

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

Contributors

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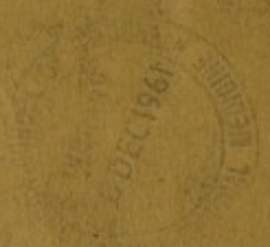
KEDAH AND PERLIS
ANNUAL REPORT
OF THE
MEDICAL DEPARTMENT

FOR

1939

BY

E. V. LUPPRIAN, M.R.C.S. (ENG.), L.R.C.P. (LOND.),
DIPLOMA LONDON S. T. M.,
STATE SURGEON, KEDAH.



Alor Star:
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ANNUAL REPORT
OF THE
MEDICAL DEPARTMENT, KEDAH.
FOR THE YEAR 1939.

For purposes of administration the State of Kedah is divided into 4 districts:— viz, North, Central and South Kedah and the Islands of Langkawi.

I. ADMINISTRATION.

The Medical Administration of the State of Kedah is under the State Surgeon, assisted by the Deputy State Surgeon who is the Health Specialist in the State.

(a) STAFF.

The list of staff attached to the Medical Department is found in appendices (1). The following changes in staff took place during the year:—

Dr. J. C. Carson acted as State Surgeon from 1-1-39 to 18-6-39, when he was relieved by Dr. Eveson who continued to act as State Surgeon till the end of the year.

Dr. R. D. Gross acted as Senior Health Officer, Kedah, from 1-1-39 to 12-10-39, when he was relieved by Dr. M. P. O'Connor, who acted as such, till the end of the year.

Dr. Beattie, F.R.C.S. (Eng.) was surgeon and Medical Officer to the Hospital at Alor Star throughout the year; and Dr. (Mrs.) M. G. Brodie was Lady Medical Officer throughout the year.

Dr. P. T. K. Nayar and Dr. Tan Joo Cheng worked in the General Hospital at Alor Star throughout the year, as did Mr. B. R. O. Willis who performed the duties of Assistant Dental Officer.

Dr. Bhandari returned to duty in April after study leave in England, and continued doing duty till the end of the year.

Miss D. Duff was Senior Nursing Sister at the General Hospital throughout the year, while Nursing Sister J. Steel, who commenced the year with work at the Hospital, left on transfer from Kedah in July and was relieved by Nursing Sister A. F. Gibson who continued at duty at the Hospital till the end of the year.

The following were the additions to the staff at the hospital during the year:—

- One Dental Mechanic.
- Four Probationer Dressers.
- One Probationer Nurse.
- One Malay Clerk.
- Eight Male Attendants.
- Two Female Attendants.

In Central Kedah, Dr. S. K. Keikar was in charge of the District Hospital, Sungei Patani throughout the year, assisted by Dr. Low Thean Loy and Dr. S. Row.

Nursing Sister Miss V. D. Smith did duty in the hospital throughout the year.

Three Asiatic Nurses were appointed to the Hospital during the year as well as five Probationer Dressers, 9 male and 2 female attendants and 2 additional toties.

In South Kedah, Dr. Jones took over the District Hospital at Kulim on 24-1-39 and continued in the post till the end of the year, with Dr. Kumarasamy to assist him there.

Dr. C. Sinnadurai was in charge of the Langkawi Hospital throughout the year.

The following were the increases in staff to the Hospital during the year:—

- Five Dressers (Probationers).
- Four Nurses (Probationers).
- 29 Male Attendants.
- 3 Female Attendants.
- 15 Toties.

(b) FINANCIAL.

The Special Expenditure for the year was \$6,299.51 for such items as were not of an annual recurrent nature and that expended on annual recurrent votes in the State amounted to \$236,478.10. Details of these items are appended in Appendix (2).

The Revenue for the year was \$18,994.70 the details of which can be seen in Appendix (3).

II. MEDICAL INSTITUTIONS.

These may be considered under the headings Hospitals and Dispensaries.

(a) HOSPITALS.

In the Northern District of Kedah is the General Hospital consisting of 440 beds for the treatment of cases admitted to hospitals under charge of Dr. D. A. Beattie, F.R.C.S. (Eng.) Medical Officer and Surgeon to the Hospital. The Staff attached to it is given in a tabular form shewn in Appendix (4).

In addition to this there are 7 Out-Door-Dispensaries situated in the following places named, viz:—

Out-Door-Dispensary at the General Hospital. The Town Dispensaries in the town of Alor Star, Changloon, Jitra, Kuala Nerang, Sik and Yen. Each of these institutes are under a Dresser, who lives at the spot and opens the dispensary both morning and afternoon in attendance on the sick, applying for treatment. He further visits other sick in their houses and sends to hospital by ambulance those cases too ill to be treated as out-patients.

The following are the new additions made in buildings at the General Hospital:—

- (1) The new Tuberculosis ward was completed early in the year.
- (2) Alterations and additions were made to the ground floor of the Administration Block, so as to provide an eye clinic with a minor operation theatre and a refraction room.
- (3) New latrines and bathroom were built on to the Male Second Class Ward and three additional cubicles added to the Ward.
- (4) A compartment was erected for housing the gas-generating plant attached to the Dental Clinic.
- (5) The New Third Class Maternity Ward was completed early in the year.
- (6) Two new temporary garages were erected during the year.
- (7) Several important alterations were effected in the Major Operating Theatre so as to render it more up-to-date with the provision of new lighting arrangements.

In the Central District of Kedah, stands the District Hospital at Sungei Patani consisting of 216 beds for the treatment of cases admitted to hospital, under charge of Dr. S. K. Kelkar, Senior Assistant Medical Officer; the staff attached to which is given in tabular form shewn in Appendix (5).

There is in addition another District Hospital situated at Baling containing 36 beds in charge of a Senior Hospital Assistant with staff shewn in Appendix (6).

In addition to these 2 hospitals in the District there are—as in the Northern District—Out-Door-Dispensaries situated in the following villages, viz:—Sik and Merbok, each under a Dresser, who resides at the spot, and attends out-patients as described previously in the Northern District.

The following were the new buildings and alterations erected and effected in the Central District:—

- (1) The Hospital grounds were fenced.
- (2) A covered way was built from the Second Class Ward to the main covered way.
- (3) Erection of an examination room, dispensary, and laboratory, adjoining the administration block.
- (4) At the Baling Hospital new quarters were constructed for the Hospital Assistant in charge of the Hospital.
- (5) The Out-Door-Dispensary at Merbok was completed and taken into use.

In the Southern District of Kedah, stands the District Hospital at Kulim, for the treatment of cases admitted to hospital from the district under charge of Dr. G. F. Jones, Medical Officer, Southern District, and the staff attached to it is given in tabular form in Appendix (7).

In addition to this there is an Out-Door-Dispensary in the district situated at the town of Bandar Bahru.

Besides the Hospitals and Dispensaries enumerated in the foregoing paragraphs, there is a system of Travelling Dispensaries operating in each district with a view to carrying Medical Aid to areas far removed from the Hospitals and Out-Door-Dispensaries.

Apart from the Government Institutions mentioned, there are several other Hospitals in the State run by Rubber Estates, who treat the sick employees on the estate and also render aid to any outsiders who require urgent help. A list of this is mentioned in Appendix (8).

WORK DONE BY THE HOSPITALS AND DISPENSARIES.

The Hospitals throughout the State cater for the treatment of all and sundry complaints; but, in the Northern District at Alor Star, a great and praise-worthy effort has been made to provide specialist appointments at the general hospital. Dr. D. A. Beattie, F.R.C.S. (Eng.) is the Surgeon at the Hospital, Dr. P. T. K. Nayar is both the Radiologist and the Physician in charge of lung diseases, Dr. M. R. Bhandari the Ophthalmologist and Dr. (Mrs.) M. G. Brodie the Lady Medical Officer for the treatment of Women and Children. All these officers have been duly trained and qualified in England and cases from the other Districts are frequently referred to them for an opinion in diagnosis and treatment. Mr. B. R. O. Willis is the Assistant Dental Officer, at Alor Star, who holds a Dental Clinic at the General Hospital, and visits the Central and Southern Districts once a month for a similar purpose, with a view to attending the School Children in these districts as well as attending adult cases who cannot afford private dental attention.

The Government Pathological Laboratory is situated in the Central Kedah and is an institution on its own run by Dr. Mustapa bin Osman and assisted by Dr. V. G. Patwardhan and one Laboratory Assistant. Pathological specimens from all over the State are sent there for examination and report. Details of the work done is shewn in Appendix (9).

Tables showing work done at the Hospitals, Dental Clinic and the Pathological Laboratory appear in the Appendices (10), (11), (12), (13), (14) and (15).

GENERAL.

From a comparison of the accommodation available in all the hospitals with the number of cases treated in these institutions, it is evident that the time is ripe for increasing the accommodation. Particular attention is called for in increasing the accommodation for Women and Children. In the estimates for 1959 provision has been made for this improvement at Alor Star, and it is hoped that the same privilege will be conferred on the Central and Southern Districts in the Estimates for 1960. It is borne in mind that on account of the necessity for stringent war economy, extravagant demands should not be made, and every endeavour will be made to curtail expenditure. A considerable amount of essential and useful work awaits commencement in the opening of Antenatal and Children Welfare Clinics throughout the State, as it is only through these institutions that the Maternal and Infantile Mortality Rate, which is high in the State, can be decreased. This question is being considered and action is being taken to remedy these defects.

Apart from the question of increasing the accommodation for the treatment of Women and Children in the Central and Southern Districts of the State—already referred to—the appointments of an Assistant Lady Medical Officer to each of these districts should be considered early, as such personnel in a predominantly Malay populated State, like Kedah, is absolutely imperative, in order to give confidence to Malay women, who unquestionably prefer to be treated by members of their own sex when ill, and to consult a woman regarding their children when they require treatment. This procedure will moreover help to establish the clinics for Maternal and Children Welfare, so badly needed in the State; this will necessitate the appointment of Health Nurses in the Southern and Central Districts, in addition to the Assistant Lady Medical Officers mentioned.

A further point for consideration is the establishment of Social Hygiene Centres in the Central and Southern districts for the intensive treatment of venereal disease, and the propagation of information to the public concerning the disease, and the devastating inroads it makes on the health of the community. One such centre exists at Alor Star, at the Out-Door-Dispensary in the town, and the treatment of these diseases are undertaken at all the hospitals and dispensaries throughout the State.

Apart from the requirements mentioned above, the Central and Southern Districts of Kedah will be greatly benefited by the appointment of an Assistant Dental Officer in each district, as under the present arrangement, the monthly visit of a Dental Surgeon to these districts is perfectly inadequate for the amount of work to be done in these districts. These improvements can however await more favourable times before being put into operation.

III. HEALTH BRANCH.

(a) STAFF.

The staff engaged in the health work was the same as in 1938, except that an additional Health Officer was appointed in North Kedah during the year.

The title of Senior Health Officer was abolished and that of Deputy State Surgeon was substituted, the office of whom adjoins that of the State Surgeon in Alor Star. In the last quarter of the year the duties of the State Surgeon were performed by Dr. S. W. Eveson.

(b) VITAL STATISTICS.

The total population of the State of Kedah is estimated at 484,933 persons. There were 18,975 births and 9,675 deaths registered during the year, producing rates of 39 and 20 per mille respectively. Last year's figures were 44 and 22.

The total deaths among infants under 1 year was 2,543 and the infantile mortality rate was 134 per mille as compared with 131 in 1938. This relatively big drop in the birth rate for 1939—as compared with 1938 can reasonably be ascribed to faulty registration in Malay births.

The births amongst Chinese showed an increase of 369 whilst those registered for Indians showed a decrease of 310 births.

The reason for ascribing the drop in birth rate amongst Malays to faulty registration is that the infantile mortality rate amongst Malays increased appreciably in 1939 (8 per mille) whilst that of the other two races decreased per mille—the Chinese by 11 per mille and the Indians by 38 per mille.

The death rate for Malays was 2 per mille lower than in 1938 whereas that for Chinese was 1 per mille higher while that for Indians 7 per mille lower.

Decreases in Malay and Indian deaths together account for the decrease in the general death rate, whereas the lowered Malay death rate gives further evidence of what has been pointed out in the foregoing with reference to registration of Malay births.

(c) PUBLIC HEALTH.

This work has been extended in Malay Villages, and Villagers, who formerly disliked the idea of latrines, are now keen on their construction. Latrines constructed in 1939 number 4,186 as compared with 769 in 1938 giving an average of 2—3 houses to 1 latrine.

During the year a new problem arose in the erection of small rice mills run by machinery in the district of North and Central Kedah, with a concurrent outbreak of beri-beri in these districts. On investigation these mills were found to overmill the rice to such an extent, that experiments revealed in some instances, the removal of pericarp to the extent of less than 1% content as estimated by vedder's test. These mills were subsequently stopped by legislation, and their further importation prohibited. There was a big decrease in incidence and death from Malaria in the year.

The following figures are interesting in regard to the Mortality Deaths from Malaria.

	1938.	1939
Deaths from Malaria	364	267
Deaths from undiagnosed forms	4,325	3,997
Cases of Malaria	11,006	6,767

QUARANTINE STATION, PADANG BESAR.

No occasion arose for using the station during the year. 10,452 passengers were examined from Thailand however—as compared with 12,962 in 1938. Although an alarming and prolonged epidemic of typhoid fever occurred in Penang during the year, it did not spread to Kedah.

The total number of Malarial cases in 1939 (including estates) was 17,245, whereas in 1938 the total amounted to 25,258, deaths from Malaria numbered 276 in 1939 against 429 in 1938.

The expenditure on Anti-Malarial Measures for the year was \$19,196.36 from a vote of 20,000 dollars; besides this a sum of \$2,548.96 was expended from a vote of \$3,000 allowed for clearance of swamps in Alor Star.

Laboratory Work on Malaria.

13,219 mosquitoes were caught, identified and dissected 10 out of 2,612 *A. umbrosus* and 1 out of 43 *A. maculatus* were found to be infected. The number of Anopheline larvae collected and identified totalled 14,691.

Vaccinations.

The totalled vaccinations performed was 15,702 of which number 14,676 were successful.

Data for other communicable diseases is reported as incomplete and are not incorporated in this report.

Sanitary Board and Controlled Building Areas.

There is little to add to the report of 1938. Legislation to register itinerant hawkers in the Kota Star and Kuala Muda Sanitary Boards was passed during the year.

Estates, Mills and Mines.

Vital statistics are found in the tables 16—24 in the Appendices at the end of the report.

Type plans for Cooly Lines were passed by the State Council During the year 819 new rooms were built for labourers and 454 rooms of the back-to-back type were converted into 227 single rooms.

The Malarial incidence dropped from 377.7 in 1938 to 263.33 per mille in 1939. The general death rate on European Holdings was 13 per mille as compared with 19 in 1938. For labourers only the incidence rate was 5.3 as compared with 8.4 in 1938.

The birth rate amongst this population on European estates was 27.8 per mille as compared with 35.7 in 1938, whereas the Infantile Mortality Rate 177 compared with 212 in 1938.

The Infantile Mortality Rate amongst Indians on European Estates dropped from 219 in 1938 to 176 in 1939.

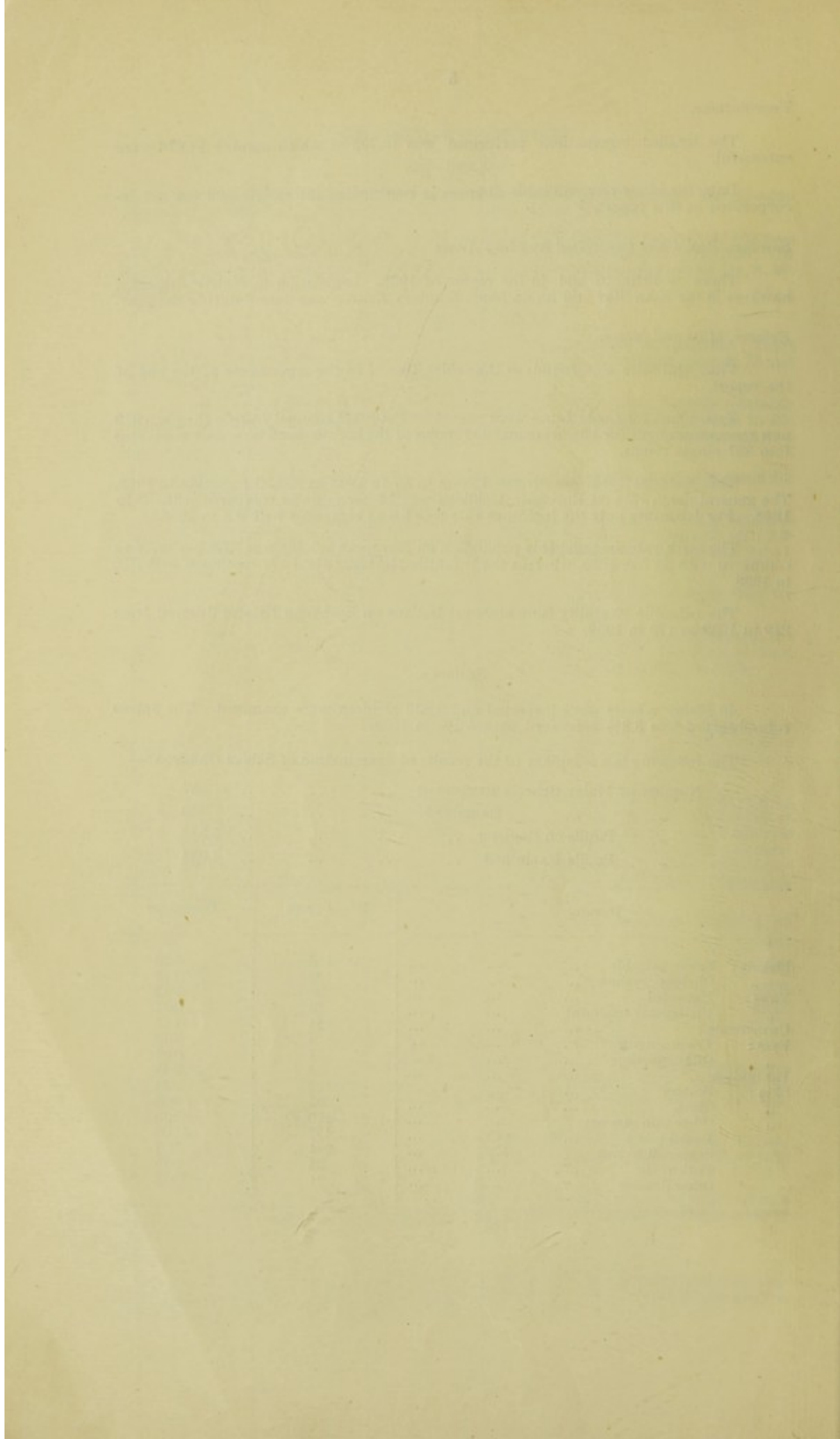
SCHOOLS.

40 Malay schools were inspected and 4,830 children were examined. The spleen rate observed was 3.2% compared with 5.2% in 1938.

The following is a summary of the results of examination of School Children:—

Number of Malay Schools Registered	..	..	..	87
" " Examined	..	..	..	40
" Pupils on Register	..	..	..	5,332
" Pupils Examined	..	..	..	4,836

Diseases	No. of Cases	Percentage
Malaria : Spleen palpable	156	3.23
" Obvious Anæmia	120	2.48
Yaws : Untreated	96	1.99
" Undergoing treatment	18	0.37
Unvaccinated	199	4.11
Eyes : Conjunctivitis	9	0.19
" Other diseases	5	0.01
Ear diseases	23	0.48
Skin : Scabies	123	2.54
" Tinia	307	6.35
" Other skin diseases	120	2.48
Dental caries	1,497	41.09
Suspected worms	284	5.87
Pediculosis	38	0.79
Other diseases	21	0.43



ANNUAL REPORT
OF THE
MEDICAL DEPARTMENT, PERLIS.
FOR THE YEAR 1939.

I. ADMINISTRATION.

The Medical Administration of the State of Perlis is performed by the State Surgeon, Kedah, who is assisted by the Assistant Medical Officer and an Assistant Health Officer stationed at Kangar, the Capital of the State.

(a) STAFF.

The principal appointments are:—

- The State Surgeon, Kedah, who visits the State at least once a month.
- An Assistant Medical Officer.
- An Assistant Health Officer.
- A Hospital Assistant Grade I.
- One Dresser Grade II.
- Three Dressers Grade III.
- A Vaccinator.
- A Mosquito-Larvae Collector and Identifier.
- A Midwife.
- One Clerk.

The following changes in the staff occurred during the year:—

Inche Yaacob, probationary Mosquito-Larvae Collector and Identifier, was sent to Kedah for training for a period of five and a half months (1st April to 15th September).

Mr. S. Rasiah, 3rd Grade Dresser, assumed duties as temporary Dresser on February 21st.

Inche Abu Bakar bin Mohammad Hashim was selected as probationary Dresser on 15th April and sent to Kedah for training for a period of one year.

Inche Mohammad Daud bin Haji Arshad, Hospital Assistant Grade I, retired from service on December 3rd, after thirty years of Government service (7 years in the Kedah Medical Department and 23 years in the Perlis Medical Department).

(b) FINANCIAL.

Revenue Collected	..	..	..	..	..	\$ 1,778.98
Expenditure:—						
(a) Personal Emoluments	..	..	..	..	..	\$19,631.48
(b) Other Charges	..	..	..	..	..	\$21,903.48
(c) Special Expenditure	..	..	..	..	..	\$ 5,800.14
(d) Special Services P.W.D.	..	..	..	..	..	\$ 1,370.35
					TOTAL	\$48,705.45

The total expenditure represents 6.32% of the total revenue or 6.81% of the total expenditure of the State during 1939.

II. MEDICAL INSTITUTIONS.

These may be considered under two headings (a) Hospitals and (b) Dispensaries.

(a) Hospitals.

There is only one hospital in the State, situated at Kangar, the Capital, consisting of 100 beds, in charge of Dr. R. Sivasambandan who is assisted by 5 Dressers. It appears to be adequate for the State for the time being but later will require enlargement in the provision of further accommodation.

(b) Dispensaries.

There are two Out-Door-Dispensaries in the State—one at the village of Kaki Bukit and the other at Simpang Ampat at which out-door treatment is given to those who apply at the institution. The Dresser in charge moreover visits such sick in their houses in the Districts around who are unable to attend, despatching to hospital those requiring hospital treatment. The construction of a 3rd Out-Door-Dispensary was commenced at Kuala Perlis towards the end of last year and will be taken into use in the new year.

The usual upkeep of all buildings was satisfactorily attended to by the P.W.D. throughout the year.

(c) Work done at Hospital and Dispensaries.

The hospital at Perlis caters for the treatment of all and sundry complaints except that of major surgery. Such cases are sent to Alor Star for operation by the Surgeon there. A considerable amount of good work was performed during the year by Dr. R. Sivasambandan with his staff and also by the Dispensaries in the district. The Travelling Dispensary also performed useful work in carrying Medical Aid and assistance to inhabitants of villages far removed from the Hospital and Dispensaries. A list of the cases treated at the hospital is to be found in Appendix (25) and that of the Dispensaries in Appendix (26).

The total number of cases treated at the hospital during the year was 2,353 as compared with 2,075 in 1938. The average of daily number of in-patients was 8.15 while the largest number on any 1 day was 114.

There were 88 deaths giving a percentage of 3.53 to total treated, excluding 36 deaths which occurred within 48 hours the death rate was 2.03%.

III. PUBLIC HEALTH.

The public health of the State throughout the year can be described as satisfactory as except for 4 cases of Cerebro-Spinal Fever. There were no cases of major infectious disease. A list of the cases which occurred is shewn in Appendix (26). All cases of communicable disease were reported to the Health Department, and steps were taken to prevent the spread of disease, with satisfactory results. As usual fevers accounted for the largest proportion of the total deaths—404 as against 480 in 1938. There were 590 cases of malaria admitted to hospital as compared with 527 in 1938 and the Mortality rate for 1939 was 9 against 7 in 1938.

The total death rate was 17.36 from 979 deaths as compared with 1,111 in 1938.

The Infantile Mortality Rate was 102.50 per mille against 111 in 1938 with a total of 201 deaths against 220 in 1938.

The total births registered during the year was 1,961; the crude birth rate was 34.78 whereas the figures for 1938 were 1,982 and 35.

IV. HYGIENE AND SANITATION.

(a) Anti-Malarial Measures.

Larval surveys were carried out in all Sanitary Board areas as shewn in the Appendix (27). Mosquito trapping continued to be done at Kangar (see Appendix (28)), but no dangerous species could be trapped.

Routine Anti-Malarial Measures as clearing, oiling and draining marshy and seepage areas were carried out in all the Sanitary Board Areas. One low-lying area near the Court at Kangar and another near the P.W.D., and Sanitary Board Cooly Lines, Arau, were filled up during the year.

The swampy area between the Sanitary Board Cooly Lines and the Chinese Burial Ground at Kaki Bukit was drained with open earth drains as a trial. If these do not effect the desired result, the area will be sub-soiled during next year. In Kangar about 2,300 feet of earth drains and in Arau 1,600 feet were constructed during the year. In Kaki Bukit, 2,300 feet of earth drains were also cut.

(b) Sewage Disposal.

Night soil is collected by the single bucket system and trenched in selected sites. Frequent inspections of the coolies while at work reduced the nuisance caused by the night soil being thrown into drains and streams. Transportation is still being done by "Kandars".

(c) Refuse Disposal.

The incinerator at Jejawi has been temporarily put out of action and controlled-tipping had compulsorily to be resorted to. This was done successfully in low lying areas in the neighbourhood of incinerator. The beehive incinerator at Kaki Bukit continued to function satisfactorily.

(d) Water Supply.

Work on the water supply of Kangar and Arau has not yet been completed. It is in its final stages of completion and the new sedimentation tank and filter bed will be used during the early part of next year.

(e) Drainage.

This is still unsatisfactory. It cannot be otherwise unless and until all the earth drains are replaced with cement drains. More cement drains were constructed during the year.

(f) Housing and Town Planning.

The seven shophouses in Kangar have been completed and most of those have been occupied already. Work on the construction of the other five shophouses had to be temporarily suspended. The seven shophouses at Arau will soon be completed. In Kaki Bukit, however, the great fire made the shifting of the village site fortunately compulsory. A new site near the school has been prepared and surveyed. Work on the construction of the new shophouses will, it is expected, commence towards the beginning of the year.

The water supply to the permanent village of Kaki Bukit has been decided upon. It is to be pipe water and the source a fresh water spring off Wang Tangga.

(g) Food in Relation to Health and Diseases.

(1) EATING SHOPS. The sanitation in all shops continued to improve; and yet there is plenty of room for improvement.

(2) STREET STALLS AND HAWKERS. The trouble in controlling hawkers still persists. Unlicensed hawkers still continue to annoy the custodians of law. Nevertheless the nuisance is decreasing slowly.

(3) RICE MILLS. All mills are being vigilantly watched if the paddy is being overmilled. A few samples have been examined at the Biochemistry Department of the College of Medicine, Singapore and some samples were found to be absolutely devoid of Vitamin B. 1.

SCHOOL INSPECTIONS.

Total number of School Children on Register was	...	1,589
" " examined	...	1,338

No.	Diseases.	No. of Cases.	Percentage.
1	Malaria—Enlarged Spleen	174 ✓	13·00
2	Worms—Suspected	201 ✓	15·02
3	Anæmia, obvious	263 ✓	19·66
4	Yaws	41	3·06
5	Unvaccinated	163	12·18
6	Eyes—conjunctivitis	6	0·45
7	" —Other Diseases	4	0·30
8	Ear—Otitis Media	1	0·07
9	" —Other Diseases	2	0·15
10	Skin—Scabies	33	2·47
11	" —Tinea	7	0·52
12	" —Other Diseases	2	0·15
13	Respiratory—Protuberculosis	93	6·95
14	Teeth—Caries	251 ✓	18·76
15	" —Alveolar abscess	3 ✓	0·22
16	Nervous Disorders	3	0·22
17	Enlarged Tonsils	9	0·67

110 school children (104 boys and 6 girls) had neosalversan injections for yaws.

VACCINATIONS.

2,398 vaccinations were done during the year.

Malays	..	..	..	..	..	1,919
Chinese	..	..	..	..	..	405
Indians	..	..	..	..	..	32
Thai	..	..	..	..	..	42
					TOTAL	<u>2,398</u>

VITAL STATISTICS.

The mid year population for Perlis determined by the Balancing Equation Method was 56,382 as compared with 49,296 found in the 1931 Census.

There were 201 deaths among infants under 1 year giving a rate of 102.50 per mille as compared with 111 per mille for 1938.

APPENDIX (1).

List of Staff attached to Medical Department.

MEDICAL.

1. State Surgeon	..	..	..	..	..	1
2. Medical Officers	..	..	..	..	..	2
3. Lady Medical Officer	..	..	..	..	..	1
4. Assistant Medical Officers	..	..	..	..	..	7
5. Assistant Dental Officer	..	..	..	..	..	1
6. European Nursing Sisters	..	..	..	..	..	4
7. Dispenser—Storekeeper	..	..	..	..	..	1
8. Hospital Assistants, Special Grade	..	..	..	..	..	3
9. Hospital Assistants, Grade I	..	..	..	..	..	9
10. Dressers, Grade II	..	..	..	..	..	35
11. Dressers, Grade III	..	..	..	..	..	8
12. Probationary Dressers	..	..	..	..	..	3
13. Laboratory Assistants, Grade II	..	..	..	..	..	3
14. Asiatic Nurses	..	..	..	..	..	7
15. Midwives	..	..	..	..	..	9
16. Pupil Midwives	..	..	..	..	..	6
17. Kampong Midwives	..	..	..	..	..	12
18. Attendants, Male	..	..	..	..	..	75
19. Attendants, Female	..	..	..	..	..	20
20. Cooks, Grade I	..	..	..	..	..	4
21. Cooks, Grade II	..	..	..	..	..	8
22. Cooks, Grade III	..	..	..	..	..	4
23. Toties	..	..	..	..	..	23
24. Barbers	..	..	..	..	..	3
25. Mortuary Keeper	..	..	..	..	..	1
26. Orderlies	..	..	..	..	..	5

HEALTH BRANCH.

27. Senior Health Officer	..	..	..	..	..	1
28. Health Officer, Central Kedah	..	..	..	..	..	1
29. Assistant Health Officers	..	..	..	..	..	3
30. Health Inspectors, Senior Grade	..	..	..	..	..	2
31. Health Inspectors, Grade I	..	..	..	..	..	2
32. Health Inspectors, Grade II	..	..	..	..	..	14
33. Probationary Health Inspectors	..	..	..	..	..	2
34. Laboratory Assistant, Grade II	..	..	..	..	..	1
35. Orderlies	..	..	..	..	..	4

PATHOLOGICAL BRANCH.

36. Pathologist	..	..	..	..	..	1
37. Assistant Pathologist	..	..	..	..	..	1
38. Laboratory Assistant, Grade II	..	..	..	..	..	1
39. Laboratory Attendant	..	..	..	..	..	2

APPENDIX (2).

Statement of Expenditure for 12 months from Zulkaedah, 1357 to Shawal, 1358

Votes.	\$	cts.
Books and Periodicals	419	25
Burial Expenses	1,564	48
Equipment and Clothing	10,777	62
Firewood and lighting	8,701	13
Furniture and Repairs	252	61
Instruments	2,435	55
Maintenance of Government Grounds	1,969	70
Maintenance of Lepers and Lunatics	98,060	15
Maintenance of Motor Ambulances	2,730	65
Medicines	33,786	47
Miscellaneous	668	44
Patients Diets	59,497	60
Trunk Call Charges	138	60
Transport	11,699	76
Treatment of Government Officers in Estate Hospital	—	—
Uniforms	1,631	45
Washing of Hospital Clothing	2,144	64
TOTAL	236,478	10
X-Ray, Alor Star (Revote)	138	89
X-Ray extras for Sungei Patani	27	00
Sterilizer	—	30
Apparatus T.B. Clinic	294	76
Equipment Eye Clinic	822	84
Purchase of a new large size Refrigerator	1,457	25
Equipment Dental Clinic	1,341	22
Weighing Machine for Women's Clinic	67	63
Purchase of Sterilizer for Hospital, Alor Star	3,149	62
TOTAL	6,299	51

APPENDIX (3).

Revenue for the year 1939 A.D. Medical Department Kedah.

Heads of Revenue.	\$	cts.
Hospital Fees	15,829	01
Sale of Medicines	1,082	40
Fees for Professional Services	756	00
Dental Fees	140	85
Poison Licence	70	00
Burials	15	75
Miscellaneous	169	69
Laboratory Fees	182	00
Registration of Births and Deaths	641	50
X-Ray	107	50
TOTAL	18,994	70

APPENDIX (4).

The following are the principal appointments in the District:

- The State Surgeon (Head of the Medical Department).
- The Deputy State Surgeon (formerly the S.H.O. Kedah).
- One European Medical Officer.
- One European Lady Medical Officer.
- Three Asiatic Medical Officers.
- One Asiatic Assistant Dental Officer.
- One Asiatic Dental Mechanic.
- Two European Nursing Sisters.
- Eight Nurses.
- Twenty Dressers.
- Eight Probationary Dressers.
- One Laboratory Assistant.
- One Dispensary Store Keeper.
- Four Midwives.
- Three Pupil Midwives.

Five Kampong Midwives.
 One Office Orderly.
 Five Cooks.
 One Dhoby.
 One Carpenter.
 One Ambulance Driver.
 Thirty-seven Male Attendants.
 Ten Female Attendants.
 Twenty-three toties.
 Eight Gardeners.

APPENDIX (5).

The year closed with the working staff as follows:—

Sungei Patani Hospital				1937	1938	1939	Actual Increase 1939
1	Assistant Medical Officers	...	...	2	2	3	(one part time)
2	European Nursing Sister	...	...	1	1	1	
3	Grade (I) Dresser	...	...	2	2	1	
4	" (II) Dressers	...	...	10	10	8	
5	" (III) Dressers	...	...	...	1	3	
6	Probationer Dressers	...	...	2	2	5	
7	" Asiatic Nurses	...	...	...	...	3	3
8	Laboratory Assistant	...	...	1	1	1	
9	Clerks (One E (ii) and One E (iii))	...	...	2	2	2	
10	Midwives	...	...	2	2	2	
11	Pupil Midwives	...	...	2	3	3	
12	Orderly	...	...	1	1	1	
13	Male Attendants	...	...	16	18	27	9
14	Female Attendants	...	...	5	5	7	2
15	Malay 2nd Class Cook	...	...	1	1	1	
16	Tamil Cook	...	...	1	1	1	
17	Malay Cook	...	...	1	1	1	
18	Chinese Cook	...	...	1	1	1	
19	Toties	...	...	4	4	6	2
20	Barber	...	...	1	1	1	
21	Sikh Cook	...	...	1	1	1	
22	Ambulance Driver	...	...	1	1	1	
23	Dhoby	...	...	1	1	1	

APPENDIX (6).

The Staff attached to Baling Hospital are as follows:—

Hospital Assistant Grade I	..	..	..	..	1
Dresser Grade II	..	..	..	..	1
Kampong Midwife	..	..	..	..	1
Male Attendants	..	..	..	..	3
Female Attendant	..	..	..	..	1
Cook	..	..	..	..	1
Toties	..	..	..	..	2

APPENDIX (7).

List of staff in Kulim Hospital and Bandar Bahru Dispensary:—

One European Medical Officer.
 One Asiatic Medical Officer.
 One Hospital Assistant Special Grade.
 Two Hospital Assistant Grade I.
 Eight Dressers Grade II. (Including Laboratory Assistant and 1 at B. Bahru).
 Six Probationary Dressers. (Including new appointments).
 Two Midwives (Hospital).
 One Kampong Midwife (Bandar Bahru).
 Twenty-seven Male Attendants. (Including 1 at Bandar Bahru and new appointments).
 Four Female Attendants.
 One Cook (Grade I).
 Two Cooks (Grade II).
 One Cook (Grade III).
 Eight Toties.
 One Barber.
 One Mortuary Keeper.
 One Orderly.
 Two Clerks.

APPENDIX (8).

List of Estate Hospitals in Kedah are as follows:—

North Kedah.

Nil.

Central Kedah.

1. Bedong Medical Association, Bedong.
2. Harvard Estate Hospital, Bedong.
3. Badenoch Estate Hospital, Kuala Ketil.
4. Scarboro Estate Hospital, Sungei Patani.
5. Baling Road Group Association, Kuala Ketil.
6. Sungei Patani Estates Hospital Association, Sungei Patani.
7. Sungei Tawar Estate Hospital, Kuala Ketil.

South Kedah.

1. Dublin Estate Group Hospital, Karangan, Kulim.
2. Bukit Mertajam Group Hospital, Kulim.
3. Sungei Ular Sub-Group Hospital, Kulim.
4. Serdang Group Hospital, Serdang.
5. Padang Serai Group Hospital, Padang Serai.

APPENDIX (9).

GOVERNMENT PATHOLOGICAL LABORATORY.

STAFF.

Pathologist	Dr. Mustapa bin Osman.
Asst. Pathologist	Dr. V. G. Patwardhan.
Lab. Assistant	Abdul Rahman bin Muneer.
Lab. Attendants	Johari bin Jamil.
	Ali bin Abdul Kadir.
Clerk	Bashah bin Hashim.

ATTACHMENT.

The following came to the laboratory to study some of the simpler diagnostic methods:

- W. Dielenberg Grade II (B.M.R.E.) once a week from 13-8-39 to 2-9-39.
- Lim Soon Huat Grade II (Serdang) from 26-8-39 to 2-9-39.
- Ganapathi Pillay Grade II (United Patani) from 9-8-39 to 2-9-39.
- Lal Singh Grade III (Sungei Patani Group Hospital) from 5-8-39 to 2-9-39.
- Kupusamy Grade III (K.M.R.E.) from 9-8-39 to 2-9-39.
- Marican Grade III (Govt. Hospital, Kulim) from 28-8-39 to 3-9-39.
- Rajadurai Grade II (Govt. Hospital, Kulim) from 23-1-39 to 22-2-39.

WASSERMANN AND KAHN REACTIONS.

4,991 samples were received with the following results:

W.R. 814 positive 3,657 Negative 254 doubtful 180 Anticomp.
K.R. 920 positive 3,831 Negative 154 doubtful.

86 of these samples were in a decomposed condition unsuitable for examination.

BLOOD CULTURE FOR BACT. TYPHOSUM.

The number of samples received was 13 with no positive finding in any of them.

URINE FOR CULTURE.

191 samples for Bact. typhosum resulted in the isolation of the organism in 3 cases; N. Gonorrhoea was recovered 3 times in 8 samples and Bact. Coli 14 times from 32 samples; 4 samples for M. tuberculosis gave negative result.

STOOLS.

Bact. typhosum was isolated in 17 out of 491 samples and B. dysentery 6 times out of 52 samples.

THROAT SWABS.

Total number of swabs cultured including repetitions amounted to 447 and of these 91 gave positive results for C. diphtheriae.

EAR SWABS.

Out of 18 ear swabs examined, 9 gave positive results for C. diphtheriae.

WATER SAMPLES.

167 samples were examined in all.

111 for the Government.

35 for the State of Perlis.

6 for the Estates.

15 for the F.M.S. Railways, Padang Besar Quarantine Station.

POLICE EXHIBITS.

91 exhibits were examined with 15 positive and 76 negative for human blood.

In none of the 5 exhibits received could spermatozoa be noted.

A single sample of hair was identified as human hair.

BLOOD CULTURES FOR VETERINARY DEPARTMENT.

5 samples of blood were examined for this department.

The amount of revenue collected was \$202.75 as against \$356.50 received for the year 1938.

BLOOD AND SERUM.

Wassermann Reactions	4,991
Kahn Reactions	4,991
Widal Reactions	619
Test for B. Melitensis	1
Weil-Felix Reactions	210
Estimation of Sugar	36
" Urea	30
" Cholestrol	1
" Blood Iron	5
" Haemoglobin	201
" Icteric Index	14
Van den Berg Reactions	15
Red Cell Counts	203
Leucocytes total Counts	16
Differential Leucocytes Counts	19
Estimation of Blood Volume	3
Sedimentation test	5
Blood Matching	16
Blood Grouping	85
Blood Calcium	3
Blood Calcium Time	1
Blood Clotting Time	1
Blood Prothrombin Time	1
Blood Bleeding Time	1
Detection of Malarial Parasites	8

Carried forward .. 11,476

Brought forward .. 11,476

URINE.

Diastase Test	1
Weil-Felix	13
Urea Concentration Test	2
Estimation of Urea	2
Detection of Parasites	2
" Albumin, Sugar & etc.	28
W. B. C.	7
R. B. C.	10

STOOL.

Simple Analysis	12
Detection of Amoebae	5
" Ova and Parasites	26
" Occult Blood	6

C. S. FLUIDS.

Wassermann Reactions	6
Kahn Reactions	6
Cell Counts	13
Chloride Tests	3
Protein Test	9
Estimation of Urea	1
" Sugar	2
Albumin	
Colloidal Benzoin Tests	1

GASTRIC CONTENTS.

Estimation for Acidity etc.	504
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EARTH.

Detection of Larvae of Anky	3
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HISTOLOGY.

Preparations and examination of Histological Sections	53
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BACTERIOLOGY.

Blood: Culture for Bact. typhosum	13
" Other organism	9
Urine	191
" Bact. typhosum	2
" " dysenteriae	8
" N. Gonorrhoea	32
" Bact. Coli	4
" M. tuberculosis	491
Stool	52
" Bact. typhosum	2
" B. dysenteriae	4
" Other organisms	6
C. S. Fluids for M. Tuberculosis	8
" N. Meningitidis	1
" Organisms	9
Sputum for M. tuberculosis	18
Eye Swabs for Organisms	38
Ear Swabs for C. diphtheriae	2
Nasopharyngeal swabs for C. diphtheriae	
" for Meningococci	

Carried forward .. 13,082

Brought forward .. 13,082

BACTERIOLOGY—(contd.)

Throat Swabs for <i>C. diphtheriae</i>	447
" for other organisms	2
Preparations of Autovaccines	9
Animal Experiments	10
Bact. Exam. of Water Samples	167
Water: Culture for Organisms	3
Cervical Swab for Organisms	1
Virulence Tests	5
Bile for Culture for Organisms	1
Smear for detection of <i>M. Laprae</i>	3
" " <i>N. Gonorrhoe</i>	4
" " <i>H. Ducreyii</i>	3
" " <i>Spirochaetes</i>	4
Pus: Culture for <i>M. Tuberculosis</i>	2
" Organisms	9
Aspirated Exudates for Organisms	2

POLICE EXHIBITS.

Exam: for the presence of Human Blood	91
" " Spermatozoa	5
" " Animal Blood	1
" " Human Hair	2

VETERINARY DEPARTMENT.

Blood Culture	5
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TOTAL .. 13,858

ESTATE HOSPITALS.

BLOOD AND SERUM.

Wassermann Reactions	952
Kahn Reactions	952
Widal Reactions	81
Weil-Felix Reactions	12

STOOL.

Detection of Ova & Parasists	1
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BACTERIOLOGY.

Stool: Culture for <i>Bact. typhosum</i>	4
" " Dysentery	1
Throat Swabs for <i>C. diphtheriae</i>	3
" " Organisms	1
Preparations of Autovaccines	3
Bact. Examination of Water Samples	6
Water: Culture for Organisms	1

TOTAL .. 2,017

PERLIS GOVERNMENT HOSPITAL.

BLOOD AND SERUM.

Wassermann Reactions	147
Kahn Reactions	147
Widal Reactions	41
Weil-Felix Reactions	38
Van den Berg Reactions	1

Carried forward .. 374

Brought forward .. 374

HISTOLOGY.

Prep. and Exam. of of Histological Sections 4

BACTERIOLOGY.

Stool for Bact. typhosum	16
C. S. Fluids for N. Meningitidis	1
" " Organisms	5
Nasopharyngeal Swabs for Meningococci	2
Throat Swabs for C. diphtheriae	8
" other organisms	1
Bact. Examinations of Water Samples	35
TOTAL	446

APPENDIX (10).

The following are the figures for comparative nationalities:—

(a) OUTPATIENTS (ALOR STAR).

	Malays	Chinese	Tamils	Others	Total
Venereal Clinic	79	84	42	19	224
Travelling Dispensary	6,861	540	417	97	7,915
Alor Star General Hospital	6,140	4,269	2,591	539	13,539
Alor Star Town Dispensary	8,119	1,723	3,127	23	12,992
Yen Dispensary	7,989	1,834	646	142	10,611
Kuala Nerang Dispensary	2,004	322	114	45	2,485
Jitra Dispensary	3,155	440	341	94	4,030
Changloon Dispensary	2,794	3,024	428	229	6,473
Total	37,141	12,236	7,706	1,188	58,271

(b) ADMISSIONS TO HOSPITAL (ALOR STAR).

Malays	1,559
Chinese	3,430
Tamils	2,537
Others	247
TOTAL	7,773

The following are the Annual Return Figures of Out-patients attending the Venereal Disease Clinic for the year, 1939.

Nationality	Syphilis	Gonorrhoea	Chancroid	Chancre	Buboes	Total
Chinese	16	43	3	14	8	84
Tamils	2	24	5	8	3	42
Malays	16	55	2	5	1	79
Sikhs	1	9	..	2	2	14
Eurasians .. .. .	..	2	..	1	..	3
Others .. .. .	..	2	..	..	..	2
Total	35	135	10	30	14	224

APPENDIX (11).

SICK INDOOR, SUNGEI PATANI.

Total number of patients treated with percentage of deaths during previous year as follows:

	1937.	1938.	1939.
Total treated	6,729	8,195	7,591
Deaths	298	362	364
Percentage of Deaths	4.43	4.42	4.80

Number of deaths which occurred within 48 hours after admission is 106. Excluding these deaths, the death rate works out as follows:—

1937	3.13
1938	3.23
1939	3.4

The largest number of patients on one day was 334 on 14-7-39 as against 318 on 15-5-38. The average daily number of patients was 248 this year as against 263 last year.

Baling Hospital.

	1937.	1938.	1939.
Total treated	347	243	904
Deaths	13	12	24
Percentage of Deaths	3.74	4.93	2.6

According to nationalities the number of inpatients are as follows:—

	1937.	1938.	1939.
Europeans	1	2	3
Eurasians .. .. .	..	6	8
Chinese	2,596	2,983	3,037
Indians	3,419	4,521	3,921
Javanese	12	8	8
Malays	589	565	595
Japanese .. .. .	..	2	..
Others	112	108	19
TOTAL	6,729	8,195	7,591

Patients from Estates.

	1937.	1938.	1939.
Chinese	17	..	36
Indians	255	419	459
Malays	6	3	13
Others	1	3	6
TOTAL	279	425	514
Deaths	14	13	16
Percentage of Deaths	5.02	3.06	3.1

APPENDIX (12).

Kulim Hospital.

Normal labour	145
Abnormal labour, Antenatal and puerperal infections	63

The number of cases of difficult labour and advanced toxæmia bear a high proportion to the total. The result shows a comparatively high maternal and infantile mortality.

(iv) *Pulmonary Tuberculosis.* This disease shows a total of 148 treated with 42 deaths. These figures are as depressing as ever despite the fact that I have sent cases who show any hope at all, to Alor Star X-ray examination and expert treatment.

(v) <i>Dog-Bite Cases</i>	20
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V. *OUT-DOOR CASES.*

	1939.	1938.
New Cases	10,199	9,886
Repetitions	3,918	3,184
TOTAL	14,117	13,070
Malays	2,322	1,858

These figures show a considerable increase over the 1938 figures especially with regard to Malays seeking out-patient treatment.

VI. *SPECIAL DISEASES.*

(i) *Malaria.* The figures for 1939 show a considerable reduction from those of 1938 and 1937.

	1939.	1938.
In-patients	1,331	1,546
Out-patients	1,959	2,168
Deaths	19	62

(ii) *Syphilis and Yaws.*

N.A.B. Injections were given as follows:—

	Indoor	Outdoor	1939	1938
Yaws	64	64	223	
Syphilis	494	189	683	863

The Travelling Dispensary gave the following N.A.B. Injections.

Yaws	103
Syphilis	30
TOTAL	133

(iii) *Infectious Diseases.*

Chicken-pox	2
Dengue	1
Diphtheria	4
Dysentery A.	55
" B.	9
Enteric fever	9
Erysipelas	3
Tetanus	1
Typhus Tropical	3
Measles	2

VII. MENTAL CASES.

55 cases were admitted for observation. Of these 23 were sent to the Central Mental Hospital Tanjong Rambutan.

VIII. LABORATORY WORK. (Report attached).

IX. SURGICAL OPERATIONS.

41 Major operations were performed.

X. TRAVELLING DISPENSARY.	1939.	1938.
New Cases	5,004	4,943
Repetitions	1,295	1,302
TOTAL ..	<u>6,299</u>	<u>6,245</u>

XI. BANDAR BAHRU DISPENSARY.	1939.	1938.
New Cases	2,561	2,822
Repetitions	422	303
TOTAL ..	<u>2,983</u>	<u>3,125</u>

XII. GENERAL.

Buildings. During the year improvements have been carried out in the operating theatre and the casualty room. The theatre has been enlarged and the floor and walls rendered with terrazo finish. When we have a new operating lamp it will be admirably suited to the surgical requirements of Kulim Hospital. The casualty room is also a marked improvement.

An ablution chamber has been constructed alongside the V.D. section of the Surgical Ward.

Kulim still needs more and better accommodation for children and female patients. Our urgent need is a children's ward and another Maternity Ward for second class patients. These have been asked in the 1359 Estimates.

With the appointment of new Dressers and Nurses, Quarters for them are also urgently needed.

Staff. I am sorry to report the retirement of Mr. P. R. Madhavan Pillai—Special Grade Dresser. He has done excellent work at Kulim and his position will be hard to replace.

In previous Annual Reports by my predecessors at Kulim, attention has been drawn to the shortage of staff and particularly to the absence of female Nurses. It therefore gives me great pleasure to be able to report the recent increases in staff and the impending appointment of female nurses.

It marks a great step forward for Kulim Hospital and will raise the standard of nursing and make for better services to the sick.

APPENDIX (12—A).

DISTRICT HOSPITAL, KULIM.

Laboratory Annual Return of In-door specimens for the year 1939.

1. MALARIAL PARASITES.

Benign Tertian	494
Malignant Tertian	593
Quartan	5
Mixed Infection	5
Negative Specimens	3,300
TOTAL ..	<u>4,397</u>

2. CYTOLOGY.

Blood.

Red Cell Counts	69
Total White Cell Counts	46
Differential White Cell Counts	26
Cerebro Spinal Fluid Cell Counts	8

Urine.

Casts Granular and Epithelial	24
TOTAL CYTOLOGICAL	173

3. INTESTINAL HELMINTHIASIS (faecal exam).

Ankylostome duodenate ova	1,890
Ascaris Lumbricoides ova	640
Entamoeba histolytica	50
Trichocephalus dispar	36
Oxyuris Vermicularis	3
Balantidium Coli	8
Negative specimens	1,010
TOTAL	3,637

4. BACTERIOLOGY.

Diphtheria.

Throat swabs—direct smears—positive	3
Negative specimens	18

Eye Smears.

Koch-weeks bacilli	4
Morax-Axenfeld bacilli	3
Gram negativè diplococci	2
Gram positive cocci	5

Gonorrhoea.

Urethral smears—positive	90
" " —negative	60
Cervical smears—positive	16

Post-mortem smears.

Tubercle Bacilli—positive	2
Sputum Tubercle bacilli	119
Negative specimens	940

Leprosy.

Nasal and skin smears—positive	11
Negative specimens	70

Smears from Male Genitals.

Spirochaeta Pallida	1
" Refringens	4
Ducrey Bacilli	6
Negative specimens	18

TOTAL **1,372**

APPENDIX (13).

DENTAL CASES 1939, ALOR STAR.

Months	Malays	Chinese	Indians	Europeans	Others	TOTAL	Remarks
January	90	63	26	9	2	190	
February	30	21	17	6	1	75	
March	195	60	58	10	2	325	
April	117	98	47	3	...	265	
May	92	89	33	8	...	222	
June	107	83	67	2	...	259	
July	49	55	32	7	1	144	
August	91	87	37	8	2	225	
September	57	71	38	9	2	177	
October	63	66	32	4	6	171	
November	48	50	18	10	4	130	
December	29	19	22	2	...	72	
TOTAL	968	762	427	78	20	2255	

APPENDIX (14).

DENTAL CASES 1939, SUNGAI PATANI.

Months	Malays	Chinese	Indians	Europeans	Others	TOTAL	Remarks
January	1	4	2	...	...	7	
February	...	3	11	...	1	15	
March	3	3	6	...	...	12	
April	2	4	6	...	1	13	
May	2	4	...	...	2	8	
June	1	4	4	...	...	9	
July	1	5	5	...	...	11	
August	5	4	3	...	...	12	
September	8	11	10	...	...	29	
October	...	...	...	...	...	...
November	1	8	1	...	...	10	
December	5	12	10	...	...	27	
TOTAL	29	62	58	...	4	153	

APPENDIX (15).

DENTAL CASES 1939, KULIM.

Months	Malays	Chinese	Indians	Europeans	Others	TOTAL	Remarks
January	...	...	...	...	...	...
February	3	...	2	...	...	5	
March	4	4	2	...	...	10	
April	2	6	2	1	...	11	
May	...	...	...	...	...	...
June	6	8	1	...	...	15	
July	5	7	5	...	...	17	
August	1	3	6	...	...	10	
September	...	...	...	...	...	...
October	...	...	...	...	...	...
November	2	5	1	—	...	8	
December	...	...	...	...	...	...
TOTAL	23	33	19	1	...	76	

APPENDIX (16).

Population, Births, Deaths, Infant Mortality and Still Births by Race.

Race				Population	Births	Deaths	Deaths under one	Still Births
Malays	...	...	...	329,640	12,261	6,601	1,690	741
Chinese	...	...	...	81,141	4,669	1,924	556	116
Indians	...	...	...	57,486	1,782	990	279	98
Non-Asiatics	...	...	...	911	2	3	...	...
Others	...	...	...	15,755	261	158	18	13
Total				484,933	18,975	9,676	2,543	968

APPENDIX (17).

Births and Still Births by Race and Sex.

Race				BIRTHS		STILL BIRTHS	
				Males	Females	Males	Females
Malays	...	...	...	6,316	5,945	429	312
Chinese	...	...	...	2,419	2,250	66	50
Indians	...	...	...	872	910	48	50
Non-Asiatics	...	...	...	2	...	...	...
Others	...	...	...	135	126	8	5
Total				9,744	9,231	551	417

APPENDIX (18).

Deaths grouped according to age, sex and nationality for 1939.

Age Groups				Sex	European	Eurasian	Chinese	Malays	Indians	Others	Total
0	...	...	...	Males			147	397	78	4	626
				Females			78	291	67	1	437
4 weeks	...	...	...	Males			30	242	14	...	346
				Females			67	181	18	4	270
3 months	...	...	...	Males			59	156	14	2	231
				Females			26	146	18	3	193
6 "	...	...	...	Males			59	133	42	...	234
				Females			30	144	28	4	206
1 year	...	...	...	Males			97	426	81	12	616
				Females			81	464	71	11	627
5 years	...	...	...	Males			33	161	22	2	218
				Females			30	156	15	7	208
10 "	...	...	...	Males			16	65	8	...	89
				Females			19	72	10	1	102
15 "	...	...	...	Males			24	79	6	...	109
				Females			13	81	14	1	109
20 "	...	...	...	Males			29	93	16	...	138
				Females			24	91	33	5	153
25 "	...	...	...	Males	1		43	95	28	2	169
				Females			29	146	44	5	224
30 "	...	...	...	Males			61	161	30	4	256
				Females			35	151	25	3	214
35 "	...	...	...	Males	1		76	151	38	4	270
				Females			29	122	20	3	174
40 "	...	...	...	Males			78	170	35	4	287
				Females			20	127	9	7	163
45 "	...	...	...	Males			75	119	34	6	234
				Females			13	66	12	1	92
50 "	...	...	...	Males	1		121	173	28	3	326
				Females			20	124	18	3	165
55 "	...	...	...	Males			338	870	64	25	1297
				Females			64	748	50	31	893
Total Males & Females ...					3		1924	6601	990	158	9,676

APPENDIX (18—A).

Deaths in Government and Group Hospitals and Outside Hospital on European and Asiatic Estates by Race.

Race	EUROPEAN			ASIATIC		
	Govt. Hospital	Group Hospital	Outside Hospital	Govt. Hospital	Group Hospital	Outside Hospital
Malays ... ..	...	2	24	...	...	16
Indians	50	416	106	5	5	13
Chinese	2	18	12	...	5	2
Others ... ..	...	...	1	...	...	...
Total	52	436	143	5	10	31

APPENDIX (18—B).

Admissions from Estates and Deaths in Hospitals and Case Mortality Rates.

Hospitals	Admissions	Deaths	Rate Percentage
Government	1,162	57	4.91
Group	26,720	446	1.67

APPENDIX (19).

Birth, Death and Infantile Mortality (I.M.R.) Rates per mille by Race.

Race.	Birth Rate.	Death Rate.	I. M.R.
Malays	37 27195.2	20 20024.9	138 137835.4
Chinese	58 57551.8	24 23711.8	119 119083.3
Indians	31 20998.9	17 17221.6	156 156565.6
Non-Asiatics	2 2195.4	3 3293.1	..
Others	17 16566.2	10 10028.6	69 68945.5
TOTAL	39 39129.1	20 19953.3	134 134018.4

APPENDIX (20).

Causes of Death.

Diseases.	Male.	Female.	Total.
Fever Unspecified	2,243	1,754	3,997
Convulsions	704	616	1,320
Old Age and Senility	497	497	994
Premature Births and Diseases of			
Early Infancy	410	268	678
Other Causes	239	169	408
Ankylostomiasis	181	169	350
Bronchitis	194	102	296
Malaria	156	86	242
Diseases of Pregnancy Child-birth			
and Puerperal State .. .. .	..	223	223
Other Forms of Tuberculosis	149	31	180
Violence (all forms)	133	36	169
Pneumonia (all forms)	120	39	159
Diarrhoea and Enteritis	85	65	150
Beri-beri	91	56	147
Diseases of the Heart	78	28	106
Other Diseases of Circulatory			
System	40	31	71
Dysentery	47	19	66
Enteric Fever	13	13	26
Non-Veneral Diseases of Genito-			
Urinary System	17	6	23
Tuberculosis of Respiratory System			
Syphilis	16	4	20
Other Diseases of Respiratory			
System	14	3	17
System	10	6	16
Diseases of Nervous System and			
Sense-organs	7	7	14
Influenza	2	2	4
TOTAL	5,446	4,230	9,676

APPENDIX (21).

Population, Births, Deaths and Infant Mortality for the Chief Towns in the State.

Towns	Popula- tion	BIRTHS		DEATHS		INFT. DEATHS	
		Number	Rate per Mile	Number	Rate per Mile	Number	Rate per Mile
Alor Star	26,157	1,253	47	450	17	150	120
Sungai Patani	109,38	738	67	363	34	70	95
Kulim	7,944	569	72	233	29	80	141

APPENDIX (22).

Population, Births, Deaths, Infant Mortality and Still-births on Estates by Race.

Race	Population	Births	Deaths	Deaths under one	Still Births
Malays	11,852	83	42	17	1
Indians	41,567	1,279	595	224	6
Chinese	7,591	46	39	7	...
Others	286	2	1	1	...
Total	61,296	1,410	677	249	7

APPENDIX (23).

Birth, Death and Infant Mortality (I.M.R.) Rates per mille on Estates by Race.

Race.	Birth Rate.	Death Rate.	I. M.R.
Malays	7.0	3.6	205
Indians	30.7	14.3	175
Chinese	6.1	5.1	152
Others	7.0	3.5	500
TOTAL	23.0	11.0	176

APPENDIX (24).

Population by Sex and Race: Deaths and Rates per mille by Race among Labourers on European and Asiatic Estates.
(Rates per mille shown in brackets under Deaths).

Race	EUROPEAN ESTATE			ASIATIC ESTATE			ALL ESTATES			Death and rate
	Population		Death and rate	Population		Death and rate	Population		TOTAL	
	Male	Female		Male	Female		Male	Female		
Malays	2,452	988	4 (1.2)	2,785	2,115	4 (0.8)	5,237	3,103	8,340	8 (1.0)
Indians	16,564	8,382	146 (5.5)	1,197	344	12 (7.8)	17,761	8,726	26,487	158 (6.0)
Chinese	2,944	314	18 (5.5)	2,409	440	6 (2.1)	5,353	754	6,107	24 (3.9)
Others	32	3	— (0.0)	106	31	— (0.0)	138	34	172	— (0.0)
TOTAL	21,992	9,687	168 (5.3)	6,497	2,930	22 (2.3)	28,489	12,617	41,106	190 (4.6)

APPENDIX (25).

In-door patients according to nationalities.

Nationality	No. treated	Deaths	Percentage of deaths	Deaths within 48 hours
Chinese	1,348	66	4.90	30
Indians	567	10	1.76	3
Malays	428	7	1.64	3
Thai	9	...	...	...
Others	1	...	...	...
Total	2,353	83	3.53	36

There was an increase in the number of cases admitted for Malaria, Dysentery, Injuries and other diseases; the number admitted for venereal diseases, pulmonary tuberculosis, pneumonia and ulcers was about the same, and there was a fall in the number of cases admitted for other lung complaints and ankylostomiasis.

ADMISSIONS FROM ESTATES AND MINES.

The total number of patients from Estates and Mines was 112 with 5 deaths or a percentage of 4.46.:—

Nationality	Remained	Admitted	Total	Deaths
Chinese ... ..	...	14	14	1
Indians	11	87	98	4
Total	11	101	112	5

8 cases of confinement among Indian Estate labourers occurred at the Hospital of which 7 were normal cases; one was complicated with eclampsia; both the mother and the prematurely born child died soon after delivery.

Infectious diseases with deaths.

Diseases	Total treated	Deaths	Percentage of deaths
Cerebrospinal Fever	5	2	40.00
Cerebrospinal Meningitis (Pneumo-coccal)	1	1	100.00
Chicken-pox	3	...	...
Dengue	1	...	...
Diphtheria	2	1	50.00
Dysentery Amoebic	14	...	...
Dysentery Type not Diagnosed	12	2	16.67
Enteric Fever	8	...	...
Erysipelas	2	...	...
Influenza	83	...	...
Leprosy	3	1	33.33
Measles	3	...	...
Mumps	3	...	...
Pneumonia	76	11	14.47
Tetanus (a) Neonatorum	6	4	66.67
.. (b) Ordinary	2	2	100.00
Tuberculosis	62	8	12.90
Whooping Cough	4	...	...
Total	290	32	11.03

APPENDIX (26).

OUT-DOOR CASES.

	Kangar Hospital	OUT-DOOR DISPENSARY		Total
		Kaki Bukit	Simpang Ampat	
Number of new cases	7,312	9,828	5,793	22,933
Repetitions of new patients	6,017	7,650	327	13,994
Those who received treatment were of the following :—				
Malays	4,667	717	4,780	10,164
Chinese	1,285	8,926	1,006	11,217
Indians	1,299	152	4	1,455
Thai	42	33	3	78
Eurasians ... ..	...	...	...	...
Europeans	13	...	...	13
Others	6	...	...	6
Total	7,312	9,828	5,793	22,933

In addition to those treated at the dispensaries, 207 cases were treated in the Kangar Gaol.

The hospital midwife attended four cases of confinement in houses.

Neosalversan injections numbered 2,123 of which 1,576 were for yaws and 547 for other conditions. Of the 1,132 cases of yaws that were treated during the year, only a few came up for subsequent injections (vide table below) :—

825 patients took only one injection.

227 patients took only two injections.

56 patients took only three injections.

24 patients took only four injections.

110 school children (104 boys and 6 girls) had neosalversan injections for yaws.

The travelling dispensary attended to 1,808 cases excluding those attended at schools, police stations, public works department and sanitary board cooly lines. The number of cases attended during 1938 was 1,440.

Four mental cases (two males and one female) were transferred to the Central Mental Hospital, Tanjong Rambutan, during the year; four were discharged and two died during the period.

APPENDIX (27).
 REPORT SHOWING THE NUMBER AND TYPES OF ANOPHELINE LARVAE COLLECTED IN PERLIS DURING 1939.

PLACES	<i>A. barbirostris</i>	<i>A. hyrc. sinensis</i>	<i>A. hyrc. nigerrimus</i>	<i>A. vagus</i>	<i>A. Koehli.</i>	<i>A. tessellatus</i>	<i>A. philippinensis</i>	<i>A. umbrosus</i>	<i>A. insulæflorum</i>	<i>A. aitkeni bengalensis</i>	<i>A. subpictus malayanus</i>	TOTAL
KANGAR	281	32	28	170	26	12	33	..	..	..	..	582
ARAU	40	30	8	69	28	..	..	..	..	..	..	175
KAKI BUKIT	140	23	22	16	2	..	..	2	72	54	25	346
OUTSIDE S. BOARD LIMITS	32	4	17	..	10	..	..	..	..	..	..	63
TOTAL	483	89	75	255	66	12	33	2	72	54	25	1,166

APPENDIX (28).

Report showing the number and types of Mosquitoes caught in Perlis, and identified in the Health Office, Perlis during 1939.

PLACE				A. barbirostris	A. hyrc. niger rimus	A. Philippinensis	A. hyrc. sinensis	A. Tessellatus	A. vagus	TOTAL
Kangar	...	...	...	20	13	9	3	1	2	48

APPENDIX (20)

Report showing the number and class of Messengers employed in the City and Town of New York in the Health Office, from January 1st, 1892, to December 31st, 1892.

Class	Number	Class	Number
First Class	10	Second Class	10
Third Class	10	Fourth Class	10
Fifth Class	10	Sixth Class	10
Seventh Class	10	Eighth Class	10
Ninth Class	10	Tenth Class	10
Eleventh Class	10	Twelfth Class	10
Thirteenth Class	10	Fourteenth Class	10
Fifteenth Class	10	Sixteenth Class	10
Seventeenth Class	10	Eighteenth Class	10
Nineteenth Class	10	Twentieth Class	10
Twenty-first Class	10	Twenty-second Class	10
Twenty-third Class	10	Twenty-fourth Class	10
Twenty-fifth Class	10	Twenty-sixth Class	10
Twenty-seventh Class	10	Twenty-eighth Class	10
Twenty-ninth Class	10	Thirtieth Class	10
Thirty-first Class	10	Thirty-second Class	10
Thirty-third Class	10	Thirty-fourth Class	10
Thirty-fifth Class	10	Thirty-sixth Class	10
Thirty-seventh Class	10	Thirty-eighth Class	10
Thirty-ninth Class	10	Fortieth Class	10
Forty-first Class	10	Forty-second Class	10
Forty-third Class	10	Forty-fourth Class	10
Forty-fifth Class	10	Forty-sixth Class	10
Forty-seventh Class	10	Forty-eighth Class	10
Forty-ninth Class	10	Fiftieth Class	10

