.
1341	41,800	749	17.91	750	17.94
1342	42,700	851	19.92	685	16.04
1343	43,700	824	18.85	753	17.23
1344	44,600	809	18.13	767	17.19
1345	45,500	948	20.83	829	18.22



Estimating the increase of population to be at the same rate as during the last inter-decennial period, the population for 1345 should be 45,500.

Of the total 948 registered as births, 28 were still births.

#### Infantile Mortality.

129 deaths were recorded as occurring in infants up to one year old, the rate being 136.08 per thousand births.

Infantile death rate for the past 5 years was:—

Year.	Deaths.	Rate per mille.
1341	85	113.48
1342	84	98.70
1343	113	137.13
1344	105	129.79
1345	129	136.08

Births and deaths according to Nationality:—

	Births.	Deaths.
Malays	811	650
Chinese	90	125
Indians	15	23
Siamese	32	31
Total	948	829

Births and deaths according to Sex:—

	Births.	Deaths.
Males	531	470
Females	417	359
Total	948	829

### III. PORT HEALTH WORK, ETC.

All boats arriving from Siamese ports were inspected during the year, owing to the outbreak of cholera in Siam.

### IV. HOSPITALS AND DISPENSARIES.

#### General Hospital, Kangar.

The number of indoor cases treated during the year was 1,007. There were 56 deaths, being a percentage of 5.6 to total treated. Excluding 21 deaths, which occurred within 48 hours of admission, the death rate was 3.5.

The figures for 1344 were:—Total cases 620, deaths 43; percentage of deaths 6.93. Percentage of deaths, excluding deaths within 48 hours of admission, 4.35. Daily average 28.51. An increase in admissions and a decrease in the number of deaths, which is satisfactory.

## Indoor patients according to Nationality.

Nationality.	No. Treated.	Deaths.	Percentage of Deaths.
Chinese	339	37	10.94
Indians	497	10	2.01
Javanese	5	1	20.00
Malays	157	7	4.46
Siamese	9	1	11.11
Total	1,007	56	5.6

The total of Malays treated in hospital was 157 or about 1/6 of the total number of patients.

## Admissions from Estates and Mines.

The total number of patients from Estates and Mines was 153 with 8 deaths, or a percentage of 5.23, against 39 cases with 3 deaths (7.61%) during the previous year.

The travelling dispensary was of great benefit to and much appreciated by the people of outside villages.

## Prevailing Diseases.

Diseases.	1343				1344				1345			
	Cases	Deaths	Deaths %	Cases	Deaths	Deaths %	Cases	Deaths	Deaths %			
Malaria	249	8	3.21	208	11	5.28	443	13	2.93			
Dysentery Amoebic	10	5	50.00	17	2	11.76	27	6	22.22			
do Bacillary	15	1	6.66	2	1	50.00	5	...	...			
Ankylostomiasis	41	4	9.75	33	...	...	34	...	...			
Syphilis	38	2	5.26	37	...	...	25	...	...			
Pulm. Tuberculosis	7	5	71.42	12	4	33.33	29	6	20.69			
Other lung Com plaints	42	16	38.09	50	15	30.00	76	16	21.05			
Wounds	39	...	...	54	2	3.70	43	2	4.65			
Ulcers	49	1	2.04	65	...	...	90	...	...			
Other Diseases	100	3	3.00	142	8	5.63	235	13	5.53			
Total	590	45	7.62	620	43	6.93	1,007	56	5.6			

More cases of malaria were admitted to hospital, but the death rate was lower than last year.

Cases of pulmonary tuberculosis came for admission in the last stage of the disease.

## Laboratory Work.

Blood films were examined in 1,281 instances with the following results:—

Malignant Malaria	...	...	...	108
Benign Tertian	...	...	...	404
Quartan	...	...	...	6
Mixed	...	...	...	5
Negative	...	...	...	506
Eosinophilia	...	...	...	72
Leucocytosis	...	...	...	96
Lecuoopenia	...	...	...	84

Other specimens examined totalled 2,685.



**Out-Door Department.**

6,434 cases were treated. The nationalities who received treatment were as follows:—

Europeans	...	...	42
Eurasians	...	...	88
Chinese	...	...	1,426
Indians	...	...	1,797
Malays	...	...	3,012
Japanese	...	...	12
Javanese	...	...	1
Siamese	...	...	56

Total	...	6,434	This number excludes repetitions.
-------	-----	-------	-----------------------------------

In addition to those treated in hospital dispensary, 182 cases were attended to in the Kangar Gaol.

Neosalvarsan injections to outdoor and indoor patients numbered 2,125 of which 421 were for syphilis and 1,704 for yaws.

**Vaccination.**

2,363 vaccinations were done against 2,844 during the previous year.

\$595.42 was spent on vaccination.

Roughly 22.66 cents per case.

**Meteorology.**

Rainfall.				Inches.
July, 1926	...	...	...	6.24
August, 1926	...	...	...	7.14
September, 1926	...	...	...	5.38
October, 1926	...	...	...	9.08
November, 1926	...	...	...	6.79
December, 1926	...	...	...	9.81
January, 1927	...	...	...	4.06
February, 1927	...	...	...	4.03
March, 1927	...	...	...	7.93
April, 1927	...	...	...	5.97
May, 1927	...	...	...	9.06
June, 1927	...	...	...	5.04

The greatest rainfall during 24 hours was 3.63 inches on 25-2-1927.

The average humidity was 78.4%.

The maximum and minimum temperatures in the shade were 96° on 14-8-26 and 69° on 20-2-27 respectively.

**Remarks.**

The Staff of the hospital worked well during the year. The appointment of an Assistant Surgeon on 11.4.45 has been much appreciated by the people. Dresser Daud passed the First Grade examination, and Dresser Probationer, Hamzah, was sent to Kedah to be coached for his Grade III examination.

A Malay midwife is, I think, really required in the State and one will be appointed, as soon as she can be found.

D. BRIDGES,

*State Surgeon.*

## APPENDIX.

## ANNUAL RETURN OF SICK.

RETURN OF SICK OF THE INDOOR PATIENTS OF THE GENERAL HOSPITAL, PERLIS.

FOR THE YEAR ENDING 30TH ZULHAJAH, 1345.

Diseases.	Remained.	Admitted.	Total.	Discharged.	Transferred.	Absconded.	Died.	Remaining.	Remarks.
<b>GENERAL DISEASES.</b>									
Chicken-pox	...	1	1	...	...	1	...	...	
Enteric Fever	...	5	5	1	...	...	3	1	
Debility	...	1	1	1	...	...	...	...	
Dysentery Amoebic	...	25	27	19	...	...	6	2	
Dysentery Bacillary	...	5	5	5	...	...	...	...	
Dysentery Chronic	...	1	1	...	...	...	1	...	
Malaria T.N.D.	...	3	25	28	28	...	...	...	
Malaria B.T.	...	1	321	322	314	...	1	6	
Malaria M.T.	...	1	82	83	69	...	10	3	
Malaria mixed	...	4	4	2	...	...	1	1	
Malaria Quartan	...	6	6	5	...	...	1	...	
Pulm. Tuberculosis	...	1	28	29	17	...	6	5	
Bubo	...	4	4	3	...	1	...	...	
Chancre Soft	...	2	2	2	...	...	...	...	
Syphilis Secondary	...	9	11	11	...	...	...	...	
Syphilis Tertiary	...	14	14	13	...	...	...	1	
Yaws	...	7	7	7	...	...	...	...	
Gonorrhoeal Urethritis	...	18	18	17	...	...	...	1	
Gonorrhoeal Vaginitis	...	1	1	1	...	...	...	...	
Gonorrhoeal Arthritis	...	4	4	4	...	...	...	...	
Gonorrhoeal Epididymitis	...	1	1	1	...	...	...	...	
Gonorrhoeal Orchitis	...	1	1	1	...	...	...	...	
Gonorrhoeal Rheumatism	...	2	2	1	...	...	...	1	
Gonorrhoeal Synovitis	...	3	3	1	...	...	...	2	
Urinary Fistula	...	1	1	1	...	...	...	...	
Retention of urine	...	1	1	...	...	1	...	...	
Arthritis Septic	...	1	1	...	...	...	1	...	
Synovitis Septic	...	1	1	1	...	...	...	...	
Rheumatism	...	2	2	2	...	...	...	...	
gangrene	...	2	2	...	...	...	1	1	
Haemorrhoids	...	3	3	2	...	1	...	...	
Osteomyelitis	...	1	1	1	...	...	...	...	
Periostitis	...	1	1	1	...	...	...	...	
Periostitis tubercular	...	1	1	...	...	...	1	...	
N. A. D.	...	1	1	1	...	...	...	...	
Admitted for the sake of mother	...	6	6	6	...	...	...	...	
Admitted for the sake of child...	...	4	4	4	...	...	...	...	
<b>DISEASES OF THE NERVOUS SYSTEM.</b>									
Epilepsy	...	1	1	1	...	...	...	...	
Haemorrhage cerebral	...	2	2	...	...	...	2	...	
Locomotor Ataxia	...	1	1	...	1	...	...	...	To decrepit home, K. Lumpur.
Lumbago	...	1	1	1	...	...	...	...	
Mania	...	2	5	1	1	1	...	2	
Mental deficiency	...	1	1	1	...	...	...	...	
Monomania	...	1	1	1	...	...	...	...	
Paraplegia	...	2	2	1	...	...	...	1	
Peripheral Neuritis	...	3	3	2	...	...	...	1	
<b>EYE.</b>									
Conjunctivitis	...	1	2	3	3	...	...	...	
Gonorrhoeal Ophthalmia	...	2	2	1	...	1	...	...	
Iritis	...	1	1	1	...	...	...	...	
Optic Neuritis	...	1	1	...	...	...	...	1	
Ulcer Cornea	...	2	2	2	...	...	...	...	



Diseases.	Remained.	Admitted.	Total.	Discharged.	Transferred.	Absconded.	Died.	Remaining.	Remarks.
DISEASES OF THE CIRCULATORY SYSTEM.									
Mitral Stenosis	...	1	1	1	...	...	...	...	
Myocarditis	...	1	1	...	...	...	1	...	
DISEASES OF THE RESPIRATORY SYSTEM.									
Asthma Bronchial	...	7	7	...	...	...	...	1	
Bronchitis	...	26	28	26	...	1	...	1	
Bronchopneumonia	...	18	18	9	...	...	7	2	
Pleurisy	...	8	8	7	...	...	1	...	
Pneumonia	...	15	15	7	...	...	8	...	
Intercostal Myalgia	...	1	1	...	...	...	...	1	
DISEASES OF THE DIGESTIVE SYSTEM.									
Ankylostomiasis	...	34	34	31	...	...	...	5	
Appendicitis Chronic	...	1	1	1	...	...	...	...	
Ascariasis	...	19	19	18	...	...	...	1	
Ankylostomiasis & Ascariasis	...	13	13	11	...	...	...	2	
Constipation	...	1	1	...	...	1	...	...	
Enteritis	...	15	15	14	...	1	...	...	
Gastritis	...	5	5	4	...	1	...	...	
Intestinal colic	...	3	3	3	...	...	...	...	
Intestinal Obstruction	...	1	1	1	...	...	...	...	
Intussusception	...	1	1	...	1	...	...	...	To G. H. A. Star.
Jaundice	...	2	2	1	...	...	1	...	
Pyorrhoea Alveolaris	...	1	1	1	...	...	...	...	
Tonsillitis	...	1	1	1	...	...	...	...	
Ulcer Duodenal	...	3	3	3	...	...	...	...	
DISEASES OF THE RENAL SYSTEM.									
Nephritis Subacute	...	3	3	3	...	...	...	...	
Nephritis Chronic Intestinal	...	1	1	1	...	...	...	...	
DISEASES OF THE SKIN.									
Eczema	...	5	5	5	...	...	...	...	
Furunculosis	...	1	1	1	...	...	...	...	
Herpesularis	...	1	1	1	...	...	...	...	
Ringworm	...	1	1	1	...	...	...	...	
Scabies	...	4	4	4	...	1	...	2	
Ulcers	...	77	90	87	...	1	...	...	
MATERNITY.									
Premature	...	3	3	3	...	...	...	...	
Normal Labour	...	3	3	3	...	...	...	...	
DISEASES OF THE CONNECTIVE TISSUE.									
Abscess	...	12	12	11	...	...	1	...	
Abscess Hepatic	...	1	1	1	...	1	...	2	
Cellulitis	...	7	8	5	...	...	...	...	
INJURIES.									
Bite Dog	...	1	1	1	...	...	...	...	
Bite Snake	...	1	1	1	...	...	...	...	
Burns	...	2	2	2	...	...	...	...	
Contusion	...	7	7	7	...	...	...	...	
Simple fracture	...	3	3	3	...	...	...	1	
Compound fracture	...	3	3	2	...	...	1	...	
Fracture vault of skull	...	2	2	1	...	...	...	...	Compound depressed fracture. (Penetrating wound of abdomen and cut throat.) To G. H. A. Star.
Wounds	...	41	43	41	...	...	2	...	
TUMOURS.									
Epithelioma Breast	...	1	1	1	...	...	...	...	
Endothelima Parotid	...	1	1	...	1	...	...	...	
Total	32	975	1007	887	4	15	56	45	

RETURN OF RAINFALL

From 1st January to 30th November, 1927 A.D.

MONTHS, 1927.	Alor Star.	Langkawi.	Sungei Patani.	Baling.	Kuala Keil.	Kulim.	Serdang.	Bandar Bahru.	Padang Besar.	Perlis.
	In. e.	In. e.	In. e.	In. e.	In. e.	In. e.	In. e.	In. e.	In. e.	In. e.
January	5.37	2.02	8.35	6.95	7.28	10.70	12.00	6.30	5.03	4.06
February	2.88	2.14	2.78	2.04	3.28	5.47	7.57	6.04	1.06	4.03
March	4.09	8.97	7.27	6.49	11.55	13.41	13.17	11.54	4.59	7.93
April	8.65	9.64	13.52	13.41	18.31	20.99	13.35	8.01	8.99	5.97
May	9.31	9.16	5.07	9.70	8.49	5.57	5.32	3.99	9.31	9.06
June	7.81	12.81	4.53	5.74	5.74	3.71	7.38	6.96	5.69	5.04
July	7.80	9.72	5.02	4.06	3.65	5.43	4.00	5.65	6.66	12.88
August	14.70	19.24	6.39	7.36	5.87	4.86	3.94	4.03	9.95	14.24
September	12.15	10.62	12.76	13.60	19.62	8.96	17.41	12.42	11.37	10.80
October	9.84	12.89	13.98	18.43	19.99	14.45	16.43	8.84	5.89	8.96
November	4.26	5.94	8.61	8.03	13.16	15.23	11.78	7.41	5.17	6.77
TOTAL	86.86	103.15	88.28	95.81	116.94	108.78	112.37	81.19	73.71	89.74



METEOROLOGICAL RETURN OF HOSPITAL, ALOR STAR.

from 1st January to 30th November, 1927 A.D.

MONTHS, 1927.	TEMPERATURE.				HYGROMETER.					Greatest Rainfall during 24 hours	
	Mean dry bulb.	Maximum.	Minimum.	Range.	Mean wet bulb.	Vapour tension.	Dew point.	Humidity.	Total Rainfall.		
January	...	...	...	...	...	...	...	...	...	...	1-70
February	...	...	...	...	...	...	...	...	...	...	1-25
March	...	...	...	...	...	...	...	...	...	...	1-02
April	...	...	...	...	...	...	...	...	...	...	1-35
May	...	...	...	...	...	...	...	...	...	...	2-35
June	...	...	...	...	...	...	...	...	...	...	2-40
July	...	...	...	...	...	...	...	...	...	...	1-38
August	...	...	...	...	...	...	...	...	...	...	3-54
September	...	...	...	...	...	...	...	...	...	...	2-12
October	...	...	...	...	...	...	...	...	...	...	1-18
November	...	...	...	...	...	...	...	...	...	...	0-82

METEOROLOGICAL RETURN OF HOSPITAL, SUNGEI PATANI.

from 1st January to 30th November, 1927 A.D.

	TEMPERATURE.				HYGROMETER.					Greatest Rainfall during 24 hours.
	Mean dry bulb.	Maximum.	Minimum.	Range.	Mean wet bulb.	Vapour tension.	Dew point.	Humidity.	Total Rainfall.	
MONTHS, 1927.										
January	81.1	90.4	71.9	18.5	76.3	.812	73.0	76.6	8.35	2.10
February	82.1	92.9	72.0	20.9	76.0	.782	71.9	71.4	2.78	.75
March	82.9	93.7	73.7	20.0	77.8	.854	74.5	75.9	7.27	1.90
April	81.7	92.4	72.4	20.0	77.8	.874	75.2	80.9	13.52	2.77
May	80.7	89.8	72.2	17.6	77.7	.885	75.6	84.5	5.07	1.83
June	81.6	91.5	71.4	20.1	78.5	.912	76.5	84.7	4.53	0.80
July	80.6	90.5	73.5	17.1	77.1	.863	74.8	82.7	5.02	1.92
August	80.7	89.3	72.7	17.2	76.2	.815	73.1	77.8	6.39	1.70
September	81.3	90.6	73.0	17.6	76.7	.829	73.6	77.7	12.76	2.36
October	80.9	89.1	71.9	17.3	77.1	.857	74.6	81.4	13.98	1.81
November	81.8	91.7	72.7	19.0	77.3	.846	74.2	78.0	8.61	3.56



ALL DATA SUBJECT ARE AT YOUR OWN RISK

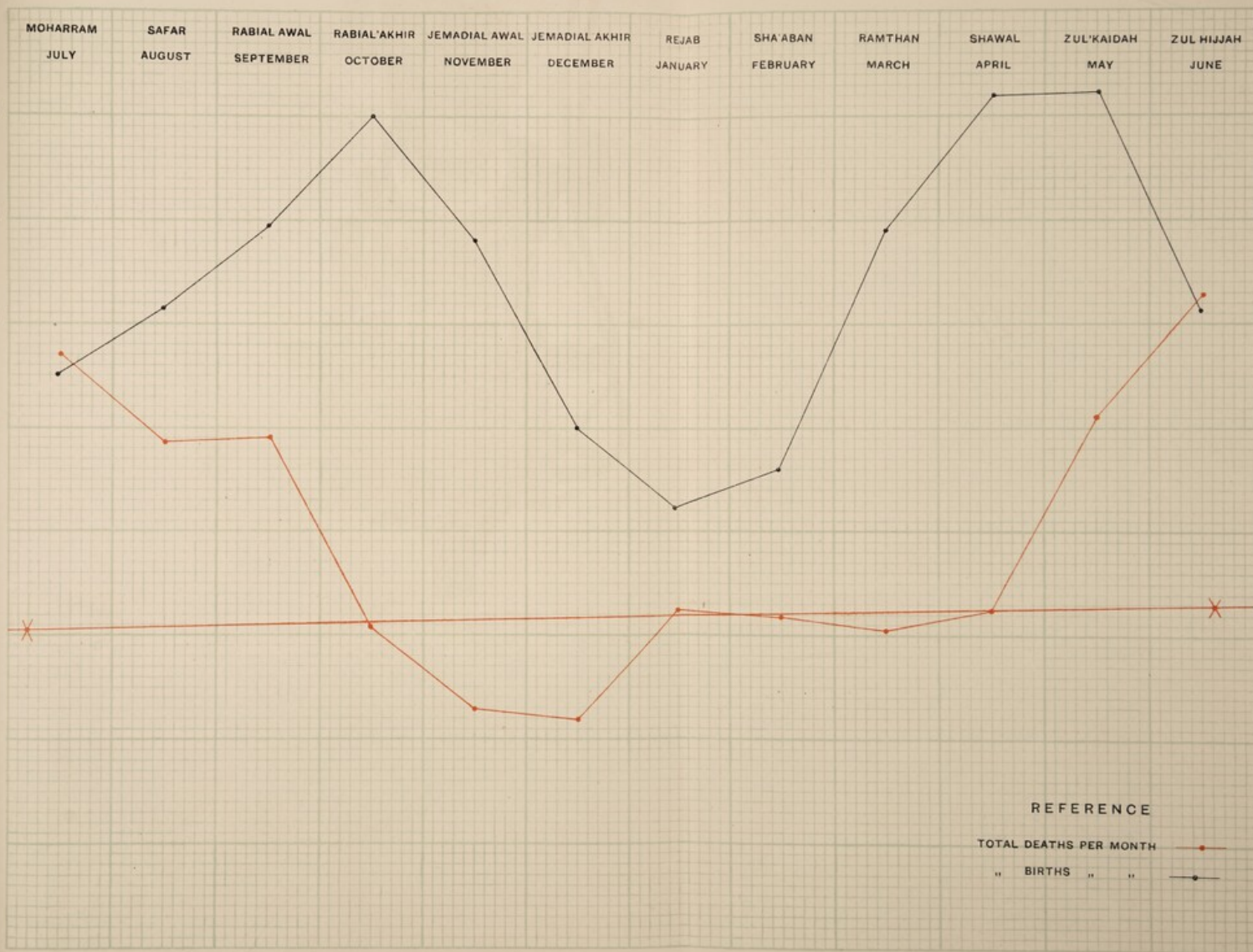
Serial Number	MATERIALS			DIMENSIONS			Weight	Remarks
	Material	Part No.	QTY	Length	Width	Thickness		
1001	Aluminum	1001	100	100	100	100	100	
1002	Steel	1002	100	100	100	100	100	
1003	Aluminum	1003	100	100	100	100	100	
1004	Steel	1004	100	100	100	100	100	
1005	Aluminum	1005	100	100	100	100	100	
1006	Steel	1006	100	100	100	100	100	
1007	Aluminum	1007	100	100	100	100	100	
1008	Steel	1008	100	100	100	100	100	
1009	Aluminum	1009	100	100	100	100	100	
1010	Steel	1010	100	100	100	100	100	
1011	Aluminum	1011	100	100	100	100	100	
1012	Steel	1012	100	100	100	100	100	
1013	Aluminum	1013	100	100	100	100	100	
1014	Steel	1014	100	100	100	100	100	
1015	Aluminum	1015	100	100	100	100	100	
1016	Steel	1016	100	100	100	100	100	
1017	Aluminum	1017	100	100	100	100	100	
1018	Steel	1018	100	100	100	100	100	
1019	Aluminum	1019	100	100	100	100	100	
1020	Steel	1020	100	100	100	100	100	

THE COMPANY

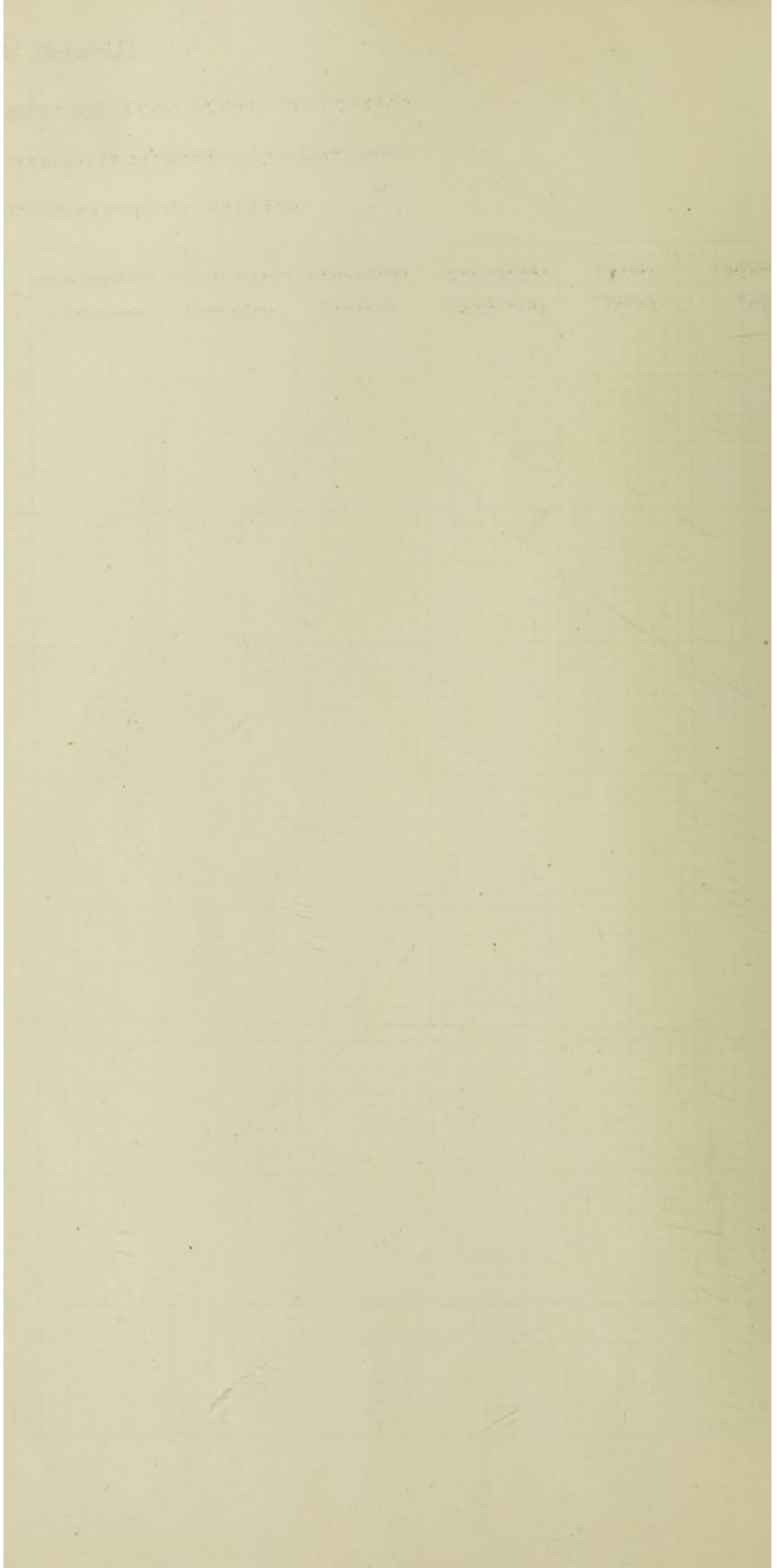
### Chart No. 1

CHART TO SHOW TOTAL BIRTHS AND DEATHS BY MONTHS

THE RED LINE X REPRESENTS A RATE OF 25 PER 1,000 ALLOWING FOR INCREASE IN POPULATION THROUGHOUT THE YEAR.







## Chart No. 2

### CHART TO SHOW INFANT MORTALITY BY MONTHS

COMPARED WITH BIRTHS AND TOTAL DEATHS

MOHARRAM	SAFAR	RABIAL'AWAL	RABIAL'AKHIR	JEMADIAL'AWAL	JEMADIAL'AKHIR	REJAB	SHA'ABAN	RAMTHAN	SHAWAL	ZUL'KAIDAH	ZUL'HIJJAH
JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE

INFANT DEATHS ON SCALE X 5.

300

280

260

240

220

200

180

160

140

120

**REFERENCE**

TOTAL BIRTHS.....  
 DEATHS OF INFANTS UNDER ONE YEAR OLD.....  
 TOTAL DEATHS.....

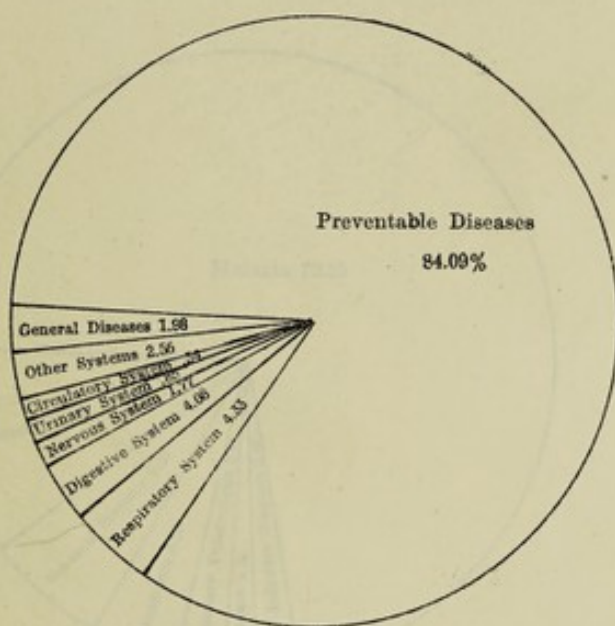
THE SCALE FOR INFANT DEATHS IS 5 TIMES THAT FOR THE OTHERS  
 INTERSECTION OF BIRTHS AND INFANT DEATH LINE INDICATES AN  
 INFANT MORTALITY OF 200 PER 1,000 BIRTHS.  
 INTERSECTION OF INFANT AND TOTAL DEATHS INDICATES THAT AT  
 THESE TIMES THE INFANT DEATHS ARE 20% OF THE WHOLE FOR  
 THE GREATER PART OF THE YEAR THEY EXCEED THIS.



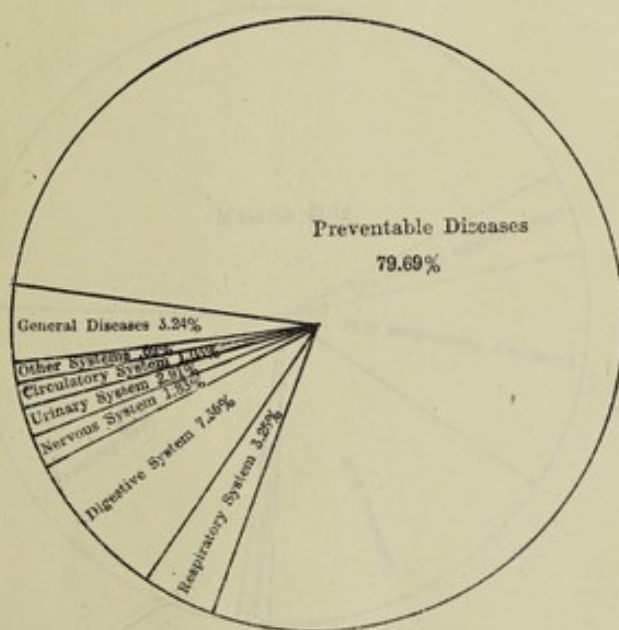


GENERAL SYSTEMIC AND PREVENTABLE DISEASES TREATED IN HOSPITALS.

Total CASES. admitted — 16296

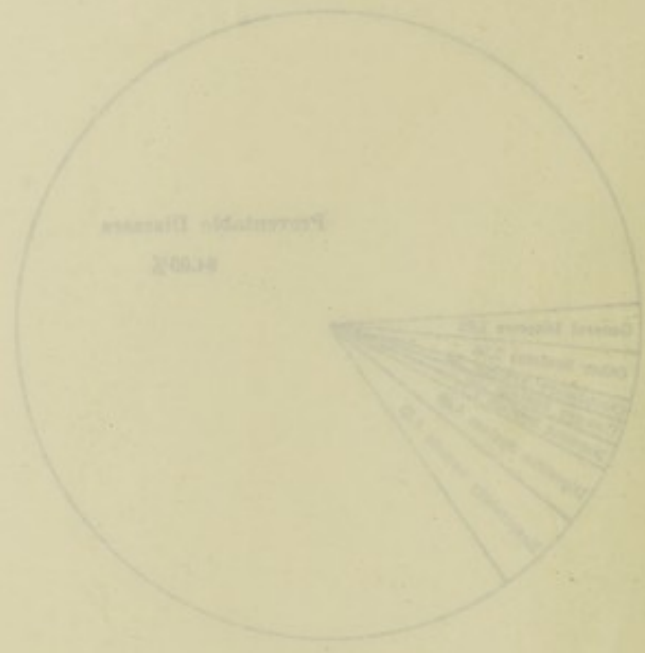


Total DEATHS. 1753





Total CASES admitted - 1936

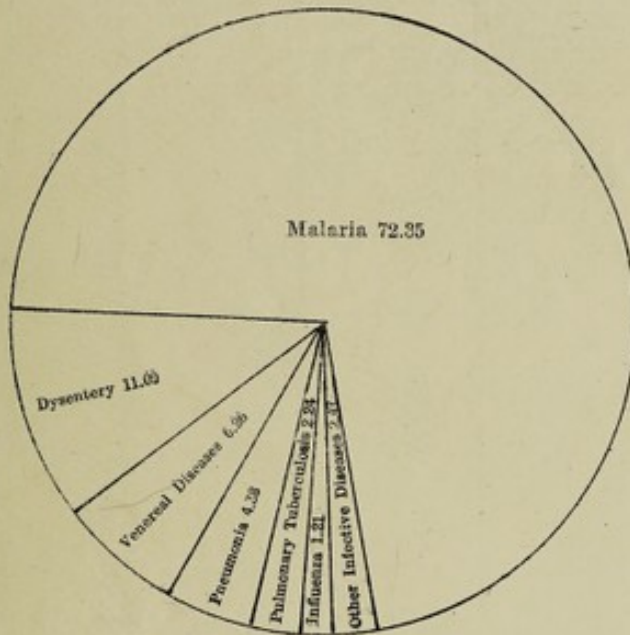


Total DEATHS 1703

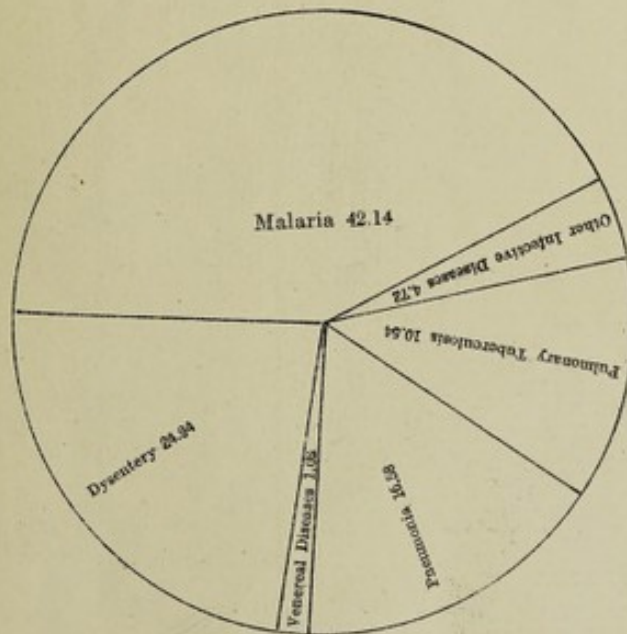


# INFECTIVE DISEASES TREATED IN HOSPITALS.

Total CASES. 10430



Total DEATHS. 1291





INFECTIVE DISEASES TREATED IN HOSPITALS.

Total Cases 10130



Total Deaths 1201

