

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

Contributors

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THE ANNUAL REPORT

OF THE

MEDICAL AND HEALTH DEPARTMENTS,
KEDAH AND PERLIS.

FOR THE YEAR

1346 A. H.

(1ST JULY, 1927 TO 19TH JUNE, 1928)

BY

DR. D. BRIDGES,

STATE SURGEON TO THE KEDAH GOVERNMENT.

PRINTED AT THE CRITERION PRESS CO., LTD., PENANG.

1929.



ANNUAL MEDICAL AND SANITARY REPORT, KEDAH.

For The Year Ending 30th Zul'hijjah, 1346 A.H.

(1st July, 1927 to 19th June, 1928 A.D.)

I. ADMINISTRATION.

Staff.

The principal appointments are:—

The State Surgeon.

Medical Branch.

- 3 Medical Officers.
- 1 Lady Medical Officer.
- 5 Assistant Surgeons.
- 2 European Nursing Sisters.
- 58 Dressers (including 5 Laboratory Assistants).
- 1 Dispenser and Store-keeper.
- 7 Midwives.
- 4 Vaccinators.

Health Branch.

The Health Officer.

4 Health Inspectors attached to the Health Office.

12 Health and Sanitary Inspectors attached to the various Sanitary Boards.

Dr. A. S. M. Douglas was seconded from the Straits Settlements for service as Medical Officer, South Kedah, on 6.11.27 (11.5.46).

Dr. J. A. W. Ebdon was seconded from the Straits Settlements for services as Medical Officer, North Kedah, on 22.5.28 (2.12.46).

Dr. W. M. Lupton, Medical Officer, South Kedah, was transferred to the Straits Settlements on 9.11.27 (14.5.46).

Dr. (Miss.) H. M. Hyslop was appointed Lady Medical Officer on 24.8.27 (25.2.46). She was transferred to the F.M.S. on 16.3.28 (24.9.46) and

Dr. (Miss.) G. B. Kibble from the F.M.S. succeeded her in Kedah on 14.3.28 (22.9.46).

Dr. J. I. Baeza, Health Officer, returned from vacation leave, and resumed duty on 29.12.27 (5.7.46).

Dr. R. B. MacGregor from 20.4.27 to 9.9.27 (17.10.45 to 12.3.46) and Dr. S. W. Eveson from 10.9.27 to 28.12.27 (13.3.46 to 4.7.46) acted as Health Officers during Dr. Baeza's leave.

Assistant Surgeon S. K. Kelkar was appointed on 29.11.46 (19.5.28)

- 7 Probationer Dressers were appointed.
- 2 Asiatic Nurses were appointed.
- 2 Dressers were retired on pension.
- 3 Dressers were dismissed.
- 2 Dressers resigned.
- 3 Probationer Health Inspectors were appointed.
- 1 Sub-Sanitary Inspector was transferred to other Department.
- 1 Sub-Sanitary Inspector was dismissed for criminal Breach of trust.

I regret to record the death of Dr. C. J. S. Nicholas, which occurred on 6.9.46 (27.2.28). This was a great loss to the service, as he was not only a very capable officer but also had an extensive knowledge of the people and country, after his 10 years' service in Kedah.

Examinations.

Two examinations of Dressers and Health Inspectors were held during the year.

	No. of Candidates.	Result.
Dressers. Moharram	4 for Grade I	1 passed
(July, 1927)	6 „ „ II	4 „
	9 „ „ III	4 „
Health Inspectors. „	1 „ „ I	Failed
	3 Probationers	2 passed
Dressers. Rejab.	1 for Grade I	Failed
(January, 1928)	4 „ „ II	2 passed
	10 „ „ III	6 „
Health Inspectors. „	1 „ „ I	Failed
	1 „ „ II	Failed.

Candidates for Dressers' examinations include 15 dressers from Estates, of whom 8 passed.

The percentage of passes in the dressers' examinations was 47.05 which was an improvement on last year's percentage of 39.47.

Ordinances.

The Health Board Enactment (Enact. No. 7 of 1346) was passed on 5th J'Awal, 1346 (31.10.27) and came into force on 29.6.46 (24.12.27).

Financial.

REVENUE. (Medical).

The total revenue collected in all hospitals during the year was \$113,282-35 against \$127,347-92 during 1345 A.H.

EXPENDITURE (Medical).

	1345	1346
Salaries and Allowances	\$158,226-16	\$175,568-23
Other charges	203,066-21	232,655-07
Total	\$361,292-37	\$408,223-30
REVENUE (Health).	\$47-50	\$48.00

EXPENDITURE (Health).

Salaries and Allowances	...	\$20,114-14	\$20,382-59
Other charges	...	7,613-50	10,343-71
		<hr/>	<hr/>
Total	...	\$27,727-64	\$30,726-30

The decrease in the Medical Revenue appears to be due to two causes:—

(a) Due to the large increase in patients seeking admission during the latter part of the year, many patients had to be discharged, as soon as convalescent, to make room for new cases; the average period of stay in hospital of paying patients was thus shortened. Though estate admissions were more than during 1345, the average period of each patient in hospital was shorter.

(b) A large number of Tamil coolies were admitted as paupers; these were evidently discharged from estates, owing to the reduction of labour.

PROPORTION OF MEDICAL AND HEALTH EXPENDITURE.

To total Revenue of the State.

Deducting the revenue collected from the expenditure of the Medical Department the net expenditure was \$294,940.95 which represents only 3.81 per cent. of the revenue of the State.

Similarly the net expenditure of the Health Branch represents only .40 per cent. of the State revenue. The total expenditure of both the branches was only 4.21 per cent. of the total revenue of Kedah.

II. PUBLIC HEALTH.

General.

The health of the country generally has not been quite so good as last year. The birth rate is lower and the death rate higher than in 1345—thus making the natural increase of population only 1642 as compared with 3015 in the previous year.

Communicable Diseases.

Malaria.

"Malaria" and "Fever Unspecified" account as usual for the largest portion of the total deaths, but together, are not so great as in 1345—the figures being 4283 in 1346 and 4820 in 1345.

The malarial seasonal incidence showed its rise earlier this year than usual—i.e., April to July period.

Cholera.

Actually four cases were recorded during the first week of the year, but as these were part of the small epidemic that was fully reported on in last year's annual report, no further mention will be made of them here.

Small Pox.

Three cases only, two at Sungei Kechil Ulu, Bandar Bahru district, in a Malay Kampong and one at the Railway coolie line at Kodiang on the Perlis-Kedah Boundary.

Cases and contacts were immediately isolated and vaccinated.

Tropical Typhus.

3 cases of this disease (2 Europeans and 1 Malay) were reported for the first time in Kedah. Two of these were European Assistants on Dublin Estate and the other case came from Yen village.

Serological tests carried out by the Medical Research Institute, Kuala Lumpur, confirmed the diagnosis.

Japanese River Fever.

One probable case of Japanese River Fever occurred in Kedah during the year, the patient being a European Rubber Restriction Officer whose duties often took him into swampy ground.

He was admitted to hospital for continuous fever of four days' duration. Blood for malarial parasites was negative. A small ulcer with black necrotic centre was observed on the inner aspect of the left calf.

Blood sent to the Institute of Medical Research, Kuala Lumpur, on 11th and 17th days of illness, gave negative results for Widal and Weil-Felix reactions. On both occasions *B. portus* x 19 (K) was agglutinated to a titre of 1/60. The patient made a good recovery.

Ankylostomiasis.

The deaths registered under this heading have been greater than ever before—the figure being 1,154 as compared with 308 last year.

While this increase is undoubtedly due to improved methods of diagnosis, it is difficult to exclude malaria, as a cause of death in many of these cases.

Ankylostomiasis, however, is by no means an unimportant disease in Kedah and requires to be systematically investigated.

Vital Statistics.

The population, as previously, is calculated by excess of births over deaths, plus an estimate of the increase of population due to immigrant Tamil and Chinese labourers.

While there is a fairly accurate record of Tamil immigrants, no figures are available concerning those that leave the State, other than the Tamils returned to India.

The immigration figures of Chinese can only be guessed at.

By estimate the population figure for the State is 399,864. On this figure the birth rate is 32.68, while the death rate 28.57 is the highest on record. This is partly due to malaria amongst infants, which is recorded as "Infantile Convulsions" and partly to Pneumonia, of which there was a moderate epidemic during the early months of the year, when at the same time the incidence of malaria was unusually great.

Infant Mortality.

The infant mortality rate is 158.66 per mille—a considerable improvement on the 2 previous years, the records of which were 163.64 in 1945 and 169.24 in 1944.

As usual the highest rate is amongst the Tamils, which is deplorably high and still continues to be 3 times as great as that of either the Malays or Chinese.

The rate for Chinese is 136.96 as against 122.61 in 1345, a considerable increase, and for the Malays 128.46 as against 144.30 in 1345, a very considerable reduction.

European Population.

The European population in the State is estimated at 399. There was one death, and no births.

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 ...	74	68
Average number resident ...	51.03	67
Total number on sick list ...	24	42
Total number of days on sick list ...	353	343
Average daily number on sick list ...	.99	.96
Percentage of sick to average number resident ...	47.03	62.68
Average number of days on sick list for each patient ...	14.70	8.16
Average sick time to each resident ...	6.91	5.11
Total number invalided ...	nil	nil
Percentage of invalidings to total resident ...	—	—
Total deaths ...	1	nil
Percentage of deaths to total resident ...	1.35	—
Percentage of deaths to average number resident ...	1.95	—
Number of cases of sickness contracted away from residence ...	nil	nil

Estate Figures.

These are shewn in the appendices as usual and call for no special remarks. ||

III. HYGIENE AND SANITATION.

On nearly all of the European estates, anti-malarial oiling work and on the largest estates, sub-soil drainage work, are now being carried out with marked success.

On the native estates, however, no work of this nature has been attempted, and as a result not only does the health of these estates show no improvement, but failure to carry out preventive measures in many cases has counteracted the good work done on European owned properties.

It is hoped that the Estate Health Board, which has only just started to function, will in the near future remedy this anomaly. ||

Permanent anti-malarial works, which were carried out by Government at Kulim and Bukit Kayu Hitam, continued to function satisfactorily, although at the latter place, blockage of the drainage system by roots will arise, unless all trees within 25 feet of the pipe lines are removed.

Coolie gangs which were organised at Alor Star, Sungei Patani and Kulim, for routine anti-malarial work in the previous year, have been strengthened, and routine monthly anti-malarial surveys at these 3 places have been instituted. Already the surveys have demonstrated the gradual reduction in the prevailing species of mosquitoes.

In addition a large number of estates have sought the advice of this office, on their malarial problems, and in all such cases anti-malarial surveys were carried out by the departmental staff.

Anti-malarial surveys were this year also extended to Pulau Langkawi, where malaria seemed to be more prevalent than ever before.

These surveys disclosed the presence of malarial vectors, such as *a. umbrosus* and *a. ludlowi*, neither of which it is usual to find in Kedah.

It is interesting to note that a species of *Umbrosus*, known as *a. Umbrosus* var. *Swellengrebel* was discovered breeding in brackish pools (250 parts per 100,000 Chlorine as Chlorides) (water pH 8.4) on the foreshore at Kuah, Langkawi. This is the first time that this species has been recorded from Malaya. One other species bearing *Umbrosus* characters, which was forwarded to the Medical Research Institute, Kuala Lumpur, for diagnosis, is reported on as "possessing characters which point to it as being something distinct"—no diagnosis has yet been made.

The anti-malarial board held 4 meetings under the Chairmanship of the State Surgeon.

Vaccinations.

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

District.	No. Vaccinated.
Kota Star	2,387
Kubang Pasu	846
Padang Trap	480
Yen	832
Langkawi	183
Kuala Muda	951
Baling	1,500
Sik	338
Kulim	997
Bandar Bahru	1,164
Total	9,678

3,455 of these were done by dressers in the Government Hospitals and Dispensaries.

The cost per head of vaccination was approximately 39 cents.

Schools.

Weekly visits were made to 29 schools by travelling dispensaries.

25 schools were inspected this year by Health Inspectors. This represents a total of 2,763 pupils of which 2,302 were examined.

In the appendix is shown the prevailing conditions found. The percentage of unvaccinated children is 17, a figure which is far too high.

Visits to Estates.

Both Native and European Estates were visited as usual. 285 visits in all were paid by the Health Officer and Health Office Staff.

The usual estate figures are shown in the appendix.

Quarantine Inspection at Padang Besar.

50,701 passengers examined, none detained.

Malay	25		Satisfactory					26
		1		Twin pregnancy				
Indian	7		1 Satisfactory to mother	Abortion at 3rd month				8
								34

2. Maternity cases—In patients.

(antepartum and postpartum cases have not been separately recorded).

[illegible]

3. Out-door attendances according to nationality.

	Seen at the Hospital Alor Star.	Seen at the Town Dispensary, Alor Star.
Malays	94	98
Indians	80	164
Chinese	113	252
Europeans	8	—
Japanese	2	—
Eurasians	12	13
Siamese	3	4
Arabs	—	2
Total	312	533
		Total attendances 845

4. Patients visited in their houses, and their nationality.

Europeans	10
Malays	36
Chinese	12
Indians	2
Total	60

V. HOSPITALS AND DISPENSARIES.

The Kedah Medical Institutions in 1346 consisted of:

Hospital, Alor Star	364 beds.
„ Sungei Patani	400 „
„ Kulim	260 „
„ Kuala Ketil	150 „
„ Serdang	80 „
„ Bandar Bahru	40 „
„ Baling	28 „
„ Langkawi	50 „
Total	1,372 beds.

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

There are 4 Dispensaries, situated at Alor Star (town), Changloon, Yen, and Sik

Three Ambulance Dispensaries were working throughout the year, one each in North, Central, and South Kedah.

Inpatients Treated in All Hospitals.

The 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.
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
1346	24,432	1,987	8.13

Excluding 608 deaths, which occurred within 48 hours of admission, the death rate for 1346 A.H. was 5.64. The percentage of deaths within 48 hours of admission, to total deaths, was 30.59.

Patients from Estates.

The total of Estate coolies treated in Government Hospitals was 8650; of these 993 or a percentage of 11.36 died, many within 48 hours of admission. These figures shew that many of these coolies were sent to Hospital too late, or when they were in a very bad state.

The following figures give the number of Indian coolies admitted to Hospital during the last four years. These figures also shew the proportion of Estate Coolies to paupers.

It will be noticed that the total number of Indian patients has increased yearly. This is probably due to large amount of Indian labourers imported into Kedah; but it also shews that the health of the Indian labourers is not improving.

Another striking feature is the proportion of Estate coolies to paupers admitted to hospitals. In 1343 there were more than 1½ times as many estate coolies as paupers; this proportion was about the same in 1344 and 1345; but in 1346 there were nearly as many paupers as estate coolies treated. A large proportion of these paupers stated, that they were paid off from such and such an estate recently—always more than 10 days previously.

It will be noticed that in 1343—44 there was an increase in estate coolies; in 1344 to 1346 there is a steady decrease. This is not on account of better health on estates and can be accounted for, I think, by the fact that recently many estates have been getting rid of coolies—and of course getting rid of the sickly ones, because of the impending removal of Rubber Restriction.

Number of Indian coolies treated in hospitals during the last four years:—

	1343.	1344.	1345.	1346.
Estate Coolies ...	6,852	9,079	8,880	8,650
Paupers ...	4,300	5,008	5,407	8,153
Total ...	11,152	14,087	14,287	16,803

Admission and Deaths.

The number treated and the number of deaths in each hospital during 1346 A H. were as follows.

Hospital.	No. treated.	Deaths.	Percentage of deaths.
Alor Star ...	5,307	320	6.03
Sungei Patani ...	8,086	728	9.00
Kulim ...	5,320	427	8.03
Kuala Ketil ...	2,506	305	12.16
Serdang ...	1,185	110	9.28
Bandar Bahru ...	629	34	5.41
Baling ...	502	22	4.78
Langkawi ...	672	28	4.17
Prison Sick Wards:—			
Alor Star ...	160	9	5.62
Sungei Patani ...	38	2	5.26
Kulim ...	27	2	7.41
Total ...	24,432	1,987	8.13

The Nationalities of Indoor Patients were:—

Europeans	...	...	21
Eurasians	...	...	8
Chinese	...	...	6,326
Indians	...	...	16,803
Javanese	...	...	24
Malays	...	...	1,094
Japanese	...	...	3
Others	...	...	153
Total			24,432

The average daily number of inpatients for the past 5 years, was as follows:—

Hospital.	1342.	1343.	1344.	1345.	1346.
Alor Star	174.57	207.87	203.91	183.71	209.27
Sungei Patani	227.22	271.02	320.76	312.05	310.06
Kulim	134.23	157.52	161.12	184.45	222.85
Kuala Ketil	105.90	100.86	145.79	117.94	120.49
Serdang	44.93	40.01	68.30	76.80	61.69
Bandar Bahru	19.96	22.92	35.56	31.39	24.85
Baling	12.68	12.21	17.70	18.27	15.25
Langkawi	12.00	6.45	11.91	13.20	28.50

Prison Sick Wards:—

Alor Star	6.40	9.46	7.68	7.31	7.81
Sungei Patani	2.81	1.58	2.44	2.25	1.10
Kulim	1.36	1.03	.06	1.30	1.07
Total	742.06	830.93	975.23	948.67	1002.94

PREVAILING DISEASES.

Diseases.	1344			1345			1346		
	Cases.	Deaths.	Deaths %	Cases.	Deaths.	Deaths %	Cases.	Deaths.	Deaths %
Malaria	8,209	419	5.10	7,984	544	6.81	10,016	673	6.72
Dysentery, Amoebic	466	97	20.81	759	206	26.74	431	117	27.15
„ Bacillary	731	155	21.20	485	116	23.71	465	147	31.61
Venereal Diseases	1,050	22	2.09	804	14	1.74	733	2	.27
Respiratory Diseases (Excluding P. Tuberculosis)	1,128	221	19.59	1,166	242	20.75	1,206	279	23.13
Pulmonary Tuberculosis	287	150	52.26	251	136	54.13	255	114	44.71
Ankylostomiasis	1,160	109	9.39	1,457	125	8.57	2,246	188	8.37
Ulcers	1,410	7	.49	1,355	9	.66	1,587	7	.44
Wounds	1,043	8	.76	976	23	2.35	920	8	.87
Other diseases	5,852	315	5.38	6,235	426	6.83	6,573	452	6.82
	21,336	1,503	7.04	21,472	1,841	8.57	24,432	1,987	8.13

There was a large increase in the number of admissions for Malaria, Pneumonia and Ankylostomiasis. The periodic rise in Malaria cases occurred earlier and lasted longer this year than previously, which would account for the larger number admitted. There was a small epidemic of pneumonia in Central and South Kedah about the same time as the Malaria outbreak. It is probable that many lung cases were secondary to Malaria.

Malaria.

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

Hospital.	Cachexia	Filaria	M.T.	B.T.	Quartan	Mixed Infection	Negative	Total
Alor Star	—	1	314	891	8	—	4573	5787
Sungei Patani	—	1	571	2082	83	134	4134	7005
Kulim	—	2	667	414	42	62	3225	4412
Kuala Ketil	—	—	148	426	3	—	1352	1929
Serdang	—	—	210	176	41	20	620	1067
Bandar Bahru	—	—	37	84	2	—	249	372
Baling	—	—	84	77	—	—	205	366
Langkawi	4	—	50	172	2	3	223	454
Total	4	4	2081	4322	181	219	14581	21392

There was an increase of 2032 in the number of cases treated for Malaria, over the previous year's figures.

Dysentery.

The number treated for Dysentery shews a fall: Amoebic Dysentery, 431 cases with 117 deaths against 759 cases and 206 deaths in 1345 A.H.

Bacillary Dysentery 465 cases with 147 deaths, against 485 cases and 116 deaths during 1345 A.H.

Respiratory Diseases.

Of the total of 1,206 cases and 279 deaths, Pneumonia accounted for 586 cases and 234 deaths. Comparative figures for Pneumonia for the past 3 years are as follows:

Year.	Cases.	Deaths.	Deaths %
1344	362	149	41.16
1345	492	214	43.49
1346	586	234	39.93

Venereal Diseases.

Gonorrhoea and Gonorrhoeal Sequelae	...	...	339
Syphilis and Syphilitic Sequelae	...	...	282
Bubo	...	...	112

Total 733 cases.

Yaws (Puru).

The number of injections of Neo-Salvarsan given during the 6 years was as follows:

Year.	No. of Injections.
1341	1,183
1342	7,620
1343	5,995
1344	7,723
1345	8,653
1346	6,689

The decrease in number of injections given for Puru (Yaws) might be partly due to fewer cases of the disease, but also due to the fact that on account of the increased pressure of work in the Hospitals, part of the year, the Medical Officers could not arrange to pay as many visits to Villages as in previous years. To carry out this work thoroughly, we shall have to increase our staff by at least 3 Assistant Surgeons.

Pulmonary Tuberculosis.

The number of cases treated during the past 5 years was as follows:

Year.	Cases.	Deaths.
1342	234	108
1343	225	113
1344	287	150
1345	251	136
1346	255	114

16 cases received treatment in the Phthisis Wards attached to the Hospital, Langkawi. The majority of the cases came in after the disease had advanced too far; and of these 5 died. The number of Government Officers admitted was 5; 3 of these were discharged as much improved, and 2 remained at the end of the year.

Ankylostomiasis.

2,246 cases with 188 deaths shew a large increase over the previous year's figures, which were 1,457 cases and 125 deaths. This increase is due to more attention being paid to this disease during the year.

Pregnancy and its Diseases.

293 cases connected with pregnancy and its complications were treated in the hospitals, with 45 deaths.

In the whole State there were 216 deaths recorded under this heading, giving a percentage of 1.65 to total births. (The number of still births in the State amounted to 928; these were not taken as births).

Mental Diseases.

149 patients were under treatment in Tanjong Rambutan at the beginning of the year; 72 were admitted, 24 were discharged as cured, 17 absconded, 8 died, and the number remaining at the end of the year was 172.

Infectious Diseases treated in Hospitals.

	Cases.	Deaths.
Cerebro-Spinal Fever	1	—
Measles	18	—
Chicken pox	24	—
Typhoid fever	17	6
Erysipelas	9	—
Mumps	11	—
Septicaemia	5	5
Small pox	1	—
Influenza	60	1
Dengue	6	—
	152	12

Leprosy.

	Rema- ined	Admit- ted	Total	Disch- arged	Abs- conded	Trans- fessed	Died	Re- main- ing
Pulau Jerejek	65	18	83	...	...	...	14	69
Pangkor Laui	10	2	12	.	...	...	3	9
Kedah Hospital	3	40	43	3	14	20	1	5

Hospital Staff.

The work in the Hospitals has increased to such an extent within recent years that although the Staff has been increased yearly, the present Staff is unable to cope satisfactory with the work and will soon have to be greatly increased, unless the Estates put up their own Hospitals by next year, which is very unlikely.

Outdoor Dispensaries.

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

	Cases. 1345.	Cases. 1346.
Alor Star (town)	8,494	8,061
Changloon	3,828	3,801
Yen	2,173	4,296
Sik	771	1,182
Kuala Muda	1,512	—
Padang Serai	1,963	401
Mahang	414	26
Motor Ambulance Dispensary, Alor Star	13,133	14,788
do Sungei Patani	6,676	5,745
do Kulim	—	1,751
Total cases	38,964	40,051
Repetitions	8,072	3,587
Total attendances	47,036	43,638

An Ambulance Dispensary was bought for Kulim in R'akhir (September). We have now one ambulance for each centre. They travelled a total of 17,677 miles and attended 22,284 cases.

The Nationalities who received Out-door treatment were:

	1345.	1346.
Malays	23,589	26,496
Chinese	7,066	4,816
Indians	7,438	7,933
Siamese	157	172
Others	714	634
Total	38,964	40,051

The Dispensary at Kota Kuala Muda was closed down at the end of 1345, and the Dispensaries at Mahang and Padang Serai in the beginning of 1346 A.H. These places are now visited regularly by the Travelling Dispensaries. The Lady Medical Officer also visits several outlying places in North Kedah weekly to attend to any women and children.

GENERAL HOSPITAL, ALOR STAR.

Dr. C. J. S. Nicholas, Assistant Medical Officer, who was in charge of this institution since his appointment on 19.7.1336 (1.5.18) died on 6.9.46 (27.2.28).

Dr. J. A. W. Ebdon from the Straits Settlements took over charge on 2.12.46 (22.5.28).

For the three months intervening, the hospital was in the charge of two Assistant Surgeons, supervised by the State Surgeon.

The number of indoor cases for the year was 5307. There were 320 deaths, being a percentage of 6.03. Excluding 88 deaths, which occurred within 48 hours of admission, the death rate was 4.37 per cent.

The daily average of inpatients was 209.27. The largest number of inpatients on any one day was 302 on 28.12.46 (17.6.28).

The figures for the previous year were:—Total cases 4,190; deaths 257; percentage of deaths 6.13; percentage of deaths excluding those within 48 hours of admission 5.18, daily average 183.71; highest number on any one day 227.

Indoor Patients According to Nationality.

	No. treated.	Deaths.	Percentage of Deaths.
Europeans	20	—	—
Malays	587	24	4.09
Indians	2,656	110	4.14
Chinese	1,952	182	9.83
Others	92	4	4.35
Total	5,307	320	6.03

Patients from Estates.

The total admissions from Estates numbered 362, of whom 27 died, a percentage of 7.46.

Prevailing Diseases.

Diseases.	1344			1345			1346		
	Cases.	Deaths.	Deaths per cent.	Cases.	Deaths.	Deaths per cent.	Cases.	Deaths.	Deaths per cent.
Malaria	923	60	6.50	1250	52	4.16	1566	75	4.76
Dysentery Amoebic	62	15	24.19	69	8	11.59	68	7	10.29
Dysentery Bacillary	49	6	12.24	36	8	22.22	31	8	25.81
Venereal Diseases	423	9	2.12	212	5	2.35	245	...	...
Respiratory Dise (excluding P. Tuber.)	153	18	11.84	166	30	18.07	284	45	15.85
Pulm. Tuberculosis	75	43	57.33	72	46	63.88	75	31	41.33
Ankylostomiasis	225	16	7.11	309	19	6.14	431	37	8.58
Ulcers	466	3	.64	353	3	.84	502	...	...
Wounds	302	4	1.32	227	4	1.76	305	6	1.98
Other Diseases	1108	58	4.87	1496	82	5.48	1800	111	6.17
Total	3783	228	6.02	4190	257	6.13	5207	320	6.03

Surgical Operations.

9 major and 78 minor operations were performed.

Intravenous injections of Neo-Salvarsan to indoor patients numbered 446: these injections were given mostly for venereal diseases.

Laboratory Work.

Blood films examined for malaria	...	5,787
Other specimens examined including urine, faeces &c.	...	2,843
Total	...	8,630
Post Mortems: Police cases	...	30
Hospital cases	...	7
Total	...	37

Out-Door Department.

Number of new cases	...	...	...	5,298
Repetitions	...	...	...	997
Total				6,295

The following gives the number of visits of various nationalities:—

Europeans 387, Eurasians 132, Chinese 1,102, Indians 1,100, Malays 2,171, Others 404.

4,418 injections were given for puru and 839 for other diseases.

Buildings.

One block of 4 attendants' quarters was completed.

Revenue.

\$8,779.55 was collected during the year, against \$9,347.50 during 1345 A.H.

Anti-Rabic Treatment.

36 cases were admitted for dog-bite. Of these 25 were confirmed as bitten by Rabid dogs and received anti-rabic serum injections.

Cases treated with anti-rabic vaccine grouped according to domicile and nationality.

Course.	Nationality.	Kedah.	Perlis.	Total.
Complete Course.	Europeans	3	...	3
	Malays	3	...	3
	Chinese	3	2	5
	Indians	14	...	14
	Total	...	...	25

Results of Treatment.

Position of bite.	I.	II.	III.	IV.	V.	VI.	Total.	No. of deaths during or after treatment.
Limbs and trunk unclothed	14	3	...	..	...	8	25	
Limbs and trunk through clothing	8	...	...	..	...	3	11	
Total	...	22	3	..	...	...	11	36

- i. Cases bitten by animals proved rabid by Laboratory Examination.
- ii. Cases bitten by animals certified rabid by Medical or Veterinary Officer—no laboratory tests.
- iii. Cases bitten by animals almost certainly rabid according to history—no laboratory tests.
- iv. Cases with recent abrasions contaminated with the saliva of proved rabid animals.
- v. Cases bitten by animals which were untraceable.
- vi. Cases having abrasions contaminated with saliva in which laboratory tests were negative.

SUNGEI PATANI HOSPITAL.

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

The number of indoor cases treated during the year was 8,086. There were 728 deaths, being a percentage of 9.00. Excluding 247 deaths which occurred within 48 hours of admission, the death rate was 5.95 per cent. The daily average of inpatients was 310.06. The largest number of inpatients on any one day was 422 on 19.11.46 (9.5.28).

The figures for 1345 were:—Total treated 7,475; deaths 675; percentage of deaths 9.03; percentage excluding deaths within 48 hours 6.14; daily average 312.05; largest number on one day 514.

Indoor patients according to Nationality.

	No. Treated.	Deaths.	Percentage of Deaths.
Europeans	1	...	...
Chinese	1,995	170	8.52
Indians	5,902	550	9.32
Malays	160	7	4.37
Others	28	1	3.57
Total	8,086	728	9.00

Patients from Estates.

The total admissions from Estates numbered 3,015, of whom 372 died, a percentage of 12.34.

Prevailing Diseases.

Disease.	1344.			1345.			1346.		
	Cases	Deaths	Deaths per cent.	Cases	Deaths	Deaths per cent.	Cases	Deaths	Deaths per cent.
Malaria	3055	134	4.38	3100	249	8.03	3989	317	7.94
Dysentery Amoebic	104	23	22.11	262	64	24.42	133	32	24.06
Dysentery Bacillary	216	54	25.00	109	22	20.18	174	62	35.63
Venereal Diseases	298	6	2.01	275	7	2.54	217	...	...
Respiratory Diseases (excluding P. Tuber)	350	86	24.57	294	79	26.87	280	88	31.43
Pulm. Tuberculosis	73	24	46.57	47	25	53.18	52	37	71.15
Ankylostomiasis	233	28	12.01	364	55	15.10	666	74	11.11
Ulcers	456	...	...	515	2	.38	520	1	1.92
Other Diseases	2442	126	5.16	2509	172	6.85	2055	117	5.69
Total	7227	491	6.93	7475	675	9.03	8086	728	9.00

Surgical Operations.

120 major and 381 minor operations were performed.

Intravenous injections and Neo-Salvarsan to indoor patients numbered 309.

Laboratory Work.

Blood films examined for malaria	7,005
Other specimens examined, including urine, faeces, sputum &c.	8,500
Total	15,505

Post Mortems:—Police cases	40
Hospital cases	32
	72

Out-door Department.

Number of new cases	3,314
Repetitions	253
Total	3,567

The following gives the number of visits of various nationalities:—

Chinese 868, Indians 1,347, Malays 684, Europeans 201, Eurasians 60, Others 154.

1,167 injections were given for puru (yaws).

Buildings.

Four Dressers' quarters, an Isolation ward, and a Malay ward were completed.

Revenue.

\$39,161.87 against \$44,141.40 in 1345 A.H.

KULIM HOSPITAL.

Dr. W. M. Lupton was in charge until 14.5.46 (9.11.27) when Dr. A. S. M. Douglas relieved him and remained in charge for the rest of the year.

The number of indoor cases treated during the year was 5,320. There were 427 deaths, a percentage of 8.03. Excluding 112 deaths which occurred within 48 hours of admission, the death rate was 5.92 per cent. The daily average of inpatients was 222.85. The highest number on any one day was 270, on 20.12.46 (9.6.28).

The figures for 1345 were:—Total cases 4,593; deaths 415; percentage of deaths 9.03; percentage excluding deaths within 48 hours 6.55; daily average 184.45; highest number on any one day 261.

Indoor patients according to Nationality.

	No. Treated.	Deaths.	percentage of deaths.
Malays	160	7	4.37
Indians	3,684	302	8.20
Chinese	1,472	118	4.01
Others	4	...	...
Total	5320	427	8.03

Patients from Estates.

The total admissions from estates numbered 2,156, of whom 217 died, a percentage of 10.06

Prevailing Diseases.

Diseases.	1344			1345			1346		
	Cases	Deaths	Deaths per cent.	Cases	Deaths	Deaths per cent.	Cases	Deaths	Deaths per cent.
Malaria ..	1525	89	5.83	1696	111	6.54	2009	126	6.22
Dysentery Amoebic ..	194	39	20.10	309	93	30.09	88	23	26.13
Dysentery Bacillary ...	145	44	29.65	17	10	58.80	60	22	36.67
Venereal Diseases ...	217	9	4.14	155	6	3.87	116	2	1.72
Respiratory Diseases (excluding P. Tuber) ..	279	59	21.14	301	56	18.60	231	63	27.71
Palm. Tuberculosis ...	68	48	67.64	74	40	54.09	64	23	35.94
Ankylostomiasis ...	393	24	6.10	512	18	3.51	719	28	3.89
Ulcers ...	238	..	...	258	3	1.14	322	4	1.20
Other diseases ...	1063	69	6.49	1271	78	6.13	1711	136	7.95
Total ...	4122	379	9.18	4593	415	9.03	5320	427	8.03

Surgical Operations.

75 major and 72 minor operations were performed.

Laboratory Work.

Blood films examined for malaria ...	4,412
Other specimens examined, including urine, faeces, sputum &c. ...	7,592
Total	12,004

Post Mortems:—Police cases ...	42
Hospital cases ...	15
Total	57

Out-door Department.

Number of new cases ...	3,471
Repetitions ...	399
Total	3,870

The number of visits by various nationalities were as follows:—

Europeans 179, Eurasians 28, Chinese 1,255, Indians 1,149, Malays 706, Others 154.

Buildings.

2 Dressers' quarters and a block of 4 attendants' quarters were completed.

Revenue.

\$25,385.21 was collected, against \$27,299.06 during the previous year.

KUALA KETIL HOSPITAL.

Special Grade Dresser V. Veerakathy Pillai was in charge of this Hospital until he proceeded on sick leave on 12.9.46 (4.3.28). First Grade Dresser V. Raghava Pillai acted up to the end of the year.

Assistant Surgeon, S. K. Kelkar was appointed for this hospital on 29.11.46 (19.5.28) but was temporarily kept at Sungei Patani to assist the Medical Officer and to get acquainted with the routine.

The total number of inpatients treated during the year was 2,506. The number of deaths was 305, being a percentage of 12.16. The death rate, excluding 107 death, which occurred within 48 hours of admission was 7.90. The daily average of inpatients was 120.49. The largest number on any one day was 172, on 27.1.46 (27.7.27).

The figures for the previous year were:—

Total cases 2,232; deaths 248; percentage of deaths 11.11; percentage excluding deaths within 48 hours of admission 7.39; daily average of inpatients 117.94; largest number on any one day 243.

Indoor patients according to Nationality.

	Total Treated.	Deaths.	Percentage of Deaths.
Indians	2,128	275	12.92
Chinese	347	28	8.07
Malays	18	...	...
Others	13	2	15.38
Total ...	2,506	305	12.16

Patients from Estates.

1,584 patients, or more than half the total number, were admitted from estates. There were 253 deaths among them, a percentage of 15.97. These patients mostly account for the large death rate.

Prevailing Diseases.

	Total Treated.	Deaths.	Percentage of Deaths.
Malaria	994	86	8.65
Dysentery Amoebic	105	44	41.90
„ Bacillary	86	35	40.70
Venereal Diseases	68	...	...
Respiratory Diseases (excluding P. Tuberculosis)	225	59	26.22
Pulm. Tuberculosis	17	5	29.41
Ankylostomiasis	185	27	14.51
Ulcer	119	..	...
Other Diseases	707	49	6.93
Total ...	2,506	305	12.16

Laboratory Work.

Blood films examined for malaria	...	1,929
Other specimens examined, including urine, faeces, sputum &c.	...	3,345
	Total	5,274

Post Mortems:—Police cases	...	7
Hospital cases	...	13
	Total	20

Out-door Cases.

1,859 cases were treated, and the repetitions numbered 177.

The following is number of visits paid by various nationalities:

Europeans 16, Chinese 407, Indians 859, Malays 527, Others 50.

549 injections of Neo-Salvarsan were given for Puru (Yaws) and Syphilis.

Buildings.

One room was added to the attendants' quarters.

Revenue.

The revenue for the year amounted to \$20,151.09 against \$27,299.06, during the previous year.

SERDANG HOSPITAL.

First Grade Dresser, M. D. Rajamoney was in charge throughout the year.

The total number of indoor cases treated during the year was 1,185. The number of deaths was 110, being a percentage of 9.28 to total treated. Excluding 29 deaths, which occurred within 48 hours of admission the death rate was 7.00 per cent. The daily average of inpatients was 61.69. The largest number on any one day was 75 on 22.3.46 (19.9.27).

The figures for the previous year were:—

Total cases 1,322; deaths 130; percentage of deaths 9.83; percentage excluding deaths within 48 hours 7.71; daily average of inpatients 76.80; largest number on one day 94.

Indoor Patients according to Nationality.

	Total Treated.	Deaths.	Percentage of Death.
Chinese	197	9	4.59
Indians	967	101	10.44
Malays	6	...	...
Others	15	...	...
Total	1,185	110	9.28

Patients from Estates.

685 were admitted from estates, of whom 80 died, a percentage of 11.68.

Prevaling Diseases.

	Total Treated.	Deaths.	Percentage os Deaths.
Malaria	523	37	7.07
Dysentery Amoebic	26	8	30.77
„ Bacillary	50	12	24.00
Venereal Diseases	34	...	...
Respiratory Diseases (excuding P. Tuber.)	45	11	24.44
Pulm. Tuberculosis	13	7	53.85
Ankylostomiasis	112	10	8.92
Ulcers	50	...	...
Other Diseases	332	25	7.53
Total	1,185	110	9.28

Laboratory Work.

Blood films examined for malaria	1,067
Other specimens examined, including urine, faeces, sputum &c.	2,002
Total.	3,069

Post Mortems:—Police cases ... 2

Out-door Cases.

902 cases were treated, and the repetitions numbered 65.

The number of visits by various nationalities were:—

Chinese 468, Indians 304, Malays 96, Others 34.

338 injections of Neo-Salvarsan were given for puru and syphilis.

Revenue.

\$10,195.02 was collected during the year, against \$13,257.86 during the previous year.

BANDAR BHARU HOSPITAL.

First Grade Dresser, K. Ayadurai was in charge throughout the year.

The total number of inpatients treated during the year was 629. Deaths numbered 34, being a percentage of 5.40. Excluding 12 deaths which occurred within 48 hours of admission, the death rate was 3.49. The daily average of inpatients was 24.85. The largest number of sick on any one day was 43 on 17.12.46 (6.6.28).

The figures for the previous year were:—Total cases 676; deaths 51; percentage excluding deaths within 48 hours 5.47; daily average 31.39; largest number on one day 41.

Indoor patients according to Nationality.

		Total Treated.	Deaths.	Percentage of Deaths.
Indians	...	537	30	5.59
Chinese	...	79	4	5.06
Malays	...	10	...	...
Others	...	3	...	...
Total	...	629	34	5.40

Patients from Estates.

There were 307 admissions from estates, of whom 18 died, a percentage of 5.86.

Prevailing Diseases.

		Total Treated.	Deaths.	Percentage of Deaths.
Malaria	...	174	8	4.60
Dysentery Amoebic	...	7	2	2.86
„ Bacillary	...	34	6	17.65
Venereal Diseases	...	13	...	...
Respiratory Diseases (excluding P. Tuber.)	...	61	4	6.56
Pulm. Tuberculosis	...	7	2	2.86
Ankylostomiasis	...	53	8	15.09
Ulcers	...	25	1	4.00
Injuries	...	72	2	2.78
Other Diseases	...	183	1	.55
Total	...	629	34	5.40

Laboratory Work.

A total of 836 specimens were examined.

4 post mortems were performed for the Police.

Out-door Patients.

770 new cases were treated and the repetitions numbered 544.

The number of visits by various nationalities were as follows:—

Chinese 296, Indians 345, Malays 112, Others 17.

134 injections of Neo-Salvarsan were given for Puru and Syphilis.

Revenue.

\$3,227.53 was collected against \$4,535.14 during the previous year.

BALING HOSPITAL.

First Grade Dresser V. Krishna Pillai was in charge of this hospital until he was retired on 1.6.46 (26.11.27). First Grade Dresser J. A. Isaac was in charge for the remaining period of the year.

The number of inpatients treated during the year was 502. Deaths numbered 22, being a percentage of 4.78. Excluding 9 deaths, which occurred within 48 hours of admission, the death rate was 2.58. The daily average of inpatients was 15.25. The largest number of sick on any one day was 30, on 22.3.46 (19.9.27).

The figures for the previous year were:—Total cases 478; deaths 37; percentage of deaths 7.74; percentage excluding deaths within 48 hours 5.43; daily average 18.27; largest number of sick on any one day 33.

Indoor patients according to Nationality.

		Total Treated.	Deaths.	Percentage of Deaths.
Chinese	...	123	8	6.50
Indians	...	357	13	3.67
Malays	...	18	1	5.56
Others	...	4	...	...
Total	...	502	22	4.78

Patients from Estates.

77 patients from estates were admitted, of whom 7 died, a percentage of 9.09.

Prevailing Diseases.

		Total Treated.	Deaths.	Percentage of Deaths.
Malaria	...	248	10	4.03
Dysentery Amoebic	...	11	...	...
Venereal Diseases	...	21	...	...
Respiratory Diseases (excluding P. Tuber.)	...	29	1	3.76
Pulm. Tuberculosis	...	5	3	6.00
Ankylostomiasis	...	26	1	3.84
Ulcer	...	35	...	...
Injuries	...	39	1	2.56
Other Diseases	...	88	6	6.82
Total	...	502	22	4.78

Laboratory Work.

A total of 753 specimens were examined.

3 post mortems were performed, including two medico-legal and one pathological cases.

Out-door Patients.

1,788 cases were treated, and the repetitions numbered 205.

The number of visits by various nationalities were as follows:—

Chinese 376, Indians 907, Malays 486, Others 19.

461 injections of Neo-Salvarsan were given for Puru and Syphilis.

Revenue.

\$1,418.15 was collected, against \$676.20 during the previous year.

LANGKAWI HOSPITAL.

First Grade Dresser V. Raghava Pillai who was in charge of this hospital was transferred to Kulim on 12.2.46 (11.8.27) and First Grade Dresser Osman bin Yahya took his place and remained in charge to the end of the year.

The number of inpatients treated during the year was 672. Deaths numbered 28, being a percentage of 4.16. Excluding 4 deaths which occurred within 48 hours of admission the death rate was 3.57. The daily average of inpatients was 28.50. The largest number of sick on any one day was 85 on 10.4.46 (7.10.27).

The figures for the previous year were:—Total cases 268; deaths 16; percentage of deaths 5.97; percentage excluding deaths within 48 hours 5.22; daily average 13.20; largest number on one day 35.

Indoor patients according to Nationality.

	Total Treated.	Deaths.	Percentage of Deaths.
Malays	44	2	4.55
Chinese	87	5	5.74
Indians	537	19	3.54
Others	4	2	5.00
Total	672	28	4.16

Patients from Estates.

There were 464 admissions from estates, of whom 19 died, a percentage of 3.77

There was an epidemic of malaria on Sungei Raya Estate and 315 cases were admitted to Hospital. This accounts for the large increase in the number of admission from Estates.

Prevailing Diseases.

	Total Treated.	Deaths.	Percentage of Deaths.
Malaria	462	14	3.03
Dysentery Amcebic	3	...	...
„ Bacillary	14	2	14.29
Venereal Diseases	9	...	...
Respiratory Diseases (other than P. Tuber.)	19	3	15.79
Pulm. Tuberculosis	16	5	31.25
Ankylostomiasis	18	1	5.56
Ulcer	15	...	...
Injuries	21	...	...
Other Diseases	95	3	3.15
Total	672	28	4.16

Laboratory Work.

A total of 1,094 specimens were examined.

1 post mortem was done for the Police.

Out-door Patients.

2,363 cases were treated, and the repetitions numbered 514.

The number of visits by various nationalities were as follows:—

Chinese 381, Indians 377, Malays 1,503, Others 102.

Revenue.

\$4,879.28 against \$1,852.32 during the previous year.

It was decided to station an Assistant Surgeon in Langkawi with a junior dresser to assist him. This has already been arranged. The Assistant Surgeon besides looking after the hospital, will visit the estates at regular intervals, also be in charge of various anti-malarial measures, undertaken on the Islands, and make periodic tours for Puru injections among the out-lying villages.

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.

The number of patients treated in the sick wards during the past 5 years was:—

Year.	No. Treated	Deaths.	Percentage of Deaths.
1342	246	2	.81
1343	317	17	5.36
1344	249	6	2.40
1345	239	12	5.02
1346	225	13	5.77

Prevailing Diseases (1346 A.H.)

	Total Treated.	Deaths.	Percentage of Deaths.
Malaria	...	24	...
Dysentery Amoebic	...	10	1
Dysentery Bacillary	...	16	...
Other Bowel Diseases	...	13	...
Venereal Diseases	...	4	...
Respiratory Diseases (other than P. Tuber.)	...	29	3
Pulm. Tuberculosis	...	6	1
Ankylostomiasis	...	36	2
Other Diseases	...	87	6
Total	225	13	5.77

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

		1344		1345		1346	
		Prisoners.	Patients.	Prisoners.	Patients.	Prisoners.	Patients.
Alor Star	...	363	7.68	330	7.31	295	7.81
Sungei Patani	...	50	2.44	50	2.25	47	1.10
Kulim	...	28	.06	29	1.30	32	1.07
Total	...	441	10.18	409	10.86	374	9.98

Out-door Attendances.

The dispensary attendances totalled 11,264, and 6,225 repetitions. These figures include the administration of quinine to all prisoners during malarial seasons.

APPENDICES.

Table of Statistics.

- A. The population of Kedah for the year 1346 A.H.
- B. Population according to races with deaths and death rate, 1346.
- C. Infantile death rate for the last 9 years.
- D. Distribution of deaths according to sex and nationality, 1346.
- E. Births according to sex and nationality, 1346.
- F. Still births according to sex and nationality, 1346.
- G. The Infantile death rate per thousand births, among the principal nationalities, 1346.
- H. Incidence of deaths according to ages and nationality, 1346.
- I. Table showing Principal causes of Deaths (according to Register of Deaths.)
- J. Cases of the Infectious Diseases, 1346.
- K. School Figures for 1346.

Estate Figures.

- L. Population by nationalities of European holdings.
- M. " " " " Native holdings.
- N. Deaths by nationalities on European holdings.
- O. Total labourers and dependents admitted to Government Hospitals from European holdings with deaths.
- P. Deaths by nationalities on Native holdings.
- Q. Total labourers and dependents admitted to Government Hospitals from Native holdings with deaths.
- R. Estates admissions to Government Hospitals with deaths by diseases, according to districts, for 1346.

Hospital Figures.

S. Indoor Patients treated in Kedah Hospitals.

T. Rainfall return December, 1927—July, 1928.

U. Meteorological return December, 1927—July, 1928, Alor Star.

V. " " " " " " Sungei Patani.

W. " " " " " " Kulim.

Diagrams and Charts.

1. Percentage of deaths from certain diseases to all deaths in the State.
2. Percentage of cases of certain diseases to total treated in Hospitals, Kedah.
3. Percentage of deaths of certain diseases to total deaths in Hospitals.
4. Chart showing prevailing diseases among Estate admissions to Kedah Hospitals with deaths.
5. Graph showing total Estate labourers and dependents admitted to Kedah Government hospitals with deaths by months.

"A."

Vital Statistics.

The population of Kedah for the year 1346 A.H. is estimated at 399,864 against 398,222 for 1345 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.	
1329	245,813	.	...	...	...	census figure
1336	290,000	7,902	27.25	6,299	21.72	
1337	302,000	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	8,655	25.40	
1341	341,596	9,454	27.73	7,834	23.41	
1342	350,000	11,095	31.70	7,857	22.41	
1343	375,560	11,152	29.69	8,647	23.02	
1344	384,124	11,342	29.52	2,910	25.75	
1245	398,222	13,738	33.49	10,723	26.22	
1346	399,864	13,066	32.68	11,424	28.57	

"B."

Population according to races with deaths and death-rate for the year 1346.

Races.	Approximate population.	Deaths.	Death-rate per mille.
European	399	1	2.50
Eurasians	155	...	...
Malays	273,222	6,133	22.44
Chinese	66,061	2,026	30.67
Indians	51,019	3,043	59.64
Others	9,008	221	24.53
Total	399,864	11,424	28.57

"C."

Infantile death rate for the last 9 years:—

Year.	Deaths.	Rate per mille.
1338	1,312	136.76
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
1346	2,073	158.66

"D."

Distribution of deaths according to Sex and Nationality for the year 1346.

Nationality.	Males.	Females.	Total.
European	1	...	1
Eurasian	...	...	...
Malay	3,256	2,883	6,133
Chinese	1,603	423	2,026
South Indian	1,635	1,365	3,000
North Indian	39	4	43
Others	95	126	221
Total ...	6,623	4,801	11,424

"E."

Births according to Sex and Nationality for the year 1346.

Nationality.	Males.	Females.	Total.
European	...	...	...
Eurasian	...	2	2
Malay	4,737	4,480	9,217
Chinese	1,163	1,042	2,205
South Indian	688	691	1,379
North Indian	20	9	29
Others	120	114	234
Total ...	6,728	6,338	13,066

"F."

Still Births according to Sex and Nationality for the year 1346.

Nationality.	Males.	Females.	Total.
European	...	...	...
Eurasian	...	...	...
Malay	371	258	629
Chinese	57	57	114
South Indian	98	74	172
North Indian	1	...	1
Others	8	4	12
Total ...	535	393	928

"G."

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

Malays,	Chinese,	Indians,
128.46	136.96	406.34

"H."

Incidence of deaths according to ages and Nationality for the year 1346.

Ages,	European.	Eurasian.	Malay.	Chinese.	S. Indian.	N. Indian.	Others.	Total.
1 year and under...	1,184	302	558	6	23	2,073
5 years and under...	1,200	185	636	7	24	2,052
15 do	556	88	255	2	25	926
25 do	468	183	386	3	11	1,051
35 do	...	1	515	334	546	6	19	1,421
45 do	448	333	301	12	22	1,116
55 do	395	308	149	3	28	883
65 do	500	136	91	1	33	821
75 do	365	73	33	1	21	493
Over 75 years	502	24	45	2	15	588
Total	1	...	6,133	2,026	3,000	43	221	11,424

"I"

Table showing Principal causes of Deaths (according to Register of Deaths) for the year 1346.

Deaths from Preventable Diseases:—

	Fever unspecified	...	...	3,457
	Malaria	...	...	826
	Tuberculosis	...	...	235
	Dysentery Amoebic	...	...	172
	.. Bacillary	...	...	154
6,525	Ankylostomiasis	...	...	1,154
	Conditions connected with child birth	...	...	216
	Syphilis	...	...	13
	Lobar Pneumonia	...	...	26
	Pneumonia	...	...	237
	Septicaemia	...	...	8
	Influenza	...	...	4
	Other Infective Diseases	...	...	17
	Yaws	...	...	6

Deaths from General Diseases.

	Digestive System	...	...	379
	Respiratory System	...	...	290
	Nervous System	...	...	135
4,899	Circulatory System	...	...	62
	Tumours	...	...	31
	Infantile Convulsion	...	...	2,261
	Old Age, Ill Defined conditions, Accidents and etc.	...	...	1,741
11,424.	Total	...	...	11,424

Cases of Infectious Diseases for the year 1346 A.H.

Reported to Health Officer during 1346 (4.7.27 to 13.6.28).

Cholera	...	...	...	4
Chicken pox	...	...	...	40
Cerebro Spinal Meningitis	...	...	...	2
Small Pox	...	...	...	3
Diphtheria	...	...	...	7
Enteric Fever	...	...	...	17
Measles	...	...	...	46
Tropical Typhus	...	...	...	3
Mumps	...	...	...	11
Para Typhoid	...	...	...	2

"K."

School Figures, 1346 A.H.

1. Total in Register	...	...	2,763
2. Total inspected	...	...	2,302

No.	Diseases.	Cases.	Percentage.
1.	Spleen	70	3.04
2.	Anaemia	120	5.21
3.	Not vaccinated	399	17.33
4.	Eye diseases	3	...
5.	Ear diseases	2	...
6.	Scabies	27	1.18
7.	Skin Diseases	44	1.91
8.	Yaws	32	1.39

Total schools visited by Senior Health Inspector	...	21
" " " " Health Inspectors	...	4

Total 25

"L."

Estate Figures.

Population by nationalities of European holdings, 1346.

No.	Nationality.	Labourers.	Dependents.	Remarks.
1.	Malay	1,635	582	
2.	Indian	34,678	9,445	
3.	Chinese	2,349	83	
4.	Others	387	87	
Total		39,049	10,197	

"M."

Population by Nationalities of Native Holdings.

No.	Nationality.	Labourers.	Dependents.
1.	Malay	5,331	1,228
2.	Indian	2,612	494
3.	Chinese	3,090	330
4.	Others	63	...
Total		11,096	2,052

Total visits to Estates by Health Officer and Staff, 1346 ... 285

"N."

Deaths by Nationalities on European Holdings.

No.	Nationality.	Labourers.	Dependents.	Infants.
1.	Malay	5	15	12
2.	Indian	332	603	239
3.	Chinese	...	2	1
Total		337	620	252

"O."

Total Labourers and Dependents admitted to Government Hospitals from European holdings with Deaths.

1.	Total Admission	...	7,985
2.	Total Deaths	...	912

"P."

Deaths by Nationalities on Native Holdings, 1346.

No.	Nationality.	Labourers.	Dependents.	Infants.	Remarks.
1.	Malay	10	15	3	
2.	Indian	20	11	1	
3.	Chinese	13	5	...	
4.	Others	3	...	...
Total		46	31	4	

"Q."

Total labourers and dependents admitted to Government Hospitals from Native Holdings with Deaths, 1346.

Total admission	...	585
Total deaths	...	81

Estate Admissions to Government Hospitals, with Deaths by diseases, according to District, for the year 1346 A.H.

No.	District.	Malaria.		Anky- lostomiasis.		Dysentery.		Other Diseases.		Pneumonia.		Other Diseases.	
		A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.
1.	Alor Star	82	5	50	5	6	...	36	5	8	1	171	11
2.	Sungei Patani	1497	156	311	39	150	48	108	26	79	36	1916	67
3.	Kulim	780	52	338	14	62	29	10	1	47	22	794	93
4.	Kuala Kedil	541	65	124	25	129	66	4	1	118	41	594	55
5.	Serang	278	33	84	7	46	10	24	6	25	7	223	17
6.	Bandar Bahru	55	2	28	3	22	5	41	...	12	2	143	6
7.	Baling	38	4	7	1	1	...	2	...	1	...	28	2
8.	Langkawi	347	13	13	1	12	1	6	1	5	2	71	1
Total		3618	336	955	95	428	159	234	40	295	111	3010	252

Total admissions ... 8570

Total deaths ... 993

APPENDIX—S.

ANNUAL RETURN OF INDOOR PATIENTS, TREATED IN HOSPITALS IN KEDAH,
DURING THE YEAR 1346 A.H.

Diseases.	Remained.	Admitted.	Died.	Total.	Remaining.	Remarks.
INFECTIVE DISEASES.						
Amoebiasis	...	1	1	1	...	
Cerebrospinal fever	...	1	...	1	...	
Chicken-pox	...	24	...	24	1	
Dengue	...	6	...	6	1	
Amoebic Hepatica	...	1	...	1	...	
Dysentery Amoebic	7	424	117	431	21	
Dysentery Bacillary	12	453	147	465	12	
Enteric Fever	...	17	6	17	1	
Erysipelas	...	9	...	9	...	
Gonorrhoea	16	235	...	251	14	
Gonorrhoeal Rheumatism	4	66	...	70	4	
Gonorrhoeal Conjunctivitis.	...	18	...	18	1	
Gonorrhoeal Arthritis	...	1	...	1	...	
Influenza	2	58	1	60	...	
Leprosy	3	40	1	43	5	
Madura Disease	1	2	...	3	...	
Diphtheria	...	2	1	2	1	
Malaria :—						
(a) Benign tertian	162	4,325	185	4487	194	
(b) Quartan	3	118	9	121	12	
(c) Malignant tertian	90	2,591	358	3041	190	
(d) Mixed infection	5	225	34	230	23	
(e) Type undiagnosed	116	1,617	55	1733	32	
(f) Malarial cachexia	16	387	31	403	32	
(g) Blackwater fever	...	1	1	1	...	
Measles	...	18	...	18	...	
Mumps	2	9	...	11	1	
Phagedaena	2	5	...	7	...	
Pneumonia (Lobar)	16	505	207	521	20	
Pyæmia	...	6	3	6	...	
Pyrexia of uncertain origin	...	27	...	27	...	
Rheumatism	3	75	...	78	1	
Septicæmia	...	5	5	5	...	
Small-pox	...	1	...	1	...	
Syphilis :—						
(a) Primary	...	36	...	36	4	
(b) Secondary	11	197	1	208	10	
(c) Inherited	3	11	...	14	1	
(d) Tertiary	...	24	1	24	7	
Tetanus	...	3	2	3	...	
Tuberculosis :—						
(a) General	...	20	4	20	2	
(b) Pulmonary Tuberculosis	18	237	114	255	30	
Whooping Cough	...	6	...	6	...	
Yaws	...	18	...	18	1	
Other Infective Diseases	4	26	7	30	1	
INTOXICATIONS.						
Alcoholism	...	11	...	11	...	
Morphinism	...	7	3	7	...	

Diseases.	Remained.	Admitted.	Died.	Total.	Remaining.	Remarks.
GENERAL DISEASES.						
Anamia	2	37	9	39	2	
Beri-beri	6	40	6	46	4	
Diabetes	...	1	1	1	...	
Senility	...	2	...	2	...	
Debility	...	12	2	12	...	
Other General Diseases	6	75	39	81	...	
CERTAIN MORBID CONDITIONS INCIDENT TO VARIOUS PARTS.						
Malformations	...	1	...	1	...	
New Growth, Non-malignant	...	8	...	8	1	
do. Malignant	...	29	7	29	...	
Cyst	...	4	...	4	...	
Other Morbid Conditions	...	2	...	2	...	
DISEASES OF THE NERVOUS SYSTEM.						
Neuritis	8	79	1	87	2	
Myelitis	2	5	1	7	...	
Multiple neuritis	...	2	...	2	...	
Meningitis	...	9	4	9	...	
Locomotor ataxia	...	6	2	6	1	
Hydrocephalus	...	1	...	1	...	
Other Diseases of Spinal Cord and Membranes	...	2	...	2	...	
Abscess of brain	...	12	1	12	...	
Other Diseases of brain & membranes	...	4	1	4	1	
Apoplexy	1	2	1	3	...	
Paraplegia	3	3	1	6	...	
Hemiplegia	1	28	7	29	2	
Chorea	...	1	...	1	1	
Convulsions	1	8	4	9	1	
Epilepsy	...	6	2	6	...	
Neuralgia	...	19	...	19	...	
Hysteria	...	6	...	6	...	
Neurasthenia	...	1	...	1	...	
Other Nervous Disorders	...	31	10	31	...	
MENTAL DISEASES.						
Mania	...	48	...	48	1	
Idiocy	...	2	...	2	...	
Melancholia	2	6	1	8	...	
Hallucination	...	1	...	1	1	
Dementia	...	2	...	2	...	
Delusional Insanity	...	8	1	8	...	
Other Mental Diseases	...	6	...	6	...	
DISEASES OF THE EYE.						
Conjunctivitis	...	78	...	78	2	
Trachoma	...	5	...	5	...	
Keratitis	...	1	...	1	...	
Ulcer of Cornea	3	49	1	52	1	
Staphyloma	1	3	...	4	...	
Iritis	...	12	...	12	...	
Hypopyon	...	2	...	2	...	
Optic Neuritis	1	1	...	2	...	
Optic Atrophy	...	4	...	4	...	
Cataract	4	17	1	21	6	
Panophthalmitis	...	2	...	2	...	
Amblyopia and Amaurosis	...	1	...	1	...	
Pterygium	...	1	...	1	...	
Blindness	...	7	...	7	7	
Keratomalacia	...	3	3	3	...	
Other Eye Diseases	10	30	...	40	2	

Diseases.	Remained.	Admitted.	Died.	Total.	Remaining.	Remarks.
DISEASES OF THE EAR.						
Inflammation	...	1	20	...	21	2
Otitis	7	...	7	
Other Ear Diseases	5	...	5	1
DISEASES OF THE NOSE.						
Inflammation	1	...	1	
Other Nose Diseases	2	...	2	
DISEASES OF THE CIRCULATORY SYSTEM.						
Pericarditis	5	4	5	
Valvular Disease	...	4	28	8	22	
Myocarditis	...	2	7	2	9	
Syncope	5	4	5	
Aneurysm	2	2	2	
Phlebitis	5	...	5	
Varicocoele	1	...	1	
Thrombosis	2	2	2	
Other Diseases of the System	10	2	10	1
DISEASES OF THE RESPIRATORY SYSTEM.						
Asthma	...	2	75	4	77	1
Laryngitis	5	...	5	1
Bronchitis	...	29	425	21	454	6
Broncho-pneumonia	...	1	64	27	65	2
Pleurisy	...	1	59	12	60	1
Empyema	...	1	10	5	11	2
Other Diseases of the System	13	3	13	1
DISEASES OF THE DIGESTIVE SYSTEM.						
Stomatitis	10	...	10	
Parotitis	2	...	2	
Gangrene of Mouth	...	1	1	...	2	
Cancerum Oris	1	2	1	
Pyorrhoea alveolaris	...	1	11	...	12	
Caries of tooth	11	...	11	2
Tonsillitis	15	...	15	
Inflammation of pharynx	11	...	11	
Gastritis	...	1	33	...	34	1
Ulceration of Stomach	13	1	13	
Dyspepsia	13	...	13	
Enteritis	...	6	106	44	112	7
Appendicitis	11	...	11	
Colitis	1	...	1	
Ulceration of intestines	...	1	...	...	1	
Intestinal obstruction	4	2	4	
Diarrhoea	...	5	148	26	153	3
Constipation	...	2	73	...	75	
Colic	...	1	33	...	34	
Ischio-rectal Abscess	12	1	12	
Fissure of anus	1	...	1	
Fistula in ano	4	...	4	
Haemorrhoids	...	1	29	2	30	1
Hepatitis	50	1	50	2
Abscess of liver	32	10	32	2
Cirrhosis of liver	...	7	34	14	41	2
Congestion of liver	1	1	1	
Jaundice	...	2	11	5	13	1
Other Diseases of the System	...	1	47	10	48	

Diseases.	Remained.	Admitted.	Died.	Total.	Remaining.	Remarks.
DISEASES OF THE LYMPHATIC SYSTEM.						
Spleen, Inflammation	2	8		10		
Spleen, Rupture		2	2	2		
Bubo	2	110		112	2	
Suppuration of Glands		2		2		
Lymphangitis		7	1	7		
Lymphadenoma		1		1		
Other Diseases of the System	1	14		15		
DISEASES OF THE URINARY SYSTEM.						
Acute Nephritis	2	75	29	77	2	
Bright's Disease		4	3	4		
Cystitis		10	1	10		
Calculus		3	1	3		
Retention of urine		4		4		
Stone in urethra		1		1		
Intestinal Nephritis		20	9	20		
Hydroemic Nephritis		8	2	8		
Other Diseases of the System		12	3	12		
DISEASES OF THE GEN- ERATIVE SYSTEM, MALE.						
Stricture		4		4		
Urethral fistula		8		8		
Phimosis	1	27		28		
Ulcer Penis		1		1		
Soft chancre	4	95		99	5	
Scrotum, Abscess		1		1		
Hydrocele		25		25	1	
Orchitis		24		24	1	
Epididymitis		7	1	7		
Other diseases, Male organs		29	1	29		
FEMALE.						
Metritis		1		1		
Erosion of cervix		1		1		
Displacements and distortions	1	3		4		
Vulva, Inflammation		2		2		
Other diseases, Female organs	1	19		20	2	
AFFECTIONS CONNECTED WITH PREGNANCY AND PARTURITION.						
Natural labour	4	118	2	122	2	
Difficult labour		23	3	23		
Abortion		29		29		
Retention of placenta		11	1	11		
Premature birth		20	15	20		
Puerperal sepsaemia	1	19	9	20	2	
Puerperal septicaemia		1		1		
Other Affections		67	15	67	2	
DISEASES OF THE FEMALE BREAST.						
		3		3		
DISEASES OF THE MALE BREAST.						
		1		1		

Diseases.	Remained.	Admitted.	Died.	Total.	Remaining.	Remarks.
DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.						
Periostitis	2	9		11		
Caries of bones	1	3		4		
Necrosis of bones		7		7		
Arthritis	3	56	2	59		
Synovitis	6	46	1	52	3	
Myalgia		24		24		
Lumbago		5		5		
Other diseases of organs of Locomotion	1	29		30	1	
DISEASES OF THE CONNECTIVE TISSUE.						
Hernia	2	34	1	36	4	
Cellulitis	11	161	5	172	5	
Abscess	18	263	4	281	16	
Carbuncle	1	13		14	2	
Gangrene	1	23	9	24	3	
Oedema	1	1		2		
Peritonitis		10	7	10	1	
Ascitis of unknown origin		7	1	7		
Other diseases of the connective tissue		20		20		
DISEASES OF THE SKIN.						
Urticaria		4		4		
Eczema		60	1	60	1	
Boil		5		5		
Herpes		10		10		
Herpes Zoster		5		5		
Ulcer	80	1507	7	1587	124	
Other skin diseases	3	67		70	3	
INJURIES.						
General	4	4	4	8		
Dog bite		47		47	3	
Snake bite		9		9		
Local						
(a) wound	18	902	8	920	19	
(b) sprains		32		32		
(c) Fractures, simple	5	109	4	114	6	
(d) do. compound	1	21	8	22	3	
(e) dislocations		11	1	11		
(f) Other local injuries	4	295	9	309	5	
POISONS.						
Opium		7	2	7		
Datura		2	1	1		
Acetic acid poison		1	1	1		
Other poisons		11	2	11		
PARASITES.						
Taenia solium		1		1		
Ascaris Lumbricoides	15	427	17	442	20	
Ankylostomiasis	85	2161	188	2246	110	
Filaria	1	3		4		
Tinea circinata	2			2		
Tinea Imbricata		1		1		
Other Vegetable parasites	2	20	2	22		
Scabies	7	288		295	3	
Other Animal parasites	1	118		119	3	
Under Observation	40	1041		1081	53	
No discoverable disease		256		256	11	
Malingering		2		2		
Total ...	951	23481	1987	24432	1114	

APPENDIX—T.

Return of Rainfall.

From 1st December, 1927 A. D. to 3 st July, 1928 A. D.

Months. 1927-1928.	Alor Star.		Langkawi.		Sungei Patani.		Baling.		Kuala Ketil.		Kulim.		Serdang.		Bandar Bahru.		Padang Besar.		Perlis.	
	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.	In.	C.
December.	...	76	1	66	2	31	2	40	3	17	6	54	9	39	9	34	2	01	1	30
January.	..	06	...	78	2	91		57	4	01	8	45	8	28	8	86	1	48	1	98
February.	...	05	...	84	5	48	1	65	3	24	...	86	1	76	4	02	2	85	1	43
March.	...	91	4	27	5	31	5	12	8	45	7	50	10	61	4	22	4	79	6	96
April.	..	87	11	62	14	84	18	22	16	55	17	70	25	16	15	80	5	46	5	21
May.	..	82	13	37	10	00	5	36	11	53	12	01	9	50	8	85	7	04	12	87
June.	...	59	5	26	1	29	1	55	3	99	1	69	2	39	6	05	1	92	4	37
July.	..	03	6	97	5	51	6	04	5	09	7	66	6	44	4	33	5	20	3	29
Total	...	09	51	77	47	65	40	91	56	03	62	41	73	53	61	47	30	75	37	41

APPENDIX—U.
METEOROLOGICAL RETURN OF HOSPITAL, ALOR STAR,
 from 1st. December, 1927 A. D. to 31st. July, 1928 A. D.

Months 1927—1928	TEMPERATURE				HYGROMETER				Total Rainfall.	Greatest Rainfall during 24 hours	Highest Shade Temperature—98.00 on 21.2.1928. Lowest Shade Temperature—70.00 on 3.5.1928.
	Mean dry bulb.	Maximum.	Minimum.	Range.	Mean wet bulb.	Vapour Tension.	Dew point.	Humidity.			
December	81.3	90.6	75.8	14.8	76.4	.863	71.8	80.9	2.76	1.50	
January	81.5	92.8	74.5	18.3	76.0	.793	72.3	73.8	2.06	.82	
February	79.9	94.1	75.7	18.4	75.7	.807	72.8	79.1	3.05	1.50	
March	79.3	93.2	75.3	17.9	72.6	.684	68.0	68.4	5.91	1.58	
April	82.9	91.9	77.4	13.5	78.3	.877	75.3	78.0	12.87	2.10	
May	82.5	90.8	77.6	13.2	78.3	.883	75.5	79.5	16.82	4.20	
June	82.4	91.6	78.2	13.4	78.5	.894	75.9	80.8	5.59	2.02	
July	82.5	91.3	79.0	12.3	78.3	.883	75.5	79.5	2.03	.85	

APPENDIX—V.

METEOROLOGICAL RETURN OF HOSPITAL, SUNGEI PATANI,

from 1st December, 1927 A. D. to 31st July 1928 A. D.

	TEMPERATURE				HYGROMETER.				Total Rainfall.	Greatest Rainfall during 24 hours.	Highest Shade Temperature = 100.00 on 13—3—1928.	Lowest Shade Temperature = 60.00 on 8—2—1928.
	Mean dry bulb.	Maximum.	Minimum.	Range.	Mean wet bulb.	Vapour Tension.	Dew point	Humidity.				
Months 1927—1928.								%				
December	82.7	92.9	71.9	21.0	76.8	.810	72.9	72.5	2.31	1.14		
January	82.8	94.1	71.3	22.8	76.5	.793	72.3	70.7	2.91	1.50		
February	83.0	91.3	71.2	23.1	76.6	.793	72.3	70.3	5.48	1.64		
March	83.9	95.3	70.6	24.7	78.0	.846	74.2	72.9	5.31	.82		
April	82.5	93.2	72.5	20.7	78.0	.868	75.0	78.2	14.84	5.16		
May	83.9	91.6	74.0	17.6	78.8	.883	75.5	76.1	10.00	2.50		
June	81.8	91.9	72.6	19.3	76.0	.788	72.1	72.7	1.29	.39		
July	82.1	92.3	73.4	18.9	76.7	.815	73.1	74.5	5.51	1.60		

APPENDIX—W.

METEOROLOGICAL RETURN OF HOSPITAL, KULIM,

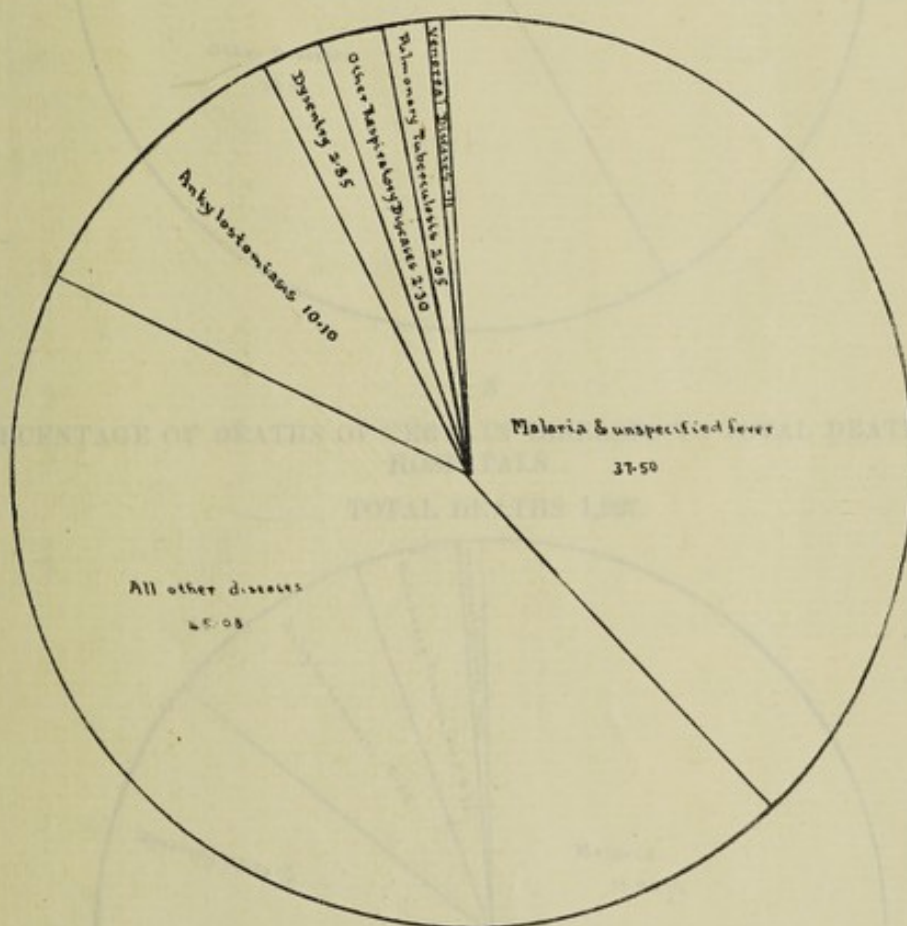
from 1st December, 1927 A. D. to 31st July, 1928 A. D.

Months 1927—1928	TEMPERATURE				HYGROMETER				Total Rainfall.	Greatest Rainfall during 24 hours.	Highest Shade Temperature—99.00 on 18.3.1928. Lowest Shade Temperature—69.00 on 18.7.1928.
	Mean dry bulb.	Maximum.	Minimum.	Range.	Mean wet bulb.	Vapour Tension.	Dew point.	Humidity.			
December	83.9	92.6	72.8	19.8	79.4	.912	76.5	78.6	6.54	2.28	
January	85.6	94.0	71.6	22.4	80.4	.927	77.0	75.6	8.45	1.88	
February	84.3	93.7	71.9	21.8	79.7	.918	76.7	78.1	.86	.25	
March	81.7	94.5	71.8	22.7	80.2	.994	79.1	92.0	7.50	1.81	
April	83.2	93.2	73.3	19.9	79.5	.930	77.1	82.0	17.70	4.81	
May	83.5	92.7	73.9	18.8	80.2	.958	78.0	83.6	12.01	2.82	
June	84.6	94.2	74.3	19.9	80.5	.952	77.8	80.1	1.69	.52	
July	84.3	93.1	73.6	19.5	81.2	.994	79.1	84.5	7.66	1.20	

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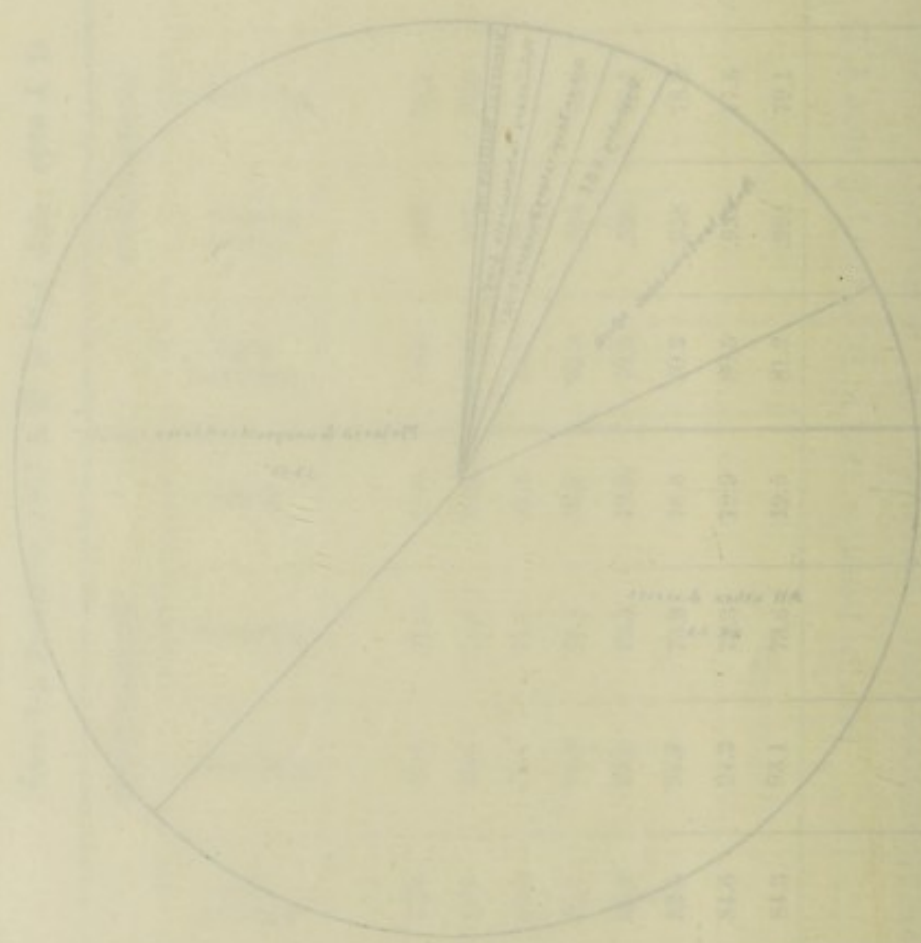
PERCENTAGE OF DEATHS FROM CERTAIN DISEASES TO ALL DEATHS IN THE STATE.

TOTAL 11,424.



APPENDIX-W.

PERCENTAGE OF DEATHS FROM CERTAIN DISEASES TO ALL DEATHS IN THE STATE

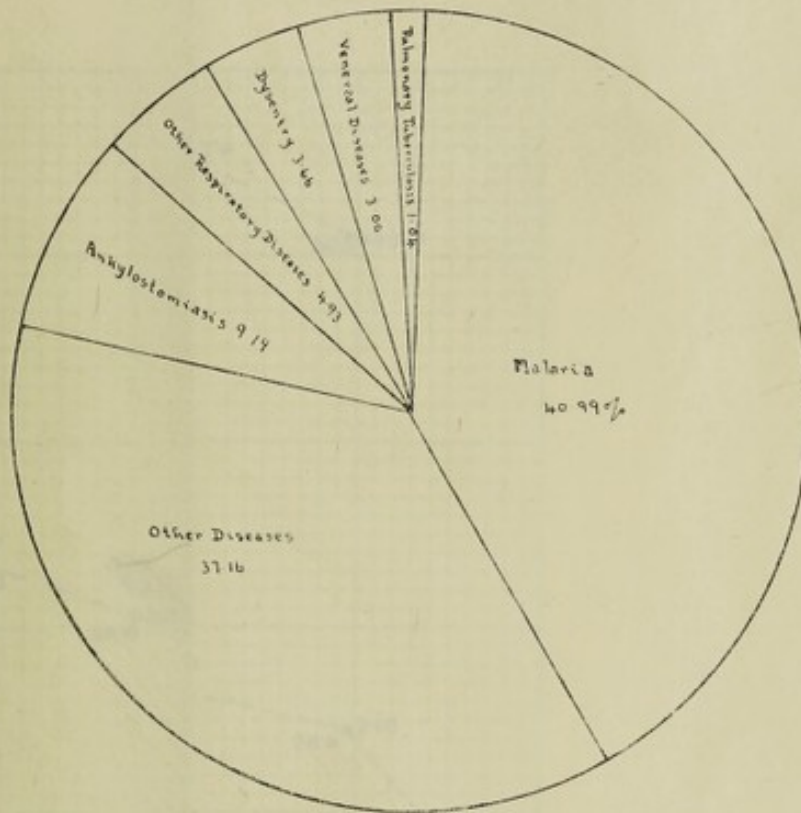


Source: State Department of Health, 1910-1911.
 Figures are based on the following table:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	12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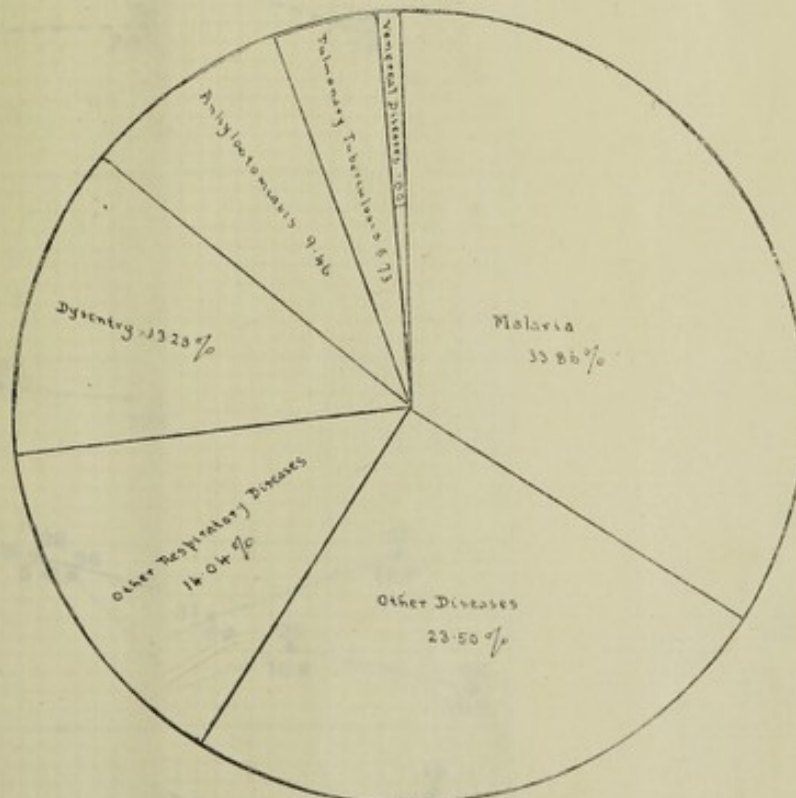
PERCENTAGE OF CASES OF CERTAIN DISEASES TO TOTAL TREATED IN HOSPITALS.

TOTAL CASES 24,432.



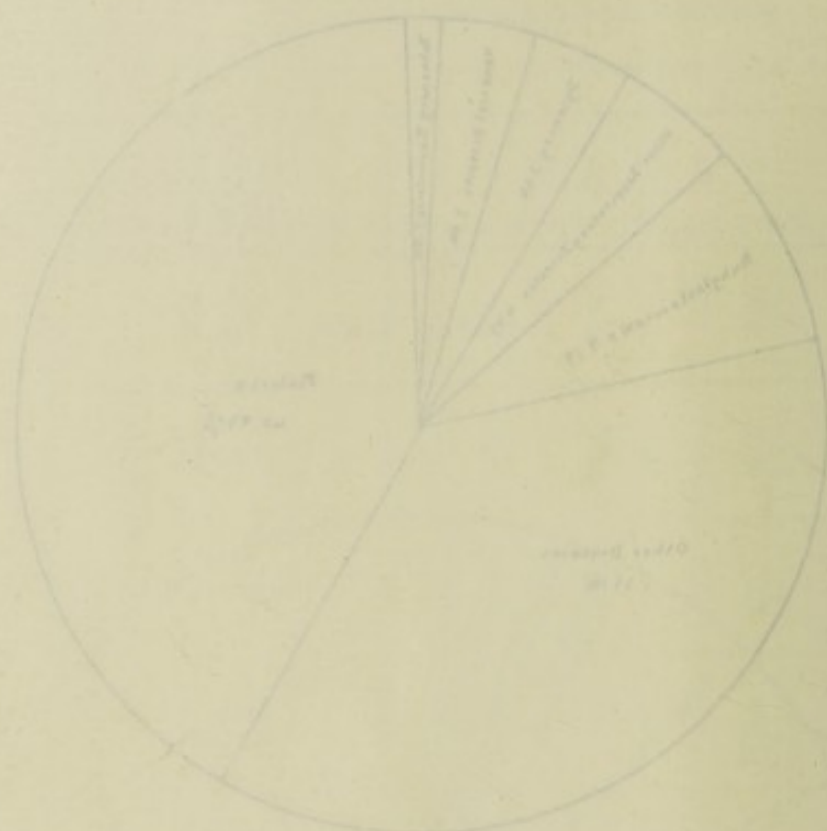
PERCENTAGE OF DEATHS OF CERTAIN DISEASES TO TOTAL DEATHS IN HOSPITALS.

TOTAL DEATHS 1,987.



PERCENTAGE OF CASES OF CERTAIN DISEASES TO TOTAL TREATED IN HOSPITALS.

TOTAL CASES 21,481.



PERCENTAGE OF DEATHS OF CERTAIN DISEASES TO TOTAL DEATHS IN HOSPITALS.

TOTAL DEATHS 1,247.

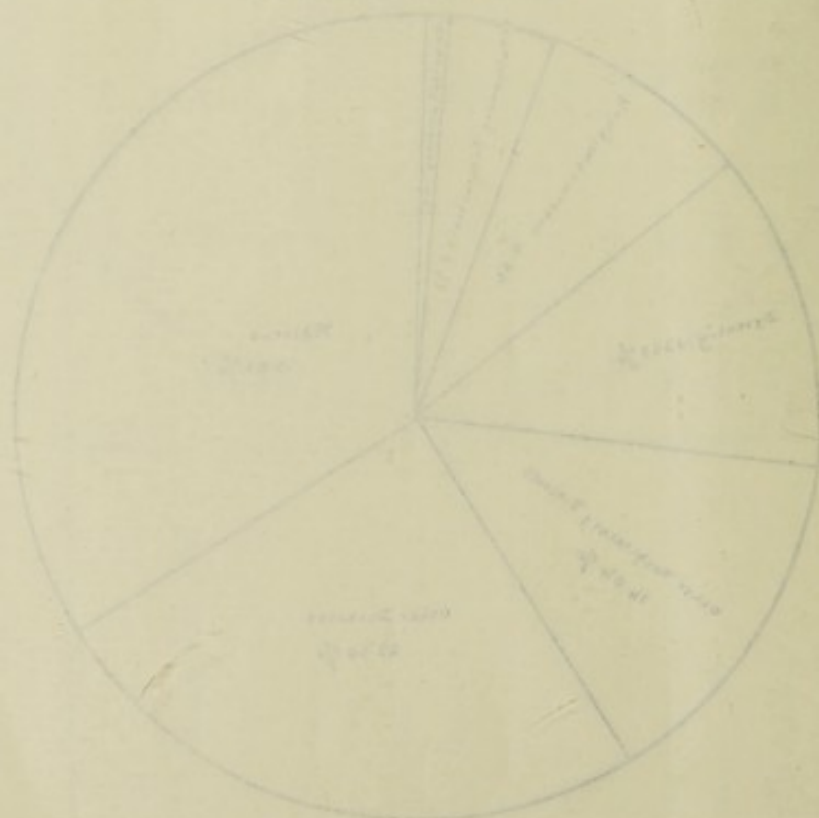
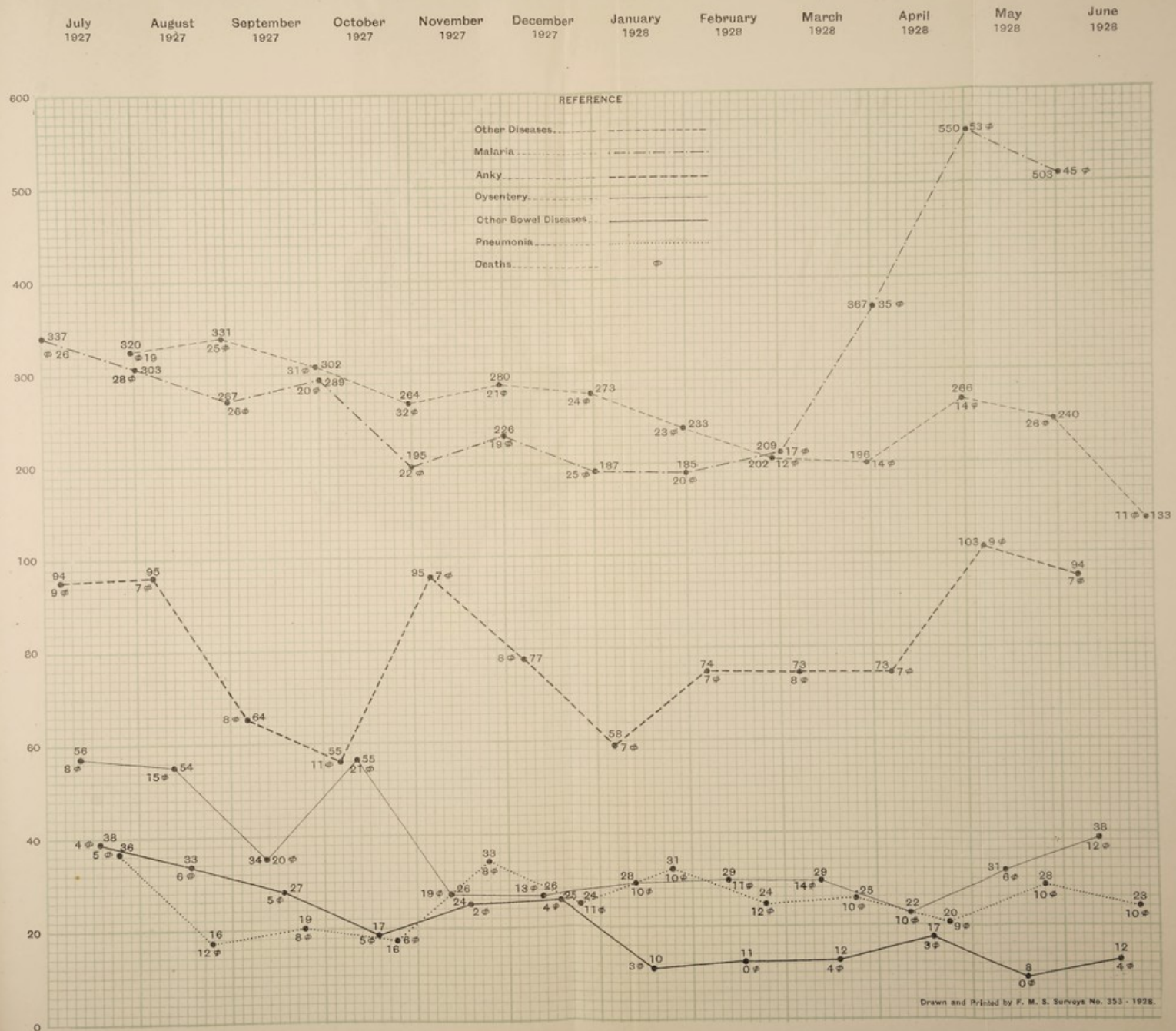


CHART SHOWING PREVAILING DISEASES AMONG ESTATES ADMISSIONS TO HOSPITAL WITH DEATHS.
FOR THE PERIOD JULY 1927 TO JUNE 1928.



ADMITTED INTO GOVERNMENT HOSPITAL WITH DEATHS MONTH

1927 TO JUNE 1928

June
1927

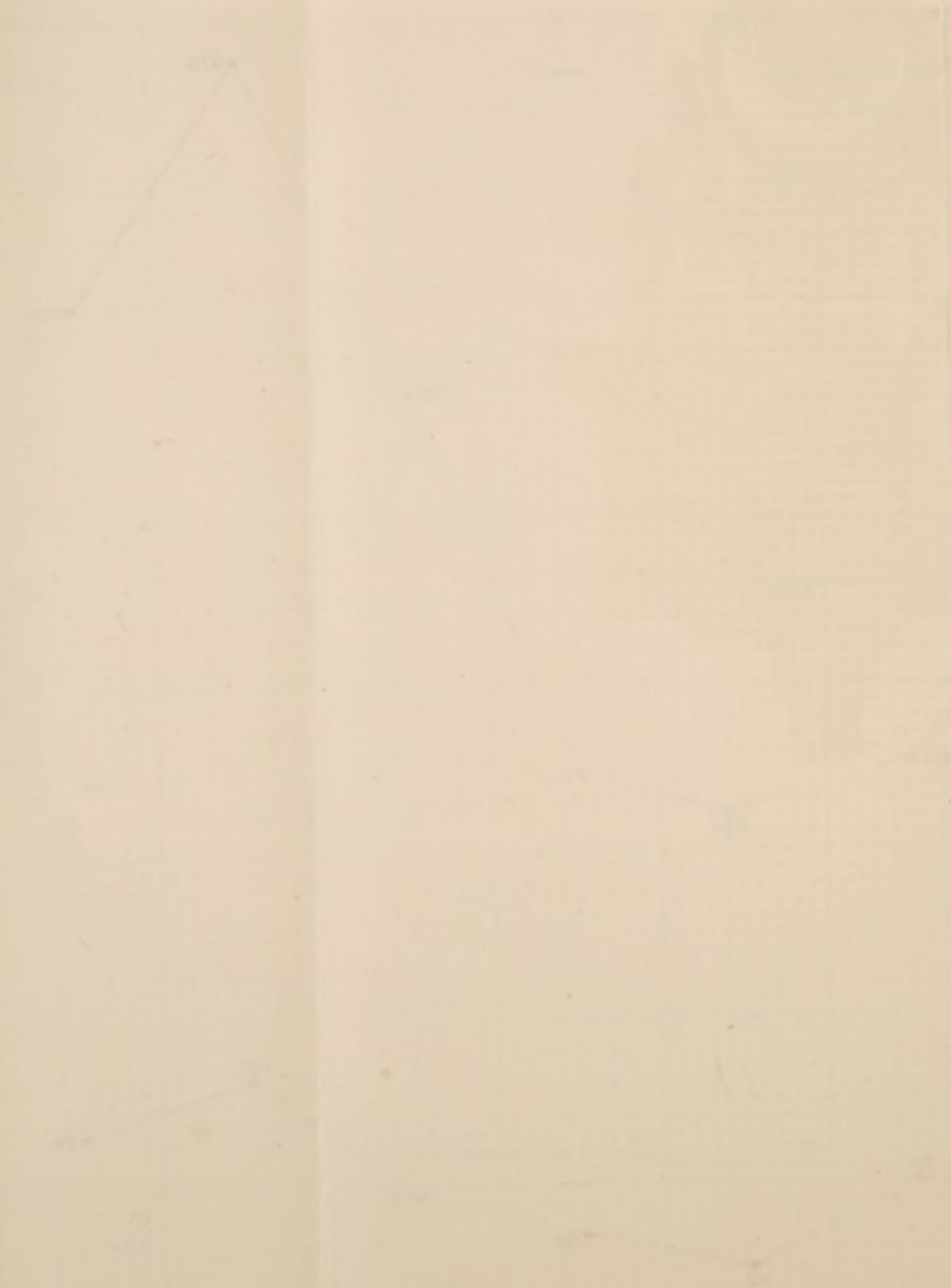
May
1928

April
1928

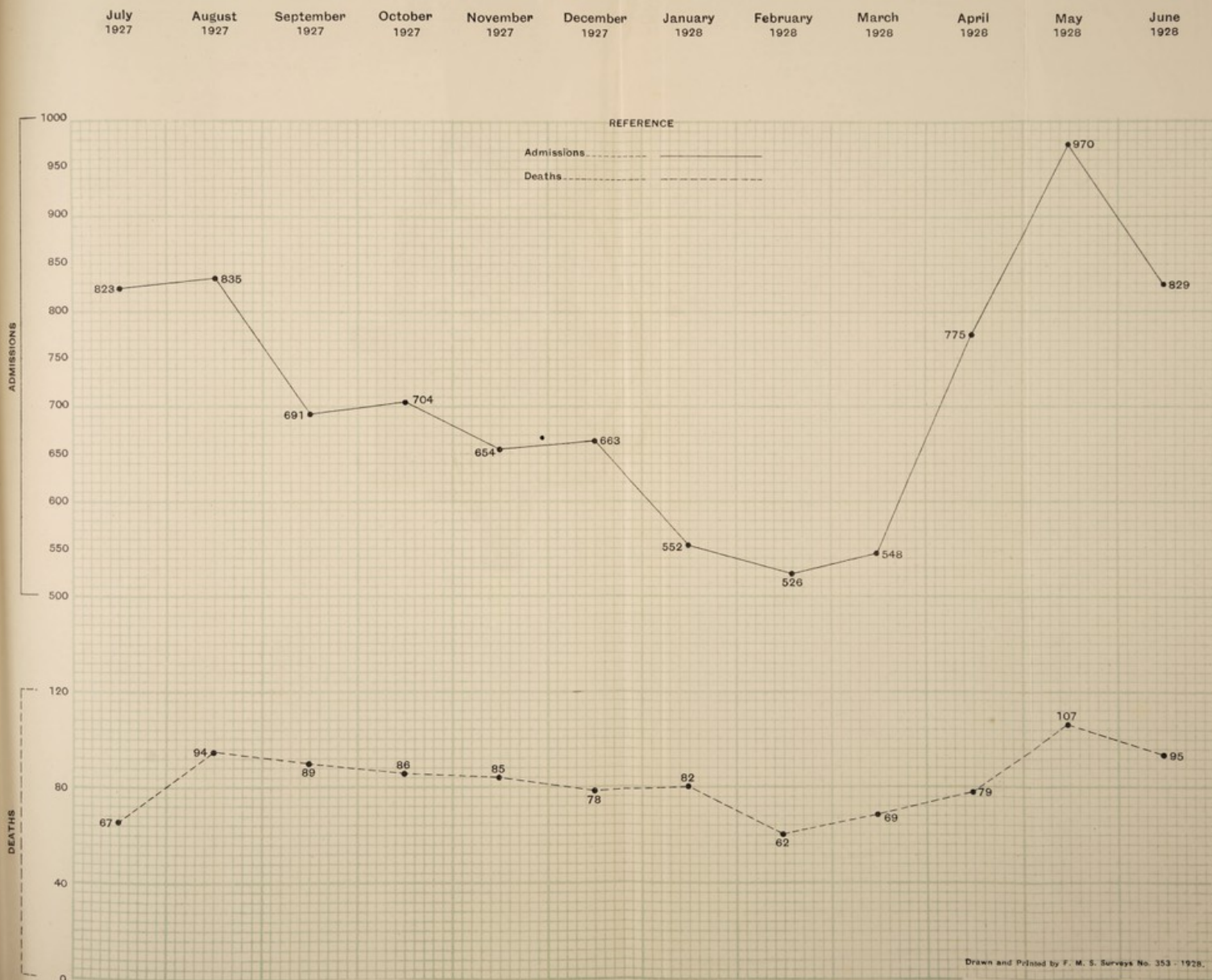
March
1928

February
1928

January
1928

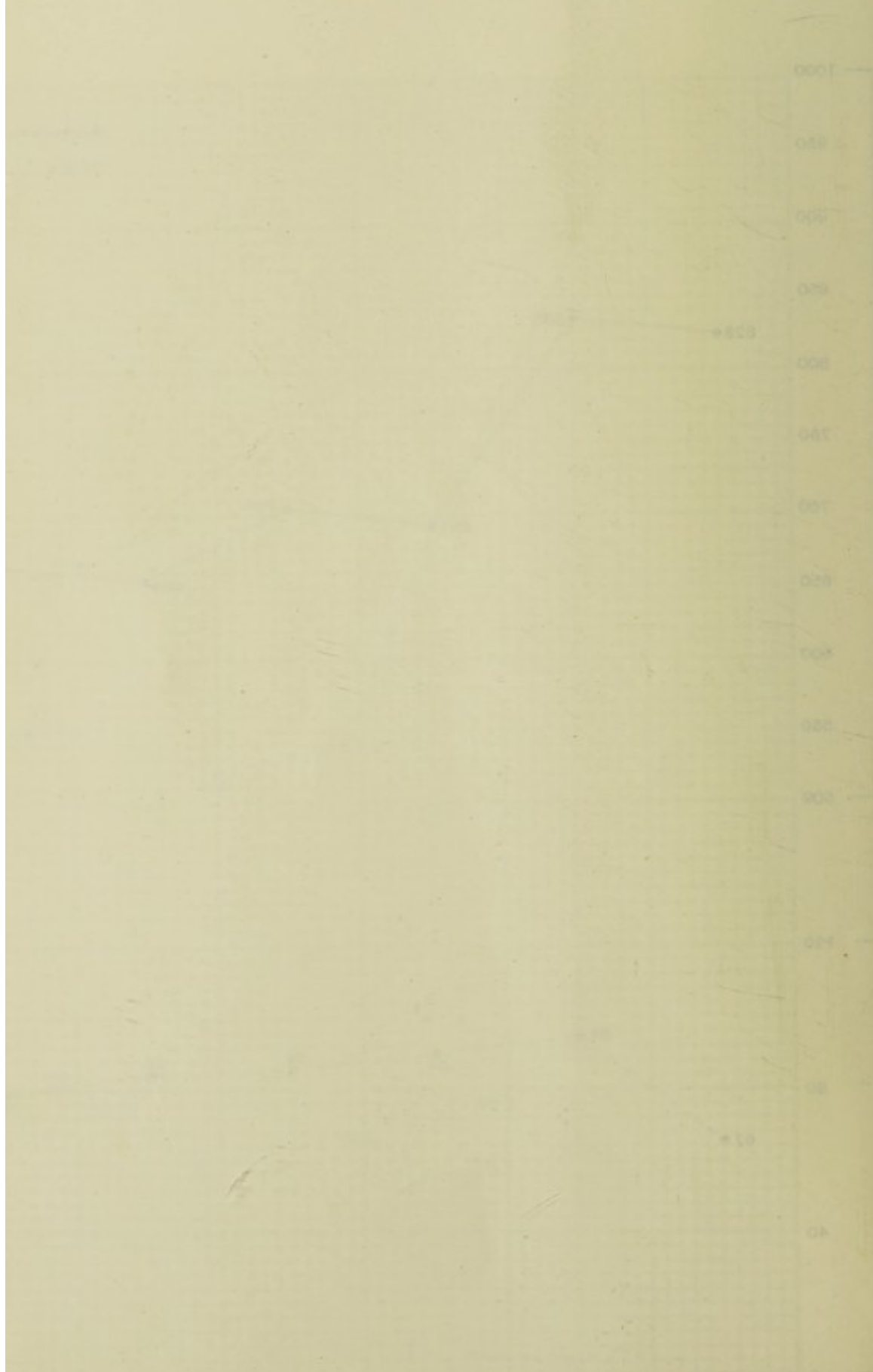


GRAPH SHOWING TOTAL ESTATE LABOURERS AND DEPENDENTS ADMITTED INTO GOVERNMENT HOSPITAL, WITH DEATHS MONTHLY,
FOR THE PERIOD JULY 1927 TO JUNE 1928.



GRAPH SHOWING TOTAL ESTATE LABOURERS AND DEPENDENTS FOR THE PERIOD

July 1937 August 1937 September 1937 October 1937 November 1937 December 1937



ANNUAL MEDICAL AND SANITARY REPORT, PERLIS.

For the Year Ending 30th Zuhaijah, 1346, A.H.

(1st July, 1927, to 19th June, 1928, A.D.)

I. ADMINISTRATION.

Staff.

The appointments in the Medical Department are as follows:—

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

- 1 Assistant Surgeon.
- 1 Dresser Grade I.
- 1 Dresser Grade III.
- 1 Vaccinator.
- 1 Dispensary Assistant.
- 1 Midwife.

The hospital was in charge of Assistant Surgeon, R. Sivasambandan, throughout the year. The Probationer Dresser, who was sent to Kedah on the 1st of Shaaban, 1345, (4.2.27) passed the Probationer Grade Examination in Rejab, 1346 (January, 1928) and re-joined the staff in Shaaban, 1346. The post of Dispensary Assistant was created this year. A Malay midwife was appointed in Rabial-awal, 1346. (August, 1927).

Ordinances.

The Quarantine and Prevention of Diseases Enactment was passed on the 24th day of Jemadil-akhir, 1346. (19.12.27).

Financial.

The total Revenue collected during the year was \$1,621.71 against \$1,669.48 during 1345 A.H.

The total Expenditure was \$23,585.45 against \$20,920.57 in 1345 A.H. The increase in expenditure was mainly due to the creation of new appointments.

II. PUBLIC HEALTH.

One case of small pox occurred in railway gang No. 26 at Jelempoh. The case was an Indian railway cooly; he was removed to Alor Star Hospital isolation ward, and no further cases occurred. A few cases of chicken-pox occurred in Mukim Arau and Kampong Salang, and were dealt with locally.

One case of fatal cerebrospinal meningitis, in a Chinese child, was admitted into hospital from Kaki Bukit.

Four cases of enteric fever were admitted into hospital during the year, of which three were Chinese Mining coolies from Kaki Bukit and one was an Indian P.W.D., cooly from Arau; two of the Chinese died. The source of infection could not be traced in any of these cases. In the death Register for 1346, 14 additional cases (all occurring in Malays) are recorded as occurring in Abi (5) Kurong Batang (6) Kechor (2) and Titi Tinggi (1). It is doubtful whether all these were genuine cases of Enteric; but unfortunately, the Medical Department was not informed at the time, and so no investigation was made. It is of course the rule that cases of typhoid should be notified, but it is not easy for the kampong people to spot cases.

A small out-break of Enteritis (about 15 cases) occurred in Kangar Gaol, during Ramthan, 1346; this was probably due to ingestion of raw vegetables and fruits by prisoners after the fast in the day. (They were privileged to take in fruits during that month). The

out-break promptly subsided, as soon as the taking of raw vegetables and fruits into the Gaol was prohibited.

"Fevers" still continue to take the greatest toll of life, and head the list of communicable diseases; most of them are malarial.

The number of cases admitted into hospital show a slight decrease from 438 in 1345 to 356 in 1346.

Lung complaints come next in order to fevers. There has been a slight decrease in the number of cases of Pneumonia seeking admission into hospital during the present year.

The number of admission for ankylostomiasis increased from 34 in 1345 with no mortality, to 83 in 1346 with 5 deaths. 3 Tamil women (two from Cowdar Estate and one from the P.W.D., Line) died a few days after premature labour; all these were bad cases of ankylostomiasis and their haemoglobin on admission was less than 10%.

Almost all the Tamil Estate coolies are suffering from this disease. The coolies on Cowdar Estate are badly affected. An attempt was made to treat these coolies on the estate, and about half the labour force was treated; but treatment had to be given up, as the Assistant Surgeon was not asked to continue his visits.

Conservancy arrangements on Cowdar Estate are primitive, and unless and until they are improved, there can be no great improvement in the number of ankylostomiasis cases.

Kaki Bukit is still the proverbial hot bed for malaria. Except for the travelling dispensary which visits the place once a fortnight, nothing has been done to improve that place. A malarial survey of this place is necessary before instituting effective anti-malarial measures. Arrangements are now being made to do this.

Mukim Beserie is an endemic place of malaria, as shewn by prevalence of enlarged spleen in the school children at Beserie.

The construction of pipes for water supply to Arau was finished in 1346; of the four pekans or townships: Kangar, Arau, Padang Besar, and Kaki Bukit, which are under the control of the Sanitary Board, Kangar and Arau are enjoying pipe water supply, while Padang Besar is getting its water from the F.M.S. Railways. A supply of pure water to Kaki Bukit should be considered necessary.

The disposal of the night soil in the four pekans is carried out by the Sanitary Boards. All use the bucket system of removal, the night soil being trenched in plots some distance from the town. The trenching ground in Kangar is not satisfactory; it is very near the hospital and trenching is not carried out properly. A suitable plot away from the town on its leeward side, and more careful supervision in the process of trenching are necessary. A qualified health inspector to carry out Sanitary work is required.

The health of the Government servants was satisfactory. All of them were examined for signs of Pulmonary Tuberculosis, and three were invalided as they were suffering from active disease. One prisoner in Kangar Goal died of Pulmonary Tuberculosis after a protected stay of 15 months in the hospital.

Of the Malay Vernacular Schools in Perlis (2 girls' schools and 17 boys' schools) 11 boys' schools and 1 girls' school were visited by the Assistant Surgeon.

11 boys' schools were visited with the following results:—

Total pupils on register	...	1,135	Percentage.
Total seen	...	943	
Enlarged spleen	...	415	44%
Pupils showing no vaccination marks	...	30	3.2%
Yaws (Pura)	...	20	2.12%

Beserie school had the greatest number of enlarged spleens: 68 boys out of 74.

Vaccinations:—2,864 were done against 2,363 during the previous year, (311½ tubes were used in all). From the reports received from the Penghulus, 33 cases were unsuccessful out of a total of 2,167.

\$770.13 were spent on vaccination; roughly 26.89 cents per case.

Vital Statistics.

(A) The population of Perlis for 1346 is estimated to be 46,400, though I think it is much less.

The following is a comparative table for the last 5 years.

Year.	Estimated Population.	Births.	Birth rate per mille.	Deaths.	Death rate per mille.
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
1346	46,400	940	24.26	722	15.56

The excess of births over deaths was 218 on the figures shown for the present year. Estimating the increase of population to be at the same rate as during the last interdecennial period, the population for 1346 should be 46,400.

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

Races.	Approximate population.	Deaths.	Death rate per mille.
Eurasians	7	—	—
Europeans	6	—	—
Chinese	4,086	125	30.59
Malays	39,681	552	13.91
Indians	920	21	22.82
Siamese (and others)	1,700	24	14.12
Total	46,400	722	15.56

(C) There were 94 deaths among infants up to one year old against 129 during 1345, A.H. The rate being 100.00 per thousand births, against 136.08 in 1345.

Infantile death rate for the previous 5 years was:—

Year.	Deaths.	Rate per mille.	Corrected rate (Age one year and under).
1342	84	98.70	—
1343	113	137.13	—
1344	105	129.79	133.59
1345	129	136.08	140.22
1346	94	100.00	103.75

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

	Malays.	Chinese.	Indians.	Siamese.
Crude	100.90	76.2	230.77	102.04
Corrected	104.28	78.43	333.33	106.38

Ankylostomiasis in the mother and poor physique are probably the main predisposing causes of the high infantile mortality in the Indians.

(D) Births according to nationality and sex.

Nationality.	Births.	
Europeans	...	—
Eurasians	...	—
Chinese	...	105
Malays	...	773
Indians	...	13
Siamese	...	49
Total	940	(482 of these were males and 458 females).

(E) Still births according to nationality.

Nationality.	Still births.
Europeans	...
Eurasians	...
Chinese	...
Malays	...
Indians	...
Siamese	...
	34

(F) Distribution of deaths according to nationality and diseases.

Diseases.	Europeans.	Eurasians.	Chinese.	Malays.	Indians.	Siamese.	Total.
Enteric Fever	—	—	2	14	—	—	16
Fevers	—	—	55	255	3	12	325
Resp. Diseases	—	—	25	63	4	4	96
Diarrhoea, Dysentry etc.	—	—	7	27	1	1	36
General Oedema (Basal)	—	—	3	37	1	—	41
Old Age	—	—	4	66	—	3	73
Convulsion (infantile)	—	—	5	59	2	3	69
Deaths after abortion or labour	—	—	—	9	3	—	12
Injuries & Accidents	—	—	13	10	1	1	25
Other causes	—	—	11	12	6	—	29
Total	—	—	125	552	21	24	722

Injuries and accidents included 2 cases of snake-bite, 3 cases of burns, 2 cases of drowning, 2 cases of buffalo gore and wild boar gore, 2 cases of lightning shock, 1 case of suicidal poisoning (HCN), one cases of delayed CHCl_3 poisoning, one case of motor accident, one case of fall from a height, and five cases due to collapse of the roof of mines in Mukim Beserie, beside five cases of fatal wounds due to weapons.

Incidence of deaths according to ages, nationality and sex.

	Malays.	Chinese.	Indians.	Siamese.	Total.		Total.
					Male.	Female.	
1 year and under	78	8	3	5	56	38	94
	(14.11 p. c.)(6.4 p. c.)(14.28 p. c.)(20.8 p. c.)						
5 years "	68	7	1	3	44	35	79
15 years "	45	4	1	1	25	26	51
25 years "	38	17	3	1	31	28	59
35 years "	43	22	5	2	47	25	72
45 years "	60	23	5	2	55	35	90
55 years "	53	17	—	4	41	33	74
65 years "	65	15	1	4	48	37	85
75 years ,	46	8	1	—	31	24	55
Over 75 years	56	4	1	2	30	33	63
	562	125	21	24	414	308	722

228 deaths occurred in persons over 50 years age.

III. PORT HEALTH WORK ETC.

All vessels arriving from Siamese ports were inspected during the year owing to Cholera in Siam.

IV. HOSPITALS AND DISPENSARIES.

General Hospital, Kangar.

A "Hut Ward" with accommodation for two families, for the exclusive use of Malay women, was completed during the year and opened on 29th Zulkaedah, 1346, (19.5.28). It is hoped that more Malay women will come to hospital for treatment. The number of indoor patients treated during the year was 1,087 of which 132 were females. There were 68 deaths, being a percentage of 6.25 to total treated. Excluding 27 deaths which occurred within 48 hours of admission, the death rate was 3.8%.

The daily average number of patients was 46.75.

The figures for 1345 were:—Total cases 1,007; percentage of deaths 5.6, percentage of deaths excluding deaths within 48 hours of admission 3.5. Daily average 37.23. There has been a slight increase in the number of admissions.

Indoor patients according to nationalities.

Nationalities.	No. treated.	Deaths.	Percentage of deaths.
Chinese	386	47	12.18
Indians	527	13	2.47
Javanese	3	—	—
Malays	162	7	4.32
Siamese	9	1	11.11
Total	1,087	68	6.25

The total number of Malays treated in the hospital was 162 or about 1/6 of the total number of admissions.

Admissions from Estates and Mines.

The total number of patients from Estates and Mines was 170 with 13 deaths, or a percentage of 7.6; against 153 cases with 8 deaths (5.23%) during the previous year. There is a tendency on the part of most of the Estate and Mine owners to send their coolies without any chit, and as it is very difficult to find out the owners, such coolies have of necessity to be treated as paupers.

Major operations	...	...	...	19
Minor operations	...	...	...	2,042
Post Mortems performed	...	...	...	45

Prevailing Diseases.

Disease.	1344			1345			1346		
	Cases.	Deaths.	%	Cases.	Deaths.	%	Cases.	Deaths.	%
Malaria	208	11	5.28	443	13	2.93	356	14	3.93
Dysentery Amoebic	17	2	11.76	27	6	22.22	27	3	11.11
Dysentery Bacillary	2	1	50.00	5	—	—	1	—	—
Ankylostomiasis	33	—	—	34	—	—	83	5	6.02
Syphilis	37	—	—	25	—	—	28	—	—
Pulm-Tuberculosis	12	4	33.33	29	6	20.69	30	10	33.33
Other lung complaints	59	15	25.00	76	16	21.05	56	9	16.07
Ulcers	65	—	—	90	—	—	49	—	—
Injuries	54	2	2.70	42	2	4.65	51	2	4.00
Other Diseases	142	8	5.63	235	13	5.53	406	25	6.15
Total	620	43	6.93	1007	56	5.6	1087	68	6.2

There has been a slight fall in the number of cases admitted for malaria, ulcers, and lung complaints; a distinct increase in the number of cases admitted for Ankylostomiasis (hookworm disease).

Cases of pulmonary tuberculosis come for admission in the advanced stage, and die after a brief stay in the hospital.

Laboratory Work.

Blood films were examined in 1,454 instances with the following results:

Malaria, B.T.	...	...	...	375
Malaria, M.T.	...	...	...	142
Malaria Quartan	...	...	...	29
Mixed infection	...	...	...	34
Leucopenia	...	...	...	17
Leucocytosis	...	...	...	81
Negative	...	...	...	776
Total				1,454

Other specimens examined totalled 2,918.

Out-Door Department.

6,568 cases were treated.

Chinese	...	...	1,017
Indians	...	...	1,463
Japanese	...	...	2
Goanese	...	...	1
Javanese	...	...	5
Malays	...	...	3,946
Siamese	...	...	23
Europeans	...	...	50
Eurasians	...	...	61
Total			6,568

This number excludes repetitions.

In addition to those treated in the hospital dispensary, 147 cases were treated in the Kangar Goal.

Neo-Salvarsan injections to out-door and in-door patients numbered 1,583, of which 513 were for Syphilis and 1,070 for Yaws.

The travelling dispensary did most useful work and was much appreciated by the working classes.

Two mental cases (Male Malays) were transferred to Central Mental Hospital, Tanjong Rambutan, during 1346 A.H. There were 17 Perlis patients (13 males and 4 females) in that hospital at the end of 1346.

One case of leprosy (Indian Tamil) was transferred to the Lepers' home, Pulau Jerjerak, during 1346, where there were 3 Perlis patients (all males) at the end of the year.

Five South Indians were repatriated to India through the Labour Office at Penang during the year.

Four patients were transferred to General Hospital, Alor Star.

One dog bite.

One case of simple fracture skull.

One case of acute abdomen.

One case of penetrating wound abdomen.

A Malay midwife was appointed in Rabial-awal 1346, (August 1927). She was called only twice during the year, to attend labour cases outside the hospital. It is hoped that her services will be more frequently requisitioned during the coming year, when the people get to know her better.

Appendices.

A. Annual Return of sick indoor patients for 1346 A.H.

B. Meteorology and Rainfall for period December 1927 to July 1928.

APPENDIX A.

Return of In-door Patients of the General Hospital, Perlis, for the year ended 30th
Zul'hijjah, 1346 A.H.

Diseases.	Remained.	Admitted.	Total.	Died.	Remaining.
General Diseases.					
Cerebro-spinal Meningitis (Pneumococcal)	...	1	1	1	...
Enteric Fever	1	4	5	2	...
Dysentery, Amoebic	2	25	27	3	1
Dysentery, Bacillary	...	1	1	...	...
Malaria T.N.D.	...	17	17	...	1
Malaria B.T.	6	201	207	1	6
Malaria M.T.	3	86	89	6	8
Malaria Quartan	...	19	19	4	...
Malaria Mixed Infection (Double)	1	22	23	3	3
Malaria Mixed Infection (Triple)	...	1	1	...	...
Dengue	...	1	1	...	...
Pyrexia of uncertain origin	...	2	2	...	...
Pulmonary Tuberculosis	5	25	30	10	2
Tabes Mesenterica	...	1	1	1	...
Pott's disease (Lower Thoracic region)	...	1	1	...	...
Gonorrhoeal Urethritis	1	25	26	...	3
Gonorrhoeal Arthritis	...	4	4	...	...
Gonorrhoeal Rheumatism	1	4	5	...	...
Gonorrhoeal Synovitis	2	...	2	...	...
Urinary Fistula	...	1	1	...	...
Retention of Urine	...	2	2	...	...
Arthritis	...	2	2	...	...
Rheumatism	...	7	7	...	...
Lumbago	...	1	1	1	...
Bubo Groin	...	2	2	...	1
Soft Sore	...	3	3	...	...
Syphilis.					
(a) Primary	...	9	9	...	...
(b) Secondary	...	2	2	...	1
(c) Tertiary	1	16	17	...	1
Spondylitis	...	1	1	...	...
Yaws	...	4	4	...	...
Haemorrhoids	...	3	3	1	...
Osteomyelitis	...	2	2	1	...
Funiculitis—Orchitis (Filarial)	...	1	1	...	...
Gangrene	1	...	1	...	...
Sinus	...	1	1	...	...
Talipes Equino Varus (Congenital)	...	1	1	...	...
Beri-beri	...	1	1	...	...
Drug Addiction (Cannabis Indica and Opium)	...	2	2	...	...
Leprosy Anaesthetic	...	1	1	...	...
Hernia Testis	...	1	1	1	...
Hernia Inguinal	...	7	7	...	...
For sake of mother, child etc.	...	12	12	...	...
Diseases of the Nervous System.					
Cerebral Haemorrhage	...	2	2	2	...
General paresis of insanity (Early stage)	...	2	2	...	...
Hemiplegia left	...	3	3	...	...
Facial Paralysis	...	1	1	...	1
Locomotor Ataxia	...	1	1	...	...
Mania	2	8	10	...	3
Melancholia	...	6	6	...	2
Mental case for observation	...	2	2	...	1
Monomania	...	2	2	...	...
Paraplegia	1	1	2	...	...
Peripheral Neuritis	1	4	5	...	...

Diseases.	Remained.	Admitted.	Total.	Died.	Remaining.
Eye.					
Conjunctivitis	...	5	5	...	2
Entropion	...	1	1	...	...
Gon. Ophthalmia	...	4	4	...	...
Iritis	...	1	1	...	...
Optic Neuritis	1	1	2	...	...
Ulcer cornea deep	...	2	2	...	...
Diseases of the Circulatory System.					
Mitral Regurgitation	...	4	4	1	...
Mitral Steuosis	...	1	1	...	...
Double Mitral	...	1	1	1	...
Myocarditis	...	4	4	1	...
Diseases of the Respiratory System.					
Asthma Bronchial	1	6	7	...	...
Bronchiectasis	...	4	4	1	...
Bronchitis	1	11	12	...	...
Broncho-pneumonia	2	7	9	2	...
Intercostal Myalgia	1	...	1	...	...
Pleurisy dry	...	7	7	...	1
Pneumonia Lobar	...	16	16	6	...
Diseases of the Digestive System.					
Ankylostomiasis	3	80	83	5	...
Appendicitis	...	1	1	...	1
Acute abdomen—perforation of Ileum	...	1	1	...	...
Ascariasis	1	37	38	1	...
Ankylostomiasis and Ascariasis	2	42	44	...	...
Cholecystitis and Choletithiasis	...	2	2	2	...
Cirrhosis of the liver	...	3	3	...	...
Colic Intestinal	...	1	1	...	...
Diarrhoea green	...	1	1	...	...
Duodenal ulcer	...	1	1	1	...
Enteritis	...	4	4	...	...
Gastritis	...	1	1	...	...
Hepatitis	...	5	5	...	...
Jaundice Catarrhal	...	3	3	...	...
Intestinal obstruction	...	1	1	1	...
Stomatitis ulcerative	...	1	1	...	...
Taeniasis	...	3	3	...	...
Diseases of the Renal System.					
Albuminuria cyclical	...	1	1	...	...
Chronic Nephritis	...	1	1	...	...
Subacute Nephritis	...	2	2	...	...
Diseases of the Skin.					
Boils	...	3	3	...	1
Dermatitis	...	2	2	...	...
Eczema	...	7	7	...	...
Elephantoid scrotum	...	1	1	...	...
Furunculosis	...	1	1	...	...
Ringworm	...	3	3	...	...
Scabies	...	17	17	...	1
Ulcers	2	49	51	...	8
Maternity.					
Abortions	...	3	3	...	...
Labour Normal	...	3	3	...	...
Labour breech impacted	...	1	1	...	...
Labour premature	...	2	2	1	...
Eclampsia Antepartum	...	1	1	1	...
Pregnancy full term (waiting case)	...	2	2	...	...
Retained placenta	...	2	2	...	...

Diseases.	Remained.	Admitted.	Total.	Died.	Remaining.
Diseases of the Connective tissue.					
Abscess	...	26	26	...	1
Adenitis	...	1	1	...	...
Ankylosis (False)	...	1	1	...	...
Bursitis	...	1	1	...	...
Carbuncle	...	1	1	...	...
Cellulitis	2	4	6	...	1
Lymphangitis	...	2	2	...	...
Myositis	...	3	3	...	...
Injuries.					
Bite dog	...	1	1	...	...
Bite snake	...	3	3	...	...
Burns	...	2	2	1	...
Contusion	...	10	10	...	...
Simple fracture	...	5	5	2	...
Compound fracture	1	...	1	...	...
Fracture skull	...	5	5	2	...
Rupture urethra	...	1	1	...	...
Sprain foot	...	1	1	...	...
Wounds	...	51	51	2	4
Tumours.					
Cancer breast scirrhus	...	1	1	...	...
Fibrolipoma back	...	1	1	...	...
Sebaceous cyst	...	2	2	...	1
Submucous Fibroids-uterus	...	1	1	...	...
Total	45	1,042	1,087	68	55

APPENDIX-B.

METEOROLOGICAL RETURN OF HOSPITAL, PERLIS,

from 1st December, 1927 A. D. to 31st July, 1928 A. D.

Months 1927-1928	TEMPERATURE.				HYGROMETER.				Total Rainfall	Greatest Rainfall during 24 hours.	Highest Shade Temperature=96.00 on 12-2-1928 and 4-5-1928. Lowest Shade Temperature=66.00 on 17-1-1928.
	Mean dry bulb.	Maximum.	Minimum.	Range.	Mean wet bulb.	Vapour Tension.	Dew point.	Humidity.			
December	82.4	89.3	72.0	17.3	76.9	.807	72.8	73.0	1.30	.70	
January	83.2	91.0	71.7	19.3	76.0	.764	71.2	67.3	1.98	.82	
February	83.4	91.8	72.1	19.7	76.0	.761	71.1	66.6	1.43	.66	
March	83.5	92.2	72.5	19.7	76.5	.782	71.9	68.2	6.96	1.88	
April	83.8	91.3	74.0	17.3	79.4	.865	74.9	74.8	5.21	1.53	
May	83.1	88.9	74.5	14.4	78.9	.897	76.0	79.3	12.87	3.25	
June	84.1	90.0	74.1	15.9	79.2	.894	75.9	76.5	4.37	2.12	
July	84.4	90.6	73.8	16.8	78.8	.874	75.2	74.0	3.29	1.07	



