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HONG KONG

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MEDICAL & SANITARY REPORT

FOR THE YEAR

1933

BY

A. R. WELLINGTON

Director of Medical and Sanitary Services

HONG KONG

PRINTED BY NORONHA & CO.

GOVERNMENT PRINTERS



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HONG KONG
MEDICAL & SANITARY
REPORT
FOR THE YEAR 1933

BY

A. R. WELLINGTON

Director of Medical and Sanitary Services.

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ANNUAL MEDICAL REPORT FOR THE YEAR ENDING
31st DECEMBER, 1933.

INTRODUCTION.

Geographical Features.

In order to give a clear impression of the Public Health conditions obtaining in Hong Kong, it is necessary first to describe the situation of the Colony, its geographical features, its climate, the nature of the population, the housing conditions and the bearing old Chinese traditions, beliefs, and customs, have on the question of co-operation with the authorities in the promotion and preservation of the Public Health. It is also desirable to indicate the various organisations which together make up the Public Health machinery.

2. The Territory under British jurisdiction includes the Colony Proper, namely, the Island of Hong Kong with the Peninsula of Kowloon, and the New Territories. In this Report the term Colony means the Colony Proper. The area of the Island is 32 square miles—that of Kowloon is $2\frac{2}{3}$ rd. square miles while the New Territories have approximately 300 square miles.

3. Situated between $22^{\circ}9'$ and $22^{\circ}37'$ North Latitude the area under discussion is just within the northern limits of the tropics. It is in fact practically on the same level as Calcutta. It may be said to form the lower extremity of the left bank of the estuary of the Canton River, at the head of which is the City of Canton and on an island in which stands the Portuguese Colony of Macao.

4. Topographically the Island of Hong Kong and the Peninsula of Kowloon may be described as a series of granite ridges separated by narrow valleys and having here and there flat areas facing the sea. The New Territory is of similar formation with some fairly wide valleys towards the north and west. The features are such that flats suitable for town sites are few in number and limited in extent. In the Island the only level of any size is that on which the City of Victoria stands and this does not cover more than one square mile. With regard to Kowloon, not more than one half is flat and convenient for street formation.

The Climate.

5. Situated just within the northern limits of the tropics and occupying an insular position immediately south of the great land mass of China, Hong Kong's climate is very materially influenced by the direction of the prevailing winds. The North East Monsoon blows from November until April and during this period the weather is dry and cool and invigorating. From May until October, the season of the South West Monsoon, the air is highly charged with moisture and the climate is hot, muggy and enervating. July, August, and September are marked by atmospheric disturbances which now and then culminate in typhoons or cyclones accompanied by blinding sheets of rain.

6. The mean annual temperature is 72°F. During the summer months the average temperature is 87°F, and there is little variation throughout the twenty-four hours. Situated on the north side of the Island the City of Victoria gets all the heat and moisture of the South West Monsoon but not the breeze, which is cut off by the mountains behind the town. During the winter months the range of temperature is from 70°F. to 45°F. with an average 66°F. necessitating for comfort the wearing of warm clothes and the provision of fires in the houses. Frost is practically unknown.

7. The average yearly rainfall is 85.72 inches. As might be expected most of the rain falls in the summer months.

Population and its distribution.

8. Hong Kong which depends for its prosperity on its trade with China has three fourths of its population concentrated in the cities of Victoria and Kowloon which may justly be described as one city divided into two by the harbour. Outside this city there is little of commercial importance and Hong Kong as a Colony might almost be termed the city and port of Greater Hong Kong.

9. With regard to the numbers, except in census years, there are no accurate statistical figures, the great movement to and from the Colony and the facility with which the border is crossed preventing accurate checking. Hong Kong being the principal entrepot for South China and its harbour one of the busiest in the world, every day on an average 5,000 to 6,000 individuals pass to and from China by river steamer or by rail and there are others who arrive and depart by junks or smaller vessels. During times of political unrest in China many thousands from the mainland sojourn in the Colony, some of whom return to their homes when conditions are more settled, other remaining attracted by the opportunities offered for employment.

10. The total civil population of the Colony is estimated to exceed 900,000, of which some 400,000 reside in the City of Victoria, 300,000 in the town of Kowloon, over 100,000 on boats in the waters of the Colony and the remainder in villages.

11. There are over 20,000 local boats registered at the Harbour Office, the occupants of each of which vary in number from four to forty according to the size and character of the craft. The Harbour Authorities believe the population to be 150,000 and certainly 100,000 cannot be an overestimate.

12. Of the total population over 97 per cent are Chinese. According to the Census Report one third of the whole were born in the Colony. The remainder are mostly those who have come from China attracted by the facilities offered for employment. Many return to their native towns or villages when too ill or too old for labour. Through this exodus the death rate in the Colony is considerably lower than it otherwise would be.

13. The masses are working people belonging to what is commonly described as the coolie class. The Chinese of the upper classes, many of whom have received a western education, are mostly engaged in commerce but there are among them a number of professional men including both lawyers and doctors.

Housing Conditions.

14. The town plans of Victoria and Kowloon are widely different: the former may be described as old-fashioned and irregular, the latter as modern and regular.

15. The site on which Victoria stands is a narrow strip of land 4 miles long by $\frac{1}{5}$ th. to $\frac{2}{5}$ ths. of a mile broad lying at the northern foot of the mountain and separating it from the sea. The total area of available space is about one square mile or $\frac{1}{32}$ nd. of that of the whole island. Limited in front by the sea and behind by the steep slopes of the mountain there remains hardly an inch of space which has not been occupied for one purpose or another.

16. That portion of the town where the working classes reside and described in the Census Report as 'Health Districts 4, 5, 6, 6A, 7, 7A, 8 (restricted), 9, and 10A (restricted), forming the lower part of the town fronting on Victoria Harbour' has an area of roughly 200 acres and in this space nearly 200,000 individuals find accommodation giving a density of approximately 1,000 per acre.

17. The conformation of the site with its rapid rise of land near the sea-shore led in the early days to the erection of houses on the narrow strip of land near the harbour and extending a little way up the lower slopes of the mountain the houses being

separated by narrow lanes and alleyways. When the population was small and the houses only one and two stories in height, the situation was not unsatisfactory. As the population increased the houses were heightened to four and five stories without any corresponding widening of the spaces separating them.

18. Year by year the population continued to increase, immigration being accelerated by unrest in China. Victoria was the centre of trade and therefore the centre of attraction. There was little room to build further accommodation and the newcomers had to squeeze into the already overcrowded premises. Rooms were divided into cubicles which to a certain extent provided privacy but which interfered both with lighting and ventilation.

19. In some houses there are tiers of bunks placed against the walls, in others the rooms are divided into cubicles or cabins each measuring perhaps eight feet by eight feet and having partitions 6 feet in height. These cabins are not the temporary abodes of persons on a voyage but the more or less permanent homes of the people. There is little or no room for kitchens, and latrine accommodation is often limited to pail closets on the roofs of the buildings.

20. Year by year the Sanitary Department and the Building Authority have made efforts to improve the situation and with a considerable amount of success both as regards palliative and radical treatment. The task almost sisyphian in itself was rendered more difficult by paucity of water and by opposition put forward both by property owners and the occupiers.

21. It goes without saying that the maintenance of a satisfactory standard of sanitation under such conditions is a most difficult problem and one which cannot be solved without the willing co-operation of the people. One thing is certain, so long as buildings are overcrowded and insanitary, no amount of external sanitation will give immunity from disease.

22. Within the last few years some 70 acres have been added to the eastern section of the town by reclamation from the sea. This locality which is known as the Praya East Reclamation has been laid out in accordance with modern town planning principles, with wide streets, short lots and back-lanes. The greater part of it is now covered with dwelling houses which satisfy sanitary requirements. The density here is not more than 300 per acre.

23. Kowloon which is a comparatively new city has been town-planned on up-to-date lines with straight broad streets and back lanes. During the intercensus period 1921-1931 it increased in population 113.06 per cent. It is still rapidly growing and in a few years will equal Victoria or even exceed it. According to the census the density of population is 300 per acre.

Influence of traditional beliefs.

24. The traditional beliefs of the uneducated Chinese as to the cause of diseases, the means of spread and the factors which affect its course are so at variance with modern teaching that there is little chance of promoting voluntary co-operation between them and the authorities, in the matter of the prevention and control of disease until they can be brought to understand the true nature of the problems and are conscious of the usefulness of the measures advocated. The proximity of China and the constant intercourse make it harder to overcome prejudices than is the case in countries further afield. The greatest hope lies in propaganda and education brought to the homes through public health nurses working as district visitors or in infant welfare centres and school welfare centres.

Propaganda which does not arouse the interest of the mother and her children has little practical value. However, leaders of opinion in China and leaders of Chinese thought in Hong Kong are making vigorous efforts to promote public health and public welfare along lines which have proved successful in the Occident, and the outlook is far more hopeful than was the case a few years ago when Chinese thought on matters of health was unduly swayed by old traditions and theories.

Quarantine impractical between Hong Kong and the River Ports.

25. So closely related are Hong Kong, Canton, Macao and the River Ports, in the matter of trade, and such is the amount of traffic both human and goods which passes between them that up to date it has been found impossible to devise any system of quarantine which would effectually safeguard one city against introduction of disease from the other and at the same time preserve that freedom of commercial movements on which these cities depend for prosperity. It has been deemed best to treat them as forming one unit, as suburbs the one of the other, and to strive for a working agreement between the various health organisations to the end that some means, other than imposing restrictions against a whole port, may be found to prevent the spread of infection.

The Government Organisation for the promotion and maintenance of the Public Health.

26. The Colony has no 'municipality' in the ordinary accepted sense of the term, the Governor himself being head of the city and head of the port. The functions of a Municipal Council are included in the functions of the Legislative Council. The Colonial Heads of Department perform the duties which in a municipality would be performed by Municipal Heads of Department.

27. The Director of Medical and Sanitary Services is the official adviser to Government on all medical and sanitary matters and is the Officer responsible to Government for the Public Health of the Colony. Under his direction come the Government Hospital Organisation, the Inspection of Chinese Hospitals and Chinese Dispensaries, the Medical Inspection of Schools, the Bacteriological Institute, the Analytical Laboratory, Anti-malarial Activities, Vaccination, Quarantine and Port Health Work, Social Hygiene Work, Maternity and Child Welfare Work, and the Registration of Births and Deaths.

28. The Sanitary Department which is distinct from and independent of the Medical Department has at its head a layman, an officer of the Cadet Service. This Department does the work usually performed by the Health Department of a Municipality and in addition deals with all matters connected with scavenging and conservancy. Attached to this department are Medical Officers of Health who are seconded from the Medical Department, two Veterinary Surgeons and fifty-six European Sanitary Inspectors.

29. There is a Sanitary Board composed of officials and non-officials whose powers and responsibilities are laid down in the Public Health and Buildings Ordinance 1903 and which acts as an advisory body to the Head of the Sanitary Department who is ex-officio chairman of the Board. The Board has no direct control over the Department. The functions and powers of the Board and the Department are limited to the Colony and to that portion of the New Territories adjacent to Kowloon which is known as New Kowloon.

30. The present machinery for the promotion of the Public Health is complex in that responsibility for the organisation of energy both for the cure and the prevention of disease is divided among a number of units, governmental and non-governmental, which operate more or less independently of one another.

Public Health Laws and their administration.

31. The principal Ordinances which have effect in matters of Hygiene and Sanitation are:—

I. The Public Health and Buildings Ordinance which resembles the English Public Health Act of 1875 and which deals with Infectious Diseases of Humans and of Animals, the wholesomeness of foods for human consumption, abattoirs, markets, dairies, food factories and food shops, nuisances, scavenging and cleansing, drainage, sewerage and sewage disposal, latrines, urinals and water closets, factories, workshops, laundries and offensive trades, buildings, their siting, design and construction, wells and pools.

- II. The Waterworks Ordinance.
- III. The Sale of Food and Drugs Ordinance.
- IV. The Births and Deaths Registration Ordinance.
- V. The Boarding House Ordinance.
- VI. The Factories and Workshops Ordinance.
- VII. The Summary Offences Ordinance.

32. The Public Works Department is the Authority under the Waterworks Ordinance. The Sanitary Department is responsible for the carrying out of the provisions of the Public Health and Buildings Ordinance except in so far as it refers to buildings, drainage and sewerage, wells and pools, which are dealt with by the Public Works Department. The Sanitary Department also deals with the Sale of Food and Drugs Ordinance. The Boarding House Ordinance, which controls lodging houses, boarding houses and hotels, and the Factory and Workshops Ordinance are under the authority of the Secretary for Chinese Affairs. The Births and Deaths Registration Ordinance is administered by the Medical Department. The Summary Offences Ordinance is the concern of the Police.

Transport of the Sick.

33. Motor Ambulances, garaged at the Fire Station, are controlled by the Police and Fire Department. Hand Ambulances are operated by the Sanitary Department. The Tung Wah Hospital and the Tung Wah Eastern Hospital each has a motor ambulance of its own and so has the St. John Ambulance Brigade.

Medical Relief.

34. Provision of medical relief is furnished by the Government, by Chinese Benevolent Institutions and by Christian Missions.

35. The following table shows the principal institutions affording medical relief to the civil population :—

	Accommodation.	Authority in Control.
<i>Government Institutions :—</i>		
Government Civil Hospital	246 beds	Medical Department.
Victoria Hospital	74 „	do.
Kowloon Hospital	84 „	do.
	& 8 cots.	
Infectious Diseases Hospital	26 beds.	do.
Gaol Hospital	30 „	do.
Taipo Dispensary	—	do.
Un Long Dispensary	—	do.
Wanchai Maternity & Infant Welfare Centre	—	do.
V. D. Clinic—Kowloon	—	do.
<i>Chinese Benevolent Institutions :—</i>		
The Tung Wah Hospital ...	438 beds.	Chinese Committee.
The Tung Wah Eastern Hospital	260 „	do.
The Kwong Wah Hospital	325 „	do.
The Tung Wah Infectious Diseases Hospital	60 „	do.
The Tsan Yuk Maternity Hospital	57 „	Special Chinese Committee.
The Chinese Eastern Maternity Hospital	31 „	do.
The Chinese Public Dispensaries (9 in number)	—	do. for each.
<i>Mission Hospitals and War Memorial Nursing Home :—</i>		
Alice Memorial & Affiliated Hospitals	126 beds.	London Missionary Society.
Matilda Hospital	50 „	Special Committee.
The French Hospital.....	110 „	French Mission.
The Italian Hospital.....	18 „	Canossian Mission.
War Memorial Nursing Home	50 „	Special Committee.

*Non-Government Organisations engaged in
Public Health Works.*

36. In addition to the Government organisation there are in the Colony a number of Benevolent Societies and Associations whose activities in the cause of public health are of great benefit to the community. The chief among these are:—the Tung Wah Hospital Charity, the Chinese Public Dispensaries, the various Missionary Societies, the Society for the Protection of Children, the St. John Ambulance Association, the St. John Ambulance Brigade, the Y.W.C.A. and the Y.M.C.A.

37. A description of the Tung Wah Hospital and the Chinese Public Dispensaries will be found in the body of the report.

38. The St. John Ambulance Association teaches first aid and home nursing and issues certificates after examination to successful candidates. Many hundreds of certificates have been issued.

39. The St. John Ambulance Brigade which is distinct from the Association is a body which practices in the field the theory taught by the latter. The Brigade which holds a strong position in the Colony does excellent work both in the training of personnel and in the performance of first aid duties. In the New Territories it has established a number of medical centres staffed by full-time nurses. The Brigade renders valuable assistance to the Government especially with regard to vaccination and propaganda.

Medical Education.

40. The Faculty of Medicine of the University of Hong Kong provides a six years' course in premedical and medical sciences leading to the degrees of Bachelor of Medicine and Bachelor of Surgery which are awarded on examination. Most of the clinical teaching is carried out at the Government Civil Hospital where 100 beds have been placed under the care of the professors of surgery, medicine and obstetrics who have been appointed respectively Surgeon, Physician and Obstetric Physician to the Hospital. The degrees of the Medical Faculty are recognised by the General Medical Council for registration in Great Britain.

41. Courses of training for nurses and midwives have been established at a number of hospitals in the Colony. Examinations are held and certificates issued by the Midwives Examination Board and by the Nurses Examination Board.

Progress with regard to Reorganisation and Expansion.

42. During the year legislation prepared on the lines recommended in the reorganisation report was completed and at the end of September a series of six Bills of Ordinances showing in detail the nature of the legislation proposed were submitted to Government. These Ordinances are intended to replace not only the Public Health and Buildings Ordinance 1903 but also the Sale of Food and Drugs Ordinance 1896 and portions of the Merchant Shipping Ordinance 1899.

43. The low value of the dollar and the trade slump continued to retard progress in reorganisation and expansion. The erection of a new infectious diseases hospital and a new mental hospital had to be postponed and it was found impossible to include in the Estimates provision for a Senior Health Officer, an Ophthalmologist, or a Dentist.

44. However in spite of the severe financial handicap substantial advancements were made in a number of directions in the Island of Hong Kong, the Kowloon Peninsula and the New Territories. The following are the most noteworthy.

45. *Staff increase.*—The staff of Chinese Medical Officers was increased by three.

46. *New Government Civil Hospital.*—Work was commenced on a 500 bed hospital to take the place of the present Government Civil Hospital.

47. *Western District Health Centre.*—A site was acquired in the crowded western district of Victoria, and near the University, for the construction of a model health centre where medical students will have an opportunity of studying the practice of modern health activities.

48. *Eastern District Health Centre.*—An offer by certain Chinese gentlemen to provide funds for the erection of a general health centre in the Wanchai District of Victoria was accepted. The building when completed will be taken over and run by the Government Medical Department.

49. *Kowloon Hospital Extension.*—During the year there were under construction :—

- ✓ (a) a general block of two wards having a total accommodation of 48 beds.
- ✓ (b) a nurses hostel.
- ✓ (c) a set of quarters for a Medical Officer.

Money was voted for the erection of a new out-patients block but owing to pressure of work the P.W.D. were unable to make a start during the year.

50. *Kowloon Venereal Diseases Centre.*—This centre which was completed early in the year was opened on the 18th of April for the free treatment of venereal diseases. The centre is situated within a convenient distance of the docks.

51. *Expansions in the New Territory.*

- (a) The Lady Ho Tung Welfare Centre was completed in November.
- (b) The Ruttonjee Dispensary at Sham Tseng was completed in December.
- (c) The Un Long Dispensary was moved to new premises and a Resident Chinese Medical Officer placed in charge.
- (d) The Tai Po Dispensary was moved to larger premises.
- (e) At the Shing Mun Dam Water Works where 1,000 labourers are employed a Medical Unit was established and a small hospital erected. Antimalarial works were carried out.

52. *Dispensary Launch approved.*—In August a dispatch was received from the Secretary of State sanctioning the building of a sea-going dispensary launch to give medical assistance to the 100,000 who live on boats in the waters of the Colony and to those resident in villages only readily accessible by boat.

SECTION I.

ADMINISTRATION.

53. The total authorised establishment of the Medical Department for the year 1933 was as follows:—

Administrative Staff.

The Director of Medical and Sanitary Services.....	1
Deputy Director of Medical and Sanitary Services...	1

Clerical Staff.

Secretary	1
Stenographers	2
Accountant	1
Clerks Class II	1
„ „ III	4
„ „ IV	1
„ „ V	6
„ „ VI	10
„ „ Special	1

INVESTIGATIVE DIVISION.

A. Bacteriological Institute.

Bacteriologist	1
Assistant Bacteriologist	1
Laboratory Assistant Class I.....	1
Laboratory Assistant Class VI.....	4

B. Malaria Bureau.

Malariologist	1
Assistant to the Malariologist	1
Malaria Inspectors	4
Malaria Inspector (Probationer)	1

Division of Chemical Analysts.

Government Analyst	1
Assistant Analysts	3
Class II Assistant Analysts	2
Sampler	1

HEALTH DIVISION.

For duty in connection with the Sanitary Department.

Health Officers.....	3
(one post vacant)	
Chinese Health Officer	1

Port Health Branch.

Port Health Officers & Inspectors of Emmigrants ...	2
Chinese Port Health Officers.....	2
Health Inspector.....	1
Public Vaccinators	12

Venereal Diseases Branch.

Venereal Diseases Officer	1
Chinese Venereal Diseases Officer.....	1
Venereal Diseases Technical Assistant	1

Maternity and Child Welfare Branch.

Lady Medical Officer	1
Infant Welfare Nurse	1
Interpreter	1

School Hygiene Branch.

Medical Officer for Schools.....	1
Chinese Medical Officers for Schools	2
School Nurses	3

Chinese Hospitals and Dispensaries Branch.

Visiting Medical Officer	1
Asst. Visiting Medical Officer	1
Chinese Resident Medical Officers	3
Chinese Lady Medical Officers	3
Stenographer	1
Midwives	3

MEDICAL DIVISION.

Clinical Branch.

Government Consultants	3
Senior Medical Officer.....	1
Medical Officers	7
Chinese Medical Officers	4
House Officers	4

Nursing Staff (General).

Principal Matron.....	1
Matrons	3
Home Sister.....	1
Tutor Sister	1
Nursing Sisters	44
Nurses (Staff)	2
Nurses (Probationers)	40
Dressers	6
Dressers (Probationers)	12
Linen Maid	1

Nursing Staff (Mental Hospital).

Head Attendant	1
Assistant Attendant	1
Female Attendants	2

Stewards.

Steward	1
Assistant Steward.....	1

Pharmacy Branch.

Apothecary	1
Assistant Apothecaries	2
Dispensers (Charge).....	5
Dispensers (Probationers)	5

Radiology Branch.

Radiologist	1
Radiographer	1
Masseuses	2
X-Ray Sister.....	1

New Territories Branch.

Medical Officer	1
Chinese Medical Officers	2
Dresser (Staff)	1
Midwives	5
Dresser (Staff) for Travelling Dispensary	1
Driver	1

Miscellaneous.

Office Attendants, Messengers, Ward-boys, Amahs, Coolies, etc.,	318
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PRINCIPAL CHANGES IN PERSONNEL.

54. The following were the principal changes which took place during the year:—

Dr. W. B. A. Moore returned from leave on the 11th January and resumed duty as Deputy Director of Medical and Sanitary Services. Dr. D. J. Valentine, who had been acting as D.D.M.S.S. during Dr. Moore's absence, left the Colony on long leave on the 8th of April.

APPOINTMENTS.

Name of Officer.	Designation.	Date of assumption of duty.
Dr. G. M. Gray	Health Officer	23.2.33.
Dr. (Mrs.) A. L. J. Dovey	Asst. Visiting M.O. Chinese Hospitals and Dispensaries	1.4.33.
Dr. Cheung Kung Leung	Chinese V.D. Officer	1.1.33.
Dr. Wong Hok Nin	Chinese M.O. for Schools	do.
Dr. (Miss) Cheng Sui Yu	Chinese L.M.O.	3.1.33.
Dr. Lam Chi Wie	Chinese M.O.	15.3.33.
Dr. Lam Shiu Kwong	Do.	15.5.33.
Dr. Yu Chiu Kwong	Do.	1.8.33.

PROMOTION.

Mr. V. C. Branson, Assistant Government Analyst, was appointed Government Analyst dating from 1st September, 1932.

RESIGNATIONS OR RETIREMENTS.

Name of Officer.	Designation.	Date of Resignation or retirement.
Dr. (Mrs.) A. R. S. D. McElney	Asst. V.M.O.C.H. & D.	31.3.33.
Dr. (Mrs.) E. M. Minetti	M.O. for Schools	9.8.33.

OFFICERS ON VACATION LEAVE IN EUROPE.

Name of Officer.	Designation.	Date of Departure.	Date of Return.
Dr. W. B. A. Moore	D.D.M.S.S.	—	11.1.33.
Dr. D. J. Valentine, M.C.	Medical Officer	8.4.33.	—
Dr. J. P. Fehily	Port H.O.	24.3.33.	24.11.33.
Dr. F. J. Farr	Radiologist	31.12.32.	28.12.33.
Dr. K. C. Yeo	Asst. M.O.H.	1.8.33.	23.11.33.
Miss A. E. Girling	Principal Matron	10.5.33 on retirement	
Miss Chettle	Matron, Victoria Hospital	4.5.33	—
Miss Maclaren	Home Sister, G.C.H.	3.3.33.	11.12.33.

LIST OF ORDINANCES AFFECTING THE PUBLIC HEALTH
ENACTED DURING THE YEAR.

55. The Ordinances affecting the public health which were enacted during the year were:—

No. 7—New Territories Regulation Amendment Ordinance.

No. 16—Opium Amendment Ordinance.

No. 22—Juvenile Offenders Amendment Ordinance.

No. 25—Miscellaneous Licences Ordinance—relating to Hawkers,
Massage Establishments and Undertakers.

56. EXPENDITURE FOR 1933 & 1932 COMPARED.

	1933	1932
Personal Emoluments	\$1,008,860.62	\$941,117.07

OTHER CHARGES.

A.—Staff.

Conveyance and Motor Allowances	13,219.62	12,388.00
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B.—General.

	1933	1932
Artificial Limbs	30.00	12.66
Bedding and clothing	12,963.08	12,183.44
Board for 4 House Officers	1,460.00	1,089.00
Board and Lodging for 6 Pupil Midwives	576.00	576.00
Books	415.33	363.91
Bonuses to Dispensary Licentiates and Clerks for vaccination of children and registration of births	4,277.20	3,466.20
Cleansing Materials	5,537.45	5,566.14
Dental and other Special Treat- ment	3,093.50	3,118.50
Expenses of Courses of Study & attendance at Medical Con- gresses	1,895.02	2,180.54
Fuel and Light	54,272.33	53,649.81
Grants to Protestant and Roman Catholic Chaplains for Re- ligious Services	1,800.00	1,800.00
Incidental Expenses	2,565.27	2,685.99
Maintenance of lunatics at Canton	7,722.16	5,749.93
Medical Comforts	603.20	664.23
Medicines, Surgical Appliances and Instruments	72,549.17	53,837.72
Provisions for Patients	144,370.88	147,850.10
Rent of Premises for Dispensaries, and Infant Welfare Centre...	3,479.35	2,616.00
Transport	1,188.70	1,073.08
Upkeep of Hospital Equipment, etc.	12,428.42	11,676.50
Upkeep of X-Ray Apparatus	11,746.81	11,840.18
Upkeep of Travelling Dispensary.	2,366.31	726.50
Ventilation of Operating Theatre.	419.60	47.85
Washing	17,462.03	15,910.78
Treatment of Opium Addicts	560.50	—

C.—Port Health Officer's Office.

	1933	1932
Conveyance Allowances	179.03	324.85
Incidental Expenses, etc.	399.81	398.97
Uniforms	166.89	186.29

D.—Bacteriological Institute.

Animals and Fodder	6,389.90	6,188.86
Anti-rabic work	373.19	425.15
Apparatus and Chemicals.....	1,338.37	1,458.85
Books and Journals	86.20	98.36
Conveyance Allowances	343.71	233.50
Fuel and Light	1,540.28	1,722.51
Incidental Expenses	720.40	788.60
Preparation of Vaccines, Serum, etc.	1,571.10	1,682.76
Uniforms	240.83	468.91

E.—Mortuaries, Victoria and Kowloon.

Conveyance Allowance	18.00	18.00
Fuel and Light	81.33	74.96
Uniforms	94.50	116.26

F.—Malaria Bureau.

Anti-Malarial Field Work.....	1,136.84	1,036.94
Conveyance and Motor Allowances	1,379.42	1,506.15
Equipment	1,392.27	1,631.97
Incidental Expenses	290.91	295.22
Uniforms	644.81	509.59

G.—Analytical Laboratory.

Apparatus and Chemicals	3,991.84	3,641.79
Books and Journals	161.69	184.38
Conveyance Allowance	180.00	287.74
Fuel and Light	807.11	707.19
Incidental Expenses	381.17	242.40
Uniforms	133.25	154.96

Total Personal Emoluments and Other Charges:—	\$1,409,905.40	\$1,316,575.34
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SPECIAL EXPENDITURE.

	1933	1932
Electric Centrifuge.....	\$1,167.94	—
Electric Refrigerators	—	870.30
Microscope for Bacteriological Institute	689.56	—
Microscope for Training Asiatic Sanitary Inspectors	940.00	—
Microscope for Venereal Diseases Clinic	702.40	—
Repair and Calibration of Instru- ments, Analytical Laboratory.	676.29	—
Travelling Dispensary	—	1,912.39
Equipment for Venereal Diseases Clinic	—	3,906.51
<hr/>		
Total Special Expenditure:—	\$4,176.19	\$6,689.20
<hr/>		
Total Medical Department:—	\$1,414,081.59	\$1,323,264.54
<hr/> <hr/>		

57. REVENUE FOR 1933 AND 1932 COMPARED.

Medical Treatment	94,220.96	105,040.87
Miscellaneous	1,180.00	150.00
Bacteriological Examination	9,346.70	14,840.60
Chemical Analyses	43,107.50	30,714.00
Bills of Health	11,070.00	11,508.00
Medical Examination of Emmig- rants	89,531.70	86,680.00
Official Certificates	2,775.00	665.00
Births and Deaths Registration ...	9,097.48	7,275.50
Consultants Fees	5,530.00	3,290.00
<hr/>		
Total:—	\$265,859.34	\$260,163.97
<hr/> <hr/>		

58. EXPENDITURE AND REVENUE MEDICAL DEPARTMENT
FOR THE PAST TEN YEARS.

Year.	Personal Emoluments & Other Charges.	Special Expenditure.	Total Expenditure.	Total Revenue.
1924.....	498,362.56	4,520.33	502,882.89	205,598.37
1925.....	548,703.64	75,537.46	624,241.10	194,547.75
1926.....	701,717.93	34,451.05	736,168.98	255,070.19
1927.....	721,623.32	16,409.47	738,032.79	307,744.48
1928.....	808,412.61	23.37	808,435.98	306,347.62
1929.....	878,058.19	17,061.08	895,119.27	299,524.51
1930.....	1,172,791.22	51,305.06	1,224,096.28	267,887.66
1931.....	1,325,353.30	52,697.76	1,378,051.06	243,256.99
1932.....	1,316,575.34	6,689.20	1,323,264.54	260,164.87
1933.....	1,409,905.40	4,176.19	1,414,081.59	265,859.34
Total	\$9,381,503.51	\$262,870.97	\$9,644,374.48	\$2,606,001.78

59. In drawing comparisons between the expenditure and revenue of different years it should not be forgotten that the Hong Kong dollar is based on silver and its value rises and falls with the price of that metal. Most of the European officers draw sterling salaries and the bulk of the drugs, dressings and instruments are obtained from England and paid for in sterling. With the exchange at a shilling, the number of dollars expended on sterling priced material is double what it would have been had the exchange been two shillings to the dollar.

RATIO OF EXPENDITURE ON MEDICAL AND SANITARY SERVICES TO
TOTAL REVENUE FROM ALL SOURCES.

60. The total revenue of the Colony from all sources was estimated at \$33,027,000.00.

61. Because of the overlapping which occurs when a work serves both a utilitarian and a sanitary service it is impossible to assess exactly the amounts which have been spent for purely medical and sanitary purposes. Including all water works and drainage works as sanitary works, the following (which include the salaries of the P.W.D. staff concerned) shows the commitments as laid down in the Estimates for 1933.

Expenditure by Medical Department.....	\$1,414,081.59	✓
,, ,, Sanitary Department	1,114,897.00	✓
,, ,, Public Works Department	2,400,000.00	✓
,, ,, Police Department	2,600.00	✓
,, ,, Subsidies to Charities	182,510.00	✓
	<hr/>	
Total:—	\$5,114,088.00	(4,278,661)
	<hr/> <hr/>	

62. Ratio of expenditure on Medical and Sanitary Services to total revenue = $\frac{5,114,088.00}{33,027,000.00} = 15.48$ per cent. (12.5)

63. If the expenditure on Water Works be not taken into account the ratio is 11.81 per cent. As explained in paragraph 61 above these figures are approximate only. (10.8)

SECTION II.

PUBLIC HEALTH.

PART I.—VITAL STATISTICS.

Civil Population.

64. The estimated civil population for the whole of the territories under British jurisdiction at the middle of the year was 922,643, of which 902,197 or 97.3 per cent was Chinese and 20,446 or 2.22 per cent non-Chinese. The distribution was as follows:—

(902,197)
(20,446)
(97.3)

Urban area of Victoria:—

Europeans and Americans	4,080	
Other non-Chinese races	5,600	
Chinese	368,739	
		378,419

(378,419)

Villages of Hong Kong:—

Europeans and Americans	320	
Other non-Chinese races	107	
Chinese	45,286	
		45,713

(45,713)
(424,132)

Total for Hong Kong Island..... 424,132

Urban Area of Kowloon including New Kowloon:—

Europeans and Americans	4,590	
Other non-Chinese races	5,727	
Chinese	286,896	
		297,213

(297,213)

Total for Kowloon & New Kowloon..... 297,213

Junks and Sampans:—

Chinese	100,000	
---------------	---------	--

New Territories exclusive of New Kowloon:—

Europeans and Americans	22	
Chinese	101,276	
		101,298

Total civil population 922,643

=====

65. During the year 2,290,700 persons entered and 2,299,313 left the Colony by river steamer and by railroad, making a surplus of emigrants over immigrants by these routes of 8,613. Fuller details are as follows:—

	<i>Arrived.</i>	<i>Departed.</i>
River steamer	1,323,020	1,361,574
Railway	967,680	937,739
Ocean going steamers	496,736	413,076
Total	<u>2,787,436</u>	<u>2,712,389</u>

The above does not represent the total movement between Hong Kong and the neighbouring provinces for there are many who arrive and depart by junk or sampan. It is estimated that on an average some 7,000 arrive and 7,000 depart daily.

Births and Deaths Registration.

66. The Registration of Births and Deaths Ordinance has since 1911 applied to the whole territory under British jurisdiction but until last year no action was taken to enforce it in the New Territories where registration of both births and deaths had been the exception rather than the rule. Registration in the New Territories has steadily increased and in 1934 should be sufficiently complete for the calculation of rates.

67. Death registration in the Colony Proper being a necessary preliminary to a permit to bury, it may be taken for granted that practically all deaths are registered. Bodies found dumped or abandoned in the streets and open spaces, and they are not a few, are taken to the Public Mortuaries where they are examined by the Medical Officer who fills in the necessary certificates which go through the Coroners' hands to the Registrar. All certificates of deaths are scrutinized by the Medical Officer of Health.

68. It has been found very difficult to obtain anything like complete registration of births and a considerable number of births, especially those of females, are never reported. Every facility is offered for registration, and the Chinese are more and more coming to realise its benefits.

Births.

69. The births registered as having occurred in the Colony Proper were:—

Chinese	14,909	(13,166) 16.5 (14.9)
Non-Chinese	453	(431) 22.1 (21.7)
Total	<u>15,362</u>	<u>(13,597) 16.6 (15.1)</u>

Deaths.

70. The deaths registered among the civilian population of the Colony (including New Kowloon but excluding the remainder of the New Territories) was 18,161, giving a crude death rate of 22.11 as compared with 24.74 for the previous year.

71.

*18161
22.11 (1933)
(1932)*

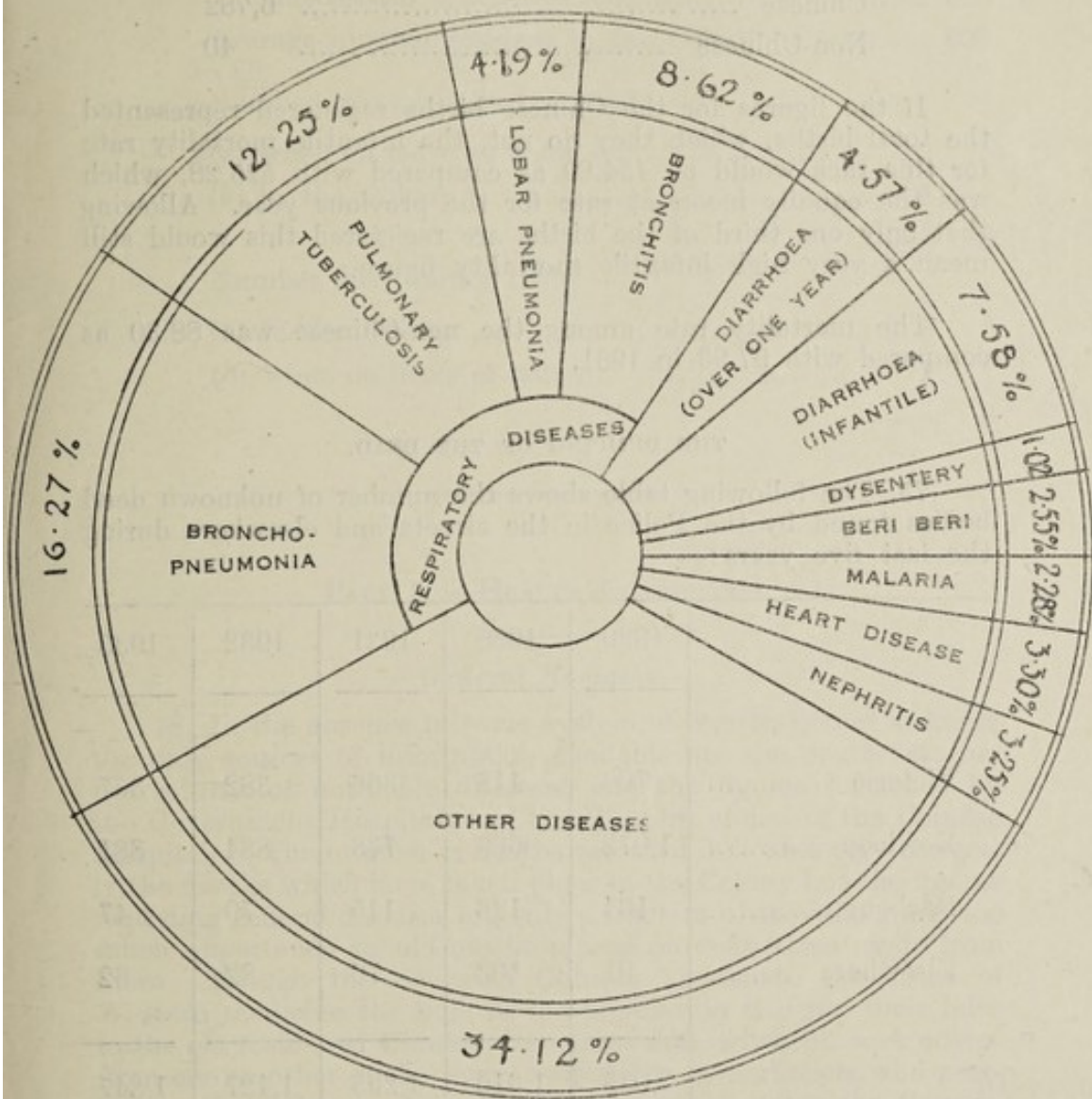
Year	Deaths	Estimated population	Death rate per mille population	
1933	Chinese 17,923	800,921	22.38	
	Non-Chinese ... 233	20,424	11.39	
1932	Chinese 19,546	781,036	25.02	
	Non-Chinese ... 283	19,984	14.16	

72. The principal diseases causing deaths were:—

5283

Disease.	No. of deaths.	Percentage of total deaths.	Death rate per mille population.	
			1933	1932
Broncho-pneumonia	2,955	16.27	3.60	3.23
Pulmonary tuberculosis...	2,225	12.25	2.71	2.52
Pneumonia	761	4.19	0.93	2.38
Bronchitis	1,567	8.62	1.98	2.59
Diarrhoea (infantile)	1,377	7.58	1.68	1.60
Diarrhoea (over one year).	830	4.57	1.02	1.40
Dysentery	186	1.02	0.23	0.36
Nephritis	591	3.25	0.72	0.89
Heart disease — heart failure	600	3.30	0.73	0.66
Beri-beri	463	2.55	0.56	0.59
Malaria	414	2.28	0.50	0.56
<i>Notifiable Diseases:—</i>				
Smallpox	433	2.38	0.53	0.21
Enteric	64	0.35	0.08	0.10
Diphtheria	81	0.44	0.10	0.10
Cerebro-spinal meningitis	118	0.65	0.14	0.15
Cholera	—	—	—	0.19
Plague	—	—	—	—

73. Death Clock showing percentage of total deaths caused by different diseases:—



INFANTILE MORTALITY.

74. The numbers of deaths of infants under one year were:—

(6916)

Chinese	6,782
Non-Chinese	40

1922

If the figures for the Chinese births registered represented the total births, which they do not, the infantile mortality rate for this race would be 454.89 as compared with 525.28, which was the equally incorrect rate for the previous year. Allowing that only one third of the births are registered this would still mean a very high infantile mortality figure.

The mortality rate among the non-Chinese was 88.30 as compared with 97.93 in 1931.

THE DUMPING OF THE DEAD.

75. The following table shows the number of unknown dead bodies found by the Police in the streets and elsewhere during the last five years:—

	1929	1930	1931	1932	1933
Victoria	706	418	366	382	357
Kowloon	1,072	669	738	884	881
Harbour	164	126	115	79	47
Elsewhere	91	103	76	82	62
	2,033	1,316	1,295	1,427	1,347

no. 1479

98 per cent of the bodies dumped were children the majority being infants. The number of males exceeded that of females.

Vital Statistics of European Civilian Population.

(8800)
(6800)

76. The Europeans and Americans resident in the Colony are estimated to number 9,012, of whom 6,964 were British. The majority of Europeans and Americans are treated by private practitioners when ill, and figures are not available for calculating incidence rates.

There were 133 deaths among the 9,012, giving a death rate of 14.7 per mille.

VITAL STATISTICS OF EUROPEAN OFFICIALS.

77. Number of Europeans (excluding temporary school mistresses)	894	(097)
Average number resident in the Colony	800	(124)
Number invalided during 1933:—		
(a) when on leave at home	2	
(b) in the Colony	6	
	—	8 (37)
Number died during 1933:—		
(a) in the Colony	5	
(b) when on leave at home	1	
	—	6 (14)

PART II.—HEALTH CONDITIONS.

General Remarks.

78. In the absence of some system of registration of sickness the only sources of information available are the death returns, the returns of notifiable diseases, and the figures furnished by the Government Hospitals and the Western clinics of the Chinese Hospitals. The number of deaths recorded indicates very correctly the deaths which have taken place in the Colony but the figures regarding general diseases are only a fraction of the whole and too much importance should not be placed on deductions made from them. Though the educated Chinese appreciate the value of Western medicine the bulk of the population still pin their faith to the old fashioned Chinese decoctions and, when ill, seek advice from one or other of the many empiricists or herbalists who practise in the Colony. A number of those who enter the Government Hospitals do so only after they have made full trial of Chinese Medicines and when their disease is well advanced.

79. Year by year, however, the value of Western medicine becomes more and more appreciated. Proof of this is the ever-increasing number who attend the outpatient departments of Government Hospitals or seek admission to the wards. Another proof is the success of the Infant Welfare Clinic which was opened in Wanchai on 25th April, 1932 and which has become so popular that there is need of further accommodation.

80. Judging from the death returns the health of the Colony was better than that of the previous year. The crude death rate was 22.38 per mille as compared with 25.02 the rate for 1932.

81. Respiratory diseases accounted for 44.93 per cent of the total deaths, the percentage for 1932 being 43.05.

82. The principal diseases causing death were broncho-pneumonia, pulmonary tuberculosis, bronchitis, pneumonia, infantile diarrhoea and diarrhoea.

83. The overcrowded houses combined with the expectorating habits of the Chinese furnish sufficient explanation for the prevalence of respiratory troubles.

Mosquito-borne Diseases.

84. The mosquito-borne diseases of the Colony are Malaria, Dengue and Filariasis. None of these are notifiable diseases and complete incidence figures are not available.

MALARIA

85. This disease which in the early days of the Colony was the great cause of death and from which Hong Kong derived its reputation of unhealthiness has now practically disappeared from the populous centres of Victoria and Kowloon as the result of the destruction of the breeding places of the carriers through efficient drainage. There is still some malaria in the out-skirts of the two towns and a considerable amount in the rural areas of both the Island and the Mainland.

86. Investigations have proved that swamps, ponds and other collections of water in the open plains, are more or less harmless and that the real danger lies within mosquito flight distance of the feet of hills and of valleys where collections of spring water in pockets, pools, swamps and streams form the breeding places of *Anopheles Maculatus*, *Anopheles Minimus* and *Anopheles Jeyporiensis*.

87. Why it is so we do not know but spring water which has not lost its sparkle does have an attraction for these three species. As a rule such water has a faint acid reaction due to dissolved carbonic acid gas. When it loses its CO_2 and becomes flat it ceases to attract.

88. For many years the chief Vector in the Colony and New Territories was believed to be *A. Maculatus*. The researches of Dr. Jackson have proved this to be incorrect. *A. Maculatus* is a carrier but is of far less importance in the spread of malaria than *A. Minimus* and *A. Jeyporiensis*.

89. It appears that species of mosquitoes, like races of men, can under different conditions of climate and surroundings develop differences in habits and tastes for food. *A. Maculatus* in Malaya readily takes human blood and is a very potent agent in the spread of malaria. In Hong Kong, where it is very prevalent, it seems to prefer animals to humans and its importance as a Vector of paludism is much less pronounced.

90. Though paddy swamps on the open plains are factors of little importance in the spread of malaria the same cannot be said of the irrigated terraces which form the rice fields of the hilly country. These have been shown by the Malaria Bureau to be, under certain conditions, prolific breeding places for that powerful carrier *A. Jeyporiensis*. The irrigation ditches leading to and from the rice fields harbour both *A. jeyporiensis* and *A. minimus*.

91. Here as in Malaya disturbances of the soil often result in the formation of small collections of water which for reasons unknown attract the malaria mosquito and in which they deposit their eggs. The breaking of the soil is not a direct cause of malaria but a predisposing factor in a chain of events which favour the spread of the disease.

92. The most malarious areas are, therefore, those in or near the hills. Unless carefully watched and carefully controlled works in the vicinity of the hills which involve disturbance of the soil such as roads, railways, or waterworks are nearly always attended by high sickness and death rates among the labour forces employed. In Malaya this was especially the case when the soil was of granite formation and the same applies in Hong Kong.

93. Malaria not being a notifiable disease few figures are available to measure the actual extent of incidence throughout the Colony and New Territories.

94. On the hospital returns and on the returns furnished by certain government departments, such as the Police, it is possible to base a guess as to whether the disease is on the increase or decrease generally, but that is all.

95. The cases admitted to Government Hospitals numbered 475 of which 8 or 1.68 per cent died. In the Chinese Hospitals there were 925 admissions, of which 208 or 21.40 per cent died.

Among those admitted to the Government Hospitals there were 195 tertian, 159 aestivo-autumnal, and 12 quartan infections.

96. The cases admitted to the Government Hospitals during the last nine years are as follows:—

1925	1,142
1926	970
1927	670
1928	485
1929	653
1930	535
1931	585
1932	465
1933	475

418
 (400)
 (175)
 366 (401)
 535 (555) 6.5
 434 (434) 1.1
 3.5 (1.2) 2

97. The incidence among the police of the New Territories for the same period was:—

1925	1,205
1926	877
1927	428
1928	278
1929	265
1930	258
1931	148
1932	55
1933	102

98. Many of the Police Stations are screened and every man is provided with a mosquito net. Prophylactic quinine is issued and the living rooms are regularly sprayed with an insecticide in an endeavour to kill any adult mosquitoes that may be present. The police on night patrols are of course liable to infection.

(455) 99. The total number of deaths attributed to malaria was 414, giving a death rate of 0.50 per mille for the Colony. The lowness of the rate is, of course, due to the fact that the great majority of the population living in the drained urban areas are outside the zone of flight of malaria carrying anophelines and, therefore, not subject to risks of attack.

DENGUE.

100. There was no epidemic of this disease during the year and only a few cases came under the notice of the Medical Officers.

FILARIASIS.

101. Researches carried out by the Malariologist show that a higher percentage of the people harbour micro-filaria in their blood than was formerly supposed. A number of mosquitoes, dissected for malaria, had filaria in their tissues. Twenty-two cases of elephantiasis were treated in the Government Hospitals and three in the Chinese Hospitals. Four cases of Chyluria were reported from the Chinese Hospitals.

Infectious Diseases.

102. The infectious diseases of the Colony may, for convenience, be classed into those which are notifiable and those which are not.

103. The most important of the non-notifiable infectious diseases is Pulmonary Tuberculosis. Leprosy is notifiable under the Leprosy Ordinance 1910 but not under the Public Health and Buildings Ordinance.

104. The notifiable diseases are Plague, Cholera, Smallpox, Yellow Fever, Typhus Fever, Cerebro-Spinal Fever, Enteric Fever, Para-typhoid Fever, Relapsing Fever, Scarlet Fever, Diphtheria, Puerperal Fever and Rabies (human and animal).

105. Responsibility for reporting a case of notifiable disease lies with the legally qualified medical practitioner attending a case, or, in the absence of such, on the occupier or keeper of the premises or on the nearest male relative living on the premises, or in default of such relative on any person in charge of or in attendance on the sick person. Reports are to be made to the Medical Officer of Health or to the Officer in charge of the nearest Police Station.

106. In actual fact practically the only reports received by the Medical Officer of Health are those:—

- (a) from qualified medical practitioners.
- (b) from the Medical Officer in charge of hospitals.
- (c) from the Medical Officers in charge of the Public Mortuaries where bodies have been taken for inspection and disposal.

107. The Health Authorities when they do discover a case of infectious disease have no power to remove it to hospital unless the patient or his guardian consents, or unless a Magistrate makes an order for removal.

TUBERCULOSIS.

108. Pulmonary Tuberculosis ranks second to broncho-pneumonia as the principal cause of death. The total number of deaths was 2,225, that for 1932 being 2,042. The death rate per mille was 2.71 as compared with 2.52 for the previous year. Pulmonary Tuberculosis in the majority of cases is a disease which unfits the individual for the active exercise of the employment months or even years before death supervenes. Because of the tendency of those unable to work and earn a living, to leave Hong Kong for their villages in China, the deaths reported form an incomplete index of the prevalence of the disease.

109. The number of cases showing clinical symptoms is unknown but reckoning 10 for each death the total comes to over 20,000.

110. As it is a habit of the working classes to expectorate freely without taking precautions the risks of spread of infection are such that few can escape. Fortunately the natural resistance of the ordinary individual to invasion by the tubercle bacillus is such, that given a sufficiency of proper food and fresh air, he can and more often than not does, wage a winning fight against the invader. It is probable that the great majority of those living in the urban districts have at some time been infected.

111. The masses in Hong Kong live a hand to mouth existence. There is little to spare in the ordinary family and all who can must work. The well and strong can earn sufficient for their daily food but the weak and ailing find great difficulty in doing so. The individual, therefore, in whom the tubercle bacillus has gained the upper hand struggles against odds under conditions which leave little hope for recovery.

112. Tuberculosis of the lungs is a hidden disease the extent of which is only discovered through careful examination by a competent physician. There is a tendency for the patient to imagine himself better than he is and it is often impossible to make the ordinary Chinese working man or woman understand the nature of his or her case and the necessity for care for himself and precautions against being a danger to others.

113. There is at present no drug known which in non-poisonous doses has any action on the tubercle bacilli growing in the tissues. The cure of the disease is brought about by the body itself and medicines only help in the process. The aim of the physician is to tone up the body to a pitch at which it can overcome the influence of the bacillus and keep it at that pitch until all bacilli have been destroyed and full repair established.

114. By the time tuberculosis has become manifest the disease has made considerable progress and time, measured sometimes in months, sometimes in years, is required to bring about a cure.

115. A proportion of the cases require hospital treatment but a much larger proportion can be treated just as well at dispensaries if the home conditions are favourable.

116. It is well known that the average self-respecting Chinese working man or woman will not remain in hospital if he or she feels able to work and it is useless to expect a stay sufficiently long to bring about complete arrest of the progress of a tuberculous infection.

117. Such being the case the establishment of a tuberculous sanatorium for the working classes would be an uneconomic proposition. The best results will be obtained through outpatient treatment at dispensaries, and the provision of beds in the general hospital for those recommended by the dispensary doctors.

LEPROSY.

118. Though leprosy is a notifiable disease very few cases are notified. The number of lepers in the Colony is not known but assuming that the incidence rate is the same as that of the neighbouring countries the total number cannot be less than 500 and it is probable that it is nearer 1,000. To many, these figures will appear to be exaggerations, nevertheless they are accepted by all who are authorities on the subject and have taken the trouble to make the necessary enquiries.

119. The law dealing with leprosy is the Leprosy Ordinance of 1910 which makes leprosy a notifiable disease and gives power to the Governor-in-Council to appoint such places as he shall think fit to be leper asylums, and power to the Governor to order that a leper be segregated in a leper asylum, or, if there be provision for effective isolation and medical treatment in the patient's own home, to prescribe the conditions under which he may be allowed to reside there.

120. Private asylums are prohibited and it is an offence to shelter a leper. There are no leper asylums in the Colony.

121. Lepers who are not British subjects are prohibited from entering the Colony and any such who find entrance may be deported. Lepers who are Chinese subjects are sent to Canton whence they may proceed to Shek Lung where there is an official asylum of the Kwang Tung Government the direction of which is entirely in the hands of the Catholic Mission. During the year the Hong Kong Government paid to the Mission a donation of \$2,500.

The number of lepers deported in 1933 was 83.

Notifiable Infectious Diseases.

122. The number of cases of infectious diseases notified during the year and those notified in 1932 were:—

	1932	1933	
Cholera	241	—	✓
Smallpox	212	566	✓
Diphtheria	205	122	✓
Enteric	202	207	✓
Paratyphoid	8	13	✓
Cerebro-spinal fever	207	191	✓
Puerperal fever	7	12	
Rabies (human)	—	2	✓
Rabies (animal)	—	3	✓

PLAGUE.

123. For the last four years no case of plague, human or rodent, has been reported in the Colony. The disease has disappeared from Hong Kong and the same may be said of South China generally. The rat population is much the same as it was and so far as we know there is no change in quantity or quality in the flea population. The sanitary conditions in Hong Kong are generally better than they were but in the majority of Chinese towns there is little change. We must accept the fact

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that the rise and fall in plague figures have not been satisfactorily explained. We know that plague is primarily a disease of rats communicated to man through the rat flea, but we have to admit that we know little of the reason for the rise and fall in the incidence of disease among rodents.

SMALLPOX.

124. Every year during the winter months this disease manifests itself in outbreaks which are sometimes epidemic and sometimes sporadic, to disappear with the advent of summer.

125. During the year 566 cases were reported, of which 392 were notified through the Medical Officers in charge of Mortuaries, that is after death had occurred. The total number of deaths was 433. Allowing for a case death rate of 25 per cent for all ages in this well vaccinated Colony the real number of cases was 433×4 or 1732. If this be the true figure then 67.3 per cent of the cases evaded discovery by the sanitary authorities and went through the various stages of this very infectious disease in one or other of the overcrowded tenement houses.

126. Of the 392 mortuary cases many were corpses dumped in the streets at night and conveyed to the Mortuary next morning by the Police. The total number of dumped bodies was 1,347 so that the claim that the chief cause of dumping is concealment of infectious cases for fear of the attention of the Sanitary Authorities cannot be substantiated. It is, however, true that fear of punishment for concealment is one cause of dumping.

127. That a child should not be vaccinated until it has passed its second Chinese New Year is a belief prevalent among the local people, and immediately after the New Year the dispensaries are crowded with mothers bringing their infants to be done. A child born just after New Year is thus two years of age before it is vaccinated. In spite of the law requiring children to be vaccinated within six weeks of birth many remain undone until the so-called propitious period, and thus there is always in the Colony sufficient suitable soil for the growth and development of the smallpox virus.

128. The concealment of cases, the dissemination of the virus by fomites and contacts and the existence of a sufficiency of suitable soil explains the continuance of smallpox despite the number of vaccinations which are done yearly.

129. The total number vaccinated during the year under review was 545,850 as compared with 244,789 in 1932 and 154,451 in 1931.

? 278,410
(= 1931 total)

130. The number of cases treated in the Government Infectious Diseases Hospital, where Western methods only are practised, was 13 with 5 deaths. The case death rate was 38.5 per cent. The number of cases treated in the Tung Wah Infectious Diseases Hospital by Chinese methods was 137 with 78 deaths. The case death rate was 57 per cent.

131. During the last 23 years 309 cases were treated at the Government Infectious Diseases Hospital by western treatment with a death rate of 15.5 per cent. During the same period at the Tung Wah Infectious Diseases Hospital 1,463 cases were treated by Chinese herbalists methods with a death rate of 48.25 per cent.

These figures should convince any open-minded person that the supposed superiority of Chinese treatment over Western treatment is a myth.

CHOLERA.

132. No cases of Cholera were reported during 1933.

DIPHTHERIA.

133. There were 122 cases reported as compared with 205 for 1932. The cases were all sporadic and the source of infection was seldom discovered.

ENTERIC.

134. The number of cases reported was 207 as compared with 202 for the previous year. All the cases were sporadic and as is usual in such, the source of the infection could not be traced. There is no evidence that any case contracted the disease through the public water supply.

CEREBRO-SPINAL FEVER.

135. The number of cases of cerebro-spinal fever or cerebro-spinal meningitis was 191, as compared with 207 for the previous year. The cases were all sporadic and in very few cases could the spread of infection be traced from a particular source. The disease showed no tendency to spread to contacts even where conditions as regards congregation of individuals and poorness of ventilation appeared to be most favourable for spreading. The case death rate was 62 per cent. Treatment was by spinal puncture and injection of serum.

SECTION III.

HYGIENE AND SANITATION.

136. The Sanitary Department which is distinct from the Medical Department and over which the Director of Medical and Sanitary Services has no authority deals with the greater part of the sanitation of the Colony. The head of the department is an officer of the Civil Service whose title is Head of the Sanitary Department.

137. The staff under his administrative supervision includes:—

- (i) Two European and one Chinese, Health Officers seconded from the Medical Department.
- (ii) Two Veterinary Surgeons.
- (iii) Fifty-six European Sanitary Inspectors.

138. There are six Asiatic Sanitary Inspectors, a number of interpreters and a large staff of subordinates.

139. Included among the responsibilities of this department are:—

- (a) the prevention or mitigation of epidemic, endemic, contagious or infectious disease in humans and animals.
- (b) the prevention of disease caused by mosquitoes.
- (c) measures for ensuring the purity and wholesomeness of foods during their preparation, storage and sale.
- (d) the control of abattoirs, markets, dairies and bakeries.
- (e) the control of eating houses.
- (f) town cleansing, scavenging and collection of nightsoil.
- (g) the disposal of the dead.

140. For the purpose of sanitary administration by the Sanitary Department, the Island and the Peninsula have been divided into local sanitary areas, each with a sanitary office, and these in turn have been sub-divided into Health Districts each in charge of a Sanitary Inspector.

141. The City of Victoria including the Peak is divided into four sanitary areas and seventeen health districts. The villages on the south side of the island are in charge of one Inspector. Kowloon Peninsula has three health areas and seven health districts. It is estimated that on an average each Inspector has to deal with a population of 25,000, a very high figure for a tropical city, and especially for one so overcrowded as Victoria.

142. The Sanitary Department has no jurisdiction in any part of the New Territories with the exception of the urban area next to Kowloon and known as New Kowloon.

143. The following general review of work done and progress made in matters of sanitation is, so far as the Sanitary Department is concerned, based on facts supplied by the Medical Officer of Health. The Annual Report of the Sanitary Department is issued independently by the Head of the Sanitary Department.

Preventive Measures Against Mosquitoes and Insect Borne Diseases.

144. The only law on the subject is the following by-law made under the Public Health and Buildings Ordinance which is administered by the Sanitary Department:—

‘When the larvae of mosquitoes are found on any premises the Board may on the advice of the Medical Officer of Health or any Assistant Medical Officer of Health give notice to the owner or occupier of such premises to remove all accumulations of water from such premises or to take steps to prevent the recurrence of the breeding places of mosquitoes in any such accumulations of water and such owner or occupier shall comply with such notice forthwith.’

This by-law does not apply to the New Territories.

145. There are no special Sanitary Inspectors engaged in anti-mosquito work and the anti-mosquito brigade consists of two overseers and a squad of oiling coolies.

146. The routine work of inspection of premises for the presence of mosquito breeding was carried out by the district inspectors. Oiling of pools and destruction of mosquito breeding places was carried out by the anti-mosquito gangs.

147. The usual cutting of undergrowth in May and October was done in co-operation with the Botanical and Forestry Department as regards Crown Lands, and with the Military Authorities, on military lands.

148. The Malaria Bureau of the Medical Department continued to function throughout the year. The work done included:—

- (a) General survey of the Colony and New Territories for the purpose of ascertaining what species of mosquitoes exist and the life history of each.
- (b) Research regarding insect borne diseases to determine the insects hosts and the conditions influencing the spread of infection.
- (c) Special investigation in malarious districts with a view to the eradication of disease.
- (d) Local mosquito surveys for the abatement of mosquito nuisances.

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- (e) Co-operation with Government Departments, the Military, Naval and Air Forces, Public Companies and private individuals with regard to the investigation and eradication of malaria.
- ↑ (f) The teaching of mosquitology.

A full account of the activities of the Bureau will be found in the Appendix.

149. The information so far collected indicates that the principal agents in the spread of malaria are *Anopheles Minimus* and *Anopheles Jeyporiensis* which breed in small pools and collections of spring water subject to the influence of light and usually situated in areas which are hilly or undulating. Water in contact with newly opened earth in these regions is especially dangerous. Terraced and irrigated rice fields in the hills are dangerous at certain periods of the season.

150. Jungle bush and undergrowth in so far as they provide shade to pools and collections of spring water, hinder rather than promote the spread of malaria.

151. The Public Works Department carry out all anti-malaria works on Crown Lands other than oiling. Each year a sum is inserted for the 'training of nullahs' and each year work to the limit of the sum sanctioned is carried out. There can be no doubt that the disappearance of malaria from the populated areas is to a large measure due to the excellent drainage works carried out by this department.

152. The Public Works Department and the Malaria Bureau co-operated to the fullest extent.

153. At the Shing Mun Dam Construction Works, situated in one of the most malarious areas in the Colony, the engineering staff co-operated with that of the Medical Department in an attempt to control the malaria problem through anti-mosquito measures. The Medical Department undertook responsibility for investigation and research, for anti-larval measures other than drainage, for drug prophylaxis and for treatment. The engineering staff undertook to do clearing and drainage, the construction of buildings and general sanitary requirements.

A zone extending from the labour camp site for half a mile in every direction was cleared, drained and oiled. An attempt was made to render the labourers' camps mosquito-proof. Fuller description of these operations will be found in Chapter X. and in the Report of the Malariologist, Appendix B.

PREVENTIVE MEASURES AGAINST PLAGUE.

154. In the campaign against plague the routine measures which have been in vogue since the disease was at its height were continued. They were:—

- (a) Periodical cleansing of premises. ✓
- (b) Abolition of rat refuges such as ceiling, stair linings and panellings. ✓
- (c) Destruction of rats. ✓

155. In the crowded areas where the houses are packed with humans and their belongings, the periodical cleansing of premises is a most important factor in the prevention of the spread of this disease. All the furniture, movable fittings and household goods are removed from the rooms and cubicles and all floors and woodwork washed down with an emulsion of soap and kerosene oil. This is done either by the sanitary staff or by the occupiers under the general supervision of the district inspector. In addition, accumulated rubbish of all kinds is cleared away and the premises thoroughly searched for rat-holes. Altogether 223,988 floors were dealt with during the year.

156. Twenty-seven members of the cleansing staff were employed in setting traps, bird liming boards, distributing barium carbonate baits, and collecting rodents which had been taken living or dead. By far the greatest number of rats were taken dead from the numerous rat reception bins or tins which are placed in convenient situations throughout the two cities. The Chinese take exception to the rats being found on their premises by the Sanitary Staff, probably through fear of extra sanitary measures being taken against them, and it is not uncommon for them to kill the rodents found in the Government traps and to throw the carcasses into the reception bins. The total number of rats collected was 174,272, of which 17,038 only were taken alive. All rats collected were sent to the Public Mortuary for examination by the Medical Officer in charge. (194,239)

157. During the year no rats were found to be plague infected.

PREVENTIVE MEASURES AGAINST SMALL-POX.

158. Under the Vaccination Ordinance all Public Vaccinators are under the Director of Medical and Sanitary Services who is Superintendent of Vaccination. As Registrar of Births and Deaths the Director is responsible for ensuring the vaccination of all children whose births are registered.

159. During the year 545,850 persons or nearly one-third of the total population were vaccinated.

The following table shows the principal bodies engaged in vaccinating and the number of operations performed by each:—

The Public Vaccinators	69,312
The Government Hospitals ,.....	5,339
Maternity and Infant Welfare Centres	163
The Chinese Public Dispensaries	61,728
The St. John Ambulance Brigade ...	409,308
Total ...	<hr/> 545,850 <hr/> <hr/>

160. From the above it will be seen that the St. John Ambulance Brigade and the Chinese Public Dispensaries rendered most valuable assistance in the attempt to control small-pox by vaccination.

161. Apart from vaccination little was done to prevent the spread of small-pox. At a maximum not more than 25 per cent. of the cases were discovered during life and of these the great majority entered the Tung Wah Infectious Diseases Hospital where they were treated by herbalists and where the precautions against dissemination were far from satisfactory.

PREVENTIVE MEASURES AGAINST CHOLERA, DYSENTERY, ENTERIC, ETC.

162. The measures which may be taken to prevent the spread of bowel diseases are those which prevent dissemination by water, by food and by flies. The Hong Kong public water, though subject to certain risks of contamination at some of its several sources, is filtered and chlorinated and when it reaches the consumer it is of a high grade of purity.

163. The measures taken to preserve the wholesomeness of foods for sale and under preparation for sale are still far from satisfactory.

164. With regard to flies Hong Kong is comparatively free from these pests; the same cannot be said for New Kowloon within a mile of the refuse dump.

Preventive Measures Against Tuberculosis.

165. The measures taken against Tuberculosis were:—

- (a) The periodical general cleansing of premises.
- (b) Action to prevent the erection of unauthorised cubicles especially those which have defects in the matter of lighting, air space and ventilation.
- (c) Action by the Building Authority to ensure the erection of houses having a proper supply of lighting and ventilation.

166. The overcrowded condition of the City of Victoria, its confined area, the difficulties presented by topographical features, and the absence of accommodation for evicted tenants make the question of hygienic housing of the populace one of extreme difficulty. The sanitary staff are working against great odds and they cannot hope to attain results such as are attained in other cities where the task is easier and the personnel larger. The wonder is not that so many contract tuberculosis but that so many manage to wage a successful fight against it.

Preventive Measures against Helminthic Disease.

167. With the exception of the action taken by the Veterinary staff at the Abattoirs there never has been any routine campaign against Helminthic disease. Whatever be the percentage of the population carrying ankylostomes very few cases of ankylostomiasis come under the notice of the hospital authorities.

GENERAL MEASURES OF SANITATION.

Domestic Cleanliness.

168. Every domestic building or part of a building occupied by the members of more than one family must, unless especially exempted by the Sanitary Board, be cleansed and limewashed throughout by the owner, to the satisfaction of the Board, not less than once in every year, and notice in writing that such cleansing and limewashing has been completed shall be sent by the owner to the Secretary within three days after the date of completion.

169. It is the duty of the occupier of any domestic building to cause such building to be kept in a cleanly and wholesome condition and to see that the drains, traps, gratings, fall pipes, and sanitary fittings and appliances, are free from obstruction and in an efficient state of repair.

170. In Hong Kong there are 13,842 Chinese houses with 47,171 floors; in Kowloon there are 10,649 houses and 31,497 floors. During the year 142,964 floors in Hong Kong and 81,042 floors in Kowloon were cleansed. During the cleansing process all the furniture is moved and the walls and floors washed down with kerosene oil emulsion.

171. Considering that each inspector has to supervise a district with approximately 25,000 inhabitants, most of whom are ignorant of the rudiments of sanitation, the thoroughness of the cleansing operations is remarkable.

Scavenging.

172. Scavenging is carried out departmentally. There are twenty-one refuse lorries in use, thirteen being for Hong Kong and eight for Kowloon. 392 tons of refuse was collected daily and removed to the various refuse depots. The bulk of the refuse was ultimately disposed of by dumping in the sea at a distance from the city and in such a situation where the currents run in a direction away from the island. Some of the refuse from Kowloon was used to reclaim low-lying land near the sea-shore.

Conservancy and Sewerage Disposal.

173. The collection and disposal of night-soil in the Colony is carried out partly by the bucket system and partly by water carriage. With regard to the bucket system arrangements are made with a contractor for the removal and disposal of excrement under conditions laid down by the Sanitary Board.

174. The excrement is removed by night from the latrines to a special fleet of junks which convey it up river to China where it is utilised as manure for the mulberry trees on which the silk worms feed.

175. Owing to the limitations of the water supply on the Island and the need for economy in the matter of consumption, it is necessary to restrict the number of water closets served by the public mains.

176. Where a sufficiency of water can be obtained from other sources, such as wells or streams, and the conditions otherwise are suitable, water closets are allowed. With regard to effluents, some enter the public sewers direct, some pass to biological tank systems to be treated before final discharge.

Drainage.

177. Drainage both surface and subsoil is controlled by the Public Works Department. \$576,200 was entered in the 1933 Estimates for a programme which included drainage, training of nullahs and sewerage. \$120,000, which includes costs of resumption, was provided for anti-malaria works.

Water Supplies.

178. The water supplies of Hong Kong and Kowloon are in charge of the Water Works Branch of the Public Works Department.

179. All the water is surface water and most of it is collected from catchment areas which are free from ordinary risks of pollution. The water, after storage for a longer or shorter period in impounding reservoirs, is filtered in some cases by slow sand filters, in others by the rapid system, and finally it is chlorinated.

180. Routine examinations are carried out by the Government Bacteriologist and Government Analyst and the results furnished to the Water Authority. The results show that the water as supplied to the consumer is of excellent quality.

Clearance of Bush and Undergrowth.

181. Generally speaking in Hong Kong and the New Territories bush and undergrowth is little in evidence except in those places where it has been planted and conserved. Routine cutting of superfluous undergrowth is carried out in May and October.

Sanitary Inspections.

182. On the staff of the Sanitary Department there are 56 European Sanitary Inspectors and six probationary Asiatic Inspectors. There are neither Health Visitors nor Public Health Nurses. Each Sanitary Inspector has for supervision a district with approximately 25,000 inhabitants most of whom are ignorant of the very rudiments of sanitation. Under their supervision come tenement houses, lodging houses, places of common assembly, eating houses, bakeries, dairies, markets, laundries, etc., etc. It is physically impossible for these men to carry out the number of inspections necessary to ensure a proper standard of sanitation and much that should be done must necessarily be left undone. Work in connection with the routine cleansing of houses takes up much of the time of the Inspectors and there is little left for other necessary action.

183. Except in the matter of house cleansing matters are not satisfactory.

Common Lodging Houses.

184. Boarding Houses which include every place where any person is harboured or lodged for any kind whatsoever of hire or reward and where any domestic service whatsoever is rendered by the owner, lessee, principal tenant, occupier, or master to the person so harboured or lodged, but which do not include any boarding house for non-Chinese seamen within the meaning of the Merchant Shipping Ordinance, are licensed and controlled by the Secretary for Chinese Affairs under the Boarding House Ordinance.

185. They include hotels, common lodging houses, places where employers lodge their employees and the premises of societies within the meaning of the Societies Ordinance, where persons pass the night.

186. Under the Public Health and Buildings Ordinance "Common Lodging House" includes any house or part thereof or other permanent structure where male persons of the labouring, artizan or mechanical classes, not being members of the same family, to the number of ten persons or upwards are housed, but does not include a house or other permanent structure where shopmen or domestic servants are housed by their employers.

187. Under the Public Health and Buildings Ordinance the Sanitary Board is given power to make by-laws for the licensing, regulation and sanitary maintenance of Common Lodging Houses.

188. Sixteen by-laws have been made under this Ordinance, one of which passes the power of registering the houses and licensing the keepers to the Secretary of Chinese Affairs.

189. In practice the Sanitary Department report on the condition of the house and if declared sanitary the Secretary for Chinese Affairs, if he be satisfied, registers it and licenses the keeper.

190. As mentioned above Boarding Houses include a Common Lodging House. Some 700 Chinese Boarding House licences have been issued by the Secretary for Chinese Affairs. They vary in class from 3rd class lodging houses to 1st class hotels.

SCHOOL HYGIENE

191. The School Inspection Branch of the Medical Department consists of one School Medical Officer, two Chinese Medical Officers, and three School Nurses.

192. According to the Census the number of persons between five and fifteen years of age was 141,709. The total number of schools under inspection by the Education Department in 1933 was 1,079 and the number of scholars on the Roll was 71,917.

193. The following table shows the classification of schools and the distribution of scholars.

Class of Institution	Government Schools		Grant in Aid Schools		Subsidised Schools		Unaided Schools		Total Scholars
	No. of Schools	Scholars on Roll	No. of Schools	Scholars on Roll	No. of Schools	Scholars on Roll	No. of Schools	Scholars on Roll	
<i>English</i>									
Secondary	4	2,380	12	6,104	1	168	10	1,864	10,516
Primary	11	1,796	1	212	—	—	114	4,664	6,672
Vocational	2	849	—	—	—	—	—	—	849
Total	✓ 17	5,025	✓ 13	6,316	✓ 1	✓ 168	✓ 124	✓ 6,528	✓ 18,037
<i>Vernacular</i>									
Secondary	1	253	4	1,023	—	—	—	—	1,276
Primary	—	—	—	—	303	20,136	613	33,077	53,213
Vocational	2	214	—	—	1	177	—	—	391
Total	✓ 3	✓ 467	✓ 4	✓ 1,023	✓ 304	✓ 20,313	✓ 613	✓ 33,077	✓ 54,880
Grand Total	✓ 20	✓ 5,492	✓ 17	✓ 7,339	✓ 305	✓ 20,481	✓ 737	✓ 39,605	✓ 72,917

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194. Children enter the Primary Vernacular Schools at 7 years of age and remain there for five years. The normal age for entering the secondary school is 12. The pupils who join the 8th or lowest class can rise one class each year until at 20 they are in the 1st class.

195. With the limited staff provided for the purpose, it was not possible to deal with more than a small proportion of the total school hygiene work calling for attention.

In England and Wales scholars are inspected three times in the course of their school life, namely, at five, eight and twelve years of age. Here it is not possible to do anything like this.

196. So far attention has been concentrated on the secondary schools and primary English Schools. With regard to routine examinations it has only been possible to deal with "entrants" and with "specials."

197. The Primary Vernacular Schools with their 53,000 scholars have not been touched and it is in connection with such that the need for health measures is most urgent. By the time the scholars come under the eye of the Medical Officer when entering the secondary school their physical abnormalities, which might have been rectified if seen and treated sufficiently early, have become established as definite health defects.

198. In Hong Kong as elsewhere the School Medical Officers found their work greatly handicapped by the absence of school clinics where those who could not afford the services of a private practitioner and who required treatment could receive the necessary attention. Cards to hospitals and Chinese Public Dispensaries did not meet the case. The children either did not attend or if they did attend refrained from making a second visit. The reasons for failure to take advantage of the opportunity of obtaining free advice and treatment are several. The natural disinclination of the ordinary child to go alone to a hospital or dispensary, the lack of sympathy shown by the average Hospital subordinate unless tipped, the time taken up in transport and waiting for one's turn to be seen are all factors which tend to make the practice of treatment of school children at hospitals and Chinese Public Dispensaries a failure.

199. To have any chance of success the child must be treated in a clinic, conveniently situated, by the doctor and the nurses whom he knows and in whom he has confidence.

200. Under the scheme for reorganisation of the Medical and Sanitary Services recommendations have been made for the provision of school clinics in district health centres. Pending the establishment of these, temporary clinics have been instituted in the Ellis Kadoorie School in Victoria and the Yaumati School in Kowloon. In February, 1933, a third clinic was opened at the Junior Technical School.

These clinics were available for scholars from any school, but, as a rule, they are attended only by those from schools within a comparatively short radius. Time and expense prevented their use by those further afield. Trachoma, conjunctivitis and skin trouble were the commonest ailments treated.

201. Vision is tested on entry to school and in Class 5. Among the entrants of 1,116 tested 27 per cent. showed slight defects and 10 per cent. serious defects. In Class 5 out of 515 examined 16 per cent. had slight, and 8 per cent. serious defects.

Those showing signs of error of refraction are sent to an oculist to be tested for glasses. Glasses are supplied free to those who cannot pay. The number sent for testing was 302 and the number supplied with glasses 228.

202. A large proportion of the Chinese children inspected required some dental treatment. There being no school dentist notices were issued to parents to take their children to private practitioners, but with little result. A school dentist is much needed.

203. Arrangements have been made with the Government Hospitals and Chinese Public Dispensaries whereby cases sent by the School Medical Officer shall receive free treatment. 380 cases received treatment at these institutions. Cod-liver oil and iron tonics are issued free at the clinics to deserving cases.

204. With regard to home visiting the nurses paid 300 visits to the homes of 228 cases.

The nurses also take the children to hospital for X-ray examination and for the first time of special treatments. This has been found to ensure better attendance and less fright on the part of both child and relatives.

Home conditions are usually found to be unhealthy, ignorance being often more of a drawback to healthy living than poverty, but there is much overcrowding. The mothers welcome the nurses' visits and ask for advice on various health matters.

205. With regard to infectious diseases the Medical Officer of Health notifies the School Medical Officer of any school cases reported to him and *vice versa*. According to the School Medical Officer most of the cases in British Schools are reported but only one-tenth of those in other schools. When we have sufficient home visitors to educate the mothers as to the importance of the subject we will get notification but not before.

206. Respecting school premises and equipment all Government Schools were inspected and reports made. Considerable improvements were effected.

207. The Central British School and the Kowloon Junior School were too crowded. New premises are badly needed for the British children.

	1932	1933
208. Schools inspected	17 ✓	19 ✓
Entrants examined	1,078 ✓	1,257 ✓
Defects found	581 ✓	640 ✓
Per cent. defects in British Schools	35.7 ✓	36.0 ✓
Per cent. defects in Anglo- Chinese Schools	53.9 ✓	56.04 ✓

REINSPECTION OF CHILDREN FOUND TO BE DEFECTIVE.

Class of School.	Year.	Re-inspected No.	Improved No.	Improved Percentage.
British.....	1932	121	47	38.8 per cent.
"	1933	16	6	37.5 " "
Anglo-Chinese..	1932	943	519	55.03 " "
" " ...	1933	1,508	720	47.75 " "

209. Most of the subsidised schools and unaided schools, numbering altogether over 1,000, have not been visited owing to lack of staff. The majority of them consist of one or more rooms in an old or newer tenement house with inadequate closet accommodation. As a rule, the teachers welcome inspection and advice..

210. A most important part of the work done by this branch was the teaching of hygiene. Lectures were given to Vernacular teachers.

211. Hygiene is a compulsory subject for English teachers and courses in this subject have been established at the Education Department's Technical Institute.

212. During Empire Health Week a health exhibition was staged in the Hall at Ellis Kadoorie School and was well attended.

213. The School Medical Officer has established at headquarters the beginnings of a health museum where are to be found posters, leaflets, pamphlets, lantern slides, etc., etc.

LABOUR CONDITIONS.

214. There are no estates, plantations or mines and comparatively few large factories. The majority of the urban labouring classes are engaged in matters connected with commerce, shipping or public works and the bulk of the remainder find employment in shops or workshops or independent businesses. There is no need for recruitment of labour, the supply being sufficient to satisfy all demands.

215. Labourers find their own accommodation in the many tenements and lodging houses which exist in Hong Kong and Kowloon.

216. The Factories and Workshops Ordinance contains sections bearing on the health of factory workers. The Public Health and Buildings Ordinance also contains sections bearing on the health of factory workers.

217. Ordinarily there are no special arrangements for the medical care of labourers other than the Government Hospitals, the Chinese Hospitals, the Chinese Dispensaries and the Mission Hospitals. The total number of third class beds in these institutions available for general diseases are about 1,000 or 1 to 750 approximately.

218. Special arrangements were made for the care of the labourers engaged in the Shing Mun Water Works Scheme which was in full swing during the year. Anti-malaria precautions were taken and hospital accommodation and medical supervision provided. The Medical Department co-operated with the Engineering Authorities.

HOUSING AND TOWN PLANNING.

219. There is no Town Planning Ordinance and Housing comes under that portion of the Public Health and Buildings Ordinance which is administered by the Public Works Department. There is little or no zoning in the older parts of Victoria and blacksmiths shops or even foundries are to be found in the midst of shop houses and domestic houses. The new reclamation in Victoria known as the Praya East has been laid out on modern lines with wide streets and backlanes. The greater part of Kowloon and New Kowloon has been planned on up to date principles. The zones recommended by the Town Planning Committee of 1923 are being adopted.

220. The following list shows some of the work done during the year by, or under the supervision of the Sanitary Department (items 1-4) and the building branch of the Public Works Department (items 4-8).

<i>Nature of Work.</i>	<i>No. of Cases.</i>	
	<i>1933.</i>	<i>1932.</i>
1.—Obstructions removed from open spaces	469	472
2.—Obstructions to light and ventilation removed	824	617
3.—Rat holes stopped	842	796
4.—Water closets installed in private buildings	3,365	1,121
5.—Houses demolished (domestic)	130	257
6.—Houses demolished (non-domestic)..	2	4
7.—Houses erected (domestic)	1,025	1,240
8.—Houses erected (non-domestic)	19	25

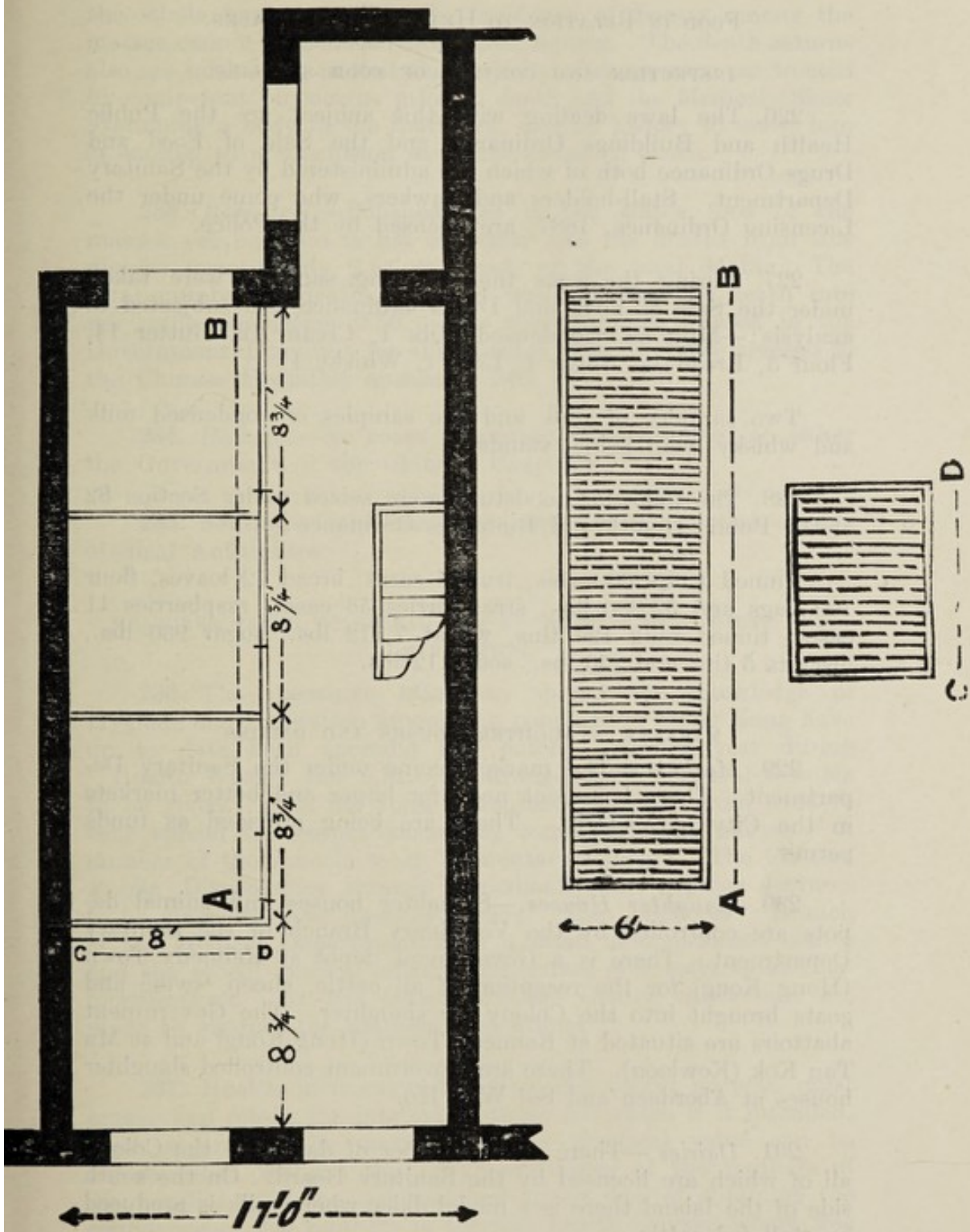
221. The City of Victoria for the area it occupies is over housed and grossly over-populated. In certain districts a great deal of improvement has been brought about but in some 200 acres where there are approximately 1,000 persons to the acre sanitary conditions are bad.

222. The position as regards housing in Victoria has been explained in the introduction to this report. The situation is at the same time a sanitary problem, a social problem and an economic problem. Victoria is the centre of attraction for the stream of immigrants from China, most of whom are poor people who live from hand to mouth. Accommodation is limited but the people must find shelter somewhere. A cubicle rents for ten dollars per month, a bed in the passage costs three to four dollars, food costs at least six dollars and the average earnings of a collier do not exceed twenty dollars.

223. There is no space to build further houses and demolition means an increase of concentration in the houses that remain.

224. One hopeful sign is that the people are being more and more attracted by Kowloon, Praya East and North Point where concentration is much less marked and where there is room for extension.

225. The following plan shows the dimensions of the model type of house designed by the Public Works Department. Provided there be sufficient space in front and behind in the way of street and back lane and provided the occupants keep the building clean and free from obstruction to light and ventilation there is no reason why they should not live a healthy life.



PLAN OF A FLOOR IN A NEW HOUSE
WITH CUBICLES

SCALE 1" = 8 FT.

FOOD IN RELATION TO HEALTH AND DISEASES.

INSPECTION AND CONTROL OF FOOD SUPPLIES.

226. The laws dealing with this subject are the Public Health and Buildings Ordinance and the Sale of Food and Drugs Ordinance both of which are administered by the Sanitary Department. Stall-holders and hawkers, who come under the Licensing Ordinance, 1887, are licensed by the Police.

227. During the year the following samples were taken under the Sale of Food and Drugs Ordinance and subjected to analysis:—Milk 55, Condensed Milk 1, Cream 12, Butter 14, Flour 5, Bread 12, Sugar 1, Lard 1, Whisky 1.

Two samples of milk and the samples of condensed milk and whisky were below standard.

228. The following foodstuffs were seized under Section 82 of the Public Health and Buildings Ordinance:—

Tinned fruits 36 cases, fruit 5 cases, bread 12 loaves, flour 109 bags and 52,890 lbs., strawberries 53 cases, raspberries 11 cases, tinned milk 129 tins, wheat 7,112 lbs., sugar 930 lbs., biscuits 5 tins and 250 lbs., soda 112 lbs.

MARKETS, SLAUGHTER HOUSES AND DAIRIES.

229. *Markets.*—The markets come under the Sanitary Department. There is urgent need for larger and better markets in the City of Victoria. These are being provided as funds permit.

230. *Slaughter Houses.*—Slaughter houses and animal depots are controlled by the Veterinary Branch of the Sanitary Department. There is a Government depot at Kennedy Town (Hong Kong) for the reception of all cattle, sheep, swine and goats brought into the Colony for slaughter. The Government abattoirs are situated at Kennedy Town (Hong Kong) and at Ma Tau Kok (Kowloon). There are Government controlled slaughter houses at Aberdeen and Sai Wan Ho.

231. *Dairies.*—There are a number of dairies in the Colony all of which are licensed by the Sanitary Board. On the south side of the Island there is a model dairy where milk is produced by stall fed cattle.

DEFICIENCY DISEASES.

232. The only information available regarding deficiency diseases is furnished by the death returns and returns of diseases furnished by the Government Hospitals and Chinese Hospitals. The hospitals deal with only a small proportion of the sick and

the whole truth regarding the incidence of disease among the masses cannot be deduced from their figures. The death returns also are misleading in that the majority of cases were not treated by competent physicians prior to death and the Medical Officer examining a body in the mortuary, had no history to assist him in coming to a conclusion as to the cause of death.

233. *Beri-Beri*.—Polished rice is the staple food of the masses yet beri-beri is not epidemic and the deaths from this disease formed only 2.55 per cent. of the total deaths. The total number of deaths recorded was 463 and the death rate per mille population 0.56. The total number treated in the Government Hospitals for this disease was 70, those treated in the Chinese Hospitals numbered 746.

234. *Rickets*.—No cases of rickets were admitted to either the Government or the Chinese Hospitals.

235. *Scurvy*.—Only one case came to the notice of the Medical Authorities.

MEASURES TAKEN TO SPREAD THE KNOWLEDGE OF HYGIENE AND SANITATION.

236. The measures taken to spread the knowledge of Hygiene and Sanitation among the populace of Hong Kong have up to date been sporadic and patchy. Every year during "Health Week" the Y.M.C.A. arranges for a series of lectures to be given. The St. John Ambulance Brigade from time to time spread the gospel concerning some particular subject. A number of the schools teach elementary hygiene. The Chinese Public Dispensaries arrange periodically for popular lectures to be given by their medical officers. The "Schools" Branch of the Medical Department have a small demonstration centre and the school medical officers and nurses give lectures and demonstrations. At the Infant Welfare Centre endeavours are made to instruct the mothers who attend.

237. Health instruction to serve any useful purpose must arouse and retain the interest of those for whom it is intended. With regard to the masses little of practical value can be accomplished without the active assistance of the mothers of the families (and the quickest and surest way of obtaining the confidence of the mothers is through health centres where free medical advice and treatment form the primary attraction and where the mothers make the acquaintance of tactful and sympathetic skilled nurses who also act as home visitors. The second best means of influencing the mother is through the school clinic where her children are medically examined by the doctor and school nurse and where opportunity is taken to add propaganda to advice.

238. At present the only Public Health Centres are the Chinese Public Dispensaries and the Government Infant Welfare Centre in Wanchai; there are no public health nurses or health visitors.

With regard to school medical work there are only three medical officers and three nurses for over 70,000 school children.

TRAINING OF SANITARY PERSONNEL.

239. The Medical Officers of Health hold classes and give lectures. Courses in chemistry, physics and sanitary engineering were held at the Technical Institute of the Education Department. At the Bacteriological Institute elementary instruction in bacteriology and mosquitology is given to sanitary inspectors.

240. Hong Kong is an examining centre for the Royal Sanitary Institute and every year examinations are held for the Sanitary Inspectors Certificate and the Sanitary Science Certificate. Candidates come from Shanghai to take these examinations. The results of the last test were very satisfactory.

SECTION IV.

PORT HEALTH WORK AND ADMINISTRATION.

GENERAL.

241. Reckoned in terms of shipping tonnage, Hong Kong is one of the five greatest ports of the world. It is the principal commercial entrepot of Southern China and it is the terminus of steamship lines running between China, Japan, and North America.

242. In 1933, 4,815 British ocean-going steamers and 6,641 foreign ocean-going steamers entered and cleared the harbour. In addition there were 9,975 river steamers, 7,972 launches, and 22,089 foreign trade junks. The total tonnage of vessels entering and clearing was 40,862,583.

243. The Medical Staff engaged in Port Health duties consists of two European Health Officers and two Chinese Medical Officers.

The work of the department includes:—

- (a) Routine inspection of ships.
- (b) Quarantine duty.
- (c) Duty in connection with emigration.
- (d) Vaccination.

244. The laws dealing with the subject of Quarantine and Port Health are contained in Table L of the Hong Kong Port Regulations, the Asiatic Emigration Ordinance and the Vaccination Ordinance.

245. During the year 5,722 inward bound ocean-going vessels were boarded by the Health Officers. Of these 2,408 were on the British register and 3,314 on the foreign register.

246. River steamers from Canton, Macao and West River Ports, also junks and small crafts were only visited when cases of sickness or death were reported. However, all river steamers are regularly inspected by a Health Inspector for cleanliness and sanitation.

247. During the year 153 special visits were made to ships for the purpose of examining persons suffering from infectious but non-quarantine diseases. 50 permits for the landing of corpses for burial were granted and 25 bodies were sent to the mortuary for post-mortem examination. 8 cases of leprosy were detected amongst Chinese passengers. 19 Chinese lunatics arrived in the Colony during the year, and 9 Philippine lunatics in transit to Manila. Bills of Health numbering 1,923 were issued.

QUARANTINE.

248. Hong Kong has no quarantine station for ships passengers and crews. When segregation is necessary it is carried out on board ship at the quarantine anchorage. A limited number (26) of infectious cases can be accommodated at the Government Infectious Diseases Hospital at Kennedy Town, but there is no room for contacts.

249. All vessels arriving from "infected" ports and those having infectious or suspicious cases on board fly the "Q" flag and go to the Quarantine Anchorage for examination.

(12,167)
(113,055)
(130,007)

250. The number of vessels arriving in Quarantine was 477 with 73,474 passengers and crew personnel of 41,335. All were examined and the passengers and crews of those vessels arriving from small-pox infected ports were vaccinated if insufficiently protected against the disease.

251. The total number of persons medically examined during 1933 was 233,022 or an average of 638 examinations per day.

252. Seventy-six vessels were fumigated during the year. Fumigations are carried out by a private company but each operation is supervised by a Health Officer.

EMIGRATION.

253. The Asiatic Emigration Ordinance No. 30 of 1915 requires that emigrant ships shall have:—

- (1) Proper and sufficient living accommodation.
- (2) Proper and sufficient sanitary requirements.
- (3) Proper and sufficient hospital accommodation.
- (4) A sufficient supply of drugs, medical equipment and disinfectants.

254. It also makes provision for:—

- (1) A proper diet scale.
- (2) The prevention of the export of the unfit.
- (3) The prevention of the export of infectious disease.

255. The Vaccination Ordinance, 1923, requires that all emigrants from the Colony shall be protected against small-pox by vaccination.

256. The duty of carrying out the sanitary and medical inspection and for vaccinating those who are insufficiently protected falls on the Port Health Authorities.

257. Emigrants are classified as:—

- (a) "Free emigrants" or those who pay their own passages.
- (b) Assisted emigrants or those whose passages are paid by their prospective employers.
- (c) Women and children.

258. The total number of emigrants examined during the year was 64,181 of whom 63,778 were free and 403 assisted. The number of rejections was 87.

200/64

259. Owing to the continued trade depression in Malaya, the Government of that country restricted the number of Chinese immigrants from Hong Kong and China. This restriction contributed largely to the reduction of total emigrants for the year to 64,181. This figure shows a very marked decrease in numbers of emigrants compared with 105,727 for 1931, 193,209 for 1930, 235,554 for 1929 and 288,745 for 1927.

VACCINATION.

260. The Government Vaccinators are members of the Port Health staff and work under the general supervision of the Port Health Officer. They work at the Vaccination Centre and on board ships and wherever needed. The number of vaccinations performed by three officers at the centres was 69,312 of which 5,324 were emigrants.

Table I.

SHOWING EMIGRANTS PASSES AND REJECTIONS FOR 1932.

<i>Port of Destination.</i>	<i>Passenger.</i>	<i>Crews.</i>	<i>Rejected.</i>
Straits Settlements	20,324	2,141	3
Canada	2,993	12,287	23
United States of America...	3,565	10,216	21
Honolulu	638	...	2
Dutch East Indies	22,296	11,209	23
British North Borneo	2,397	2,075	6
Shanghai and Japan.....	6,410	...	1
Australia	594	2,593	...
South Sea Islands.....	551	80	1
Manila	13	...	...
India	3,354	10,637	7
Panama	199	105	...
Mauritius	380	169	...
Reunion	233	...	...
Madagascar	84	211	...
Jeddah	84	68	...
England	13	...	...
Total	64,181	54,032	87

Table II.

SHOWING MONTHLY RETURNS OF EMIGRANTS, CREWS AND REJECTIONS.

<i>Month.</i>	<i>Ships Examined.</i>	<i>Pas-sengers.</i>	<i>Crews.</i>	<i>Rejected</i>
January	18	2,171	3,050	4
February	19	3,859	3,586	1
March	31	6,609	5,468	14
April.....	24	5,352	4,144	4
May	27	5,452	4,642	8
June	27	4,700	4,676	9
July	27	5,618	5,157	8
August	27	4,948	4,625	11
September.....	28	5,482	4,910	37
October	28	6,797	4,728	1
November.....	27	7,349	4,666	0
December	27	5,844	4,380	8
<i>Total.....</i>	310	64,181	54,032	87

Table III.

<i>DISEASES.</i>	<i>No. REJECTED.</i>
<i>Skin Diseases:—</i>	
Scabies	8
Furunculosis	3
Urticaria	1
Impetigo contagiosa	1
<i>Eye Diseases:—</i>	
Trachoma	39
Conjunctivitis	3
<i>Infectious Diseases:—</i>	
Smallpox	3
Smallpox contacts	2
Chickenpox	3
Measles	1
Measles contacts	5
Cerebro-spinal fever	1
Leprosy	3
Fever	9
Syphilis	3
Debility	1
Toxic vomiting	1
<i>Total</i>	87

Table IV.

SHIPS DETAINED IN QUARANTINE.

Name of Vessel.	From which Port.	Cause.	Cases.	Date of arrival in Quarantine.	Date of departure from Quarantine.
Talma.....	Calcutta	Smallpox	1	22.2.33	22.2.33
Norviken.....	Canton	Suspected Smallpox	1	14.11.33	15.11.33
Pembrokeshire.....	Shanghai	Smallpox	1	10.12.33	10.12.33

Table V.

SHOWING THE NUMBER OF PASSENGERS, CREW AND SHIPS ARRIVING IN QUARANTINE EACH MONTH, 1933.

Month.	No. of Passengers.	No. of Crews.	No. of Ships.
January.....	6,884	5,500	55
February.....	13,877	6,683	71
March.....	16,388	6,902	92
April.....	13,450	7,640	90
May.....	13,397	8,476	101
June.....	9,381	5,963	66
July.....	92	87	1
August.....	...	...	...
September.....	...	...	...
October.....	...	...	...
November.....	...	...	...
December.....	5	84	1
Total.....	73,474	41,335	477

Table VI.

SHOWING QUARANTINE NOTIFICATIONS ISSUED BY THE HONG KONG GOVERNMENT FOR 1933.

Port or Locality.	Disease.	Date of Notification.	Date of cancellation.
Swatow.....	Smallpox	Jan., 9th 1933.	June, 22nd 1933.

SECTION V.

MATERNITY AND CHILD WELFARE.

261. MATERNITY HOSPITAL ACCOMMODATION.

Hospital.	Authority in control.	Beds.
Government Civil	Government Medical Dept.	21
Victoria	Do. Do.	32
Tsan Yuk	Chinese Committee.	45
Wanchai	Do.	31
Tung Wah	Do.	24
Tung Wah Eastern	Do.	18
Kwong Wah	Do.	59
Alice Memorial	London Mission.	14
St. Paul's	French Mission.	9
Canossa	Italian Mission.	1
Matilda	Board of Trustees.	8
War Memorial	Do.	6
Yeung Wo	Yeung Wo Directors.	6
	Total.....	274

The maternity hospitals will be described under Section VI.

262. During the year the St. John Ambulance Brigade maintained four small lying-in hospitals in the New Territories. These were situated respectively in the villages of Kam Tin, Sha Tau Kok, Tsun Wan and Cheuny Chau.

MIDWIVES.

263. Under the Midwives Ordinance of 1910 'No one whose name is not on the Midwives Register may practise midwifery habitually for gain or describe herself as one especially qualified to carry on the work of a midwife.'

264. Training Schools for Midwives have been established at the Alice Memorial, Tsan Yuk, Tung Wah, Tung Wah Eastern, Kwong Wah and Government Civil Hospitals.

265. The course of training is as follows:—

- (a) for those who have less than two years general training two years at a Maternity Hospital recognised as such by the Board.
- (b) for those who have had two years training in general nursing one year at a recognised maternity hospital.
- (c) for those who have had four years training in general nursing six months at a recognised maternity hospital.

266. During 1933 thirty-nine candidates satisfied the examiners and were registered. (36)

267. The total number on the Midwives Register at the end of 1933 was 287 (248 in 1932).

268. The number of midwives on the Government Medical Establishment was increased from seven to eight by the appointment of a midwife to Kowloon City. The services of these midwives are free to those who cannot afford to pay a fee. Four midwives were detailed for duty in connection with Chinese Public Dispensaries (Yaumati, Shaukiwan, Aberdeen and Kowloon City) and four for duty in the New Territories (Un Long, Tai Po, Cheung Chau and Tai O).

269. During the year 1,605 cases were attended by Government midwives being an increase of 309 on last year's total of 1,296. Of these 107 were cases attended by the newly appointed midwife at Kowloon City. The number of cases taken by the midwives at Aberdeen and Shaukiwan respectively showed a considerable increase on the figures for 1932. This would indicate a growing tendency for the boat population to seek scientific treatment.

ANTE-NATAL AND INFANT WELFARE WORK.

270. The ante-natal and infant welfare centres in the Colony are:—

The Government Infant Welfare Centre, Wanchai.

The Tung Wah Hospital Centre.

The Tsan Yuk Hospital Centre.

The Alice Memorial Hospital Centre.

The Military Centre.

271. Infants are of course seen and treated at all hospitals both as inpatients and outpatients and at all the Chinese Public Dispensaries.

272. With regard to the New Territories, Government has made provision for infant welfare at the two Government Dispensaries. The Government Travelling Dispensary which stops at road-side villages dispenses advice and medicines free. Two new Government Centres were in course of erection during the year, one the Lady Ho Tung Welfare Centre near Ko Tung, the other the Ruttonjee Dispensary at Sham Tseng.

273. The St. John Ambulance Brigade have established ten centres in the New Territories where infants and mothers can receive treatment.

THE GOVERNMENT INFANT WELFARE CENTRE.

274. This centre which is the first established by Government occupies the ground floors of two adjacent shop houses which were rented for the purpose. It is situated at eastern end of Victoria in the area lately reclaimed from the sea in the district of Wanchai.

275. The premises consist of a waiting room communicating by a door in the party wall with the demonstration room, the front part of the latter being partitioned off to form a small consulting room, the remaining small rooms comprise the creche, the dispensary and the amah's quarters.

276. The staff consists of one Lady Medical Officer, one Chinese nurse, one interpreter, one dispenser and one amah. In addition the centre has had valuable assistance from a number of voluntary workers whose help has been greatly appreciated.

277. The Centre was opened to the public on the 25th of April 1932. From its inception the attendances increased daily. The following table shows the monthly attendance figures.

Month.	1933		1932	
	Total Attendance	Daily Average	Total Attendance	Daily Average
January.....	586	25.47	...	...
February	685	28.54	...	...
March	829	30.70	...	...
April (one week)	762	34.63	23	3.28
May	868	33.38	319	12.84
June	769	32.04	383	15.95
July	914	36.56	445	17.80
August	1,252	48.15	563	21.65
September.....	989	39.56	599	24.12
October.....	904	37.66	667	26.68
November.....	981	39.24	647	25.88
December	1,922	42.58	675	27.00
	<u>11,461</u>		<u>4,321</u>	

278. The total number of infants under supervision during the year was 1,200 and the total attendance 10,561. *11,461*

279. It was found that the attendance varied greatly from day to day due principally to variations in the weather conditions, but a total of 73 infants was recorded on one day.

280. Of the 1,200 infants seen, 1,126 lived in the immediate neighbourhood of Wanchai. The remaining were brought from the following districts:—

Central district Victoria	18
West Point	18
Shaukiwan	10
Boat population	6
Yaumatei district Kowloon	5
Mongkok district Kowloon	2
Hung Hom district Kowloon	4
Kowloon City district Kowloon	6
Cheung Chau	2
Macao	1
Canton City (Kwantung Province China).....	2
	—
Total	<u>74</u>
	==

281. The following were the most prevalent ailments:—

- Malnutrition.
- Conjunctivitis.
- Bronchitis.
- Feeding disorders.
- Thrush.
- Eczema and skin troubles.
- Multiple boils.

282. All cases which would ordinarily be treated in an Outpatient Department were treated at the Centre. A limited number of infants are kept at the Centre, five cots being allotted for this purpose. Cases which required inpatient hospital treatment were recommended for admission to the hospital.

283. To those who do not understand the local situation it is necessary to explain that advice without treatment offers little attraction to the Chinese mothers and an infant welfare centre in Hong Kong without facilities for treatment would be little patronised.

284. The majority of infants seen at the Centre for the first time were suffering from incorrect feeding in addition to the disease for which they were brought for treatment.

The feeding of infants who are not taking their mothers' milk presents difficulties. In some cases the parents can afford to buy an inferior quality of condensed milk and in others they cannot afford milk of any kind. Cases of poverty are referred to the Society for the Protection of Children who assist so far as their funds allow. The co-operation of this Society has been most valuable.

285. The Centre has been an unqualified success and its popularity is on the increase. The accommodation is now too small for the work being done. When the new Health Centre, which has been promised by certain benevolent Chinese gentlemen, is established in the neighbourhood it will contain adequate accommodation for this branch of public health activity.

There can be no doubt that similar institutions conducted on parallel lines would be popular in other districts.

THE TUNG WAH INFANT WELFARE CENTRE.

286. The Tung Wah Infant Welfare Centre is held every Wednesday morning under the supervision of the Western trained medical officers. The babies are weighed and the mothers advised concerning feeding and care of infants. The total number of attendances was 1,270, that for 1932 was 1,103.

THE TSAN YUK INFANT WELFARE CENTRE & ANTE-NATAL CLINICS.

287. The Infant Welfare Clinic which is held every Friday morning and which is conducted by one or more of the Government Lady Medical Officers is restricted to babies who have been born in the hospital. The number of new cases was 496 (500) and the number of old cases 1,495. The average attendance per clinic was 41.47. (1344)

288. The ante-natal clinic has been in existence for more than three years and the number of cases is increasing gradually. The total number of patients who attended the clinic was 170 and the total number of visits paid was 263. The Chinese look upon pregnancy as a normal occurrence and as a rule they come to the clinic only to find out the probable date of delivery. Of the 168 patients who were diagnosed pregnant at the clinic, only 42 appeared again before labour.

THE ALICE MEMORIAL INFANT WELFARE CENTRE.

289. The Alice Memorial Infant Welfare Centre like that at the Tsan Yuk deals with babies who have been born in the hospital. With regard to ante-natal there were 200 first visits (167) by expectant mothers and 80 return visits. With regard to Infant Welfare activities there were 339 first visits and 579 return visits. (272)

SECTION VI.

HOSPITALS, INSTITUTES, ETC.

GOVERNMENT INSTITUTIONS.

290. The Government Hospitals are:—The Government Civil Hospital, the Victoria Hospital, the Kowloon Hospital, and the Infectious Diseases Hospital.

Government Civil Hospital.

291. The Government Civil Hospital, which was built in 1874 and which occupies a site in the middle of the most populous area, is the largest Government hospital in the Colony. It has accommodation for 246 patients, including the 21 maternity beds, which are in a Bungalow separated from the main buildings. The majority of the maternity beds and about 100 beds in the main building are under the control of the Clinical Professors of the Hong Kong University, who have been appointed respectively Physician, Surgeon, and Obstetric Physician to the hospital and who are responsible to the Director of Medical and Sanitary Services for the duties they perform in the hospital. They have also been appointed consultants to Government. The University Clinics do all the outpatient work except that connected with the Venereal Diseases Clinic which is attended to by the Government Venereal Diseases Specialist.

292. Dr. J. E. Dovey was the Medical Officer in charge during the year. Dr. G. H. Thomas and Dr. A. Wong were assisting.

293. The number of inpatients, exclusive of those in the maternity block, was 5,113 (4,876 in 1932), of which 901 were treated by the University staff and 4,212 by the Government Medical Officers.

294. The 901 patients treated by the University staff were made up as follows:—

Medical cases	429
Surgical cases	356
Gynaecological cases	116

295. The daily average number of inpatients was 190, that for the previous year was 197.

296. The nationality of the patients was:—

European	420	7.	
Indian	1,216	23.8	(20.0)
Chinese	3,397	66.4	(70.0)
Russian	24		
Other Asiatics	56		
	5,113		
	5,113		

297. A large proportion of the total patients receive treatment free of charge.

298. There were 262 deaths and of these 177 occurred within 24 hours of admission. The case death rate was 51.24 per mille (70.3 per mille in 1932).

299. 1,169 major operations were performed (915 in 1932). Of these 715 were from the University Surgical Clinic. 114 from the University Gynaecological Clinic and the remaining 340 were performed by the Government Medical Officers.

300. There were 934 accidents of a nature so serious as to require treatment as inpatients (737 in 1932).

301. *Police Wards.*—The total number of admissions and deaths were as follows:—

	<i>Admissions.</i>	<i>Deaths.</i>
British	78	1
Russian shipguards	13	—
Indians	554	6
Chinese (Cantonese)	86	1
Chinese (Wei-hai-wei)	133	—
	864	8
	864	8

302. The daily average number of Government Servants treated by the Government Medical Officers as outpatients was 32 (28 in 1932).

303. *Outpatients Department.*—This department is open both morning and afternoon. The number of attendances, exclusive of Venereal Diseases cases, was 51,925 (47,627 in 1932). In addition there were 14,618 attendances for dressing (17,313 in 1932). The number of prescriptions dispensed was 63,262 (52,838 in 1932). The number of vaccinations was 2,530.

MATERNITY BUNGALOW AT THE GOVERNMENT CIVIL HOSPITAL.

304. The Bungalow has accommodation for twenty-one patients and is mainly for the use of Asiatic women.

305. There are three general wards with a total of sixteen beds, two private wards with two beds each and one isolation ward with one bed.

306. The majority of patients are under the care of the Professor of Obstetrics of the University he being at the same time Obstetric Physician to the Government Civil Hospital.

✓ 307. The admissions during the year were 912 (870 in 1932), making a total of 932 cases treated. There were altogether 832 deliveries of which 212 cases were under the care of the Government Medical Officers and 620 under the Professor of Obstetric and his Assistants.

076
(11-a)
(122)

The daily average number of patients in the hospital was 15 excluding infants.

308. The Nationalities of the patients were as follows:—

English	1
Portuguese	1
Japanese	10
Indians	40
Chinese	780
Total	832

There were two Maternity deaths, one from Septicaemia and one from Myocarditis. Five infants were stillborn and 19 died.

309. The reports of the Professors in charge of the various University Clinics will be found in the Appendix.

THE MENTAL HOSPITAL.

310. The Mental Hospital which is an annex to the Government Civil Hospital has accommodation for 14 Europeans and 18 Asiatics.

311. This institution is intended for use only as a temporary abode for the mentally affected pending arrangements being made for their transfer to Europe or Canton.

312. The Medical Officer of the Government Civil Hospital is in administrative charge.

PATIENTS.

313. Remaining from 1932	36
Admissions during the year	316
	— 352
Discharged apparently cured	76
Discharged relieved	87
Transferred to the Canton Mental Hospital	143
Died	9
Remaining at end of 1933	37
	— 352

Daily average number of patients 35.9.

Victoria General and Maternity Hospital.

314. The Victoria Hospital which was originally built for the accommodation of women and children is now a general and maternity institution. Situated in the residential area well above the level of the town it has a clear view across the harbour of the territory on the opposite side. There are 42 general beds and 32 maternity beds, in separate blocks with entirely separate staff for each building.

315. Dr. I. Newton was Medical Officer in charge during the year. Dr. P. F. S. Court was Assistant Medical Officer until March 26th when he was relieved by Dr. G. V. A. Griffith.

316. During the year 545 cases were treated, 425 in the General Block and 120 in the Maternity Block. The patients treated in the General Block were men 112, women 218 and children 95. There were 7 deaths.

(646)
(539) (107)

317. The daily average number of patients exclusive of maternity patients was 18.7.

318. The nationality of those treated was:—

Europeans	378
Chinese	36
Other nationalities	11
	====
Total	425
	—

THE MATERNITY BLOCK.

319. The number of beds in this hospital is thirty-two.

320. The admissions during the year were 111. The total number of cases treated was 120.

321. There were 87 deliveries with two stillbirths. There was one case of twins. There was no maternal death.

322. The daily average number of patients was 4.4 mothers and 3 infants.

323. The Maternity Block is available for private patients who wish to be attended by their own doctors. Twenty-two patients availed themselves of the privilege.

Kowloon Hospital.

324. This is situated on the mainland and at present consists of three blocks:—

A. Block containing 28 beds.

B. Block containing 31 beds.

M. Block containing 25 beds and 8 cots.

A. and B. Blocks cater for male patients and M. Block for female patients. M. Block which was opened on 1st April was built for maternity cases but so great was the need for accommodation of general cases that it had to be used temporarily as a general block.

325. This hospital is being enlarged year by year by the erection of additional blocks, the rate of extension being governed by the financial state of the Colony. It will ultimately be a 500 bed hospital.

326. During the year building operations were almost completed on C. Block, a nurses hostel and quarters for the Assistant Medical Officer. With the completion of C. Block the maternity block will be used for the purpose for which it was built.

327. Dr. J. T. Smalley, Senior Medical Officer, was absent on leave from March 26th to November 3rd during which time Dr. F. S. Court was in charge assisted by Dr. J. B. Mackie. Dr. C. H. Luk was Chinese Medical Officer.

328. The total number of cases treated in hospital was 2,321 as compared with 2,132 in 1932.

329. The nationalities were made up as follows:—

	Males.	Females.	Total.
Europeans	461	308	769
Chinese	1,231	252	1,483
Indians	15	7	22
Others	37	10	47
	—	—	—
	1,744	577	2,321
	=====	=====	=====

330. The deaths numbered 124, 99 of these being males and 25 females.

331. The daily average number of patients was 70.9 (65.7 in 1932).

332. During the year 610 operations were performed under general anaesthesia (724 in 1932).

333. The number of Police admitted was as follows:—

Europeans	Chinese	Indians
83	234	2

OUTPATIENTS DEPARTMENT.

334. The number of outpatients' visits recorded as compared with previous years were as follows:—

	1929.	1930.	1931.	1932.	1933.
New cases	9,987	9,471	9,731	10,447	12,439
Old cases	3,197	3,029	5,333	7,167	7,040
Dressings	3,086	5,482	6,833	8,111	8,331
	—	—	—	—	—
Total	16,270	17,982	21,897	25,727	27,810
	=====	=====	=====	=====	=====

335. In addition 2,371 vaccinations were performed.

336. The number of prescriptions dispensed during the year was 12,978 (12,377 in 1932).

Venereal Diseases Clinics.

337. Dr. J. A. R. Selby, Government Venereal Diseases Officer, was in charge during the year.

338. Owing to the increase in work the following additions were made to the staff:—

- (a) Dr. Cheung Kung Leung (Chinese Medical Officer), January 1st.
- (b) Mr. A. Steven (Technical Assistant), February 10th.
- (c) Miss Brown (Nurse), June 16th.

The Government Lady Medical Officers Doctors Lai, Ruttonjee and Cheng assisted in the clinics for women.

339. There are now three Government V. D. Clinics:—

- (a) at the Government Civil Hospital.
- (b) at the Kowloon Hospital.
- (c) at South Kowloon (Tsin Sha Tsui) close to the docks.

340. The South Kowloon Centre which is an "ad hoc" clinic was opened in April in a new building specially constructed for the purpose.

341. All treatment is given free of charge.

342. Clinics are held daily as follows:—

343. At the Government Civil Hospital.
Monday and Wednesday.—10 a.m. for Chinese.
Tuesday.—10 a.m. and 5 p.m. for Europeans.
Thursday.—10 a.m. for Indians.
Friday.—10 a.m. for women only.

344. At the Kowloon Hospital:—

On Tuesday afternoons for males and on Friday afternoons for women.

345. At the South Kowloon Centre:—

- 2 Mondays 10 a.m. and Thursdays 2 p.m. for Indians.
- 1 Mondays 2.30 p.m. for women only.
- 2 Tuesdays 10 a.m. and Fridays 2.30 p.m. for Chinese males.
- 2 Tuesdays 2.30 p.m. and Saturdays 10.30 a.m. for Europeans.

This Clinic is open daily from 8 a.m. to noon and from 1 p.m. to 8 p.m. for the treatment of males and from 12 noon to 1 p.m. for the treatment of females. A dresser is in charge of male treatments and a nurse is in charge of female treatments.

346. The total number of new cases treated was 4,331 as compared with 2,881 in 1932 and 1,966 in 1931.

The total number of attendances was 17,143 as compared with 10,733 in 1932 and 6,392 in 1931. Of these males numbered 13,755 and females 3,388.

347. The nationality and sex of those treated at the above clinics were as follows:—

	1932.		1933.	
	Male.	Female.	Male.	Female.
Europeans	123	4	157	4
Chinese	2,158	437	2,998	1,027
Indians	150	2	141	4
Japanese	7	0	0	0
Total	2,438	443	3,296	1,035

348. The diseases treated:—

	1932		1933	
	Male.	Female.	Male.	Female.
Syphilis	1,472	199	1,649	398
Chancroid	205	3	132	—
Gonorrhoea	331	86	358	240
Syphilis with Gonorrhoea ...	108	96	122	53
Chancroid and Gonorrhoea.	9	—	—	—
Observation	249	59	948	343
Other diseases	64	—	42	1
Total	2,438	443	3,296	1,035

349. 5,559 specimens of blood were sent to the Bacteriological Institute for Wassermann test, the result being as follows:—

	Males	Females	Total
Strong positive.....	1,856	429	2,285
Positive	343	85	428
Weak positive	292	98	490
Doubtful	359	70	429
Negative	1,486	541	2,027
Total	4,336	1,223	5,559

350. 9,226 injections of N.A.B. and 636 injections of Bismuth were given to outpatients.

351. 23 cases of gonorrhoea received 184 treatments with diathermy in the Radiological Department with satisfactory results.

352. 24 beds were reserved for V.D. male cases in the G.C.H. and these were kept full throughout the year. There are at present no beds reserved for female cases and such are badly needed.

TSAN YUK HOSPITAL V.D. CLINIC.

353. A clinic for Chinese women suffering from venereal diseases was held weekly by the Government Lady Doctors, Mrs. Dovey, Miss Lai and Miss Ruttonjee.

354. 454 new patients were treated. There was a total of 1,394 attendances (2,253 in 1932).

355. The diseases treated were as follows:—

	1933.	1932.
Syphilis	85	76
Syphilis with gonorrhoea.....	69	185
Gonorrhoea	151	271
Soft Chancre	—	—
No apparent disease	149	120
Total	<u>454</u>	<u>652</u>

356. 388 injections of N.A.B. were given.

357. 410 specimens of blood were sent to the Bacteriological Institute for examination with the following results:—

Positive	149
Negative	252
Doubtful	9
Total	<u>410</u>

358. 5,885 injections of N.A.B. and 222 injections of Bismuth were given to outpatients.

359. The falling off in the numbers treated at the Clinic is due to the fact that cases of Venereal Disease discovered at the Chinese Public Dispensaries Gynaecological Clinics in Kowloon which formerly were sent to the Tsan Yuk after the opening of the "ad hoc" centre at South Kowloon were sent to that institution.

GYNAECOLOGICAL CLINICS AT THE CHINESE PUBLIC DISPENSARIES.

360. Once a week at each of the Chinese Public Dispensaries a 'Gynaecological' Clinic was held by one of the Government Lady Medical Officers. It is estimated that at least fifty per cent of the cases attending were suffering from Venereal Disease in one or other form.

HOSPITAL OUTPATIENT TREATMENT.

361. Venereal cases were seen at the outpatient departments of the various hospitals and dispensaries.

X-Ray, Massage and Electro-Therapeutic Branch.

362. Dr. Pringle was in charge of this branch during the year. He was assisted by Mr. J. Skinner, M.S.R., B.P.A. as Radiographer, Miss C. S. Mackenzie as X-Ray Sister, and Miss L.M. Siggins, C.S.M.M.G., B.P.A., and Miss M. H. Hughes C.S.M.M.G., B.P.A. as Masseuses and Electro-therapists.

363. Following the experience obtained in training Chinese nurses in Massage etc. Miss E. Anderson was accepted for training and made satisfactory progress. It is felt that more pupils could with advantage be taken for training but the lack of fixed appointments for qualified masseuses acts as a deterrent to recruiting.

364. The increase in the work of all branches noted in 1932 was maintained. The following table shows the figures for the three years, 1931, 1932 and 1933:—

	1931.	1932.	1933.
Massage and electrical treatment ...	6,239	9,498	10,579
Radiological examinations	2,464	2,696	3,076
Films exposed	3,653	4,521	5,477

365. Of the total radiological examinations 2,652 were done at the Government Civil Hospital and 424 at the Kowloon Hospital. The reasons for this difference are that the staff is concentrated at the G.C.H. and the apparatus and accommodation at the Kowloon Hospital are inadequate.

366. The apparatus at Kowloon is old and constantly going out of order. In spite of repairs and renewals made during the year it never seemed to be satisfactory for any length of time. An unfortunate series of breakages of tubes caused it to be operated with non-standard tubes which further reduced its efficiency.

367. Considering the population of Kowloon is almost 300,000 facilities for X-Ray work should be improved. It is most important that there should be in this large City up to date and efficient apparatus.

368. Of the total number of massage and electrical treatments 5,432 were carried out at the Government Civil Hospital, 3,634 at the Kowloon Hospital and 1,513 at the Victoria Hospital.

369. There is great need for more extensive and appropriate accommodation for X-Ray, massage and electro-therapy work both at the Government Civil Hospital and at Kowloon. At Kowloon the situation is particularly bad and it will be worse when the new wards are open and working at their full capacity.

370. Considerable use was again made of the radium lent by the Matilda Hospital. A special safe for the storage of such was obtained during the year and the system of checking the issues and returns was revised to minimise risk of loss.

Government Dispensaries.

371. The Dispensaries maintained by Government during the year under review were the Taipo Dispensary and the Un Long Dispensary, both in the New Territories. Details with regard to these will be found in Section X which deals with the New Territories.

The Government Infectious Diseases Hospital.

372. This was originally a Police Station but was adapted as a hospital and has accommodation for 26 beds in six wards. The hospital is situated very close to the extreme western end of the Island and next door to the Tung Wah Smallpox Hospital. It is admirably situated for its purpose being more or less isolated yet convenient for access by ambulance, by bus, or by launch.

373. During the year the hospital was under the charge of Dr. G. V. A. Griffith who supervised the work there in addition to his other duties.

374. During the year there were 24 admissions and 7 deaths. The following table shows the nature of the diseases and the cause of death.

Diseases	Admission	Death	Death Rate
Smallpox.....	13	5	38.53 per cent
Leprosy	7	2	28.57 "
Chicken Pox	2	—	—
Observation	2	—	—

THE CHINESE HOSPITAL AND DISPENSARIES.

375. The Chinese Hospitals and Chinese Dispensaries are institutions established by the Chinese for the benefit of the poor of Chinese nationality. Intended to be additional to, not in substitution of, the Government Hospitals they serve a very useful purpose not only in the matter of medical relief but in that of health education.

376. An enormous and ever-increasing number of sick too poor to pay a doctor's fee or to buy proper medicine, are successfully reached.

377. There are three general hospitals, one smallpox hospital, two maternity hospitals and nine public dispensaries.

They are maintained by subscriptions from the public, by donations from the Chinese General Charities Fund and by direct grants from Government. They are controlled by Chinese Committees who work in close co-operation with the Secretary for Chinese Affairs.

378. In the three big hospitals the patient can choose between Western and Chinese methods of treatment, but in the Maternity Hospitals and Dispensaries Western Medicine only is practised. Government Lady Doctors hold gynaecological clinics in each of the dispensaries once or twice a week.

379. Both Hospitals and Dispensaries are subject to inspection by the Government Medical Department. There are four officers of the Department who duty it is to visit the various institutions and to give advice and assistance. These officers work in close touch with the Secretary for Chinese Affairs.

THE CHINESE HOSPITALS.

380. The Tung Wah Hospital situated in the centre of the most thickly populated area in Victoria was founded by the Chinese in 1873 with the help and encouragement of the Government. It took the place of a Home for the Dying which had been conducted by charitable Chinese, and it was intended to provide treatment by Chinese herbalists, and accommodation in sanitary surroundings for the poor of the Chinese race.

381. Originally intended for the accommodation and treatment of those Chinese whose fears and prejudices against Western medicine prevented their applying for relief at the Government Hospitals the Tung Wah at a later period introduced and encouraged scientific methods. As prejudice disappeared and confidence grew the demand for Western medicine increased until now the number being treated by this method equals that which still pins its faith to the plasters and decoctions of the herbalists.

✓ 382. The Tung Wah Smallpox Hospital situated at the extreme West end of Victoria was erected in 1902.

✓ 383. The Tung Wah Eastern Hospital situated at the extreme East end of Victoria was opened in 1929.

384. The Government gave the sites and with grants of money assisted in the erection of the buildings.

✓ 385. The Kwong Wah Hospital situated in the Central district of Kowloon was built in 1911 to meet the needs of those resident in the peninsula. The funds for its erection were raised by public subscription.

386. In administrative control of the four hospitals is the Tung Wah Committee, a body of Chinese gentlemen elected each year by the subscribers.

387. The activities of the Chinese Hospitals include:—

- (a) The care of the sick and treatment by Western methods or Chinese methods according to the wish of the patients.
- (b) Maternity benefits and infant welfare by Western methods only.
- (c) Vaccination.
- (d) Health propaganda.
- (e) Assistance to the destitute.
- (f) The provision of coffins for and the burial of the dead.

388. Much progress has been made in all departments of the hospitals during the last few years. These improvements include:—

- ✓ (a) The appointment of University graduates as full time Resident Medical Officers.
- ✓ (b) The foundation of training schools for female nurses.
- (c) Extensions and improvements in the male nursing section.
- ✓ (d) The establishment of clinical laboratories.
- ✓ (e) The provision of radiological apparatus.
- ✓ (f) The establishment of up-to-date operating theatres.
- ✓ (g) The purchase of motor ambulances.
- ✓ (h) Improvements in the accommodation for patients.
- ✓ (i) Improvements in quarters for the staff.

389. Today each of the three Chinese Hospitals has a good operating theatre where operations are performed daily, many of which are major in character.

390. In charge of the medical side (Western) of each hospital is a Medical Superintendent, a graduate of the University, whose salary is paid by Government, and who is a member of the Medical Department.

The Tung Wah Hospital.

391. The year 1933 witnessed the demolition and reconstruction of a considerable portion of this institution. Established in 1870 and added to from time to time it had become a confusing assemblage of buildings some of which were much below the standard required in a modern hospital or infirmary. As mentioned in the 1932 annual report the wards were, many of them, old dark and in some respects insanitary but they provided shelter food and medical attendance for many sufferers who would otherwise have had no means of relief.

392. Nothing short of demolition and reconstruction could make the place satisfactory. There were of course sentimental objections to the demolition of the fine old assembly hall where year after year the directors had met and discussed the problems confronting them, but space was very limited and it was not possible to retain the old hall and at the same time erect a building which would meet the requirements of the situation. It was decided therefore to raze the hall and the insanitary buildings and construct in their place a six story modern hospital incorporating in it a new assembly hall.

393. The plans for a proposed six story building showed wards having a width of 30 feet, an uneconomical utilisation of space unless it was the intention to place down the centre a third row of beds, an arrangement objectionable from the sanitary point of view. It was explained by Mr. M. K. Lo who represented the Directors that there was no intention of interposing a third row of beds and the plans were accordingly passed.

394. The plans were passed in July and by 24th of the same month the central hall and certain of the wards had been pulled down. Work was carried on both by day and by night and such progress was made that on the 17th of October the corner stone was laid by His Excellency the Governor. By the end of the year the walls of the main block had been carried up to the full height and roofed over.

395. During the course of operations the hospital machinery was unavoidably upset, and temporary accommodation had to be provided for those displaced. The number of beds was reduced to 438.

396. The staff consists of a Chinese Medical Officer of the Government Medical Department and three Resident Medical Officers whose salaries are paid by the Hospital. There are in addition a number of Chinese Herbalists who practise Chinese medicine for the benefit of those who prefer that treatment.

397. *Inpatients (General).*

	<i>Western treatment.</i>	<i>Chinese treatment.</i>	<i>Maternity Cases.</i>	<i>Total.</i>
1933	5,588 ^{10,079}	4,491	1,600 ✓	11,679
1932	5,918 ^{11,004}	5,086	1,560 ✓	13,564

398. There were 890 operations including many major ones.

399. *Outpatients (General).*

	<i>Western treatment.</i>	<i>Chinese treatment.</i>	<i>Total.</i>
1933	28,443	179,821	208,264
1932	34,095	185,273	219,368

400. *Eye Clinic.*

1933	12,540
1932	13,022

401. *Baby Clinic.*

1933	1,270
1932	1,486

402. *Deaths. Brought in dead.*

1933	2,249	1,042
1932	1,869	1,013

403. A large proportion of the deaths in the Hospital occur within 24 hours of admission. The sick poor go there to die. 511 were brought in moribund as compared to 649 in 1932. Those brought in dead include bodies sent from ships in harbour, from neighbouring hospitals, from the Public Dispensaries and from private houses. All are taken to the Tung Wah for the benefit of free coffining and free burial.

404. At the Nursing Board examination held in December 14 nurses entered for the preliminary test, of which twelve passed in all subjects, one passed in half and the other failed. This is the first time nurses from the Tung Wah Hospital group have presented themselves for the Board's examination. The results are highly satisfactory.

✓ *The Kwong Wah Hospital.*

405. This hospital does for Kowloon and the Peninsula what the Tung Wah and Tung Wah Eastern do for the island of Hong Kong. There is official accommodation for about 326 beds of which 229 are for general diseases, 40 are for tuberculosis cases and 59 are for maternity cases. There are 18 private wards including 7 for maternity cases.

406. The accommodation cannot keep pace with the growth in population. Kowloon has considerably more than doubled itself during the last ten years. No patient is turned away for want of room and in both medical and surgical wards it is common to find two in a bed, and others sleeping on the floor.

407. The staff consists of a Senior Resident Medical Officer whose salary is paid by the Government, and three Junior Medical Officers paid by the Directors.

408. There are also a number of Chinese Herbalists who practise Chinese medicine and are paid out of Hospital funds.

409. The patients, on admittance, can choose whether they desire treatment on Western or Chinese lines.

410. *Inpatients.*

	<i>Western treatment.</i>	<i>Chinese treatment.</i>	<i>Maternity Cases.</i>	<i>Total.</i>
1933	6,082 ⁹	277 3,195	4,006	13,283
1932	9,517 ¹¹	56 2,339	3,327	15,183

411. There were 261 major operations, the number for 1932 being 255.

412. *Outpatients.*

	<i>Western treatment.</i>	<i>Chinese treatment.</i>	<i>Total.</i>
1933	40,373	114,627	155,000
1932	40,537	97,398	137,935

413. There were 1,824 eye cases as compared with 2520 for the previous year.

414. The number of deaths in hospital was 3,382. As in the Tung Wah, the number of deaths is influenced by many factors which have nothing to do with treatment in the hospital.

415. There is a small laboratory where facilities are available for ordinary routine microscopic examination.

416. A children's clinic is held twice a week. The average attendance is 18.

There is also an antenatal clinic held once a week in the Maternity Block. The number of cases seen was 232.

The Tung Wah Eastern Hospital.

417. This Hospital continues to do very good work. It serves the useful purpose of reminding the older foundation—the Tung Wah—what it is possible for a Chinese Hospital to be. Everything is new and clean and it had the advantage of starting fresh in up-to-date buildings.

418. The staff consists of a Chinese Medical Officer paid for by Government, and two Junior Doctors appointed by the Directors of the Tung Wah.

419. For the greater part of the year the official number of beds was 254. Actually these numbers were augmented by canvas camp beds where the pressure of cases was heavy. With the camp beds the total number which can be accommodated is at least 300.

420. The hospital is now completed and is a model of what a charity hospital should be, viz., all space occupied without wasting and without overcrowding. Each bed in the general ward has 60 square feet of space only, but such is the plan of the ward and the arrangement of the beds that each of the latter has ample lighting and ventilation.

421. *Inpatients.*

	<i>Western treatment.</i>	<i>Chinese treatment.</i>	<i>Maternity.</i>	<i>Total.</i>
1933	2,560	2,402,680	767	6,007
1932	2,690	4562,1872	588	5,150

422. *Major Operations under General Anaesthesia.*

1933	151
1932	159

423. *Outpatients.*

	<i>Western treatment.</i>	<i>Chinese treatment.</i>	<i>Total.</i>
1933	22,211	52,005	74,216
1932	16,012	46,283	62,295

Vaccinations.

1933	443
1932	414

424. The number of children admitted continues to increase and there is now a large children's ward.

425. Two wards have been set aside (one male and one female) for patients who are able to make some payment but who cannot afford a private room. The charge in these wards is \$1.40 per day including food and medicine. Each patient can if he desires, bring in an attendant to help in looking after him. There are 14 beds in the Male ward and 8 in the Female.

426. There are a number of small private wards where the inclusive fee per day is \$3.00. The wards are popular.

427. A ward of 12 beds for the treatment of opium addicts has been set aside since June. These patients are mostly business men who find they cannot afford the luxury of opium in these days of depression. They appear to be earnest in their desire to rid themselves of their handicap. The course of treatment is usually complete within three weeks. The cost is defrayed by Government. So far 177 cases have undergone the course.

428. Deaths in 1933 numbered 1,166. A large proportion of these died within 24 hours of admission.

429. The improvement in the health of the general staff continues and there were no cases of malaria. The nurses are supplied with mosquito nets and take prophylactic doses of quinine.

The Tung Wah Smallpox Hospital.

430. The Tung Wah Smallpox Hospital, erected in 1902 for the herbal treatment of smallpox cases, consists of six wards arranged in three two-storied blocks and faced by another group of three two-storied blocks intended for staff quarters and for administration purposes.

431. At a distance and separated by a yard are the kitchens, the servants quarters and the mortuary. The whole is contained in a large compound.

All the blocks are connected by covered ways.

432. This hospital at the time of its construction was considered to have all the requirements necessary for the proper treatment of smallpox cases by Chinese methods.

433. There was room for 60 cases without overcrowding but there was no arrangement for heating the wards and no water carriage system.

434. The staff consists of a Chinese coolie as a caretaker and an amah. There is no resident doctor and no clerk and there are neither dressers nor nurses.

435. A herbalist from the Tung Wah visits daily and prescribes infusions but there is no attempt at nursing. Certain hospital clothing is provided but the patients as often as not wear their own clothes.

436. Considered to be a herbalist hospital it is seldom visited by any of the Western-trained Tung Wah staff, and for all practical purposes it is controlled by the caretaker and the herbalist. There being no trained staff resident and the control being such as it is there must be grave doubts regarding the efficiency of the disinfection processes and the means taken to prevent dissemination of disease by patients, contacts and fomites.

437. 137 cases of smallpox were admitted during the year. There were 78 deaths giving a case death rate of 57 per cent.

438. For some years this institution has been neglected with the result that the fabric is now in a very dilapidated condition.

439. Five years ago an attempt was made at renovation and various rooms in the service blocks were labelled respectively doctor's office, record room, laboratory and dispensary, but no use was made of any of the rooms and they remained unequipped and empty.

440. This year proposals were made for improving the accommodation and installing a water carriage system. Proposals were also made for providing a service of properly trained nurses to look after the patients. These proposals were not carried out and at the end of the year nothing had been done.

441. There can be no doubt that conditions at this hospital are unsatisfactory both from the point of view of the patients and that of the public.

The Tsan Yuk Maternity Hospital.

442. The Tsan Yuk Maternity Hospital, which is part of the organisation financed and managed by the Chinese Public Dispensaries Committee, is situated in the most populous district of the town and next door to the Western Dispensary. Its proximity to the University of Hong Kong has made it a convenient centre for the training of Medical Students.

443. By an arrangement with the Committee the whole of the inpatient work is supervised by Dr. R. E. Tottenham, Professor of Obstetrics to the University.

444. The total number of beds is 60 of which 45 are reserved for maternity cases and 15 for gynaecological patients.

445. The total number of deliveries was 1,192 (1,252 in 1932) out of a total of 1,282 cases treated. There were 5 maternal deaths and 53 children were still born.

446. The total number of admissions to the Gynaecological department was 210 and the number of operations performed was 121.

447. There is an out-patient department the clinical work in which is carried out under the supervision of Lady Medical Officers of the Government Medical Department. In addition to the treatment of ordinary gynaecological cases, special clinics are held for ante-natal infant welfare and venereal diseases.

Clinic	New cases	Return visits	Average attendance at clinic	Total 1933	Total 1932
Gynaecological	665	442	24.04	1,107	1,009
Venereal Diseases	454	1,394	38.5	1,848 ✓	2,233 ✓
Antenatal.....	170 ✓	93 ✓	5.36	263 ✓	228 ✓
Infant Welfare	496 ✓	1,495 ✓	41.47	1,991 ✓	1,847 ✓

448. The drop in the V.D. cases was due to the opening of the "ad hoc" centre in Kowloon.

449. The Infant Welfare Clinic which is held once a week is confined to babies born in the hospital.

The Wanchai or Eastern Maternity Hospital.

450. This hospital, which is connected with the Eastern Dispensary, is in charge of a Western trained Chinese Doctor.

451. The total number of beds was 31. The total number of admissions was 903. There was 1 maternal death.

452. Since this hospital was renovated in 1931 it has maintained a high standard of efficiency and has done remarkably good work in a very crowded district.

The Chinese Public Dispensaries.

453. The origin of the Chinese Public Dispensaries was a movement made in 1904 by certain leading Chinese citizens to stop the practice of dumping dead bodies by providing receiving

houses for the sick and for the dead which would act also as information bureaux where the poor could obtain advice and assistance in matters connected with:—

- (a) the removal of patients to hospital.
- (b) certification as to cause of death.
- (c) removal of corpses to mortuaries.
- (d) supply of coffins and arrangements for burial.
- (e) the registration of births.
- (f) vaccination.

454. In 1905 two depots were established, the Western and the Eastern, under a Committee, consisting of the Chairman of the Tung Wah Board of Directors and the two unofficial Chinese members of the Sanitary Board.

455. In immediate charge of each depot was a Chinese doctor qualified in Western medicine and his staff consisted of an English-speaking clerk and a number of subordinates.

456. In 1908 the movement ceased to be connected with the Tung Wah and the Committee became the Chinese Public Dispensaries Committee under the Chairmanship of the Registrar General, now the Secretary for Chinese Affairs.

457. It was declared at the time that the work of the depots or dispensaries was not hospital work and that the Chinese doctors employed were simply to diagnose disease and not to treat it. However, treatment centres were needed and treatment, commenced in a small way, gradually developed until now the principal function of the dispensaries is medical relief.

458. It is worthy of note that as far back as 1896 a Commission appointed by Government to advise regarding the Medical Department recommended the establishment under Government control of dispensaries in different parts of Victoria and Kowloon. However, none were built and the Chinese Public Dispensaries to-day occupy the positions which under other circumstances would have been filled by departmental institutions.

459. There are now nine Chinese Public Dispensaries, five on the island of Hong Kong and four in Kowloon. The two original institutions have Chinese maternity hospitals adjacent to them, the Tsan Yuk Hospital and the Wanchai Hospital.

460. Two of the Dispensaries are still housed in rooms attached to temples. Another, that at Aberdeen, consists of two rented shops temporarily adapted for the purpose. Gradually up-to-date buildings are taking the place of the temporary ones.

The Dispensaries at Shaukiwan and Wanchai are excellent buildings of their kind, as are also those of Yaumati and Kowloon City on the Kowloon side. The Western Dispensary has been much improved. The Central Dispensary is very small for the work it does.

461. This year has been marked by a general increase in the patients of all the dispensaries. Equipment has been improved and new instruments purchased. Besides instruments for small minor operations two of the institutions have their own microscopes. It is hoped that in the near future all will be provided with microscopes which are very necessary for diagnosing and differentiating the malaria cases which form such a large percentage of those attending.

462. Sick too serious for outpatient treatment were transported to hospitals by means of ambulances.

463. As mentioned before, once a week at each of the Dispensaries a gynaecological clinic is held by one of the Government Lady Medical Officers. In some there are two clinics a week.

464. Situated in the most thickly populated districts they fulfil a most useful purpose, not only in the treatment of disease but also as foci for the spread of knowledge concerning the cause of disease, and as the means of spread of the value Western drugs and methods both in prevention and cure. During the year very good propaganda work was done by four street orators appointed by the Committee.

465. Last but not least, each dispensary has a room attached to it where dead bodies can be received for transport to the mortuaries preliminary to burial. Coffins are provided free.

SUMMARY OF WORK DONE IN THE DISPENSARIES DURING 1933.

Dispensaries.	Patients.		Certificate of causes of death.	Patients sent to Hospital.	Patients removed to Hospital by Ambulance, Mortuary.	Corpses removed to Hospital or Mortuary.	Application for coffins.	Dead infants brought to Dispensary.	Vaccinations.	Gynaecological cases seen by Lady Doctor.
	New cases.	Old cases.								
Central	19,149	14,559	—	6	2	41	41	27	4,135	543
Eastern.	12,219	10,913	4	16	18	26	26	199	5,356	997
Western	12,973	11,262	43	17	20	339	339	303	5,991	1,107*
Shauiwan	28,519	26,403	23	69	4	8	8	194	8,756	1,568
Aberdeen	5,339	5,763	—	68	4	—	—	—	819	441
Yaumati & Harbour.	42,208	33,714	70	48	27	238	—	231	11,071	2,449
Shamshuipo	17,554	10,718	24	76	—	204	—	189	12,060	1,420
Hung Hom	11,760	3,030	69	153	10	158	—	150	6,562	584
Kowloon City	15,940	10,354	89	115	10	122	—	122	6,978	550
Total for 1933.....	✓ 165,661	✓ 126,716	322	568	95	1,136	414	1,415	61,728	9,659
Total for 1932.....	✓ 148,163	✓ 119,237	312	501	190	1,090	472	1,398	37,875	9,636

*Carried out at Tsan Yuk.

SECTION VII.

PRISONS.

466. The principal prison in the Colony is Victoria Gaol where there is accommodation for 650 males. At Lai Chi Kok on the Kowloon side of the Harbour is the Lai Chi Kok Prison where there is accommodation for 600 males. The Female Prison is situated near to the Lai Chi Kok Prison and has accommodation for more than 100.

467. All male prisoners are admitted to Victoria Gaol where they are carefully examined by the Medical Officer. Some, including all who are not passed as medically fit, remain in Victoria, others are transferred to Lai Chi Kok. Female prisoners go direct to the Female Prison.

468. The total number of admissions to all prisons was 11,439 of which 9,698 were males and 1,741 females. Of these 32 were treated as juveniles and 1,133 were fifty years of age or over.

469. In Victoria Gaol there is a small hospital of 30 beds. At the Lai Chi Kok Prison there are 12 beds for non serious cases, serious cases are transferred to Victoria Gaol Hospital. The Female Prison has 9 beds for sick cases.

470. For cases which require special treatment there are prison wards in the Government Civil Hospital and in the Kowloon Hospital.

471. Dr. G. V. A. Griffith was Medical Officer to Victoria Gaol throughout the year.

472. Dr. Mackie was Medical Officer to the La Chi Kok Prison and Female Prison until April when he was relieved by Dr. Uttley.

473. Thirty-seven cases including 5 for X-ray examination were removed to the Government Civil Hospital for treatment not available at the Gaol Hospital, while 3 cases were transferred to the Mental Hospital.

474. There were 17 deaths of which 8 were from pulmonary tuberculosis, 2 from valvular heart disease, 2 from lobar pneumonia and 2 suicides.

475. Twenty prisoners were released on medical grounds, all of whom were lepers.

During the year there was one execution.

Prison.	Total Prisoners admitted.	Daily average No. of inmates.	Total admissions to Hospital.	Daily average No. of prisoners in hospital.	Total Out-patients.	Daily average number of out-patients.	Deaths due to disease.	Death rate <i>i.e.</i> % of deaths to total admissions to prison.
Victoria (Male)	9,698	850	1,232	23.85	16,636	56.58	15	9.15
Lai Chi Kok (Male)..	—	435	420	3.42	3,872	10.63	1	0.01
Lai Chi Kok (Female)	1,741	187	163	3.63	351	1.51	—	—

All male prisoners are admitted to Victoria Gaol in the first instance and no prisoner is transferred to Lai Chi Kok unless he is passed medically fit.

Serious cases from Lai Chi Kok are transferred to the Victoria Gaol Hospital for treatment.

SECTION VIII.

METEOROLOGY.

477. Situated just within the northern limits of the tropics occupying an insular position immediately to the south of the great mass of China, Hong Kong's climate is very materially influenced by the direction of the prevailing winds.

478. The North East Monsoon blows from November to May and during this period the weather is dry, cool and invigorating. From May until October, the season of the South West Monsoon, the air is highly charged with moisture and the climate is hot.

479. The mean annual temperature is 72°F. During the summer months the average maximum temperature is 87°F. and there is little difference throughout the twenty-four hours. Situated on the north side of the Island the City of Victoria gets all the heat and moisture of the South West Monsoon but not the breeze itself which is cut off by the mountain behind the town. During the winter months the range of temperature is from 70°F. to 45°F. with an average of 66°F.

480. The table on the following page gives the means or totals of the meteorological data for the several months of the year 1933. The data for this table were kindly supplied by the Director of the Royal Observatory, Hong Kong.

METEOROLOGICAL DATA.

The following Table I gives the means, totals or extremes of the Meteorological Data for the several months of the year 1933.

Month.	Barometer at M.S.L. Mean.	Temperature.				Humidity.		Cloudiness.	Sunshine. hours.	Rain. ins.	Wind.		
		Absolute Max.	Mean Max.	Mean.	Mean Min.	Absolute Min.	Rel.				Abs.	Direction.	Velocity.
January	30.23	72.5	60.9	55.4	51.5	41.4	75	0.34	87	75.8	0.480	NE	8.2
February	30.07	79.3	65.1	60.0	56.9	53.2	80	0.42	81	97.9	0.100	E	15.8
March	30.06	82.0	69.6	63.6	59.7	47.9	78	0.47	71	131.9	1.015	E/N	12.9
April	29.97	86.6	77.3	71.7	68.3	57.2	82	0.64	76	145.5	1.915	E	12.3
May	29.90	90.0	84.0	78.4	75.1	70.7	82	0.80	71	216.8	4.515	E/S	10.8
June	29.73	91.2	87.0	82.6	79.4	73.7	83	0.92	86	153.2	16.440	S	11.7
July	29.75	93.0	87.9	82.3	78.8	75.7	83	0.91	71	209.3	14.310	ESE	9.3
August	29.81	92.9	89.5	83.9	80.1	76.0	78	0.90	51	299.5	1.735	S/E	9.4
September	29.82	92.2	87.1	81.9	78.3	74.2	79	0.85	65	193.7	12.580	E/N	11.8
October	29.99	90.0	82.3	76.7	73.1	64.6	71	0.65	64	191.6	3.745	ENE	13.2
November	30.10	82.0	75.3	69.1	65.3	59.3	70	0.50	46	203.4	4.135	ENE	10.8
December	30.10	77.3	70.4	64.8	61.4	55.0	74	0.45	47	207.8	1.375	E/N	10.9
Mean total or extreme	29.84	93.0	78.0	72.5	69.0	41.4	78	0.65	68	2,126.4	62.345	E	11.4

SECTION IX.

SCIENTIFIC.

A.—BACTERIOLOGICAL INSTITUTE.

481. The activities of the Institute include:—

- (a) the preparation of vaccine lymph.
- (b) the preparation of sera.
- (c) the preparation of bacterial vaccines.
- (d) the preparation of rabies vaccine.
- (e) examination of pathological material.
- (f) examination of waters, milks, etc., etc.
- (g) medical research.

482. The Institute is under the charge of the Government Bacteriologist who is assisted by the Assistant Bacteriologist and four Laboratory Assistants.

483. Particulars of the work done during the year are contained in the Annual Report of the Bacteriologist which is appended.

B.—*The Public Mortuaries.*

484. There are two public mortuaries, one being situated in Victoria and the other in Kowloon.

485. At these places for the reception of the dead are received:—

- (a) bodies from the Chinese Hospitals and Chinese Public Dispensaries for diagnosis.
- (b) bodies forwarded by Convents which have received them either moribund or dead from relatives and friends.
- (c) dumped bodies, that is to say, bodies which have been taken from the place of death under cover of the night and dumped in the streets or in the harbour to save the trouble and expense of burial. The great majority of these cases have died a natural death and there is no need for concealment.
- (d) bodies sent by the Police for medico-legal examination.
- (e) bodies sent by the Medical Officer of Health for examination for signs of infectious disease or for simple diagnosis.

486. In all cases where a diagnosis cannot otherwise be made a *sectio cadaveris* is performed.

487. All dead rats collected by the Sanitary Authorities are taken to the mortuaries for examination with regard to plague.

488. The Public Mortuary, Victoria, is in charge of the Assistant Bacteriologist, but the Public Mortuary, Kowloon, is under a Medical Officer who has been detailed for this work in addition to his other duties.

489. *Public Mortuary, Victoria.*

Report on Post-mortem Examinations, 1933:—

✓ Number of examinations performed	2,120
Male bodies examined	983
Female bodies examined	1,137
Sex unknown owing to advanced decomposition.	2
Claimed bodies sent from hospitals, etc.	102
Unclaimed bodies mostly abandoned	2,018
Number of Chinese bodies examined	2,113
Number of Non-Chinese bodies examined	7

Male. Female. Total.

Number of bodies under 2 years of age	588	978	1,566
Number of bodies over 2 years of age	290	159	454

490. Bodies were received from the following sources:—

Victoria	2,042
Harbour Police	0
Shaukiwan District	62
Other Villages	16
Number of rats examined	93,769
Number found plague infected	Nil.

491. *Public Mortuary, Kowloon.*

Report on Post-mortem Examinations, 1933.

Number of examinations performed	2,995 ✓
Male bodies examined	1,648
Female bodies examined	1,322
Bodies of unknown sex (indistinguishable)	25
Claimed bodies sent from Hospitals, etc.	466
Unclaimed bodies mostly abandoned	2,529
Number of Chinese bodies examined	2,979
Number of Non-Chinese bodies examined	16

	<i>Male.</i>	<i>Female.</i>	<i>Un- known.</i>	<i>Total.</i>
Number of bodies under 2 years of age	1,204	1,093	17	2,314
Number of bodies over 2 years of age	422	259	0	681

Bodies were received from the following sources:—

Kowloon District	2,806
Harbour Police	189
Number of rats examined	80,231
Number found plague infected	0

SECTION X.

THE NEW TERRITORIES.

PUBLIC HEALTH AND SANITATION.

492. The New Territories comprise the mainland between Kowloon and the Sham Chun River and a number of islands including Lantau which is larger than Hong Kong. The mainland is so indented by bays, harbours and coves that it may be said to consist of a number of irregular peninsulas many of which are almost islands. Both mainland and islands are of similar geological formation, being barren granite hills or mountains separated by fertile valleys.

493. For general administrative purposes the New Territories have been divided into two districts—North and South each under its District Officer. The Northern District which is chiefly mainland is approximately 200 square miles in extent. The Southern District has roughly 100 square miles of which 40 only are mainland the rest being islands.

494. For the purposes of medical administration it has been found convenient to divide the Territories into a Western Medical District and an Eastern Medical District, the boundary line being the range which extends from North to South and which separates the waters running East from those going West or South.

495. The Western District includes the West Coast and the South Coast with the hinterlands stretching back to the hills. The circular road crosses the boundary at the 3rd mile and at the 32nd mile. The islands of Tsing, Lantau, Cheung Chow and Lamma form part of this district.

496. The Eastern District includes the whole of the East Coast with its hinterlands.

497. Each medical district has approximately 150 square miles.

498. With regard to population the only information available is that contained in the Census Report where the figures refer to police districts only. The populations of the various villages in those districts are not known. The following is taken from the 1931 Census Report:—

Western Medical District.

<i>Police District.</i>	<i>Population.</i>
<i>Mainland :—</i>	
Tsun Wan	5,335
Ping Shan	12,660
Au Tau	12,877
Lok Ma Chau	4,377
	———35,249 ✓
<i>Islands :—</i>	
Lantau	7,409
Tung Chung	1,713
Cheung Chau	5,477
	———14,599 ✓
	—————49,848 ✓

Eastern Medical District.

<i>Police District.</i>	<i>Population.</i>
<i>Mainland :—</i>	
Sha Tau Kok	8,941
Sheung Shui	10,208
Taipo	12,684
Shatin	4,346
Saikung	7,585
	———43,764 ✓
<i>Islands :—</i>	
Po Toi Group and Cheung Kwan O District	3,100
	——— 3,100 ✓
	—————46,864 ✓

499. The population is grouped into villages which are situated mostly on the lower levels, viz., on the flats facing the sea or in the valleys leading up to and between the hills. Some of the villages are easy of access by rail or road but some are only reached after hours of walking and there are those which are only easily accessible by boat.

500. The rules and regulations governing village life are nowhere laid down in print but have been handed down from generation to generation. There are no heads of villages appointed by and responsible to Government, for the conduct of village affairs, but there are " Village Elders " who are accepted as arbiters in petty disputes and who have acquired their positions through age, experience, wealth or family rank. These elders have no executive power and are regarded by the villagers and by Government as advisers only.

501. From time to time co-operative efforts are made for the good of the community—some contributing money, some materials and some labour. In this way the paving of streets or paths, the construction of a bridge or the digging of a village well is brought about.

Public Health.

502. There are practically no public health laws in force in the rural areas of the New Territories. The Public Health and Buildings Ordinance of the Colony does not apply and there is no power to ensure notification, isolation or disinfection of disease cases. The Registration of Births and Deaths Ordinance was made applicable in 1911 but was until last year in most villages a dead letter. The vaccination Ordinance applies but there has never been any compulsory vaccination.

503. Figures for diseases incidence and for deaths during the years the New Territories have been under British jurisdiction are not available so that death rates and incident rates for particular diseases cannot be calculated. Such being the case the health conditions of the people can only be gauged by inspection and deduction.

504. Past reports of District Officers or of the Police make little mention of diseases or of deaths and the natural conclusion is that there was little out of the normal to note.

505. Enquiries made at the villages elicits little that can be called alarming. Some sick can be found but they are few compared with the number of healthy looking men, women and children one sees going about attending to their various occupations.

506. Near the hills there is a considerable amount of malaria but judging from the appearance of the people the number of chubby children and the lowness of the spleen rates the ravages of this disease are mild when compared with other tropical countries.

507. Abnormalities and accidents in connection with pregnancy and child birth must occur but from all accounts they are few in proportion to the numbers of normal cases.

508. Skin diseases there are, but judging from the returns of the dispensaries and travelling dispensary they are not very prevalent.

509. Trachoma varies with the village. In some it is common in others it is not.

510. With regard to Tuberculosis the population is mostly engaged in agriculture or fishing. The people as a whole live an open air life and Tuberculosis cases are not common.

511. Taking everything into consideration there is little evidence that the population of the New Territories is an unhealthy one.

Sanitary History.

512. With regard to sanitary measures which are the concern of the District Officers, markets have been constructed at Taipo, Cheung Chau and Un Long. In Taipo and Cheung Chau sanitary organisations have been established consisting in the case of the former of a sanitary squad under a contractor, in the latter of a squad under the Market Committee appointed by the Kai Fong. In the other villages sanitary organisations have not yet been brought into being, and the pigs are still the natural scavengers.

Medical History.

513. The history of medical efforts is as follows:—

1898—Territory taken over by the British.

1900—Government Dispensary established at Taipo and a Chinese M.O. put in charge. He was responsible to the M.O., Kowloon.

1901—Huts for lepers erected at Au Tau.

1911—Leper huts discontinued.

1911—Registration of Births and Deaths Ordinance extended to New Territories and Police Stations declared to be places for registration. The provisions of the Ordinance were not enforced until 1932.

1914—Government Midwife stationed at Un Long.

1915—Government Midwife stationed at Taipo.

1916—Government Midwife stationed at Tsun Wan.

1917—Government Midwife stationed at Cheung Chau.

1920—A non-Government Chinese Hospital established at Un Long, the Bok Oi, as a herbalist treatment centre and dying house.

- 1925—Un Long Dispensary established with a dresser in charge.
- 1928—European M.O. appointed with part-time duties in the New Territories.
- 1929—Proposals submitted by the Director of Medical and Sanitary Services for:—
- (a) Motor Travelling Dispensary for Northern District.
 - (b) Dispensary Launch for the Islands the boating population and those villages which can only be reached by water.
- 1930—Government appointed a Committee to make enquiries into the question of Sanitation and Registration of Births and Deaths in the New Territories.

Periodical visits of medical practitioners to the New Territories arranged by the New Territories Medical Benevolent Society and the St. John Ambulance Brigade.

1931—First Aid Stations established at Kam Tin and Fan Ling by St. John Ambulance Brigade.

Medical Benevolent Society increases its activities.

1932—Government placed on the roads a fully equipped motor travelling dispensary for dispensing both medicines and treatment to the villages near the road.

Proposals to provide a Dispensary Launch had to be postponed owing to the financial crisis.

Proposals to erect dispensaries at Tsun Wan and Cheung Chau were abandoned as the voluntary benevolent societies had established centres there.

Government accepted from Sir Robert Ho Tung a sum of \$100,000 and a plot of land for the erection and part maintenance of a Welfare Centre at the 32nd mile near Fanling.

Government accepted from Mr. Ruttonjee the offer to erect and hand over to the Medical Department a Dispensary at Sham Tseng at the 13th mile West road.

The New Territories Medical Benevolent Society opened a maternity home at Tsun Wan and centres at Tuen Mun Ping Shan and Shatin.

The St. John Ambulance Brigade opened centres at Taipo, Un Long, San Tin, Sha Tau Kok, Sai Kung and Cheung Chau, and a cottage hospital for women and children at Kam Tin.

An effort was made to enforce the Births and Deaths Ordinance which was applied to the New Territories in 1911 but which up to date had remained a dead letter.

The Medical Department's Organisation during 1933.

514. Under the scheme for medical expansion the New Territories were divided into Western and Eastern districts with headquarters respectively at Un Long and Taipo. Each district is in charge of a Chinese Medical Officer who is responsible to the Medical Officer of the New Territories.

515. The duties of the District Medical Officer include:—

- (1) Supervision of the Government dispensaries in his district. ✓
- (2) Domiciliary visits to indigent cases too ill to attend the dispensary. ✓
- (3) Emergency calls for all classes. ✓
- (4) Accompanying the Travelling Dispensary three times a week visiting villages in the district. ✓
- (5) Reconnaissance and propaganda. ✓
- (6) Spleen surveys. ✓
- (7) Periodical visits to Police Stations.

516. The Shing Mun Dam area was constituted a special medical district in charge of a special Chinese Medical Officer responsible to the Medical Officer New Territories for general medical work and to the Malariologist for anti-malaria operations.

517. The Staff for the New Territories included:—

- 1 European M.O. resident in Kowloon.
- 1 Chinese M.O., 1 dresser and 1 midwife resident at the Government Dispensary at Un Long.
- 1 Chinese M.O., 1 dresser and 1 midwife resident at the Government Dispensary at Taipo.
- 1 First grade dresser attached to the Travelling Dispensary.
- 1 Midwife at Cheung Chau.
- 1 Midwife at Tai O.

518. There was a fully equipped dispensary at Un Long and another at Taipo, and there were in course of construction up to date health centres and dispensaries at Ku Tung and Sham Tseng.

519. With the completion of the new buildings there will be Government Centres in the South, West, North and East sections of the fifty mile circular road which surrounds the main portion of the mainland of the Territories.

520. The Government Motor Travelling Dispensary which has its own first grade dresser and which carried one or other of the Medical Officers during its peregrinations was on the roads six days a week making by-weekly or tri-weekly visits to all the roadside villages.

521. In addition there were at Shing Mun a full time resident Chinese Medical Officer and three dressers any of whom was available for an emergency.

522. The Government Dispensary Launch for carrying medical assistance to remote villages in the neighbourhood of the coast and to the boat population had been approved and only waited improvement in the financial position to be placed on the stocks.

523. Dr. K. H. Uttley was Medical Officer in Charge of New Territories throughout the year.

Malarial Survey.

524. A spleen rate survey of the school children of the Territories which was started in May was still in progress at the end of the year. Both the M.O. i/c N.T. and the District M.O.s were engaged in this work. It was noted that even in the districts where malaria was reputed to be most prevalent the spleen rate was low—much lower than had been expected considering the character of the country. The one exception to this was the coastal region between Castle Peak and Tsun Wan a narrow strip where the hills slope down to the sea. Here out of 145 school children examined 105 or 73% had palpable spleens.

525. Though spleen rates were low those taken near the hills were always higher than those taken in the open plains. Out of 1,816 children examined who lived in close proximity to the hills 278 or 15.19% had enlarged spleens. Out of 1,191 children examined who lived in the plains 68 or 5.71% only showed signs of splenic enlargement.

526. Among 375 children palpated on Cheung Chow Island 4 or 1% had spleens large enough to be felt.

527. No opposition was experienced in spleen surveys on the contrary the people showed considerable interest in the proceeding.

528. A record was kept of those who showing no signs of spleen enlargement had marked pallor. Out of 1,807 children so observed 120 or 6.64% were very pale. It was not ascertained how many, if any, were suffering from hookworm but considering the small number of cases diagnosed in the hospital as harbouring anchylostomes the probability is that in the majority the cause of anaemia was malaria.

Small-pox Survey.

529. While making spleen census note was taken of the number of children who were pock marked. Out of 2,635 children seen, 116 or 4.40% were pock marked.

The Government Travelling Dispensary.

530. The Government Motor Travelling Dispensary was put on the road on the 16th of June 1932. At first it visited all the villages on the road side once or twice a week, later, on representations from the voluntary aid societies it ceased to call at the villages where they had established centres. The usefulness of this well equipped dispensary was thus considerably curtailed for the societies established centres in all the principal villages easy of access and there remained only the smaller hamlets. A Medical Officer and a dresser accompanied it on its rounds. There was a fixed itinerary and time table so that the people should know where and when to expect it.

531. On Mondays, Wednesdays and Fridays it visited the Western District from San Tin to Shing Mun inclusive. On Tuesdays, Thursdays and Saturdays it visited the Eastern District from Sha Tin to Sha Tau Kok and back to San Tin inclusive. In this way there was a minimum of mileage and overlapping and a maximum of hours of work in the villages.

532. The following table shows the results attained.

Year	New Cases	Old Cases and Dressings	Total	Malaria Cases
1932 (6 months)	10,058 ✓	5,651	15,709	860 ✓
1933	10,523 ✓	2,084	12,607	766 ✓

Taipo Dispensary.

533. For the greater part of the year the dispensary occupied the ground floor of a shop house on the main road of the village. The mezzanine floor served as quarters for the midwife and the medical officer and his family occupied the remainder of the building. The premises were too small for the work.

534. On the 1st of November the Government took a lease of three houses on the northern side of the town to serve as a self contained unit comprising:—

- (a) a dispensary.
- (b) a room for a children's clinic.
- (c) a maternity ward.
- (d) quarters for the Medical Officer.
- (e) quarters for a Midwife.
- (f) quarters for a Dresser.

535. The following table shows the extent of the work done at the dispensary during the year:—

New cases	4,926	as compared with	3,390	in 1932.
Old cases	6,237	„ „	4,668	„ „
Vaccination	2,065	„ „	1,345	„ „
Midwifery cases	111	„ „	81	„ „

Un Long Dispensary.

536. The old premises having becomes too small for the purpose a new block of three houses on a corner site was taken on lease. As at Taipo the buildings will ultimately provide accommodation for a dispensary, a children's clinic, a maternity ward, and quarters for the Medical Officer and his staff.

537. The work done by the Un Long Dispensary during the year was as follows:—

New cases	3,192	} 6596 (7021)
Old cases	3,404	
Vaccinations	821	
Midwifery cases	122	(12)

Medical Officers Visits.

538. During the year the Medical Officer visited all the villages of any size both in the Northern and Southern Districts to investigate the position obtaining in each and to form an opinion as to the need for medical attention. He was struck by the amount of malaria in some sections and its comparative absence in others. It is prevalent in the hilly districts opposite the middle section of the Fanling-Sha Tau Kok Road and in those south of Un Long.

539. *Tai O.*—Tai O, a fishing village of 5,000 inhabitants on the extreme north-west of Lantau Island, was visited once a week where all seeking treatment were treated at the local hall.

A village elder was always present to see that the patients followed each other quickly and quietly. On an average 30-40 cases were seen each time. Malaria appears to be absent but venereal disease is prevalent. The Government Midwife stationed in this village attended to 108 cases during the year.

540. *Sai Kung*.—The St. John Ambulance Branch having established a Centre in this village in May the Government Medical Officer ceased his periodical visits.

New Territories Police Stations.

541. Police Stations were visited at intervals during the year both by the M.O. i/c N.T. and by the District M.O.s. Except at Tsur Wan the health of the men was fairly good.

542. The Malaria incidence figures showed some increase on those of the previous two years.

543. The following are the malaria incidence figures for the last nine years:—

1925	1,205
1926	877
1927	428
1928	278
1929	265
1930	258
1931	148
1932	135
1933	192

544. Many of the Police Stations are screened and every man is provided with a mosquito net. Prophylactic quinine is issued and the living rooms are regularly sprayed with an insecticide in an endeavour to kill any adult mosquitoes which may be present. The men on night patrol are of course exposed to the bites of mosquitoes.

545. This year it was decided to make a trial of quino-plasmoquine instead of quinine as a drug prophylactic at Tsur Wan Police Station which had the reputation of being the most malarious station in the New Territories. The administration of the new drug commenced in the last week in July and was continued until the end of the year. At the commencement of the experiment the blood of each of the 19 adults who occupied the station was examined for malaria infection. Of these 18 were negative and 1 was positive.

546. The following was the course adopted:—

First five days.—One quino-plasmoquine tablet (containing plasmoquine $\frac{1}{6}$ grain and quinine $4\frac{1}{2}$ grains) was given after food three times a day.

Interval of ten days without drugs.

Second five days.—One tablet three times a day.

Subsequently one tablet every evening after food until the end of the year.

547. Of the 19 who were present at the beginning of the trial 8 were transferred before the end of the year and others came in their places.

548. Results:—

- ✓ 1.—No untoward symptoms were experienced by those taking the drug.
- ✓ 2.—No case of malaria was admitted to hospital from this station during the half year of trial.
- ✓ 3.—Of the 8 who were transferred and who therefore ceased to take the drug, three subsequently went down with malaria which they might or might not have contracted at Tsun Wan.

Voluntary Effort.

549. At the commencement of 1933 no fewer than 10 medical centres each with its resident staff of nurse midwives had been established by one or other of the voluntary benevolent associations.

550. The following table shows the position of the Centres, the authority in control, the class of establishment and the resident staff:—

Position.	Authority in control.	Class of establishment.	Resident staff.
Taipo	St. John Ambulance	Dispensary	Medical Officer and midwife
Un Long	Do.	Do.	Midwife
Kam Tin	Do.	Dispensary and hospital for women and children	Midwives - two
San Tin	Do.	Dressing Centre	Midwife
Fanling	Do.	Do.	Midwife and dresser
Saikung	Do.	Do.	Midwife
Cheung Chau	Do.	Dispensary and Maternity ward	Midwives - two
Tsun Wan	New Territories M.B.S.	Dispensary and Maternity hospital	Do.
Shatin	Do.	Dispensary	Midwife
Ping Shan	Do.	Do.	Do.

551. Early in January the New Territories Medical Benevolent Society and the St. John Ambulance Brigade came to an agreement regarding their work in the New Territories and amalgamated to form the "St. John Ambulance New Territories Medical Benevolent Branch".

552. During the year the Centres at Taipo and Un Long were closed and new centres opened at Saikung, Ha Tsun, Tin Kok and Ta Ku Ling.

553. A small maternity hospital was opened at Sha Tau Kok.

554. A plot of land was acquired at Cheung Chau for the erection of a forty bed modern general hospital. Building operations commenced towards the end of the year.

The scope of Activities of the Government Medical Department and the St. John Ambulance New Territories Medical Benevolent Branch defined.

555. The great concern shown during the last two years by the voluntary medical associations for the health of the inhabitants of the New Territories, which up to this time had not been considered an unhealthy area, and the enthusiasm exhibited for establishing centres for the treatment of the sick and for the delivery of the parturient made it necessary to arrive at some sort of agreement if wasteful overlapping of Government effort and of private effort were to be avoided.

556. Article 8 of the Agreement amalgamating the New Territories Medical Benevolent Society with the St. John Ambulance Brigade to form the St. John Ambulance New Territories Medical Benevolent Branch states—

"It is one of the objects of the New Territories Branch to cooperate with the Government of Hong Kong in the social welfare work in the New Territories of the Colony the intention being to alleviate the sufferings of the inhabitants."

557. At a Conference at Government House on 17.1.33 to establish a workable arrangement whereby medical work in the New Territories could be carried out by the Government Medical Department and the St. John Ambulance Branch without overlapping it was agreed—

- (a) That within the limits of its resources it was the duty of Government to take such action as was necessary to meet the reasonable medical requirements of the people
- (b) That there should be full cooperation between the Government Medical Department and the St. John Ambulance Branch.

- (c) That where there was no centre and one appeared desirable the St. John Ambulance Branch should with the approval of Government start one and run it until such time as the Government might wish to take it over and do the work itself.
- (d) That the resident staff at any centre should be entirely provided by the organisation, Government or Brigade, running the Centre.

558. At a meeting held at the office of the Director of Medical and Sanitary Services on 28.2.33, the question of cooperation was further discussed.

559. As the Medical Department had three resident doctors in the New Territories one of which accompanied the Travelling Dispensary which twice or three times a week visited each of the villages on the road, the Director suggested that a useful measure of cooperation would be for the doctor to stop off at the St. John's Centres and prescribe for the patients gathered there leaving the treatment to be carried out by the resident staff of nurses.

560. This offer was not accepted by the St. John Authorities who wished the work at the Centres to be done entirely by the St. John Ambulance staff. They would however welcome the assistance of the Government doctors in cases of emergency and would call them in whenever necessary.

561. It was agreed—

- (a) That the five Government centres established or in course of being established at Taipo, Un Long, Ho Tung, Sham Tseng and Shing Mun should remain.
- (b) That eight of the ten St. John Ambulance Centres should remain viz. those at Kam Tin, Tsun Wan, Ping Shan, San Tin, Fanling, Sha Tau Kok, Shatin and Cheung Chau.
- (c) That the centres established by the St. John Ambulance at Taipo and Un Long where there were already Government Centres should be closed.
- (d) That the Government Travelling Dispensary should cease calling at the villages where the St. John centres had been established confining its attention to other villages on or near the road.
- (e) That a Government Medical Officer who was also a member of the St. John Ambulance Brigade should be appointed a member of the Brigade's Advisory Committee.

*Measure for the Protection of Health of the Labour Force
at Shing Mun Dam Construction Works.*

562. The site for the dam is situated in broken country about 500 feet above the sea where the terrain consists of granite hills separated by steep sided ravines. At the commencement of the works the narrow ravine inverts were drained by boulder-bedded streams themselves fed by innumerable seepages and springs. Wherever possible the hill sides had been terraced and irrigated for the wet cultivation of rice.

563. The country abounded with potential breeding places of anopheline mosquitoes many of which were difficult to bring under control.

564. Judging from past experience of earth works carried out in such country the probability was that unless adequate precautionary measures were taken there would be a high malaria incidence and death rate among the labourers employed. It was therefore decided to take such precautions as might be practicable to prevent the introduction and spread of infection.

565. It was agreed that there should be a division of labour in carrying out the scheme for health control. The Medical Department undertook responsibility for investigation and research, for anti-larval measures other than drainage, for drug prophylaxis and treatment.

566. The Engineering Staff undertook to do clearing and drainage, the construction of buildings and general sanitary requirements. It was understood that the two departments should work in full cooperation.

567. On the medical side it was considered necessary to provide a mosquito-proof hospital and medical centre and to employ as a resident staff a Chinese Medical Officer and two or more dressers for hospital and field work also a gang for oiling and ditching. It was recommended that anti-malaria measures be controlled by the Malariologist and drug prophylaxis and treatment be under control of the M.O. i/c New Territories.

568. With regard to the engineering aspect an engineer who had had many years experience in Malaya was engaged to take charge of the anti-malaria drainage.

569. Owing to the very broken nature of the country there was very little choice in the matter of sites for coolie lines, for quarters for the European Staff, for hospital buildings and medical quarters. The best had to be made of a very difficult situation.

570. The site chosen for the coolie lines was a valley some 500 yards distant from the nearest point on the Shing Mun River and 700 yards from the dam. A valley was chosen in preference to a ridge in the hope that the hills on either side would to a certain extent act as a barrier to the flight of mosquitoes from breeding grounds outside the area of control.

571. The site selected for the hospital and medical centre was a small knoll on a ridge overlooking the lines valley on the one side and the valley of the Shing Mun on the other. Very limited in extent this knoll had to accommodate the drinking water reservoir in addition. On the same ridge but separated by a distance of a quarter of a mile was the site for the European quarters.

572. As no standards had been laid down as regards house accommodation or hospital accommodation for labourers the Director of Medical and Sanitary Services asked for the standards in vogue in Malaya viz. 300 cubic feet space for the individual in the lines and hospital accommodation in the proportion of three beds for every 200 labourers for general diseases and a separate additional ward for special cases to the extent of 1 bed for every 100 labourers.

573. It was recommended that hospital buildings, quarters and lines be made mosquito proof.

574. A piped supply of good water, trough water closets and the drainage necessary for domestic purposes were also recommended.

575. The engineering authorities were of opinion that the Malayan standards were too liberal for Shing Mun and decided that line accommodation to the extent of 150 cubic feet per person was sufficient. It was also decided not to mosquito proof the lines as the engineers were confident that the drainage operations carried out by them would make mosquito access improbable.

576. Arrangements were made for a plentiful supply of filtered water to be delivered to the lines by pipes.

Arrangements were also made for a complete sewage system with automatically flushed trough closets, septic tanks and filters.

577. With regard to the hospital it was agreed to erect in the first instance a small mosquito proof ward of 14 beds. This accommodation was deemed sufficient for a start as in the absence of any serious outbreak of malaria or of infectious diseases there might prove to be no need for a larger institution.

578. Pending the completion of the Medical Centre it was arranged for the staff to sleep at Kowloon spending the day at Shing Mun. It was also arranged for the Travelling Dispensary to visit three times a week and for a stock of medicines and dressings to be kept on the spot.

579. Every day the lines were visited by the Medical Officer and the dresser and any found sick were given treatment or sent to hospital. All cases of fever had their blood tested for malaria.

580. Instructions were issued that a daily statement should be sent to Medical Headquarters showing the strength of the labour force, the number of sick and the causes of sickness and the number of deaths.

581. The work of the medical staff was handicapped by the delay in the completion of the hospital and medical centre and quarters for the staff which were only ready for occupation in October.

582. The labour force which was small at the beginning steadily increased until upwards of 800 were in residence.

583. From time to time blood tests were made to ascertain the parasite rates of the various sections of the labour force. It was proved that a varying percentage of those engaged were already carrying the parasite when they took up residence. In such there was often little or no external evidence to indicate that they were carriers, and the coolies themselves were unaware of the fact.

584. The following tables compiled from figures supplied by the M.O. i/c New Territories are interesting for comparison:—

NEWLY ARRIVED LABOURERS.

Date.	Race.	No. examined.	Parasite rate per cent.	Spleen rate per cent.
September.....	Cantonese	72 ✓	15.3 ✓	1.0 ✓
	Shanghai.	100 ✓	12 ✓	0.74 ✓

LABOURERS OTHER THAN NEW ARRIVALS.

Date.	Race.	No. examined.	Parasite rate per cent.	Spleen rate per cent.	Parasite rate for all races.
June-July ...	Cantonese ...	302	44.70	20.2	46%
	Shanghai ...	67	59	1.3	
	Indians	31	29	0.0	
November ...	Cantonese ..	299	26.42	3.34	26.42%
	Shanghai ...	180	13.33	1.11	
	Indians	21	9.52	0.0	

585. During the year anophelines caught in the lines were identified and dissected at the Malaria Bureau. The prevalent anophelines were *A. minimus*, *A. jeyporiensis*, *A. maculatus* and *A. hyrcanus*. All species were found to be natural carriers but the prevalence and infection rate varied according to the species and the season.

586. As little was known of the power of flight of the local anophelines it was deemed wise to commence anti-larval measures at the centre or lines site spreading out concentrically until such a distance had been reached as would be sufficient to prevent access to the lines from the breeding places under normal flight conditions.

587. Experience in Malaya had shown the margin of safety for that country to be half a mile and it was hoped that in Hong Kong this distance or less would prove sufficient. The index of success would be the absence of mosquitoes in the lines.

All privately owned land within a radius of half a mile from the lines was resumed by Government in order that there might be full control over this area.

588. Anti-malaria inspectors from the Malaria Bureau visited frequently for the purposes of collecting mosquitoes and their larvae. Specimens caught were conveyed to the Bureau for identification and dissection.

589. Tents each containing a human bait suitably protected were placed in different positions in an attempt to determine by the catches made the directions from which the anophelines invading the lines were coming.

590. By the middle of the year all possible mosquito breeding places within $\frac{3}{8}$ ths of a mile from the lines had been destroyed. In spite of this it was still possible to catch in the lines large numbers of adult anophelines showing that the radius of sanitated area was not yet sufficient.

591. As it was unlikely that the extension of an additional $\frac{1}{8}$ th mile would prevent the access to the lines of all anophelines and as it was impossible to predict with certainty how much further it would be necessary to go the Medical Authorities recommended mosquito nets or proofing the lines.

592. Single nets were tried but proved a failure. It was then decided to screen the windows and doors with fourteen mesh copper gauze. This mesh had in the laboratory proved impervious to all anophelines.

593. As so often happens in cases where attempts are made to screen houses which have not been designed with a view to that end the result was only a partial success; in fact some lines became excellent mosquito traps. Whereas previous to screening *Anopheles hyrcanus* was rarely captured in considerable numbers. They found their way in but could not find their way out.

594. By the end of the year all the area up to the half mile circle had been cleared of breeding places. Anophelines however continued to be caught in the lines showing that under the conditions prevailing the range of flight and therefore the limit of safety exceeds half a mile.

595. The antimosquito measures taken by the medical staff included oiling and paris-green application to the breeding places and the catching of adult mosquitoes in the lines. The catching of large numbers of mosquitoes each of which is a possible medium of spread of malaria must have a beneficial effect and it is probable that mosquito catching in the lines was of considerable value in preventing a rise in the incidence rate.

596. A detailed account of the antimosquito work done by the staff under the control of the Malariologist is contained in his annual report which will be found in the appendix.

597. The following data supplied by the Resident Engineer shows the extent of the very important anti-malaria engineering works carried out by his staff.

- (1) 326 acres cleared of brushwood, etc.
- (2) $6\frac{1}{4}$ miles open drain cut for oiling, etc.
- (3) $7\frac{1}{4}$ miles of rock channels made on steep mountain sides.

*✓ clean
only*

- Drainage*
- (4) All rice fields, hyacinth ponds and stagnant pools have been drained for a radius of half a mile from the centre of the camp and in some places for a greater distance. In the Shing Mun Valley this work extends to a distance of nearly 2 miles and to a width of $\frac{1}{2}$ mile on the left bank and $\frac{1}{4}$ mile on the right.
- (5) The total length of pre-cast concrete channels and concrete channels built in situ is $7\frac{1}{4}$ miles.
- (6) The total length of subsoil pipe laid is $10\frac{1}{2}$ miles.
- canalised*
- (7) The Shing Mun river, together with the river running into Gindrinks Bay, with its tributaries has been cleared of boulders and canalised for a length of 5 miles, and all possible breeding places either filled in with concrete or stone, or drained.

598. In Hong Kong, large works are usually carried out through contractors and sub-contractors who pay their coolies only for the days they work. The strength of the labour force varies with the requirements of the situation as judged by the contractors or sub-contractors.

599. The contractors usually supply house accommodation, but neither food, nor medicines nor comforts for the sick. The coolie who falls ill must tend for himself and he who has neither money nor friends must look to Government or some charity organisation for maintenance and treatment. In any case the individual who is unable to work soon takes his departure and disappears from the ken of the contractor. At Shing Mun free treatment and hospital accommodation was provided but there were many who followed the fashion of the country and left in search of a change of scene. Under the circumstances it is most difficult to compile accurate vital statistics.

600. The following table shows as accurately as is possible under the circumstances, the average percentage of the labour force off duty daily owing to sickness:—

January to July—no returns.			
August	5.3%	on an estimated population of	650
*September	3.2%	„ „ „ „ „	800
October	4.2%	„ „ „ „ „	807
November	6.1%	„ „ „ „ „	707
December	5.8%	„ „ „ „ „	685

601. Malaria accounted for 30% of the cases.

*—The lowness of the September rate is due to the influx of a number of healthy coolies from Shanghai.

602. Considering the reputation of the locality the figures are very satisfactory. There can be no doubt that the health precautions taken was largely responsible for the favourable results.

Births and Deaths Registration.

603. Early in 1932 arrangements were made whereby the Police Stations became the registry offices for Births and Deaths. It was decided to avoid prosecutions at first and to rely on propaganda and persuasion. At the end of the year it was found that the results in the large island villages of Cheung Chau and Tai O were good, in Tsun Wan the Southern District mainland village they were only middling while in the Northern District they were very poor. On the advice of the District Officers it was decided to prosecute in cases of default. After one or two prosecutions passive resistance for the most part disappeared.

604. The total number of births registered in the New Territories during 1933 was 3,380 as compared with 587 in 1932. With regard to deaths the numbers were 1,370 and 310 respectively.

605. Next year registration in the New Territories should be sufficiently complete to allow of the calculation of birth and death rates for this area. This has been impossible hitherto.

A. R. WELLINGTON,
D.M.S.S.

APPENDIX A.

GOVERNMENT BACTERIOLOGICAL INSTITUTE.

Report for the year 1933.

By A. V. GREAVES, M.B., (Tor.), M.C.P. & S., (Ont.),
D.T.M., (Liverpool).

INTRODUCTORY.

(1) *Administrative.*—There were no changes under this heading during the year.

(2) *Buildings and Equipment.*—A part of the basement was fitted up as a laboratory for the purpose of accommodating the student sanitary inspectors under the scheme recently approved. This is used as a lecture and demonstrating room both for the teaching of bacteriology and malariology. The equipment is simple but sufficient for the purpose. Two new microscopes have been provided and there are the usual gas fittings, sink, reagent shelves, etc.

There have been no other alterations in the buildings.

A new binocular microscope has been purchased, partly to take the place of one very old one used by one of the junior assistants and partly to permit one to be sent away for repairs when required. We actually only have just what is needed and no more, and some of the instruments are long past their greatest usefulness.

One large and two small centrifuges of the latest high speed pattern have been purchased and installed.

(3) *Library.*—The following additions were made to the library during the year:—

1. Surgical Pathology of the Skin, Fascia, Muscles, Tendons, Blood and Lymph Vessels, A. E. Hertzler, 1931.
2. Lyon's Medical Jurisprudence for India, Waddell, 1928.
3. Neoplastic Diseases, James Ewing, 1931.
4. Vitamins: A Survey of Present Knowledge, Medical Research Council, 1932.
5. Tuberculous Disease in Children: Its Pathology and Bacteriology, J. W. S. Blacklock, Medical Research Council, 1932.

(4) *Publications*:—

“Perforative Amoebic Ulceration of the Appendix,” by A. V. Greaves, Transactions of The Royal Society of Tropical Medicine and Hygiene, Vol. XXVI, No. 4, January, 1933.

“Acute Phlegmon of the Stomach and Duodenum,” by A. V. Greaves, Canadian Medical Association Journal, Vol. XXIX, 37-39, 1933.

“The Laboratory Diagnosis of Malaria,” by A. V. Greaves, The Caduceus, Vol. XII, No. 4, November, 1933.

“A New Microscope Adapter for the Hand Spectroscope,” by A. V. Greaves, (In the Press).

(5) *Research*.—Routine work in great volume again prevented much being done in the way of research.

(a) *Dysentery*.—The work on Flexner dysentery strains commenced during the latter part of 1932 has been pursued steadily and although the number of cultures isolated and dealt with is not large, some facts emerging are of considerable interest.

The appended table shows the distribution of the strains between the various sub-divisions of the group and those which are inagglutinable.

V	7%
W	28%
X	13%
Y	7%
Z	2%
ZX	28%
Mixed	9%
Inagglutinable	6%

The infrequency of inagglutinable strains is somewhat remarkable in view of the records of Indian observers. Thus Manifold and deMonte report 28.2% of 117 strains as inagglutinable. It is possible that the reason for this may be in the fact that in the latter group agglutination was carried out relatively soon after isolation, whereas in our series all strains isolated were subcultured weekly for three months before agglutination, thus permitting any agglutinable property to become manifest and fixed. The type sera used were those of Medical Research Council and all the strains recorded showed agglutination to 50% or over titre. Boyd's experience regarding saccharose fermentation has been confirmed by us, no agglutinable culture showing true saccharose fermentation. One of the inagglutinable cultures, however, showed definite acidity in saccharose. This strain has not yet been investigated thoroughly.

In the table the association of Z and X is given a special place in view of its high incidence in the series, and also because of the comparative specificity of its antigenic structure, there being in most instances either complete absence of agglutination against the antisera of the other strains or else a fairly definite response on the part of Y—the latter being a very typical part of the pattern.

(b) *Malaria*.—A considerable increase of blood slides received for the diagnosis of malaria afforded us the opportunity of making a careful species determination of the parasites present. The pre-existing records of the Colony are incomplete in this respect—it was thought useful to attempt to fill the gap. All films were personally examined by the writer, occasionally with the assistance of the Malariologist, Dr. R. B. Jackson. While the figures are still not large the results are of interest, disclosing as they do, the presence of Quartan infection to a not inconsiderable degree. This species was hitherto considered uncommon in Hong Kong. (see M 127.)

It was found necessary again to go into the question of staining methods. The method of Shute was tried, and, in a modified form, has been so successful that it is being used routinely. The difference between the original method and the modification consists in omitting the determination of the pH of the methyl alcohol. In its present form it is simple and fitted to the needs of a busy diagnostic laboratory.

(c) *Diphtheria*.—Some work has been done and is still in progress on media for the isolation of the Klebs-Loeffler Bacillus, the idea being, if possible, to obtain a medium which will be as useful for diagnostic purposes as for purposes of virulence testing. To this end a modification is being made of the original Loeffler slope by the addition of varying amounts of tellurite. While the work is not yet completed a good measure of success has been obtained, the medium at present used being almost as sensitive as Loeffler's but succeeds in inhibiting nearly all other growth, so that a culture of considerable purity is obtained in most cases. Should the desired result be obtained, it would be possible to use the diagnostic culture for virulence testing without the intervening steps of plating and picking colonies. The saving of time and work which would result, is of course obvious.

(d) *Miscellaneous*.—Collection of material for research is being carried out on behalf of Professor Hoeppli and Professor van Dyke of Peiping Union Medical College; in the case of the former, livers infested with clonorchis, and the latter, pituitary glands are being collected and forwarded.

(6) *General*.—At the risk of being tedious I must again emphasize the need for consideration being given to the need for a new Institute in close relation to one of the large hospitals. The need for more room will require some building addition to the present structure at some date not far distant, if further development of the work at present carried on is to be considered, and it would seem to be uneconomic to do this if removal is to be contemplated within a few years.

Quite apart from actual routine work the Institute is more and more being used for teaching purposes, such as in the instruction of sanitary officers, hospital dressers, etc., and this naturally encroaches on our already scanty room.

This is also true of the stable quarters, where room for an extra pony is needed for the necessary increase in the production of anti-meningococcal serum. Another grave need is for an operating room for removal of vaccine material from calves. At the present moment this is carried out in the open, which is to say the least of it highly undesirable.

The summary of tests at the end of this Report appears to show fewer tests carried out in 1933 than 1932. This is due practically entirely to alterations in the mode of presentation of figures, chiefly with reference to Widal tests, which were previously reported as separate agglutinations of each of the three organisms, while the present totals show a single test for each serum. This alone makes a difference of 1,828 tests. There are other minor charges in the same direction, so that with corrections the total for the two years is practically identical. It must be recalled, however, that in 1932 there were three minor epidemics of cholera, cerebro-spinal meningitis, and diphtheria, requiring the examination of unusual numbers of faeces, spinal fluids, and throat swabs. That the total number of examinations remains practically the same shows that the regular routine work has increased steadily. Probably the greatest increase is shown in serological work, about 2,000 more sera having been examined this year. The number of blood smears examined for malarial parasites is also very much greater.

The work of the staff is satisfactory and the usual high standard of technical efficiency has been maintained.

A. PROTOZOOLOGY AND HELMINTHOLOGY.

(1) *Blood films for malaria*.—One thousand nine hundred and ninety films were examined for the presence of malarial parasites. A marked improvement has been noted in the quality of the blood films forwarded for examination from the hospitals, and diagnosis is much facilitated thereby.

The percentage proportion of the different types of parasite was found to be as follows:—

742	Malignant tertian	57.81%	57.1
	Benign tertian	24.39%	24.4
	Quartan	5.52%	5.5
	Unclassified	12.26%	12.3

These percentages are closely coincident with those of last year, although the latter were based on a rather small series of cases.

EXAMINATION OF BLOOD FILMS FOR MALARIA.

PARASITES.	EUROPEAN.	INDIAN.	CHINESE.	TOTAL.
Malignant Tertian.	40	11	378	429
Benign Tertian ...	19	7	155	181
Quartan	1	1	39	41
Unclassified	14	7	70	91
Negative	320	58	870	1,248
Grand Total	394	84	1,512	1,990

(2) *Filaria*.—Fourteen films were examined for the particular presence of filaria, but as a matter of fact all blood films sent in for examination for the presence of malarial parasites are routinely searched for filaria as well.

(3) *Faeces*.—Seven hundred and forty five specimens of faeces were examined for the presence of the ova of helminths, and for vegetative and encysted forms of protozoa. It may be pointed out that all samples of stools received for any examination are routinely searched for such parasites.

A large percentage of faecal specimens are sent in for the exclusion or diagnosis of dysentery, and the routine pursued is to report to the sender immediately the cytological picture presented. This gives the clinical attendant valuable information for the purposes of treatment without delay, while the time-consuming culture is carried out at leisure and reported on when complete. The value of this is not to be questioned, as the finding of macrophages and pus cells in a stool is to all intents and purposes pathognomonic of bacillary dysentery. Even in spite of the fact that most of the stools received by this laboratory are not fresh, the percentage of positive cultures grown from such cytologically typical stools is as high as 46%.

B.—SEROLOGY.

(1) *Serological reactions for Syphilis.*—Eight thousand two hundred and fifty seven sera were subjected to test.

The percentage figures for the different results are as follows:—

Strong Positive	36%	} 50%
Positive	8%	
Weak positive	6%	
Doubtful	6%	
Negative	44%	

The increase in the total number of sera tested continues year by year in conformity with the development of the V.D. clinics, and forms a very important part of the activities of the Institute.

EXAMINATION OF BLOOD SERA FOR SYPHILIS.

	EUROPEAN.		INDIAN.		CHINESE.		Total.
	M.	F.	M.	F.	M.	F.	
Strong positive..	57	5	78	10	2,186	663	2,999
Positive	24	3	50	2	429	141	649
Weak positive...	17	3	34	3	290	109	456
Doubtful	24	1	49	2	359	84	519
Negative	322	22	266	15	1,935	1,074	3,634
Grand total...	444	34	477	32	5,199	2,071	8,257

(6442)

(2) *Agglutination tests.*—No comment is necessary on this heading. The technique used in performing the test is the same as used previously, namely, the method of qualitative receptor analysis.

AGGLUTINATION TESTS.

ORGANISMS.	EUROPEAN.		INDIAN.		CHINESE.		Total.
	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	
B. Typhosus ...	50	127	5	36	186	510	} 914
B. Para. A.	3	174	...	41	3	693	
B. Para. B.	3	174	...	41	8	688	
B. Para. C. ....	...	...	...	...	1	...	1
B. Melitensis ...	...	1	...	...	...	2	3
B. Abortus .....	...	4	...	...	...	...	4
Weil Felix reaction .....	...	1	...	...	...	...	1
Grand Total ...	56	481	5	118	198	1,893	923 (179)

C.—BACTERIOLOGICAL EXAMINATIONS.

(1) *Faeces*.—Three hundred stools were cultured for the presence of pathogenic organisms. The table shows the distribution of the different types of infection present. Infections with *B. dysenteriae* (Schmitz) are seen to be by no means uncommon as a cause of dysentery in Hong Kong.

STOOLS EXAMINED FOR ORGANISMS.

Organisms.	European.		Indian.		Chinese.		Total.
	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	
Typhoid group..	2	24	...	1	...	99	126
B. Dysenteriae (Group).....	...	61	...	7	...	38	106
B. Dysenteriae (Flexner).....	21	...	3	...	31	...	55
B. Dysenteriae (Shiga).....	...	...	1	...	3	...	4
B. Dysenteriae (Schmitz).....	5	...	...	...	2	...	7
B. Cholera.....	...	...	...	1	...	1	2
Grand Total ...	28	85	4	9	36	138	300 (116)

(2) *Sputum*.—Six hundred and seventeen specimens of sputum were examined for the presence of *B. tuberculosis*.

EXAMINATION OF SPUTUM FOR *B. TUBERCULOSIS*.

	EUROPEAN.	INDIAN.	CHINESE.	Total.
Positive	22	32	92	146
Negative	92	73	306	471
Grand Total	114	105	398	617

(3) *Urine*.—Two hundred and fifty one urines were reported on; a large number of these being cultured in addition to complete examination otherwise.

(4) *Urethral and cervical smears*.—Five hundred and twenty eight smears were stained for the gonococcus.

(5) *Nasal scrapings*.—One hundred and seven nasal smears were examined for the presence of the Leprosy bacillus. This number is almost double that of 1932. Twenty-two were positive.

(6) *Throat swabs*.—Six hundred and fifty four swabs from the nose and throat were cultured and examined for *C. diphtheriae*.

THROAT SWABS EXAMINED FOR DIPHTHERIA.

	EUROPEAN.	INDIAN.	CHINESE.	Total.
Positive	60		47	107 ✓ (382)
Negative	316	1	230	547
Grand Total	376	1	277	654 ✓ (1730)

(7) *Cerebro-spinal fluids*.—Two hundred and seventy four fluids were examined for the meningococcus; slightly over 50% being positive either on direct examination or on culture. This total is considerably less than that of the previous year, but is still high enough to remind us of the ever present possibility of another epidemic. In a normal year the number of fluids sent for examination averages 18, so that it is quite evident that the epidemic of 1932 still lingers on our threshold.

C. S. F. EXAMINED FOR MENINGOCOCCUS.

	European.	Indian.	Chinese.	Total.
Positive	3	1	136	140 ✓
Negative	5	1	128	134
Grand Total	8	2	264	274 ✓

(8) *Miscellaneous materials.*—Thirty nine examinations were made under this head. Of some interest were three instances of the occurrence of the disease of bread known as “ropy bread”. Two of the cases were referred by the naval authorities and one by a private individual. In all of them we were able to isolate the causative organism, *B. mesentericus panis viscosi*, and to reproduce the disease by inoculation into a freshly baked loaf. A good summary of our knowledge of this condition is given by Rowlette (*Journal of the Royal Army Medical Corps*, Vol. LX, No. 2 February, 1933).

Twenty five brains were examined for Negri bodies, one of them that of a monkey. Three dog’s brains showed Negri bodies.

D. PREPARATION OF VACCINE LYMPH.

The figures for the year are as follows :—

Number of calves vaccinated	147.
Amount of lymph prepared	21,600 c.c.
“ “ “ issued	23,277 “
“ “ “ remaining in stock	29,835 “

Attention is drawn to the very large amount of lymph issued. This is accounted for by the occurrence of a small outbreak of small-pox during the latter part of 1932 and the early months of 1933. Of this large amount no less than 70% was issued during the two months, February and March. The strain placed

both upon our stock of lymph and the staff of the Institute during this period was very heavy, and it is a great cause for satisfaction that all demands for lymph were at all times fully and promptly met. Naturally the replenishment of our stocks has caused us some concern, and vaccination of calves for the year has been heavy. It is, however, anticipated that the issue during 1934 will be smaller than usual.

During the period of heavy production it was found that the lymph-grinding machine fell heavily behind the supply of pulp offered for grinding, and this, coupled with the fact that no duplicate machine exists, led to the request (which was subsequently granted by Government) that a new machine be provided. This machine is now on order and should be in use during 1934. As it is of a quick grinding type, it should relieve us of a certain amount of anxiety on the score of replacement of stocks.

Certain improvements in the routine of lymph preparation have been instituted. Regular passage through the rabbit is now carried out at definite known intervals, so that the history of all seed used is known and recorded. As it was found that the plate counts of most batches of lymph, even after extended storage, were abnormally high, it was considered advisable to institute routine exposure to room temperature for approximately one week in order to bring down the count to proper limits. While this procedure achieves its purpose satisfactorily a doubt arises as to the preservation of the potency of the lymph, particularly after storage, and until the question is definitely settled it is proposed to decrease the dilution with glycerol-saline by the addition of three times the amount of diluent by weight instead of four times as is at present practised. While this will reduce our production to some extent it should definitely enhance its immunizing property.

Potency tests were carried out as usual on babies in the Alice Memorial Hospital, and our grateful thanks are due to the Medical Director and associated members of the staff for their kindness and co-operation in making this possible. Dr. Annie Sydenham in particular has given much of her time to making the necessary inspection and records.

During the writer's leave in 1934 it is hoped to obtain some data on methods of production of vaccine by growth of the virus *in vitro* in the hope that by this time methods will have progressed sufficiently to have placed this procedure on a practical basis.

E. PREPARATION OF VACCINES AND SERA.

(1) *Anti-meningococcus serum*.—The quantity of serum issued this year is still heavy, although not approaching last year's figures, which were influenced by the presence of a small epidemic of cerebro-spinal meningitis.

The amount of serum issued was 15,990 c.c., this amount is only slightly over half of that issued in 1932, but about three times the average issued in previous years. At the present moment the amount which we are able to prepare is a good deal less than this, and we will be faced with a shortage unless the number of cases of the disease diminishes, or we are able to add another pony to our stock. Two ponies are at present used for serum production, and this number is really as many as our stable accommodation will take care of.

(2) *Gonococcus vaccine*.—The amount issued is 4,650 c.c. This is slightly in excess of that issued last year.

Efforts to improve the yield have at last achieved a fair measure of success. The medium used hitherto was testicular extract agar. This is also now used but with the addition of 5% whole sheep's blood. The resulting yield is much higher than we have hitherto been able to obtain by any of the methods tried. This medium with the addition of blood is simple to prepare and affords a luxuriant growth of the organisms.

(3) *Anti-rabic vaccine*.—The method of preparation of anti-rabic prophylactic was again varied this year to conform with the findings of Indian workers (Cunningham, Malone and Craighead, Indian Medical Research Memoirs, Nos. 15 and 26). The amount of brain substance was increased from 1% to 2%, the dose remaining the same and the preparation otherwise being unchanged.

Several cases of persons bitten by a proved rabid dog were treated and followed up for a period of approximately four months; in no instance did infection occur.

The total number of cases treated was 226, and the total number of doses issued 2,166, both considerably in excess of last year's totals.

In the table appended, many of the cases shown under the heading, "treatment not completed" consist of cases released under the advice of the Colonial Veterinary Surgeon that the suspected dog was not rabid after a period of observation

94 completed
147 not

Race incidence of cases.	Treatment completed.	Treatment not completed
British	25	15
Chinese	59	108
Portuguese	7	1
Japanese	1	1
French	1	...
Polish	1	...
Eurasian	1	...
Indian .....	...	1
Spanish .....	...	1
Unknown (outport cases).....	4	...
Total.....	99 ✓	127

(4) *Autogenous vaccines*.—Twenty nine vaccines were prepared from material forwarded from various sources.

VACCINE AND SERUM.	AMOUNT ISSUED.
Gonococcus Vaccine	4,650 c.c.
T. A. B. „	380 „
Cholera „	85 „
Autogenous „	29 vaccines.
Anti-meningococcic serum	15,990 c.c.

F. EXAMINATION OF WATER AND MILK.

(1) *Bacteriological analysis of the water supply.*—One thousand three hundred and twenty three samples of the public water supply were examined routinely for bacteriological purity. Daily samples were taken from the various water areas and the results reported to the Water Authority. The usual high standard of purity has been maintained.

The appended table shows the various sources from which the samples were obtained:—

Unfiltered raw water.....	108
Filtered raw water.....	110
Filtered and chlorinated water from service taps throughout the Colony.....	1,083
Well water	1
Water from other than public supplies	21
	<hr/>
Total	1,323
	<hr/> <hr/>

(2) *Bacteriological analysis of milk.*—Two samples of milk were tested, one from a dairy supply and one sample of condensed milk referred by the Medical Officer of Health.

G. MEDICO-LEGAL INVESTIGATIONS.

Thirty four examinations were carried out under this heading on behalf of the Department of Criminal Investigation.

For detection of human blood.....	25
For detection of semen	6
For the classification of hair	3
	<hr/>
	34
	<hr/> <hr/>

H. MORBID HISTOLOGY.

One hundred and seventy eight examinations of tissues were made. Sixty two of these were of tumours, seventeen malignant and forty five benign. The remainder were for general pathological diagnosis.

A most interesting specimen is to be recorded, that of the heart of a coolie who died suddenly while apparently in good health. The organ showed an infiltrating tuberculoma of the myocardium. This type of tuberculous infection of the heart is extremely rare. The tissues are being carefully studied and it is hoped to report the case later.

ANALYSIS OF CLINICAL AND OTHER EXAMINATIONS.

Nature of Examination.		Total for 1933.	Total for 1932.
Agglutination Reaction.	B. Typhosus	914	2,607
	„ Paratyphosus A		
	„ „ B		
	„ „ C	1	...
	Weil Felix Reaction	1	3
	B. Dysenteriae	...	...
Agglutination Reaction.	„ Meletensis	3	4
	„ Abortus	4	3
	Serological Reaction for Syphilis	8,257	6,442
Blood Smears.	Malaria Para-ites	1,990	897
	Filaria	14	9
	Blood count, etc.,	25	32
Cultural Examina- tions.	Bacillus Diphtheria (Naso- pharyngeal swabs)	654	1,730
	Meningococcus (Spinal fluids)	274	463
	Typhosus, Paratyphosus, Cholera, etc., (Faeces)	300	716
Faeces.	Ova of helminth	745	697
	E. histolytica		
	Occult blood	23	6
Faeces.	Tubercle Bacillus	2	2
	Tissue Sections	178	264
Miscellaneous Examinations.	Sputa	617	574
	Pus	39	12
	Urine	251	146
	Smear for Gonococcus	528	438
	Smear for B. lepræ	107	56
	Rat smears, spleen, etc., for B. pestis	1	...
	Animals for Rabies	25	11
Medico-legal Examinations	34	55	
Bacteriological Examination of Milk	2	1	
Bacteriological Analysis of Water	1,323	1,433	
Rideal Walkers Test of Disinfectants	3	...	
Autogenous Vaccine prepared	29	47	
Filter candles sterilized for domestic filters	336	389	
Miscellaneous	238	171	
Total.....		16,918 ✓	17,208 ✓

SMOITANIMA BACTERIOLOGICAL INSTITUTE. KIRIZJANA

Expenditure for 1932 and 1933.

	1932.	1933.
1. Personal Emoluments	\$32,141.98	\$42,944.64
<i>Other Charges.</i>		
29. Animals and Fodder	6,188.86	6,389.90
30. Anti-rabic Work.....	425.15	373.19
31. Apparatus and Chemicals.....	1,458.85	1,338.37
32. Books and Journals	98.36	86.20
33. Conveyance Allowances	233.50	343.71
34. Fuel and Light	1,722.51	1,540.28
35. Incidental Expenses	788.60	720.40
36. Preparation of Vaccine, Serum ...	1,682.76	1,571.10
37. Uniforms	468.91	240.83
Total	<u>\$13,067.50</u>	<u>\$12,603.98</u>

Special Expenditure.

52. Electric Centrifuge	—	1,167.94
53. Microscope for Bact. Institute.....	—	689.56
Microscopes for Training Asiatic Sanitary Inspectors	—	940.00
Electric Refrigerator.....	870.30	—
Total	<u>\$870.30</u>	<u>\$2,797.50</u>
Total Bact. Institute.....	<u>\$46,079.78</u>	<u>\$58,346.12</u>

Revenue for 1932 and 1933.

	1932.	1933.
Bacteriological Examinations.....	\$14,840.60	\$9,346.70

EXPENDITURE & REVENUE FOR PAST TEN YEARS.

	Per. Emols. & Other Charges.	Special Expen- diture.	Total Expen- diture.	Total Revenue.
1924	\$28,644.53	\$ 459.29	\$29,103.82	\$4,752.12
1925	26,498.47	...	26,498.47	3,536.40
1926	29,982.11	9.70	29,991.81	7,220.41
1927	27,984.41	436.87	28,421.28	7,664.62
1928	34,643.40	23.37	34,666.77	6,635.23
1929	37,545.96	442.14	37,988.10	8,307.44
1930	55,239.81	...	55,239.81	7,384.03
1931	55,446.94	794.19	56,241.13	7,482.82
1932	45,209.48	870.30	46,079.78	14,840.60
1933	55,548.62	2,797.50	58,346.12	9,346.70

Appendix B.

ANNUAL REPORT OF THE WORK OF THE MALARIA BUREAU FOR THE YEAR 1933.

by

R. B. JACKSON, M.D., D.P.H., Malariologist.

Staff.

The staff consisted of the Malariologist, Assistant to Malariologist, four Inspectors, one Probationer Inspector, one clerk and four coolies. The Assistant to Malariologist was absent on leave from 6th May onwards. A probationer Inspector was appointed in April on account of the extra work entailed by the Shing Mun Camp.

From 1st August the services of four vaccinators were placed at the disposal of the Bureau. They assisted in larval surveys and helped to collect mosquitoes from houses.

Work carried out during the year.

This was included under the following headings:—

- (a) General mosquito survey of the Colony and New Territories, in order to determine what species existed, their life histories, and, as far as possible, their identifications in the larval and adult stages.
- (b) A general investigation of malaria and other mosquito-borne diseases.
- (c) The catching of mosquitoes frequenting habitations, their identification, and the dissections of such Anophelines as were found, for malarial and filarial infections.
- (d) Investigations as to the prevalence of malaria in certain areas, and the conditions under which it was existing, with a view to its abolition, and, in the case of the Shing Mun Camp, the supervision of certain measures directed against Anopheline larvae and mosquitoes.
- (e) Local mosquito surveys for the abatement of mosquito nuisance.
- (f) The teaching of mosquitoology and the instruction of the inspectors in this work, and other matters bearing on the subject.
- (g) Co-operation with Government Departments, the Military, Naval and Air Forces, public companies and private individuals in the investigation and eradication of malaria.
- (h) Experiments with Paris Green in the destruction of Anopheline larvae.

↓ check list in P.A.D.

↑

(a) INVESTIGATION OF SPECIES AND THEIR LIFE HISTORIES.

Anophelines.

The number and species of the various anopheline larvae examined are given in Table I. Table II gives the number and species of the imagines obtained from pupae collected, and from pupae obtained from the larger larvae.

An experiment was performed in order to obtain an approximate estimate of the number of days which *Anophelines* might live, if unable to leave a dwelling, and if only blood meals were available. On the 23rd October a batch of *Anophelines* consisting of 4 *A. hyrcanus*, 1 *A. maculatus* and 1 *A. minimus* which had recently hatched out in the laboratory were transferred to a lamp glass whose ends were covered with mosquito netting. The mosquitoes were allowed access to raisins and damp lint was placed on the top of the netting. At 8 a.m. on the 24th the lamp glass was applied to an arm and 1 *A. hyrcanus* fed. The raisins and water were withheld but a blood meal was afterwards offered daily at 8 a.m. On the 25th 3 *A. hyrcanus* fed; on the 26th 2 *A. hyrcanus* fed—the *A. maculatus* being found dead. On the 27th 4 *A. hyrcanus* fed. On the 30th 3 *A. hyrcanus* fed. 1 *A. hyrcanus* being found dead. On the 31st no *A. hyrcanus* fed—2 were found dead. The *A. minimus* fed a little. On the 1st November the remaining *A. hyrcanus* and *A. minimus* were found dead—only the *A. maculatus* had not taken blood.

A. maculatus. This year the proportion of *maculatus* larvae examined to the total anopheline larvae collected was less than in former years (33% as compared with 52% in 1932) owing to the areas surveyed including more cultivated and fallow rice fields, swampy tracts and vegetable gardens, places which do not normally function as breeding grounds for this species.

Although the *maculatus* larvae caught were more numerous than those of any other anopheline the numbers of adults taken both by day and by night were small in comparison with the catches of other species. Except in the case of the Wo Li Hop collections those captured were usually not gorged with blood. Malaria infections of the midgut have however been encountered and on two occasions larval filaria were met with in the thorax.

Experiments were made with a frog and with a canary to ascertain if batches of *A. maculatus* could be induced to feed on them but in neither occasion did they take blood. Sixteen *maculatus* were left with a frog for three nights continuously but did not feed on it. Fifteen *maculatus* were put with a canary for one night but none took blood. In the morning four of the fifteen fed greedily on the arm of an inspector. Another batch of fifteen were left for three nights continuously with a different canary but did not bite. When the bird was removed an arm was offered for forty minutes but without result. All the anophelines used in these experiments were hatched out in the laboratory, had been fed for a few days prior to the experiments on water and raisins and had access to the same during the trials.

On the 18th of November a hill stream crossing the Tytam bridle path was searched carefully for two hours; no larvae were got but one pupa obtained hatched out as *A. maculatus*. The nearest habitation was half a mile distant on one side, and three quarters of a mile distant on the other side of the stream. These were two police stations with four or five police in each.

The larvae of *A. maculatus* are usually abundant in hill streams in populous areas. Should it prove to be the case that they are absent or few in numbers in such streams remote from human habitations there must be some attraction in connection with these habitations. Few adults are captured in dwellings in day and night catches in comparison with the larval population, so it would not appear to be the human element.

The larvae have been found in numbers in localities where neither horses, cattle nor pigs were kept, so these animals do not seem to be the draw. The adults do not appear to feed on frogs or birds. It however is possible that dogs may prove one of the attractions.

It is hoped in the future to make further investigations into the matter by ascertaining if they can be caught at night coming into stables or byres, or caught in the open, in order to obtain sufficient material for precipitin tests and dissections.

A. minimus. Larvae of *A. minimus* were met with in their usual breeding places in the flat portions of streams amongst or near the hills and in irrigation ditches. In October they were found in terraced rice fields containing rice almost fully grown. It was reported that the water was being drained from these rice fields. In the streams, except for an occasional specimen, they were not found in pools devoid of vegetation or algae, hence clearing of streams alone is likely to have a good effect by increasing the velocity of the current and discouraging the growth of vegetation and algae. In one instance four *A. minimus* and one *A. maculatus* were found in water below a dead pig in an advanced stage of decomposition. More work is required to ascertain if peckets in hill side clefts and pools in the steep portions of hill streams harbour these larvae to any extent, also if they can be found in numbers in streams remote from the hillfoot and outside tidal influence, as results affecting the extent of anti-malarial operations are likely to be obtained. Fewer adults are caught in the colder months as will be seen on reference, to Tables IX and X for the Wong Chok Hang catches. Similar results were obtained in this locality in 1932. No anti-malarial operations except catching have been done there. As in 1932 this Anophele was found to be an important carrier of malaria and harboured larval filaria.

A. hyrcanus. Larvae of *A. hyrcanus* var. *sinensis* were found in rice fields at various stages of the crop. At times they were best demonstrated by muddying the water. They were met with

in flooded rice stubble. It has been ascertained that after feeding, the great majority of these Anophelines leave the building, hence do not figure to any extent in day catches, as was conjectured in the 1932 report. In the Shing Jun collections they were obtained in large numbers in the latter part of the year following screening of the lines and have been found infected with malaria but not in the collections from elsewhere. They have been found infected with larval filaria in the thorax, head and proboscis.

A. jeyporiensis. Larvae of *A. jeyporiensis* were found to breed in profusion in water on abandoned rice fields in hilly country. They have been found along with those of *A. hyrcanus* in the stubble of rice fields situated at the foot of hills, but adults previously absent from catches in this locality began to appear before the rice was cut whilst the water was being drained off. They were found in terraced rice fields in hilly country during the month of October along with the larvae of *A. hyrcanus* and *A. minimus* when the crop was almost ripe and the water was being drained off. The larvae were met with occasionally in hill streams, but so far, such sources have not been found to contribute to any appreciable extent. This mosquito was found to be a most important carrier of malaria. Large numbers were dissected in 1933 as compared with 1932 when it was only found infected during the last quarter of the year. It has been found infected with filaria. At the Shing Mun Camp large numbers were captured and in certain directions its range of flight much exceeds half a mile. Most likely the variety *candidiensis* is the sole representative of the species to be found here.

A. karwari, A. aitkeni and A. splendidus. Larvae of *A. karwari, A. aitkeni, A. splendidus* (*maculipalpis*) were obtained only in small numbers. A few adults of *A. karwari* and *A. splendidus* were captured in houses. No larvae of *A. tessellatus* were encountered and no adults were taken.

Culicines.

Specimens of the following mosquitoes not commonly met with in the Colony, and their corresponding larval skins have been obtained:—*C. virgatipes, C. castrensis* var. *foliatus, C. sinensis, C. (Lophoceratomyia) infantulus, C. (Lophoceratomyia) rubithoracis, Ficalbia minima, Ficalbia luzonensis, Uranotaenia macfarlanei, Uranotaenia annandalei, Armigeres magnus, Harpagomyia genurostris.*

The following specimens were obtained—which are new records for the Colony—*C. whitmorei, C. castrensis* var. *foliatus, C. mimulus* var. *Ficalbia luzonensis, Harpagomyia genurostris.*

Larval skins and corresponding adults of mosquitoes belonging to the genus *Culex* which were hatched out from the liquid obtained from pitcher plants were submitted to Dr. Edwards of the British Museum for identification, but for the present he is unable to name the species until fresh material is forthcoming from Sumatra and Malaya. Ten larvae of *A. maculatus* were put into pitcher plant fluid one evening, left overnight, and were all found dead next morning.

The larvae of *C. virgatipes* resemble those of *C. fatigans* and the mosquitoes can easily be confused. As *C. fatigans* is a common house pest and *C. virgatipes* does not figure in catches, it is important to distinguish between these species. The larvae of *C. virgatipes* have been found in ditches between ridges on which vegetables were planted, and in wet vegetable cultivation, also in pools in hill streams containing leaves. *C. fatigans* have been found occasionally breeding in wet cultivation in small numbers.

In addition to *C. mimeticus* and *C. mimulus* there appears to be a third spotted winged *Culex* (not *C. orientalis*) in Hong Kong, but examination of more material is required before a definite opinion can be given.

The larvae of *C. sinensis* closely resembles that of *C. cornutus*, an Indian species.

The larvae of *C. castrensis* var. *foliatus* at times remain parallel to the surface of the water like those of Anophelines.

The larvae of *Harpagomyia genurostris* were found in water in pineapple plants; the larvae of *Aedes albopictus* were also found there. The habits of *Harpagomyia* as described on page 92 *Genera Insectorum* (P. Wytsman) 194ME Fascicule, Diptera Fam. Culicidae by F. W. Edwards, M.A., Sc. D., are most peculiar. These habits were observed by Jacobson in Java, and confirmed subsequently by James in Ceylon and Farquharson and others in Tropical Africa. "The flies haunt tree trunks where ants of the genus *Cremastogaster* are found and obtain their food from the ants. The proboscis of the mosquito is evidently highly specialised for this purpose and they probably do not feed in any other way. The *Harpagomyia* places itself directly in front of the advancing ant, sometimes even nipping the ant between its front legs and not releasing it until it stops and opens its jaws, when the mosquito thrusts the swollen tip of its proboscis into the ant's mouth and rapidly absorbs the food offered. While the interchange is taking place the ant strokes the tip of the mosquito's proboscis with its palpi".

In the Wong Chok Hang tent night catches, females of *M. (M.) uniformis* and *M. (C.) crassipes* were met with occasionally but no males. The larvae obtain their oxygen from the roots of certain plants, attaching themselves to the plants by means of their peculiar siphons. They can be dislodged and

thus obtained either by pulling or digging up the plants. In the Po Kong Survey one Inspector reported that he obtained them by the simple device of scraping plants with his dipping pan. It is not easy to rear the adults from the larvae and so obtain male specimens. In Malaya in 1927, males of these species, as well as other mosquitoes were obtained by the Malariologist in the early morning hours, from railway carriages which had been standing the previous night in the neighbourhood of swamps.

A species of *Culicoides* found on *C. fatigans* was identified by Dr. Edwards as *Culicoides anophelis* (Edw.) and a *Chrysops* caught biting at Shing Mun at 4 p.m. in the month of May, was identified by him as *Chrysops mlokosiewiczii* (Big.). Larvae and adults of *A. pattoni* were received from Dr. Hoeppli, Peiping Union Medical College on behalf of Dr. L. C. Feng. Larval specimens and mosquitoes were sent to Professor E. W. Walch, Batavia, to Dr. P. F. Russell, Bureau of Science, Manila, to Captain Barraud, Malaria Survey of India, Kasauli and to Dr. L. C. Feng. Mosquito specimens, slides of mounted larvae and of mosquito dissections were given to Dr. Sien, Canton, slides of mosquito dissections to Dr. Kandasamy, Penang, and slides of larvae to Major Stewart, Stanley.

A collection of fishes and insects which prey on mosquito larvae is being made.

(b) *Malaria.*

From the results of the 1933 dissections it will be seen that the important carriers are *A. minimus* and *A. jeyporiensis*.

The infection rates in these mosquitoes were low in the first quarter of the year, rose in the second, remained high in the third and fourth quarters, declining towards the end of the year.

A. maculatus and *A. hyrcanus* were found infected at Shing Mun Camp under what must be considered exceptional circumstances.

Investigations made at Pokfulam during the year as to the pathogenicity of *A. maculatus* confirmed the results obtained in 1932 and point to *A. maculatus* being of no great importance in comparison with *A. minimus* and *A. jeyporiensis*.

As to *A. hyrcanus* further research is required in localities remote from the hills (where it is likely to be unaccompanied to any extent by the important carriers) to ascertain its harmfulness under such conditions.

Records obtained from the R. A. M. C. authorities indicated as formerly a much higher incidence for the second half of the year, being 104 fresh cases out of a total of 113 amongst British Troops. The figures for Lai Chi Kok Gaol (male) which is close

to a hill stream where *A. minimus* has been found to breed, were 58 cases for the second half out of the 62 microscopically diagnosed cases for the whole year. For the female Gaol at Lai Chi Kok all the microscopically diagnosed cases, 29, occurred in the second half. Amongst Government servants (excluding coolies) out of 214 cases diagnosed as malaria, 158 occurred in the second half of the year.

The corresponding figures for 1930, 1931, 1932 show the same incidence. Judging from the Shing Mun and other figures, malaria appears to be most prevalent from May until the end of the year, being low in the first quarter, corresponding to the infection rate of the Anophelines carriers.

Malaria carrying mosquitoes have been found to breed in abandoned rice fields in hilly country throughout the year, and during the last quarter of the year in rice fields whilst the irrigation water is being drained off.

In areas where the masses of the population reside, extensive drainage of hill streams has been largely carried out and in consequence, as a rule, there are no facilities for breeding Anophelines, but where such exist, as in suburban and rural areas on the Island and Mainland, the occurrence of malaria can be reckoned on where the Anophelines flourish, as is borne out by investigations made in the past.

In Table III, figures are given regarding Hospital admissions supplied by Government Civil Hospital, Kowloon, Victoria, Victoria Gaol, Lai Chi Kok Gaol (male), Lai Chi Kok Gaol (female), Tung Wah, Tung Wah Eastern, Kwong Wah, Matilda, Alice Memorial, Ho Miu Ling, War Memorial, Yeung Wo Hospitals; and the relation to admissions for malaria. The malarial admissions are also arranged according to quarters of the year and to methods of diagnosis. As malaria is not a notifiable disease, rates cannot be given for the general population. Clinical diagnosis of malaria is not a satisfactory one. No cases of Black-water fever were reported.

In Table IV statistics of cases treated, supplied by the following Dispensaries are shown:—Tai Po, Un Long, Western Public, Kowloon City, Sham Shui Po, Shaukiwan, Aberdeen, Central, Eastern, Yaumati, and Hung Hom.

Table V deals with Hospital admissions of Government servants (excluding coolies) in relation to admissions for malaria.

Table VI is a similar table for Police including Water Police. Certain stations are situated in areas where malaria is not likely to be contracted, others in rural areas where night patrol work adds to the risk of infection.

Table VII gives the results of examinations of blood films for malaria made from prisoners admitted to Victoria Gaol, arranged in districts according to addresses supplied. The parasites are not classified, as in the great majority of positive findings, the diagnosis could only be made from the thick films supplied, and could not be established from the thin films owing to the scantiness of the infections. The films were obtained through the co-operation of the M.O. Gaol and his staff, and were stained in the Laboratory of the Bureau.

Records obtained from the R. A. M. C. authorities regarding incidence of malarial infection amongst the troops, British and Indian, are as follows:—(relapses not being taken into account) British Troops, number of cases of malaria contracted during the year was 113, of which 5 occurred in first quarter, 4 in second, 20 in third and 84 in fourth quarter. Calculated on an average strength of 2350, the admission rate for the year for fresh cases was 48.9 per 1000. Amongst the Indian troops there were 9 fresh infections, of which there were 2 in the first quarter, 4 in the second, none in the third, and 3 in the fourth quarter. These work out for the year as 7.2 per 1000 on an average strength of 1250.

Statistics for 1933 obtained from the M. O. H. show that 511 deaths were ascribed to Malaria in the Colony and the New Territories, these being 2.6% of the total deaths. The death rate per thousand for malaria is given as 0.55.

Dengue.

According to returns received, 9 cases were admitted to Government Hospitals in 1933. No specimens of *Aedes aegypti* were met with, but *Aedes albopictus* were frequently encountered.

Filaria.

No cases of disease due to filarial infection were reported from the Government Hospitals during the year. Mosquitoes obtained from various sources were dissected and examined for larval filaria. As a rule, these infections were only met with in warmer months of the year. In the Wong Chok Hang dissections one *A. minimus* was found infected with both malarial and filarial parasites. In the previous year seven. In the Shing Mun dissections 7 *A. minimus* and 15 *A. jeyporiensis* had double infections. During the year proboscis infections were encountered in *A. hyrcanus*, *A. minimus*, *A. jeyporiensis*, and *C. fatigans*. No proboscis infections had been found in 1932. On 6 occasions in the Anophelines, filaria were met with in the proboscis. On 16 occasions they were found in the head, on 4 in the neck, on 103 in the thorax, on 27 in the abdominal cavity and on one occasion in the femur. No infections were found in the malphigian tubes of either the Anophelines or *C. fatigans*.

One *A. maculatus* obtained from the Shing Mun Camp harboured a filaria worm in the thorax, one *A. maculatus* captured in the village of Wo Li Hop half a mile distant, harboured a similar worm in the thorax. Two unusual larval filaria were found in *A. jeyporiensis* obtained from Wo Li Hop, one in the thorax and one in the abdominal cavity. The appearance of these four specimens before and after staining did not resemble those usually met with, especially those of *A. jeyporiensis*.

Larval filaria in the mosquito may be derived from other than human sources, but when these filaria correspond morphologically to the description of those obtained from human sources, are found to develop in the thorax and head of the mosquitoes only, are met with in mosquitoes which are known to feed on human blood, and captured in places where the population harbours micro-filaria, it is extremely improbable that such are not derived from human sources, especially as several of these mosquitoes have been found infected with both malarial and filarial parasites. So far there have been no opportunities of infecting Anophelines or Culicines experimentally, or of ascertaining whether there is a periodicity or not in the human infection. Diseases due to filaria are not often reported in spite of the prevalence of Anopheline vectors (?).

Table VIII gives findings obtained from examination of thick films made from prisoners admitted to Victoria Gaol. These films were taken in the day time for examination for malarial parasites. Double infection with malarial and filarial parasites were met with on two occasions in thick films obtained from the Gaol and on nine occasions in thick films obtained from Shing Mun.

(c) THE CATCHING AND DISSECTING OF ANOPHELINES FOR
MALARIAL INFECTION.

(1) *Wong Chok Hang Village and Surroundings.*
(*Little Hong Kong.*)

Catching operations had been done here in 1932 and were continued throughout 1933. The locality is surrounded by hills on all sides, except in the direction of the sea. A large stream, with several branches, flows through it. The inhabitants are engaged in growing vegetables and rice and rearing pigs and poultry. Rice is grown in a ravine about 500 yards long, by 120 yards wide, and, in a few terraced plots. A ditch runs along the hill foot by the side of the rice field in its entire length and discharges into the main stream. The people of the village live in houses built of stone roofed with tiles; the others in matshed huts made of bamboo and thatch. The pigsties have low walls and high roofs, supported on poles and are unsuitable daytime resting places for mosquitoes.

In 1931 a high spleen rate was found amongst the children, and in 1932 a micro-filaria rate of 12% was obtained from 106 people examined at night.

Night catching by trapping was done by the Inspectors during January and February in a room of a house on the outskirts of the village. The house was placed at the disposal of the Bureau by the owner Mr. Li. The investigator slept on a camp bed protected by a mosquito net, outside this was a larger net hung on four poles fitting into wooden discs which rested on the floor. The larger net had flaps in the sides weighted by rollers, when in use the flaps were rolled up. At intervals the investigator got up, lowered the flaps and searched for mosquitoes with an electric torch. An I. P. tent, as in 1932 was pitched near the house and coolie looked after it, slept there and caught mosquitoes. Night catching was done by the Inspectors in turn. On Monday, Tuesday, and Wednesday nights of each week the tent was inspected at 8 p.m. to ascertain if the coolie were at his post, and occasionally during the night. Catching was done at intervals until midnight in house and tent, and the coolie then brought his catching bottle with contents to the Inspector. Between midnight and dawn another catch was made, and again before daylight. The coolie was provided with camp bed, mosquito net, alarm clock and torch. When not actually catching he remained inside the net. The Inspector on duty brought the result of the catches to the laboratory on Tuesday, Wednesday and Thursday mornings. On other days of the week, except Sundays and holidays, morning catches were done by him between 9.30 a.m. and 12.30 p.m., and the result of the tent catches of the previous night obtained. The arrangements were similar to those carried out during the greater part of 1932. From March onwards the night catching at Mr. Li's house was discontinued. The coolie collected for one hour from dusk onwards in the tent and made another collection at dawn. From 8.30 a.m. till 11.30 a.m. he collected mosquitoes in the neighbouring huts which the experience of the previous year had shown to be much better resting places than the village houses, and afterwards brought the catches to the laboratory. From time to time one of the Inspectors made day catches in order to check results.

Culicines not readily obtained were captured by the tent coolie in night catches, *e.g.* *Aedes niveus*, *M. (M.) uniformis*, *M. (C.) crassipes*. His blood was examined monthly for micro-filarial and malarial parasites but as in 1932 none were found.

Results of Anopheline catches are shown in Tables IX and X.

Many more *A. maculatus* (142 against 63) were obtained during the year than in 1932. Considering the propinquity of the tent to hill streams harbouring the larvae in abundance, the adults were as usual poorly represented in night catches. *A. minimus* was best obtained by day catching; greater numbers were captured from March onwards, and throughout the year many more were found in the huts close to the breeding places than in those further away.

Few *A. hyrcanus* were caught in the night catches and fewer still in day catches. The chief breeding place of *A. hyrcanus*, namely, the rice ravine was a good distance from the tent and there were numerous huts in between.

As in 1932 *A. jeyporiensis* was absent from the catches made during the period April-September inclusive. In 1932, comparatively large numbers were obtained during the last quarter of the year. The locality was visited in November 1932 when the rice had been cut and water in the ravine was draining off. In it were found numerous larvae of *A. jeyporiensis* and *A. hyrcanus*.

In October 1933 when the ravine was inspected the water was being drained off, but the adjacent ditch previously mentioned had been both deepened and widened. On enquiry it was ascertained that rice cultivation was to be discontinued for economical reasons, and that vegetables were to be grown instead, after suitable drainage. Another visit was paid after the rice had been cut, but owing to the operations on the ditch very little water was left in the rice fields as compared with the amount found in the previous year; however, 93 larvae of *A. jeyporiensis* and 121 of *A. hyrcanus* were collected. It would seem that as at Shing Mun, drainage preparatory to cutting the rice makes the water suitable for *A. jeyporiensis*, which continue to breed while it is drainage off. Drainage is not done when the first crop is cut, but the stubble is ploughed in, and another crop planted, hence no adults were obtained at that period as the water was not apparently suitable for the larvae. It would also appear that hill streams do not affect the catches of *A. jeyporiensis* to any extent.

Table XI gives the results of dissections for malarial infection. In *A. minimus* it was highest in June, July, August and usually high in December—6% as compared with 1.6% in the previous year.

Table XII gives the result of dissections for filarial infection of mosquitoes captured. In November and December 25 *A. minimus* were obtained which had recently fed, the midgut was opened and the red blood corpuscles examined—none were nucleated, therefore these Anophelines had fed on mammalian blood only.

(2) *Shing Mun Camp.*

The coolie lines were divided into two sections, separated by a narrow ridge, one section being situated in a ravine marked A in the map, the other section in a ravine forming a branch of stream B2. Streams abound on all sides of the camp. There was a certain amount of rice cultivation, shown in the map as shaded areas. The rice fields in the Shing Mun Valley above the site of the Dam had been abandoned for a considerable period previously.

At first the labour force was housed in matsheds made of bamboo and thatch, with four rows of sleeping benches, two on each side. Later on these were replaced by buildings of a permanent type with similar sleeping arrangements. The number of labourers varied from 390 in February to 671 in December.

Table XIII gives the monthly population, race distribution, and incidence of malaria and details. Up to June catching was done by the Inspectors, each line was searched from end to end with the aid of an electric torch. On a few occasions the space below the lower sleeping bench was cleared and searched, but no great additions to the catch were thus procured. The mosquitoes were obtained resting on clothes, mosquito nets and walls of the buildings; they favoured the matshed lines and comparatively few were caught in the permanent lines until screening was done, the permanent lines being much better lighted and ventilated, consequently less attractive as day resting places.

From June onwards two of the labour force who had been taught this work did the catch, brought the results to the Bureau and until October, brought the blood films taken from the sick. These coolies slept in tents in the ravines in which the two sections of the Camp were situated, about 50 yards below each section. They were provided with catching apparatus and torches. Catching was done in the tents for one hour before bedtime and again at dawn. When not engaged in catching they remained under the net. Occasional visits were paid at night by the local staff to the tents and once a week an Inspector did morning catch in the lines as a check.

In June there was no appreciable difference between the results of the two tent catches, so the tent in B2 was moved to a spur by the side of stream D on the right bank of the Shing Mun. About double the number of *A. jeyporiensis* were caught in this tent afterwards as compared with the other, so it would appear that these mosquitoes were mainly coming down the Shing Mun Valley as had been suspected.

Tables XIV and XV show records of Anopheline catches. A male *Harpagomyia genurostris* was obtained in the tent catches, also *C. sinensis*, and *C. whitmorei*, hitherto not met with, and *C. sitiens*. *C. sitiens* was obtained in June. Formerly the larvae had been found in pools of water, in boats lying on the beach, but elsewhere it is said to breed in brackish water by the sea. It would appear then, that these specimens came from Gin Drinkers Bay, over $1\frac{1}{2}$ miles distant.

During the eleven months over 33000 Anophelines were captured and over 16000 dissected. The largest monthly catch was in July. Details are shown in Table XVI. As at Wo Li Hop *A. jeyporiensis* were the most numerous; during some months its infection rate was considerably lower than that of *A. minimus*, but taken over the eleven months' period there was not so much differences.

Infection rates of both these Anophelines were low in the first quarter of the year, rose in the second, remained high in the third reaching a peak in July, and declined in the fourth quarter. Heavy infections in both glands and midguts were frequently encountered. Owing to pressure of work during April the salivary glands alone of 416 *A. jeyporiensis* were dissected. 18 were found infected, or 4.3%. The salivary glands alone of 85 *A. minimus* were dissected, 9 were found infected or 10.6%. Similarly in May the salivary glands of 1801 *A. jeyporiensis* were dissected, 39 were found infected, or 2.16%. The salivary glands of 644 *A. minimus* were dissected, 25 were found infected, or 3.88%. These records are not included in Table XVI.

It will be noticed in Table XIV that the catch of *A. hyrcanus* hitherto a small one, commenced to rise in September and attained comparatively large dimensions for the rest of the year. This was due to attempts made to render the lines mosquito proof, which resulted in making them mosquito traps. Infections were met with in the salivary glands as well as the midguts. In the medium sized oocysts the pigment was always found to be arranged in wisps or swathes, to be very fine and of a brownish yellow colour. This colour and arrangement of pigment has been stated to be characteristic of infection with benign tertian. Heavy infections of the midgut were only met with on one occasion when 120 oocysts were counted. The infection rate of this mosquito was low compared with that of *A. minimus* or *A. jeyporiensis*. In the month of May 127 *A. minimus* had an infection rate of 15%. During the same month no infections were found in 84 *A. hyrcanus*.

8 *A. maculatus* were found infected out of 230 dissected. No infections were found in the salivary glands. Four oocysts were found in one midgut, 3 of which contained sporozoites, in another midgut there were 40 oocysts. but the usual numbers were 3 or 4. The results of the dissections for larval filaria are found in Table XVII. One *A. hyrcanus* and one *A. maculatus* were found infected. The form found in the *A. maculatus* resembled that found in the same species in Wo Li Hop.

(3) *Wo Li Hop Village.*

Wo Li Hop is a village consisting of 26 human habitations. These are built of stone and roofed with tiles. The population of the village is about 126. In three instances cows were accommodated in one of the rooms of a dwelling, in five, cows, pigs and fowls were kept in a separate house, and in ten instances, pigs only were housed in pigsties. In all these animal shelters there was very little light and ventilation and the great majority of mosquitoes caught were obtained from them. Out of 1316 *A. minimus*, 4041 *A. jeyporiensis*, 194 *A. maculatus*, 197 *A. hyrcanus* captured, 1118 *A. minimus*, 3491 *A. jeyporiensis*, 182 *A. maculatus*, 158 *A. hyrcanus* were taken in the animal shelters.

As the map indicates the village is situated north of the access road to the Shing Mun Camp, on the hilly ground sloping from Tai Mo Shan ridge seawards. It is over half a mile from the Shing Mun Camp; south of the village and on either side of it are terraced rice fields. Several hill streams flow down from the ridge. Along the banks of the Shing Mun river above Pineapple Pass there are fallow rice fields, some of which were flooded and favourite breeding places of *A. jeyporiensis*. There are also fallow rice fields along the banks of stream B north of the access road.

In 1932 about 160 coolies engaged on making the access road to the Dam were housed in matsheds situated by the roadside opposite the hamlet. These suffered severely from malaria. In December 1932 fifteen village children between the ages of 2 and 10 were examined, five had enlarged spleens or 33%.

Catching was done as a rule once a week except in the month of May. During January, February, and March catching was also done in the matsheds accommodating the road-making coolies. The matsheds were afterwards demolished when the coolies left.

The Inspectors when collecting took thick and thin films from any sick persons encountered in the village. The results are shown in Table XX.

Towards the end of the year some coolies (employed at Shing Mun) and their families were residing in the village and contributed to most of the cases of malaria. Only one of these used a mosquito net, but practically all of the villagers used nets. If malarial parasites were found, it was reported to the Medical Officer in charge New Territories for treatment by the Travelling Dispensary.

The results of the catches are shown in Table XVIII and the dissections for malaria in Table XIX.

The majority of the Anophelines captured were *A. jeyporiensis*.

The malaria infection rate was low in the first quarter, rose towards the end of the second, continued high in the third and declined in the fourth but the infection rates were low compared with those found in the Shing Mun Camp dissections in the corresponding months. Gland infections were found in every month; the infection rates of *A. minimus* and *A. jeyporiensis* differed widely in certain months but approximated in the total dissections.

1,185 *A. minimus* were dissected for larval filaria but none were found infected. Of 3707 *A. jeyporiensis* two were infected with what was considered to be larval filaria derived from human sources, and one was infected with two filaria which were not. Out of 187 *A. maculatus* dissected one harboured a filaria which did not seem to be obtained from human sources. *A. hyrcanus* was found infected three times in 176 dissections or 1.69% on one occasion in the proboscis.

(4) *Pokfulam, Site of New Government Civil Hospital.*

At Pokfulam catches were made during the second half of the year in the three matsheds housing the labourers employed in levelling the site of the New Government Civil Hospital. By the end of the year 242 labourers were employed. The Inspector engaged in the catching took thick and thin films of any person found sick in the lines. Results of examinations of Blood Films and catches for Pokfulam are found in Tables XX and XXI.

Of the five cases found with parasites in the blood, one had recently come from a malarious area, two had lived long enough on the site to have contracted malaria there, and no information had been obtained from the other two.

Several surveys have been done within the circle of half a mile radius from the site from 1931 onwards. Larvae of *A. maculatus* were found in abundance on all occasions and very few larvae of *A. minimus* except in the surveys done in the cold weather when they were found in comparatively large numbers in a small sector in the neighbourhood of the junction of Island and Mount Davis Roads. In this small sector 19 out of 26 children examined in 1931 had enlarged spleens or 73%. In the larger sector of the half mile circle 124 children were examined; three had enlarged spleens or 2.4%. The matsheds are situated about 650 yards from the *A. minimus* breeding places, but there are several huts of a primitive type in between which no doubt have greater claim on the attentions of these mosquitoes. As will be seen very few Anophelines were captured on each occasion hence it was not considered necessary to make catches more frequently. All the mosquitoes were dissected and in December one *A. minimus* was found to be heavily infected in the salivary glands.

No complaints as to malaria were received from the residents in the neighbourhood.

(5) *Tai Hang Road, (an East-end suburb of Victoria).*

Catches were made from July onwards. 62 labourers engaged in building operations were housed in two matsheds on the spur above the Tai Hang Road in the vicinity of the Tai Hang nullah. As before blood films were taken of any sick. Two

were found infected, one had come from a malarious district and had suffered from a previous attack. The Tai Hang nullah above the road is untrained and there are vegetable gardens and hill streams in the neighbourhood. No infections were found in the mosquitoes captured.

(6) *Tung Wah East Ravine. (In the East-end suburbs of Victoria).*

Catching was done in the matsheds housing 40 labourers engaged in training one of the Tung Wah East ravine streams which runs between Broadwood Road and Tung Wah Eastern Hospital. One labourer with parasites found in his blood had been working for six days there.

(7) *Hong Kong Volunteer Defence Corps Camp.*

Members of the staff who were under canvas during four week ends in November and December obtained 25 Anophelines from the medical tent between dusk and 10 p.m., 14 *A. hyrcanus*, 9 *A. jeyporiensis*, 1 *A. maculatus*, 1 *A. splendidus* (*maculipalpis*). These were dissected for malarial and filarial infections, but none found.

(d) INVESTIGATIONS AS TO PREVALENCE OF MALARIA IN CERTAIN AREAS.

(1) *Shing Mun. Investigation and Prevention.*

It will be seen on reference to the map that the Camp is situated 500 feet above sea level on ground which slopes southwards from Tai Mo Shan Ridge to Gin Drinkers Bay. East of the Camp is the Shing Mun river. The Gorge where the Dam is being constructed is half a mile distant. The Shing Mun river rises east of Tai Mo Shan, flows south to Pineapple Pass, and afterwards turns east to Tidal Cove at Shatin.

Flowing south from Tai Mo Shan to Gin Drinkers Bay is a large stream B, with numerous branches which lie on all sides of the Camp. The streams are rocky bedded and boulder strewn, the boulders being of all sizes and shapes; in places the streams are very steeply graded, in others the grade is flat. Sometimes the course leads through deep gorges. In some of the valleys rice fields arranged in terraces have been constructed by building a series of stone walls across them in order to retain the soil thrown down, the stream being usually diverted to one side and used as an irrigation ditch. In some instances the irrigation ditch is entirely fed by seepages, in others, as in the case of fallow rice fields, sometimes no irrigation ditch could be demonstrated, but only seepage water.

The nearest human habitation to the Camp is the village of Wo Li Hop which is half a mile distant as the crow flies. There are no human habitations in the upper reaches of the Shing Mun, the villagers having migrated, and flooded fallow rice fields are a feature of the tributaries of the stream from Pineapple Pass upwards.

On the 28th November, 1932, the Camp site was inspected and a preliminary survey done. Larvae of *A. minus* and *A. jeyporiensis* were obtained in abundance in the neighbourhood. Both these Anophelines had been found to be carriers of malaria in the dissections done in 1932. Enquiries were made in the neighbouring village of Wo Li Hop regarding the health of the coolies housed in matsheds there; these coolies were engaged in making the access road to the Dam, and evidence of the occurrence of intense malaria was forthcoming.

On the 1st December, 1932, it was recommended that a map scale 16" to the mile be provided indicating an area of half a mile radius from the periphery of the Camp site, and that control be obtained of such area and as much beyond it as would be necessary for adequate drainage and oiling, that oiling operations be commenced after the necessary clearing had been done, that mosquito nets of good quality be provided or the buildings rendered mosquito proof, and that such permanent works as were deemed necessary could be started after oiling operations had been established. For the European quarters mosquito proofing was recommended.

A Chinese Doctor and a Dresser commenced a course of instruction at the laboratory of the Bureau on 9th January, 1933, in order to obtain a working knowledge of the Anopheline larvae and mosquitoes.

On the 1st February, 1933, the Camp site was again visited; permanent anti-malarial works had been commenced, but no oiling was being done of the water in the ditches which had been dug, nor of the water in the natural breeding places. Three matshed lines had been erected, there were no mosquito nets in use.

On the 10th February oiling operations were commenced under the supervision of the Assistant to the Malariologist, who had had a good deal of experience of this work as a Health Inspector in Malaya. He was assisted by the Chinese Medical Officer and Dresser who were transferred from the Bureau for instruction in anti-malarial operations to enable them to take over charge later. A gang, in the beginning consisting of 6 coolies was got together, who carried out oiling, minor ditching, upeep of areas under oiling and did a certain amount of clearing in the hill streams. Later on when 2 sprayers were in work and use was being made of Paris Green mixtures, the oiling gang was increased to 10.

The major part of stream clearing was done by labour supplied by the Engineering staff and under their supervision.

By the end of March the area represented by the 2" circle on the map (corresponding to 440 yards on the flat) was under larval control. Streams B2, B3, C, D, E, had been dealt with in their entire length and stream A as far as the 3" circle (corresponding to 660 yards on the flat). On the 30th of March, in order to enable oiling to be carried out up to the 3" limits, clearing and ditching was asked for, commencing with stream F, as *A. jeyporiensis* which formed the majority of the morning catches in the Camp were found to be breeding in grassy seepage areas on its banks.

On the 10th of April 300 Anophelines were caught in the coolie lines; on the 19th 290 were caught. Five *A. jeyporiensis* were found to have sporozoites in the salivary glands. On the 20th April clearing and ditching up to the area of the 3" circle was again asked for—this was started on 21st April.

The area within the 3" circle was brought under larval control in June, but Anophelines continued to be captured in large numbers in the Camp, by far the most numerous being *A. jeyporiensis*.

Larval surveys done by the staff of the Bureau and collections made by the Resident Medical Officer failed to find larvae of *A. jeyporiensis* in any great numbers in the area between the 3" and 4" circles. From researches made on the Island it was ascertained that hill streams did not harbour the larvae of *A. jeyporiensis* to any great extent. Larvae of *A. hyrcanus* were found in rice fields on all occasions when they were sought for. Larvae of *A. minimus* and *A. maculatus* were found in the streams and irrigation ditches but until control of the cultivation had been obtained, and clearing of the streams had been done, oiling operations could not be undertaken for the destruction of such larvae.

A. jeyporiensis was found breeding in the fallow terraced rice fields just outside the 4" boundary at Pineapple Pass, at the foot of stream H, and later on in similar situations along stream I on the right bank of the Shing Mun below the P.W.D. Dam. Previous to the cutting of the second rice crop the Chinese cultivators make a few simple drains which remove the water from the plots. Temporary drainage of the rice fields on these lines was asked for—this was done and permanent drainage was afterwards put in. Permanent work was also done in the area between these places although no larvae of *A. jeyporiensis* had been reported, and no drainage had been asked for. More breeding places of *A. jeyporiensis* were found in rice swamps on the left bank of the Shing Mun between the P.W.D. Dam and Pineapple Pass in connection with streams L, M, N,

and these were dealt with by Paris Green. Several fallow rice fields were searched on the left bank of the Shing Mun opposite the site of the Dam but all were found dry. Searches were made in the upper part of B above the access road but no wet fallow rice fields were met with until a considerable distance had been covered.

Above the P.W.D. Dam breeding places were found along stream J and along stream K, and the right bank of the Shing Mun as far as Ho Pui after several searches; first and second time of searching being without result, as if the *A. jeyporiensis* were retreating up the valley as its breeding places were being dealt with. In December temporary drainage of these additional places was asked for. Towards the end of the year a larval survey was done in the branches of the Shing Mun between Pineapple Pass and the P.W.D. Dam but comparatively few larvae of *A. minimus* were found in the streams investigated—hence no clearing was asked for.

At the end of October surveys done by the Inspectors in the terraced rice fields along B1 resulted in the finding of *A. hyrcanus*, *A. minimus* and *A. jeyporiensis*. Similar results were obtained about the same time from investigations of the rice fields on the right bank of B opposite stream B3 and above B1. The water was reported to be draining off the plots. In the previous month surveys done in the terraced rice fields adjoining Wo Li Hop had yielded only *A. hyrcanus*.

Anti-larval measures within the 4" circle were only completed by the end of the year. The Shing Mun stream, B and its branches, and other streams had been cleared and were under oiling. Rice fields adjoining Wo Li Hop, those along stream B1 and those along the right bank of B at the 4" circle had been cleared by the Labour Force of the Engineering staff and treated by the oiling gang. The remaining rice fields between the 3" and 4" circles had been ditched by the oiling gang. Anti-larval measures directed against *A. jeyporiensis* were in operation along the Shing Mun from P.W.D. Dam to Pineapple Pass and along stream B1 as far as the access road.

The amount of oil used in December was 418 gallons and over 16 miles of streams of varying breadth were under oiling as well as the trenches in the cultivated areas.

During the year works of a permanent nature were done in the rice swamps (indicated by shaded areas) within the 2" circle and along stream A1 outside it. Drainage pipes and rubble, surmounted by concrete drains were placed in the narrow rocky bedded streams C, D, and part of E. Permanent work was done on that portion of the ravine which runs from Pineapple Pass to Wo Li Hop and in the breeding places of *A.*

jeyporiensis on both banks of the Shing Mun between Pineapple Pass and the P.W.D. Dam, also in some of the *A. minimus* breeding places. During the year from 150 to 200 labourers were employed by the Engineering staff on anti-malarial works—the great majority of which were engaged on operations of a permanent nature which take time to accomplish.

As well as anti-larval operations other anti-malarial measures directed against mosquitoes were undertaken. Over 33,000 Anophelines were captured in the coolie lines. Such catching could not fail to have a marked effect on the situation.

On the 20th April the provision of mosquito nets was again recommended, also on the 12th May. This was not successful as all the labourers were not provided with nets, and those which were issued were made of poor material, were of insufficient dimensions, and of faulty design being furnished with flaps and also there was insufficient accommodation for their proper arrangement. Only those which were privately owned were satisfactory.

From September onwards attempts were made to screen the lines, defects in the screening were pointed out from time to time. In spite of all this numerous Anophelines were still caught—the screening acting as a trap. *A. hyrcanus* which formerly had only been captured in small numbers were now obtained in such abundance as to enable a reliable natural infective index to be worked out. Table VIII gives the estimated population month by month and its distribution according to race, and the number of cases treated due to all causes, and to malaria. In considering these figures it must be taken into account that the population—especially Cantonese—was a floating one.

It will be seen that in the month of May when malaria became serious there were 40 cases out of a population of 650, or an incidence of 6.1%. In December when a considerable amount of anti-malarial work had been completed there were 64 cases out of a population of 671, or 9.5%. The blood films were taken by the Resident Medical Officer, forwarded to the Bureau, stained and examined by the Inspectors until the end of September from which time they were done by the Shing Mun Hospital staff. From September onwards the staff in charge of anti-malarial operations and of the Hospital resided on the spot in mosquito proof houses. None contracted malaria. At the end of the year 14 Europeans were living at Shing Mun. Six of these had suffered from malaria. Two of them twice. On several occasions faults in the screening of their houses were reported. Seven policemen—5 Indians and 2 Cantonese—were in residence from 15th August onwards. One Cantonese suffered from malaria. Screening defects in the Police Barracks were also reported,

Seventy-six visits were paid by the Malariologist from February onwards. Thirty-two visits by the Assistant to the Malariologist. Four Inspectors paid 60, 30, 48, 79 visits respectively. In addition a laboratory coolie helped in the larval collections, as well as the Vaccinators.

The visits paid by the Inspectors were for purposes of larval surveys, catching of Anophelines in the lines and catching of Anophelines as a check on the local collection.

(2) *Shek O.*

The investigations commenced in 1932 were completed in 1933, a report furnished and recommendations made for either temporary or permanent anti-malarial works to be carried out.

(3) *Fulmer Bungalow, Castle Peak Road.*

Owing to complaints of the occurrence of malaria, visits were paid to the neighbourhood on the 23rd and 27th October. Larvae of *A. hyrcanus*, *A. minimus* and *A. maculatus* were found without difficulty in the places searched. A portion of the stream between Fulmer bungalow and the Cafeteria had been trained and a considerable amount of debris had accumulated in it. Larvae of *A. hyrcanus* were found in every dip, and some larvae of *A. maculatus* and *A. minimus*, as well as *Simulium* larvae. The rice fields in the vicinity were mostly dry on dates of inspection. Screening was recommended.

(4) *The China Light and Power House, Tai Po.*

A visit was paid on 21st November, as recent cases of malaria had occurred there. There were hill streams in the vicinity and terraced rice fields in which larvae of *A. minimus*, *A. jeyporiensis* and *A. hyrcanus* had been found in surveys done in 1950. As a mosquito nuisance was also complained of, the septic tank was inspected and certain defects demonstrated. Mosquitoes afterwards caught in the house, when forwarded to the Bureau, were identified as *A. hyrcanus*, *A. jeyporiensis* and *Armigeres obturbans*. Screening was recommended.

(5) *Fanling Government Bungalow.*

Visits were paid on 27th October and 1st December. In December 29 Anophelines were obtained in a daytime search in labourers' matsheds, 15 of which were *A. hyrcanus*, 8 *A. minimus*, 6 *A. jeyporiensis*. One *A. jeyporiensis* was captured on a net in servants' quarters. The blood of one sick labourer was taken and he was found to be suffering from malaria. A brief report was submitted.

(6) *Site of Former Military Sanitorium at Magazine Gap.*

Several visits were paid to this site. Recommendations were made regarding the repair and upkeep of drainage in the neighbourhood already in existence. The question of extension of drainage was raised.

(7) *Proposed Site for Cantonments at Po Kong.*

A larval survey was commenced on the 26th September and finished on 29th December. The area dealt with included the above site and half a mile outside its periphery. It also included half a mile radius round the Royal Air Force Aerodrome. The proposed Cantonment area is flat cultivated land. To the South is the Air Port and the sea. To the North, East and West are hills between whose spurs streams run seawards. In the cultivated areas the larvae of *A. hyrcanus* predominated although larvae of *A. minimus* were found no irrigation ditches and the hill streams, *A. minimus* and *A. maculatus* were numerous, the majority being obtained in the neighbourhood of the hills. Larvae of *A. jeyporiensis* abounded in the fallow rice fields near the Rifle Range. In this vicinity at Chuck On in 1928 a company of 200 troops went into camp. Owing to malaria—80 cases in one month—the camp was abandoned. A few catches were done in a matshed near Kai Tak Aerodrome. Results are shown in Table XXI. One *A. jeyporiensis* was found to be heavily infected in the midgut, and a labourer whose blood was taken had been living there for a month who appeared to have contracted malaria there. A preliminary report with map attached was submitted.

(8) *Repetition of Surveys at Taikoo Sanitorium.*

IN December, 1932, 16 larvae of *A. maculatus* and 19 *A. minimus* were found in a brick and cement tank 6 feet square near the site of the former Taikoo Sanitorium. The tank was fed by a seepage trickling from the rocks and overflowed into a concrete channel. The site is approximately 1,200 feet above sea level, one mile as the crow flies from the nearest habitation and $2\frac{1}{2}$ miles by road. No one had been living on the site since 1930. During 1933 the tank was inspected monthly—February, May, September excepted. No larvae were collected until November when 28 *A. maculatus* were found. In December 15 *A. maculatus* and one larva of *A. minimus* were collected. Tadpoles were noticed on most occasions. Two of these were captured and kept alive for weeks in the laboratory, but did not eat Anopheline larvae which were offered to them. Furthermore, tadpoles were present in the tank when larvae were obtained.

(9) *Repetition of Surveys around Site of New Government Civil Hospital.*

Larval surveys were repeated at intervals in two ravine streams A north and B south of Mount Davis Road.

In December, 1932, 97 *A. maculatus* and 99 *A. minimus* had been collected from stream B between Island Road and Victoria Road. The *A. minimus* thus forming 50% of the collection. In February, 1933, 46 *A. maculatus* and 10 *A. minimus* were collected—the *A. minimus* forming 18% of the collection. In April, 93 *A. maculatus* and 4 *A. minimus* were found. *A. minimus* thus forming 4% of the catch. In May 35 *A. minimus*. In June, 6 *A. maculatus*. In September 20 *A. maculatus*, in November 76 *A. maculatus* and 71 *A. minimus* or 50% *A. minimus*. In stream A in December, 1932, larvae only of *A. maculatus* were collected between the conduit and Forestry paths. In February 65 *A. maculatus* and 4 *A. minimus*. In April, May, June, September, October and November only *A. maculatus* were found. Larvae of *A. minimus* had not previously been recorded from stream A. From enquiries made by the Malariologist it appears that sullage water from a bungalow off Hatton Road finds its way into A.

(e) MOSQUITO NUISANCES.

Complaints were received from the Peak, the Colonial Secretary's Office, the neighbourhood of Sassoon Road, the Dairy Farm, Pokfulam, and from the vicinity of Wong Nei Chong Gap.

C. fatigans was the cause of the nuisance at the Peak, the larvae being found in the usual places.

Numerous larvae of *Aedes albopictus* were found near the office of the Colonial Secretary. A septic tank accounted for the *C. fatigans* mosquitoes at Sassoon Road. At Pokfulam *C. fatigans* larvae were found in pools contaminated with the effluent from a septic tank. At Wong Nei Chong Gap numerous larvae of *Aedes albopictus* were found in the compound of a house.

Mosquitoes sent in by a resident of Shek O, which had been captured in his bungalow were identified as *Aedes togoi* which breed in rock pools by the sea.

Numerous *C. fatigans* larvae were found in pools in a hill stream which discharges into the trained Wong Nei Chong nullah over a spill way. This stream received the drainage from several pigsties.

(f) INSTRUCTION OF INSPECTORS AND TEACHING OF MOSQUITOLOGY.

The instruction of the Inspectors was continued during the year. They have attained a high standard of efficiency in the dissection of mosquitoes and in the staining and diagnosing of blood films.

Unusual features, such as the occurrence of Ross's black spores in salivary glands and midguts have been brought to the notice of the Malariologist by them, also the presence of a heavy

infection of *Herpetomonas culicis* in an *A. jeyporiensis*, an unusual larval filaria in *A. jeyporiensis* and in *A. maculatus*. One of them has received instructions from the Government Bacteriologist in the precipitin test for human blood. Mosquitoes hitherto not met with or not recorded for Hong Kong, such as *Harpagomyia genurostris*, *C. sinensis*, *C. whitmorei*, were correctly diagnosed by them when first encountered.

They have now had a good deal of experience in making larval surveys, reporting upon them and investigating mosquito nuisances. Courses of instruction were undergone by the following:—Dr. Mok, Dresser Ng, Dresser Ho. Messrs. Lee and Young, preparatory to taking up work at Shing Mun. Four vaccinators also received instruction and Dr. Sien from Canton.

Four members of the R.A.M.C. were taught how to identify the common Anopheline larvae and adults, how to obtain larvae and how to catch adults in dwellings. Larvae of *A. maculatus* and *A. hyrcanus* were found by them on Stonecutter's Island.

(g) CO-OPERATION WITH OTHER DEPARTMENTS, AND PRIVATE INDIVIDUALS.

From time to time visits were paid to the P.W.D. drainage works in progress at Tung Wah Eastern Hospital, Taikoo Dockyard, Lyemun Barracks, Stanley Peninsula, Kowloon Tong.

Special visits were made with the Drainage Engineer to Stanley Peninsula, Kowloon Tong, Shek O, and with the Senior Works Inspector to Lyemun.

A visit was paid to Shing Mun with one of the P.W.D. officials concerning leakage from an aqueduct which was creating breeding places.

Po Kong was inspected with the D.A.D.H., China Command, and visits were paid with the Supervisor to the Surroundings of Kai Tak Aerodrome.

In connection with the Anniversary of the Founding of the University specimens of larvae and adults, alive and preserved, and of dissections, and also various appliances, were exhibited; and demonstrations of these were organised.

An address was given at the University on the occasion of the showing of a film by the Asiatic Petroleum Company. A series of lectures and demonstrations were given to the Asiatic Probationer Sanitary Inspectors.

The surroundings of No. 48, Stubbs Road, Fulmer Bungalow, China Light and Power House, Taipo, the neighbourhood of Sham Tseng and Tsun Wan Police Station were visited. Anopheline mosquitoes were identified for Dr. L. Saunders. Anopheline larvae and adults for the Military Authorities and Anopheline larvae for the M.O.H.

Certain entomological specimens (weevils found in rice and flour) were submitted by the M.O.H. They were identified as belonging to the genera *Sitophilus*, *Tribolium*, and *Gnathocerus*, and forwarded to Professor Patton, Liverpool School of Tropical Medicine, who confirmed them as *Sitophilus oryzae*, *Tribolium confusium*, and *Gnathocerus maxillosus*.

(h) EXPERIMENTS WITH PARIS GREEN.

Paris Green was obtained from the Chinese Export, Import and Bank Company, Ltd. Visits were paid to the P.W.D. quarry at North Point and to the Green Island Cement Company in order to select a diluent. Cement dust was decided upon—the Green Island Cement Company supplying it free of charge. Owing to the fineness of the dust it was not considered necessary to put it through a sieve.

A mixer was made by the South China Motor Ship Building and Repairing Works, Kowloon, according to plans supplied.

On 15th August Laboratory trials were made with a 1% dilution. Four dishes A, B, C, D containing 10, 10, 10, 12 large larvae were placed in the verandah of the Laboratory, at distances of 10', 12', 14', 16' from a chalked line. A small handful of the mixture was scattered in the direction of the dishes—the sower standing at the mark. At the end of three hours all the larvae in dishes A, B, C, were dead and nine in D. In 4 hours the remainder were dead.

On the 22nd August a fallow rice plot 16' by 45' was dusted by hand with a 1% solution. Before dusting it was ascertained that large Anopheline larvae could be obtained without difficulty. Next day a search was made over all the plot by the Medical Officer Shing Mun and the Malariologist, only 2 large larvae and 9 small ones were collected. Meanwhile a Paris Green "Duster," 2 "Guns" and soapstone diluent had been obtained from India. On the 20th October a stream at Pokfulam was visited, a pool about 6 feet square was selected and all the Anopheline larvae collected. Water was flowing slowly through the pool, the larvae were put back—also others which had been collected elsewhere, numbering in all 65. A 1% mixture was sprayed by the "Duster"—5 hours afterwards 34 were recovered 13 of which were dead. It is possible that other dead larvae had been carried away at the slow current. Of the 21 live ones recovered the majority were small. A breeze was blowing and it was difficult to distribute the mixture satisfactorily owing to the presence of eddies. On 16th November a plot of 25' by 21' which had been used for growing vegetables, but at that time contained water and grass, was sprayed with one of the "Guns" and a 1% soapstone mixture. Numerous large Anophelines larvae were demonstrated just before spraying. Five hours afterwards the place was well searched. One large larva was found alive and 21 dead. Quite small larvae have been killed in the Laboratory with these mixtures. It is hoped to experiment further with rice fields and fallow rice fields.

Table I.
Anopheline Larvae examined microscopically during 1933.

Month	A. maculatus	A. minimus	A. hyrcanus	A. jeyporiensis	A. karwari	A. aitkenii	A. splendens	Total
January.....	1,079	142	289	17	2	—	9	1,538
February.....	571	113	477	33	—	—	—	1,194
March.....	358	137	384	199	—	—	—	1,078
April.....	422	752	219	287	1	14	—	1,695
May.....	805	899	208	231	—	22	3	2,168
June.....	295	106	170	406	—	—	9	896
July.....	276	51	112	438	30	—	3	910
August.....	155	445	51	194	—	—	—	845
September.....	344	100	197	103	2	—	—	746
October.....	605	429	937	234	—	—	—	2,205
November.....	874	724	1,942	471	51	—	—	4,062
December.....	2,293	2,248	1,106	1,037	11	37	5	6,737
Totals.....	7,987	6,146	6,092	3,650	97	73	29	24,074

}

 33.2 25.5 25.3 15.2 0.4 0.3 0.1

Table II.

Adult Mosquitoes hatched out from large larvae and pupae during 1933.

Month	A. maculatus	A. minimus	A. hyrcanus	A. jeyporensis	A. karwari	A. aitkenii	A. splendens	Total
January.....	230	23	3	—	1	—	1	258
February.....	181	21	83	3	2	—	—	290
March.....	141	1	61	14	—	—	—	217
April.....	125	114	14	38	—	—	1	292
May.....	208	64	25	22	—	1	—	320
June.....	96	21	42	66	—	—	1	226
July.....	73	4	17	120	11	—	2	227
August.....	87	110	8	73	—	—	—	278
September.....	49	10	24	18	—	—	—	101
October.....	139	61	38	47	—	—	—	285
November.....	212	78	142	25	2	—	—	459
December.....	286	219	159	37	2	1	1	705
Totals.....	1,827	726	616	463	18	2	6	3,658

Nationality	War Memorial Admissions		Yeung Wo Admissions	
	All causes	Malaria	All causes	Malaria
Europeans	381	39	14	...
Indians .....	...	...	1	...
Chinese	3	1	1,656	79
Others .....	...	...	7	...

SUMMARY OF ADMISSIONS.

<i>Nationality.</i>	<i>All causes.</i>	<i>Cases of Malaria.</i>	<i>Percentage of admissions for Malaria.</i>
Europeans...	2,209	133	6.02
Indians	1,226	115	9.38
Chinese.....	42,529	1,418	3.33
Others	136	6	4.41
Totals.....	46,100 <i>(41,930)</i>	1,672 <i>(1,535)</i>	3.63 <i>(3.7)</i>

MALARIA ADMISSIONS.

<i>During</i>		<i>Diagnosed microscopically.</i>	<i>Diagnosed clinically.</i>
1st Quarter	212	1,005	667
2nd "	272		
3rd "	561		
4th "	627		
Totals...	1,672	1,005	667

Table IV.

Dispensary Statistics.

Dispensaries.	Total cases treated.	Malaria cases treated.	Percentage of cases of Malaria treated to total cases.
Tai Po	11,213	1,171	10.44
Un Long	6,496	226	3.48
Western Public	24,235	201	0.83
Kowloon City	15,712	2,099	13.36
Sham Shui Po	28,272	953	3.37
Shaukiwan	54,922	652	1.19
Aberdeen	11,102	235	2.12
Central	33,708	73	0.22
Eastern	22,135	263	1.19
Yaumati	75,922	1,954	2.57
Hung Hom	11,760	697	5.93
Totals.....	295,477 (259,650)	8,524	2.88

Malaria cases treated.

<i>During</i>	<i>Diagnosed microscopically.</i>	<i>Diagnosed clinically.</i>
1st Quarter 1,457	1,246	7,278
2nd „ 1,853		
3rd „ 2,489		
4th „ 2,725		
Totals.....8,524	1,246	7,278

Table V.

Government Employees and Malarial Admissions.

Nationality.	Average No. of employees.	Malarial Admissions.	Malarial Admissions per 1,000.
Europeans	857	44	51.34
Indians	1,070	94	87.85
Chinese	3,789	75	19.79
Others	85	1	11.76
Totals.....	5,801 ✓	214 ✓	36.88 ✓

Malarial admissions.

<i>During</i>	<i>Diagnosed microscopically.</i>	<i>Diagnosed clinically.</i>
1st Quarter 18	162	52
2nd " 38		
3rd " 86		
4th " 72		
Totals..... 214	162	52

Table VI.

Police Force and Malarial Admissions.

Stations.	Average Strength.	Malarial Admissions.
Central	634	13
Upper Levels	104	7
Gough Hill	34	3
Central Fire Station.....	82	...
Sai Ying Pun	102	7
Pokfulam	1	...
Aberdeen	20	1
Wan Chai No. 2	100	5
Bay View	20	2
Wong Nai Chung Gap.....	1	...
Shauiwan	18	1
Stanley	5	3
Tai Tam Tuk	1	...
Quarry Bay	18	2
Yaumati	104	1
Sham Shui Po	40	5
Mongkok	48	...
Kowloon Water Works	1	...
Hung Hom	35	1
Kowloon City	54	3
Water Police.....	24	3
Tsim Sha Tsui.....	80	...
Tsun Wan.....	13	10
Cheung Chau	12	...
Tai O.....	17	...
Green Island	1	...
Police Training School	125	4
Au Tau	15	8
Castle Peak	3	4
Lok Ma Chau	12	3
Ping Shan	11	...
Sha Tin.....	9	2
Sai Kung	11	3
Sha Tau Kok	14	3
Sheung Shui.....	16	7
Tai Po	18	...
Tai Ku Ling.....	3	1
Lin Ma Hang	1	...
TOTALS.....	1,807	102

Summary of admissions.

Nationality.	Strength.	Malarial Admissions.	Malarial Admissions per 1,000.
Europeans.....	250	18	72.00
Indians	726	70	96.42
Chinese	831	14	16.85
Totals.....	1,807	102	56.45 5.6%

Malarial admissions.

<i>During</i>		<i>Diagnosed microscopically.</i>	<i>Diagnosed clinically.</i>
1st Quarter	8	68	34
2nd "	25		
3rd "	34		
4th "	35		
Totals.....	102	68	34

Chapter VII.
RESULTS OF EXAMINATION OF BLOOD FILMS (FOR MALARIAL PARASITES) TAKEN FROM PRISONERS ADMITTED TO VICTORIA GAOL.

District according to address supplied.	City of Victoria		Island of Hong Kong (excluding City of Victoria.)		Kowloon.		New Territories.		Total.	
	Films		Films		Films		Films		Films	
	examined.	positive.	examined.	positive.	examined.	positive.	examined.	positive.	examined.	positive.
Month.										
January	8	...	2	...	74	...	11	...	95	...
February .....	...	...	5	...	90	2	5	...	100	2
March	3	...	4	...	96	1	7	...	110	1
April	1	...	3	...	82	...	9	...	95	...
May .....	...	...	1	...	100	1	9	1	110	2
June .....	...	...	1	...	93	2	11	...	105	2
July	2	...	3	...	84	2	16	...	105	2
August	4	...	2	...	99	2	10	...	115	2
September ...	11	...	3	...	67	1	5	...	86	1
October	6	...	7	...	82	2	5	...	100	2
November ...	15	...	5	...	78	...	9	...	107	...
December ...	13	...	7	1	56	...	14	...	90	1
Yearly Totals.	63	...	43	1	1,001	13	111	1	1,218	15
Percentage ...	...	...	2.33	...	1.29	...	.90	...	1.23	...

Table VIII.
RESULTS OF EXAMINATION OF BLOOD FILMS (FOR MICROFILARIA) TAKEN FROM PRISONERS ADMITTED TO VICTORIA GAOL.

District according to address supplied.	City of Victoria.		Island of Hong Kong (excluding City of Victoria).		Kowloon.		New Territories.		Total.	
	Films		Films		Films		Films		Films	
	examined.	positive.	examined.	positive.	examined.	positive.	examined.	positive.	examined.	positive.
Month.										
January	8	...	2	1	74	...	11	...	95	1
February .....	...	...	5	...	90	...	5	...	100	...
March	3	...	4	...	96	...	7	...	110	...
April	1	...	3	...	82	...	9	...	95	2
May .....	...	...	1	...	100	...	9	...	110	2
June .....	...	...	1	...	93	...	9	...	105	3
July	2	...	3	...	84	...	11	...	105	1
August	4	...	2	...	99	...	16	...	115	...
September	11	...	3	...	67	...	10	...	86	...
October	6	1	7	...	82	...	5	...	100	3
November	15	...	5	...	78	...	9	...	107	...
December	13	...	7	...	56	...	14	...	90	1
Yearly Totals.	63	1	43	1	1,001	11	111	...	1,218	13
Percentage ...	1.59		2.33		1.10		...		1.07	

Table X.
Result of Morning Catching of Anophelines at Wong Chok Hang Village and Surroundings.

Month during which catching took place.	No. of mornings when catching took place.	SPECIES.											
		A. Minimus.		A. Jeyporiensis.		A. Maculatus.		A. Hyrcanus.					
		M.	F.	M.	F.	M.	F.	M.	F.				
January	16	2	56	...	19	...	...	...	...	...	...	...	...
February.....	15	2	99	...	10	...	...	3	...	...	...	...	...
March.....	27	1	251	...	7	...	...	2	...	...	...	...	4
April	22	48	346	...	...	...	...	1	...	...	...	...	...
May	26	9	477	...	...	...	...	...	...	...	...	...	...
June	24	68	416	...	...	...	...	...	...	...	...	...	...
July.....	25	34	369	...	...	...	...	...	...	...	...	...	...
August	26	49	283	...	...	...	...	...	1	...	...	...	1
September	26	21	236	...	1	...	...	...	...	...	...	...	1
October.....	24	17	287	...	33	...	...	...	...	...	...	...	2
November.....	25	15	280	...	55	...	...	...	...	1	...	...	2
December	24	36	210	...	10	...	...	...	...	...	...	...	...
Totals.....	280	302	3,310	...	135	...	...	10	...	1	...	...	9

Table XI.

Records of Dissections for Malarial Infection of Anophelines caught at Wong Chok Hang Village and Vicinity.

Month	Species	No. dissected	No. with infected glands only	No. with infected midgut only	No. with infected glands and midgut	Percentage infected
January ...	A. minimus	56	...	...	...	...
	A. jeyporiensis ...	19	...	...	...	...
	A. maculatus.....	...	...	...	...	...
	A. hyrcanus .....	...	...	...	...	...
February ...	A. minimus	103	...	2	...	1.94
	A. jeyporiensis...	14	...	...	...	...
	A. maculatus.....	20	...	...	...	...
	A. hyrcanus	3	...	...	...	...
March	A. minimus	248	...	6	...	2.42
	A. jeyporiensis ...	8	...	...	...	...
	A. maculatus.....	38	...	...	...	...
	A. hyrcanus	26	...	...	...	...
April	A. minimus	312	4	3	2	2.88
	A. jeyporiensis...	...	...	...	...	...
	A. maculatus.....	38	...	...	...	...
	A. hyrcanus	14	...	...	...	...
May	A. minimus	442	7	7	5	4.30
	A. jeyporiensis...	...	...	...	...	...
	A. maculatus.....	5	...	...	...	...
	A. hyrcanus	5	...	...	...	...
June	A. minimus	446	10	23	2	7.85
	A. jeyporiensis...	...	...	...	...	...
	A. maculatus.....	4	...	...	...	...
	A. hyrcanus	1	...	...	...	...
July	A. minimus	372	10	21	2	8.87
	A. jeyporiensis...	...	...	...	...	...
	A. maculatus.....	6	...	...	...	...
	A. hyrcanus	1	...	...	...	...
August	A. minimus	295	8	12	2	7.46
	A. jeyporiensis...	...	...	...	...	...
	A. maculatus.....	9	...	...	...	...
	A. hyrcanus	2	...	...	...	...
September..	A. minimus	244	3	3	4	4.10
	A. jeyporiensis...	1	...	...	...	...
	A. maculatus.....	3	...	...	...	...
	A. hyrcanus	2	...	...	...	...
October.....	A. minimus	274	4	7	5	5.84
	A. jeyporiensis...	37	...	1	...	2.70
	A. maculatus.....	2	...	...	...	...
	A. hyrcanus	2	...	...	...	...
November..	A. minimus	269	6	8	...	5.20
	A. jeyporiensis...	49	1	1	...	4.08
	A. maculatus.....	2	...	...	...	...
	A. hyrcanus	2	...	...	...	...
December...	A. minimus	198	2	4	6	6.06
	A. jeyporiensis...	9	...	...	...	...
	A. maculatus.....	2	...	...	...	...
	A. hyrcanus .....	...	...	...	...	...
Totals.....	A. minimus	3,259	54	96	28	5.50
	A. jeyporiensis...	137	1	2	...	2.18
	A. maculatus.....	129	...	...	...	...
	A. hyrcanus	58	...	...	...	...

Table XII.

Result of Dissections for Larval Filaria of Mosquitoes caught at Wong Chok Hang Village and Surroundings.

Month.	Species	No. dissected	No. of infection	Percentage infected
January ...	A. minimus.....	56	...	...
	A. jeyporiensis.	19	...	...
	A. maculatus ...	...	...	...
	A. hyrcanus ...	...	...	...
	C. fatigans	56	...	...
February...	A. minimus	103	...	...
	A. jeyporiensis .	14	...	...
	A. maculatus ...	20	...	...
	A. hyrcanus ...	3	...	...
	C. fatigans	61	...	...
March	A. minimus ...	248	...	...
	A. jeyporiensis .	8	...	...
	A. maculatus ...	38	...	...
	A. hyrcanus ...	26	...	...
	C. fatigans	74	...	...
April	A. minimus.....	312	10	3.21
	A. jeyporiensis..	...	...	...
	A. maculatus ...	38	...	...
	A. hyrcanus ...	14	...	...
	C. fatigans	132	7	5.30
May	A. minimus.....	442	16	3.62
	A. jeyporiensis..	...	...	...
	A. maculatus ...	5	...	...
	A. hyrcanus ...	5	...	...
	C. fatigans	197	1	0.51
June.....	A. minimus.....	446	8	1.80
	A. jeyporiensis..	...	...	...
	A. maculatus ...	4	...	...
	A. hyrcanus ...	1	...	...
	C. fatigans	142	2	1.41

Table XII,—*Continued.*

Result of Dissections for Larval Filaria of Mosquitoes Caught at Wong Chok Hang Village and Surroundings.

Month	Species	No. dissected	No. of infection	Percentage infected
July	A. minimus.....	372	5	1.34
	A. jeyporiensis..	...	...	...
	A. maculatus ...	6	...	...
	A. hyrcanus ...	1	...	...
	C. fatigans .....	...	...	...
August.....	A. minimus... ..	295	4	1.36
	A. jeyporiensis..	...	...	...
	A. maculatus ...	9	...	...
	A. hyrcanus ...	2	...	...
	C. fatigans .....	...	...	...
September..	A. minimus.....	244	8	3.28
	A. jeyporiensis..	1	...	...
	A. maculatus ...	3	...	...
	A. hyrcanus ...	2	...	..
	C. fatigans .....	...	...	...
October.....	A. minimus.....	274	4	1.46
	A. jeyporiensis..	37	...	...
	A. maculatus ...	2	...	...
	A. hyrcanus ...	2	...	...
	C. fatigans .....	...	...	...
November..	A. minimus.....	269	...	...
	A. jeyporiensis..	49	...	...
	A. maculatus ...	2	...	...
	A. hyrcanus ...	2	...	...
	C. fatigans .....	...	...	...
December ..	A. minimus.....	198	1	0.51
	A. jeyporiensis..	9	...	...
	A. maculatus ...	2	...	...
	A. hyrcanus ...	...	...	...
	C. fatigans .....	...	...	...
Totals....	A. minimus.....	3,259	56	1.72
	A. jeyporiensis.	137	...	...
	A. maculatus ...	129	...	...
	A. hyrcanus ...	58	...	...
	C. fatigans	662	10	1.51

Table XIII.

Sickness Returns for the Shing Mun Labour Force.

Month	Race.	Average Population.	Malaria Cases		No. of cases of Sickness from all causes.	No. of Deaths.
			Diagnosed clinically.	Diagnosed microscopically.		
February	Cantonese.....	390	...	1	1	...
March	Cantonese.....	460	7	...	22	...
April	Cantonese	540	3	1	14	...
	Shanghai.....	60	...	..	7	...
	Totals	600	3	1	21	...
May.....	Cantonese	540	3	13	32	...
	Shanghai.....	90	3	19	48	...
	Indian.....	20	2	...	3	...
	Totals	650	8	32	83	...
June	Cantonese.....	635	8	25	58	...
	Shanghai.....	90	7	33	53	...
	Indian.....	40	4	6	21	...
	Totals	765	19	64	132	...
July.....	Cantonese.....	570	13	93	210	...
	Shanghai.....	90	5	48	87	..
	Indian.....	30	6	6	27	...
	Totals	690	24	147	324	...
August	Cantonese.....	544	16	127	300	...
	Shanghai.....	70	1	22	59	...
	Indian.....	26	2	9	25	...
	Totals	640	19	158	384	...
September	Cantonese.....	616	16	104	220	...
	Shanghai.....	150	11	44	127	...
	Indian.....	24	2	11	25	...
	Totals	790	29	159	372	...
October....	Cantonese... ..	640	23	107	282	2*
	Shanghai.....	133	8	51	158	...
	Indian	24	...	6	13	...
	Totals	797	31	164	453	2
November.	Cantonese.....	493	3	80	213	1*
	Shanghai.....	178	1	74	230	...
	Indian	21	1	7	13	...
	Totals	692	5	161	456	1
December.	Cantonese... ..	431	...	36	131	...
	Shanghai.....	219	...	25	129	...
	Indian.....	21	...	3	10	...
	Totals	671	...	64	270	...
Grand Totals.....			145	951	2,518	3

* Not due to malaria.

Details of Examination of Blood Films for Malaria, Shing Mun.

Nationality	No. of Specimens obtained	B. T.	M. T.	Q.	B. T. and M. T.	Type not classified	Totals
Cantonese	703	86	222	4	1	274	587
Shanghai.....	412	47	142	2	2	123	316
Indian	66	9	11	...	...	28	48
Grand Totals	1,181	142	375	6	3	425	951

Table XIV.

Results of Morning Catches in the lines, Shing Mun Camp.

Month during which catching took place.	No. of mornings when cat- ching took place.	SPECIES.														
		A. minimus.		A. jeyporiensis.		A. maculatus.		A. hyrcanus.		A. splendidus.		A. karwari.				
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
February.....	7	...	108	...	371	...	12	...	77	...	2	...	...	...	...	...
March.....	11	...	163	...	638	...	15	...	71	...	3	...	...	...	...	...
April.....	9	...	321	4	1,331	...	34	...	48	...	3	...	...	...	...	...
May.....	22	...	811	2	2,303	...	49	...	90	...	10	...	...	...	...	...
June.....	24	...	632	6	3,509	...	11	...	8	...	1	...	...	...	...	...
July.....	29	1	800	5	5,929	...	30	...	14	...	5	...	...	...	...	...
August.....	31	...	269	...	3,374	...	22	...	15	...	...	...	...	...	...	...
September.....	26	...	448	...	3,669	...	22	...	116	...	...	...	...	...	...	1
October.....	27	...	530	...	3,019	...	32	...	879	...	...	...	...	...	...	...
November.....	26	...	461	...	943	...	36	...	939	...	2	...	...	...	...	...
December.....	27	...	101	...	231	...	14	...	889	...	...	...	...	...	...	...
Total.....	239	1	4,644	17	25,317	...	277	...	3,146	...	26	...	...	...	...	1

PLATE XI

Table XV.

Results of Night Catching of Anophelines at Shing Mun in Three Tents,

Locality	Month during which catching took place	No. of nights when catching took place	Species											
			A. minimus		A. jeyporiensis		A. maculatus		A. hyrcanus		A. splendidus			
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
Tent in Ravine A	June	20	...	63	...	9	...	...	3	...	...	...	...	1
	July	24	...	42	...	14	...	...	3	...	...	...	...	1
	August	27	...	26	...	14	...	...	13	...	...	...	...	...
	September ...	17	...	19	...	2	...	...	2	...	...	...	...	...
	October	25	...	8	...	2	...	...	6	...	...	...	...	...
	November ...	...	...	5	...	...	...	...	1	...	...	...	...	...
	Total	113	...	163	...	41	...	...	28	...	...	...	...	2
Tent in Ravine B2	June	20	...	65	...	6	...	...	4	...	...	...	...	...
	July	24	...	54	...	20	...	...	...	...	...	...	...	1
	August	27	...	61	...	13	...	...	16	...	...	...	...	...
	September ...	17	...	72	...	2	...	...	10	...	...	...	...	...
	October	25	...	20	...	4	...	...	7	...	...	...	...	...
Tent in Ravine D	November ...	...	...	2	...	...	...	...	...	...	...	...	...	...
	Total	93	...	209	...	39	...	...	33	...	...	...	...	1

Table XVI.

Records of Dissections for Malarial Infection of Anophelines caught at the Shing Mun Camp.

Month	Species	No. dissected	No. with infected glands only	No. with infected midgut only	No. with infected glands and midgut	Percentage infected
January	A. minimus	...	...	...	...	...
	A. jeyporiensis	...	...	...	...	...
	A. maculatus	...	...	...	...	...
	A. hyrcanus	...	...	...	...	...
	A. splendidus	...	...	...	...	...
February	A. minimus	94	...	...	...	...
	A. jeyporiensis	323	...	2	...	0.62
	A. maculatus	10	...	1	...	10.00
	A. hyrcanus	72	...	...	...	...
	A. splendidus	2	...	...	...	...
March	A. minimus	130	...	1	...	0.77
	A. jeyporiensis	551	1	...	...	0.18
	A. maculatus	12	...	...	...	...
	A. hyrcanus	67	...	...	...	...
	A. splendidus	3	...	...	...	...
April	A. minimus	197	8	2	2	6.09
	A. jeyporiensis	805	11	5	9	3.11
	A. maculatus	29	...	...	...	...
	A. hyrcanus	45	...	...	...	...
	A. splendidus	3	...	...	...	...
May	A. minimus	127	10	6	3	14.96
	A. jeyporiensis	381	12	16	7	9.19
	A. maculatus	44	...	...	...	...
	A. hyrcanus	84	...	...	...	...
	A. splendidus	10	...	...	...	...
June	A. minimus	227	7	22	9	16.74
	A. jeyporiensis	1,038	27	68	13	10.41
	A. maculatus	9	...	1	...	11.11
	A. hyrcanus	7	...	...	...	...
	A. splendidus	...	...	...	...	...
July	A. minimus	214	11	33	12	26.17
	A. jeyporiensis	1,534	52	164	42	16.82
	A. maculatus	15	...	2	...	13.33
	A. hyrcanus	11	...	...	...	...
	A. splendidus	5	...	...	...	...
August	A. minimus	118	7	11	6	20.34
	A. jeyporiensis	1,704	42	193	37	15.96
	A. maculatus	22	...	2	...	9.09
	A. hyrcanus	15	...	...	...	...
	A. splendidus	...	...	...	...	...
September	A. minimus	236	8	32	12	22.03
	A. jeyporiensis	1,877	42	145	32	11.67
	A. maculatus	19	...	1	...	5.27
	A. hyrcanus	107	...	3	...	2.80
	A. splendidus	...	...	...	...	...
October	A. kawari	1	...	...	...	...
	A. minimus	375	8	25	8	10.93
	A. jeyporiensis	1,749	26	104	11	8.06
	A. maculatus	26	...	1	...	3.85
	A. hyrcanus	822	4	15	...	2.31
November	A. splendidus	...	...	...	...	...
	A. minimus	371	5	19	...	6.47
	A. jeyporiensis	811	5	18	...	2.84
	A. maculatus	32	...	...	...	...
	A. hyrcanus	889	3	5	...	0.90
December	A. splendidus	2	...	...	...	...
	A. minimus	66	...	2	...	3.03
	A. jeyporiensis	163	...	2	...	1.23
	A. maculatus	12	...	...	...	...
	A. hyrcanus	699	...	4	...	.57
Total	A. splendidus	...	...	...	...	...
	A. kawari	1	...	...	...	...
	A. minimus	2,155	64	153	52	12.48
	A. jeyporiensis	10,936	218	717	151	9.93
	A. maculatus	230	...	8	...	3.48
	A. hyrcanus	2,818	7	27	...	1.21

Table XVII.

Records of Dissections for Larval Filaria of Anophelines caught at Shing Mun Camp.

Month	Species	No. dissected	No. infected	Percentage infected
January ...	A. minimus ....	...	...	...
	A. jeyporiensis..	...	...	...
	A. maculatus ...	...	...	...
	A. hyrcanus ....	...	...	...
	A. splendidus...	...	...	...
February...	A. minimus	94	...	...
	A. jeyporiensis..	323	...	...
	A. maculatus ...	10	...	...
	A. hyrcanus	72	...	...
	A. splendidus...	2	...	...
March	A. minimus	130	...	...
	A. jeyporiensis..	551	...	...
	A. maculatus ...	12	...	...
	A. hyrcanus	67	...	...
	A. splendidus...	3	...	...
April	A. minimus	282	4	1.42
	A. jeyporiensis..	1,221	12	0.98
	A. maculatus ...	29	...	...
	A. hyrcanus	45	...	...
	A. splendidus...	3	...	...
May	A. minimus	771	6	0.78
	A. jeyporiensis..	2,182	14	0.64
	A. maculatus ...	44	...	...
	A. hyrcanus	84	...	...
	A. splendidus...	10	...	...
June	A. minimus	227	2	0.88
	A. jeyporiensis..	1,038	5	0.48
	A. maculatus ...	9	...	...
	A. hyrcanus	7	...	...
	A. splendidus...	...	...	...
July	A. minimus	214	6	2.80
	A. jeyporiensis..	1,534	15	0.98
	A. maculatus ...	15	...	...
	A. hyrcanus	11	...	...
	A. splendidus...	5	...	...

Table XVII,—*Continued.*

Records of Dissections for Larval *Filaria* of Anophelines caught at Shing Mun Camp,—*Continued.*

Month	Species	No. dissected	No. infected	Percentage infected
August	<i>A. minimus</i>	118	1	0.85
	<i>A. jeyporiensis</i> ..	1,704	15	0.90
	<i>A. maculatus</i> ...	22	...	...
	<i>A. hyrcanus</i>	15	...	...
	<i>A. splendidus</i>...	...	...	...
September..	<i>A. minimus</i>	236	2	0.85
	<i>A. jeyporiensis</i> ..	1,877	14	0.75
	<i>A. maculatus</i> ...	19	1	5.26
	<i>A. hyrcanus</i>	107	...	...
	<i>A. splendidus</i>...	...	...	...
	<i>A. karwari</i>	1	...	...
October ...	<i>A. minimus</i>	375	...	...
	<i>A. jeyporiensis</i> .	1,749	2	0.11
	<i>A. maculatus</i> ...	26	...	...
	<i>A. hyrcanus</i>	822	...	...
	<i>A. splendidus</i>...	...	...	...
November..	<i>A. minimus</i>	371	...	...
	<i>A. jeyporiensis</i> ..	811	1	0.12
	<i>A. maculatus</i> ...	32	...	...
	<i>A. hyrcanus</i>	889	1	0.11
	<i>A. splendidus</i> ...	2	...	...
December...	<i>A. minimus</i>	66	...	...
	<i>A. jeyporiensis</i> ..	163	...	...
	<i>A. maculatus</i> ...	12	...	...
	<i>A. hyrcanus</i>	699	...	...
	<i>A. splendidus</i>...	...	...	...
Total....	<i>A. minimus</i>	2,884	21	0.70
	<i>A. jeyporiensis</i> ..	13,153	78	0.60
	<i>A. maculatus</i> ...	230	1	0.43
	<i>A. hyrcanus</i>	2,818	1	0.04
	<i>A. splendidus</i> ...	25	...	...
	<i>A. karwari</i>	1	...	...

Table XVIII.
Results of Morning Catches of Anophelines at Wo Li Hop and Surroundings.

Month during which catching took place.	No. of mornings when catchings took place.	SPECIES.											
		A. Minimus.		A. Jeyporiensis.		A. Maculatus.		A. hyrcanus.		A. Splendidus.			
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
January	2	...	56	...	124	...	4	...	9	...	...	...	2
February	6	...	274	...	515	...	45	...	79	...	...	...	...
March	3	...	70	...	318	...	22	2	21	...	...	...	...
April	3	...	140	...	221	...	25	...	32	...	...	...	...
May .....	...	...	...	...	...	...	...	...	...	...	...	...	...
June	4	...	118	...	409	...	17	...	...	...	...	...	...
July	3	...	72	...	329	...	13	...	2	...	...	...	...
August	4	...	89	...	521	...	6	...	...	...	...	...	...
September	4	...	87	...	439	...	10	...	3	...	...	...	1
October	3	...	121	...	437	...	7	...	4	...	...	...	1
November	4	...	171	...	504	...	26	...	9	...	...	...	...
December	4	...	118	...	224	...	19	...	38	...	...	...	...
Totals	40	...	1,316	...	4,641	...	194	2	197	...	...	...	4

Table XIX.

Records of Dissections for Malarial Infection of Anophelines caught at Wo Li Hop Village and Surroundings.

Month	Species	No. dissected	No. with infected glands only	No. with infected midgut only	No. with infected glands and midgut	Percentage infected
January ...	A. minimus.....	48	...	...	...	...
	A. jeyporiensis...	119	1	...	...	0.84
	A. maculatus.....	4	...	...	...	...
	A. hyrcanus.....	9	...	...	...	...
February...	A. splendidus.....	...	...	...	...	...
	A. minimus.....	232	1	...	1	0.86
	A. jeyporiensis...	435	...	1	...	0.23
	A. maculatus.....	41	...	...	...	...
March	A. hyrcanus.....	65	...	...	...	...
	A. splendidus.....	2	...	...	...	...
	A. minimus.....	67	1	...	...	1.49
	A. jeyporiensis...	307	...	2	...	0.65
April	A. maculatus.....	22	...	...	...	...
	A. hyrcanus.....	21	...	...	...	...
	A. splendidus.....	...	...	...	...	...
	A. minimus.....	126	1	1	...	1.59
May	A. jeyporiensis...	204	3	...	...	1.47
	A. maculatus.....	25	...	...	...	...
	A. hyrcanus.....	30	...	...	...	...
	A. splendidus.....	...	...	...	...	...
June	A. minimus.....	...	...	...	...	...
	A. jeyporiensis...	107	4	...	5	8.41
	A. maculatus.....	381	5	8	4	4.46
	A. hyrcanus.....	16	...	...	...	...
July	A. splendidus.....	...	...	...	...	...
	A. minimus.....	63	1	7	4	19.05
	A. jeyporiensis...	303	8	20	2	9.90
	A. maculatus.....	12	...	...	...	...
August	A. hyrcanus.....	2	...	...	...	...
	A. splendidus.....	...	...	...	...	...
	A. minimus.....	89	...	3	...	3.37
	A. jeyporiensis...	511	3	34	2	7.63
September..	A. maculatus.....	6	...	...	...	...
	A. hyrcanus.....	...	...	...	...	...
	A. splendidus.....	...	...	...	...	...
	A. minimus.....	74	1	6	...	9.46
October.....	A. jeyporiensis...	370	4	9	...	3.52
	A. maculatus.....	10	...	...	...	...
	A. hyrcanus.....	3	...	...	...	...
	A. splendidus.....	1	...	...	...	...
November..	A. minimus.....	105	2	...	...	1.90
	A. jeyporiensis...	383	1	2	...	0.78
	A. maculatus.....	7	...	...	...	...
	A. hyrcanus.....	4	...	...	...	...
December...	A. splendidus.....	...	...	...	...	...
	A. minimus.....	165	2	...	1	1.82
	A. jeyporiensis...	487	3	4	1	1.64
	A. maculatus.....	25	...	...	...	...
Total.....	A. hyrcanus.....	7	...	...	...	...
	A. splendidus.....	1	...	...	...	...
	A. minimus.....	109	...	1	1	1.84
	A. jeyporiensis...	207	1	...	1	0.97
Total.....	A. maculatus.....	19	...	...	...	...
	A. hyrcanus.....	35	...	...	...	...
	A. splendidus.....	...	...	...	...	...
	A. minimus.....	1,185	13	18	12	3.63
Total.....	A. jeyporiensis...	3,707	29	80	10	3.21
	A. maculatus.....	187	...	...	...	...
	A. hyrcanus.....	176	...	...	...	...
	A. splendidus.....	4	...	...	...	...

Table XX.

Examination of Blood Films for Malaria Parasites from Various Sources.

Locality	Months in which specimens obtained	No. of specimens obtained	No. of specimens positive	Remarks
Pokfulam (New Government Civil Hospital Site.	August	2	1	} Taken from Contractor's labourers engaged on the levelling of the site.
	September	3	1	
	October	1	1	
	November	1	1	
	December	1	...	
Tai Hang Road.....	October	3	2	} Taken from Contractor's labourers engaged in building houses.
Tung Wah Nullah	September	1	1	} Taken from Contractor's labourers engaged in training hill streams.
	November	1	...	
Wo Li Hop Village (N. T.)	June	1	...	} Taken from villagers, and at the latter end of the year from coolies (who were employed at the Shing Mun Dam) and their families who resided at the village.
	July	1	1	
	August	1	1	
	September	1	1	
	October	1	1	
	November	6	6	
	December	1	1	

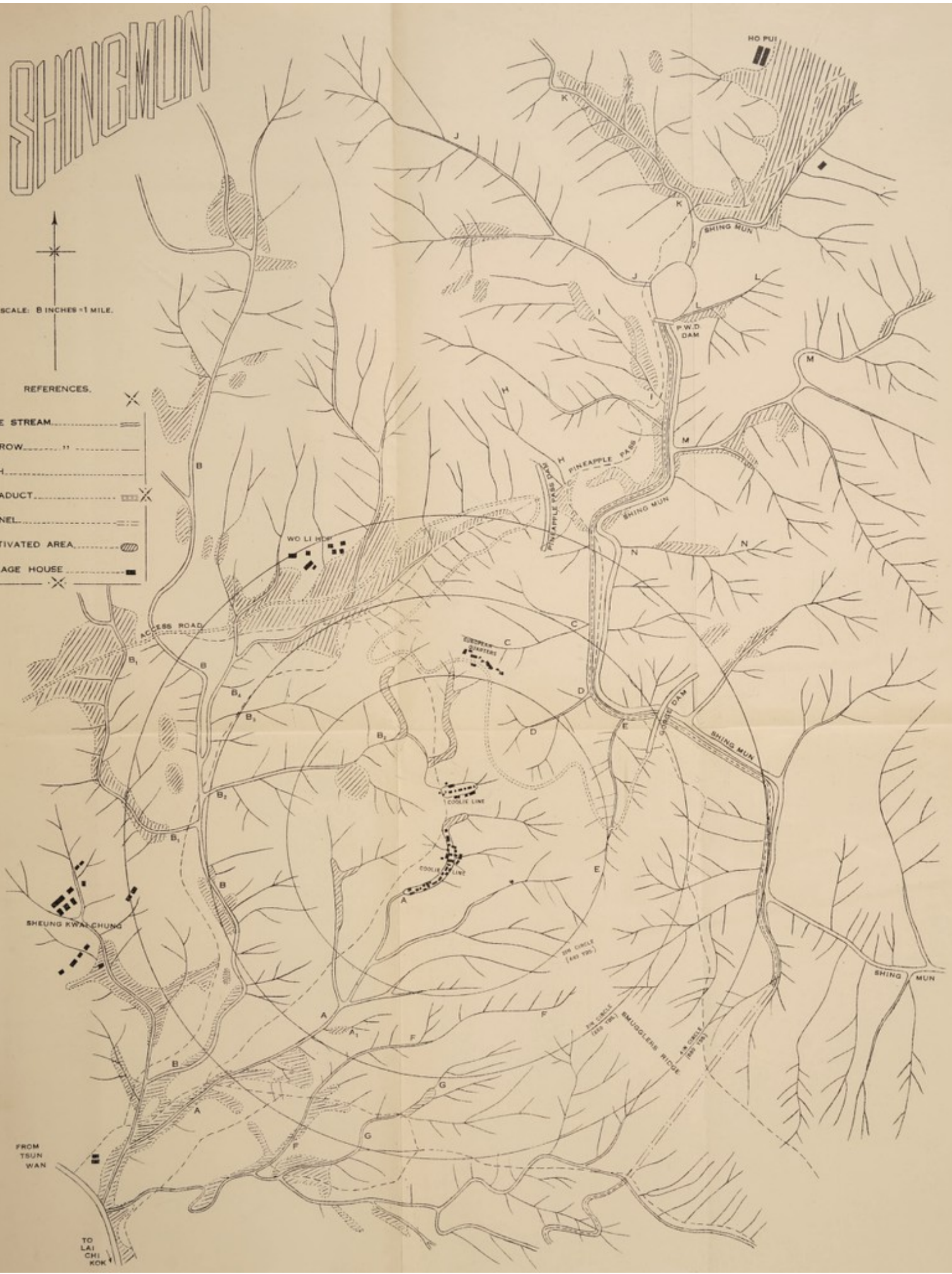
SHING MUN



SCALE: 8 INCHES = 1 MILE.

REFERENCES.

- ×
- WIDE STREAM.....
- NARROW.....
- PATH.....
- AQUADUCT.....
- TUNNEL.....
- CULTIVATED AREA.....
- VILLAGE HOUSE.....
- ×



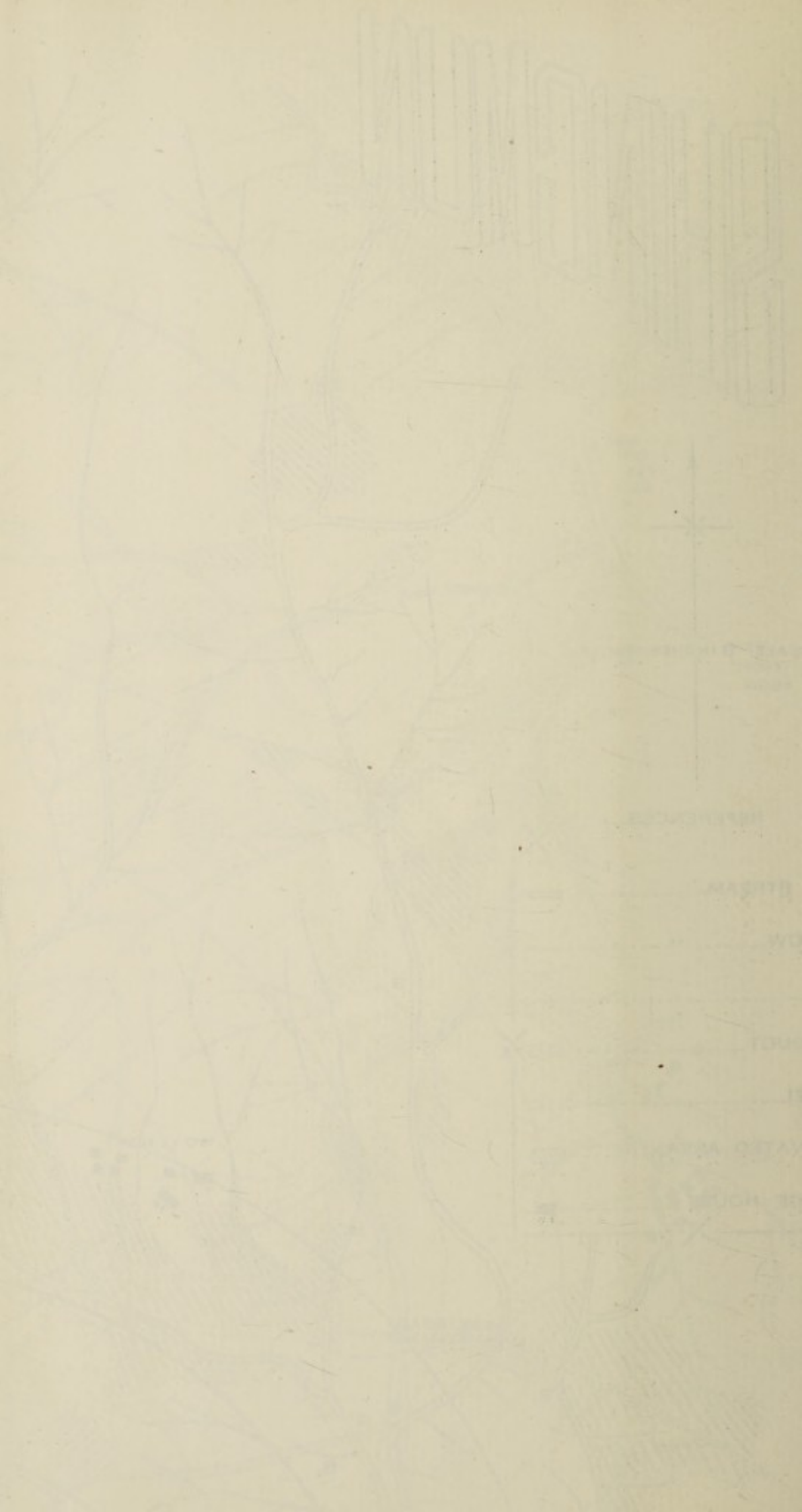


Table XXI.

Results of Morning Catches, made in Matsheds occupied by Contractor's Labourers.

Locality	Month during which catching took place	No. of mornings when catching took place	SPECIES								
			A. Minimus		A. Jeyporiensis		A. Maculatus		A. Hyrcanus		
			M.	F.	M.	F.	M.	F.	M.	F.	
Government Civil Hospital Site (Pokfulam).	July.....	1	...	...	...	...	...	...	...	...	...
	August	4	...	...	...	...	1	...	...	...	...
	September	4	...	...	...	...	2	...	...	...	...
	October	5	...	1	...	1	...	...	...	...	...
	November	5	...	1	...	...	...	...	...	...	...
	December	3	...	2	...	...	...	...	...	...	...
	Totals	22	...	4	...	1	3	...	...	...	...
Tai Hang Road.	July.....	2	...	1	...	...	...	...	...	...	...
	August	4	...	...	...	...	...	...	...	...	...
	September	5	...	...	...	...	...	...	...	...	...
	October	5	...	3	...	7	...	...	...	...	3
	November	4	...	2	...	...	...	...	...	...	...
	December	2	...	...	...	...	...	...	...	...	...
	Totals	22	...	6	...	7	...	...	...	...	3
Tung Wah Nullah.	July.....	1	...	...	...	...	...	...	...	...	...
	August	4	...	...	...	...	...	...	...	...	...
	September	5	...	...	...	...	...	...	...	...	...
	October	5	...	6	...	3	...	...	...	...	...
	November	4	...	11	...	2	...	...	...	...	...
	December	3	...	2	...	...	...	...	...	...	...
	Totals	22	...	19	...	5	...	...	...	...	...
Kai Tak Aerodrome.	November	2	...	1	...	3	...	...	...	...	...
	December	2	...	1	...	9	...	...	...	...	3
	Totals	4	...	2	...	12	...	...	...	...	3

Appendix C.

GOVERNMENT LABORATORY.

Report on work done during the year 1933.

by

Mr. V. C. Branson—Government Analyst.

The work of the Government Laboratory can be divided into three main classes.

(1) Official Work, *i.e.* work for the Government from other Government Departments and for which the Laboratory primarily exists.

(2) Semi-official Work, *i.e.* work done by the Laboratory by virtue of its being a Government Department, *e.g.* work from the Naval and Military Authorities etc. Fees are charged for this work. In the case of the Naval and Military Authorities, the work is charged at half rate only.

(3) Unofficial Work, *i.e.* work done by the Laboratory for outside firms in competition with private consulting analysts and for which full fees are charged.

The total number of samples dealt with under all three heads for the year 1933 was 3,296 against 2,627 for 1932.

(2706) in (m/y) report

The following tables show the nature of the work under the three heads.

Official Work.

	1933.	1932.
Chemico-Legal Samples, from the Police & Medical Departments.....	227	146
Food & Drug Samples under the Ordinance, from the Sanitary Department.	104	118
Water Samples, from Public Supplies.....	1,372	941
Dangerous Goods under the Ordinance from the Police Department and Fire Brigade	33	11
Bio-chemical Examinations, from the Medical Department & University...	254	184
Materials from various Departments for testing:—		
Oils from P. W. D.	10	17
Coals from P. W. D., Harbour Department & K. C. R.	201	211
Building Materials from P.W.D.....	4	2
Foodstuffs from Medical Dept.	14	6
Pharmaceutical Samples from Government Apothecary	6	—
Chemicals from Medical Department, P. W. D., etc.....	10	32
Battery Acids from P. W. D.	4	—
Miscellaneous Investigations	22	24
	2,261	1,692
	✓	✓

Value of work done for Government Departments as determined under the Tariff of Fees (Government Notification No. 887 of 1932) was \$38,815.00 against \$35,085.00 for 1932.

Semi-official Work.

	1933.	1932.
Pharmaceutical Analyses under the Pharmacy & Poisons Ordinance	19	8
Food & Drugs under Section 11 of the Sale of Food & Drugs Ordinance.....	1	8
Examination of Steamer Tanks for Inflammable Vapour	84	72
Materials from Naval & Military Authorities for testing:—		
Foodstuffs	10	29
Water (Distilled).....	4	2
Coals	11	5
Oils (Fuel, Kerosene & Petrol)	22	103
Battery Acid	33	31
Chemicals	1	9
Miscellaneous	1	—
	186	267
	186	267

Value of work done under this head was \$5,420 as against \$5,200 for 1932.

Unofficial Work.

	1933.	1932.
Foodstuffs	118	107
Bio-Chemical Examinations.....	1	—
Water Samples	24	16
Building Materials	8	8
Oils, Fats & Waxes, including petroleum products	181	187
Minerals & Metals	462	304
Dangerous Goods	6	6
Chemicals	16	22
Fertilizers	16	4
Miscellaneous	17	14
	849	668
	849	668

Value of work done under this head was \$39,488.50 as against \$27,119.00 for 1932.

Official Work.—Chemico-Legal Samples.

The following table shows the nature of the work done under this head.

	1933.	1932.
Toxicological Examinations	91	115
Articles connected with corrosive fluid throwing	5	—
Counterfeit coin materials	20	7
Counterfeit note materials	80	—
Bombs and explosive	15	4
Articles for stains	9	4
Well Water	1	4
Other examinations	6	6

A considerable amount of work was done in connection with the discovery of a complete plant for the forging by photo-mechanical methods of Siamese notes: also in connection with the seizure of moulds etc. for the counterfeiting of Hong Kong 10 cents and 5 cents pieces.

In the Spring an attempted murder by shooting concerned this Department, as the stains on the prisoner's hand, on the revolver alleged to have been used, and on a glove used in a test shoot with the revolver, were shewn to be identical.

Toxicological Examinations.

<i>Nature of poison.</i>	<i>No. of cases.</i>
No poison found.....	41
Opium	17
Barbituric acid hypnotics.....	6
Phenolic or cresolic compounds	11
Arsenic	4
Aspirin	3
Hydrocyanic acid or cyanide	4
Oxalic acid	2
Chinese medicine	1
Animal toxins.....	2
Total	91 Cases.

The poisoning cases were all apparently suicide, opium again being the favourite agent. At the end of the year however there were several cases of poisoning by lysol. In the case of the death in which a Chinese medicine was found in the lungs and stomach, death had occurred through the inhalation of the medicine (U. I. Oil) in a fit of vomiting, causing suffocation.

FOOD AND DRUGS.

The table below gives the details of the Food & Drug Samples submitted by the Sanitary Department under the Ordinance.

Substance.	No. of Samples Exam.	No. found genuine.	No. found adulterated.
Bread	12	12	0
Butter	14	14	0
Cream	12	12	0
Flour	5	5	0
Lard	1	1	0
Milk, fresh	58	55	3
Sugar	1	1	0
Whisky	1	1	0
Total.....	104	101	3

Again it has to be reported that the amount of Food & Drug work done under the Ordinance is far below that which should be done for a Colony of this size. 3,000 samples per year should be about the figure, as stated in the last report for this Department. In any case the amount of adulteration shewn in the table above does not represent the amount of adulteration of Foodstuffs in the Colony. The samples are almost invariably taken by Sanitary Inspectors in uniform, thus warning the seller before even the purchase is made that it is probably intended for analysis, moreover samples are usually taken on one day in each quarter.

WATER SAMPLES.

It has been possible this year to increase the number of tap samples taken. The number being in the neighbourhood of 100 per month from house supplies in every part of the Colony supplied with filtered water. The usual weekly examinations of unfiltered and filtered water from the various filter beds were carried out: It is again to be reported that from chemical evidence the water supplies in the Colony are above reproach.

DANGEROUS GOODS.

These were samples of oils from lighters etc., for flash point, and explosives for identification in connection with the enforcement of the Ordinance.

BIO-CHEMICAL EXAMINATIONS.

Blood for blood urea nitrogen and blood sugar.	43	Samples.
Blood for blood urea nitrogen.....	60	„
Blood for blood sugar	41	„
Blood for blood calcium	* 1	„
Urine	94	„
Stool	2	„
Vesical calculus	11	„
Cerebral spinal fluid.....	1	„
Human milk	1	„
	<hr/>	
Total	254	Samples.
	<hr/> <hr/>	

These have increased considerably during the year and are now coming in from more than the two sources mentioned in last year's report. The vesical calculi were sent in for complete analysis by the Professor of Surgery at the University in connection with investigation into the nature of the local type.

MATERIALS FROM GOVERNMENT FOR TESTING.

There has been a slight falling off in the number of samples of materials submitted by Government Departments for testing. At the end of the year four samples of paint materials, supplied for use on a Government house, were submitted by a sub-department of the P. W. D., the first for very many years. Of the four samples, only *one* was genuine. Although probably 75% does not represent the amount of adulterated material supplied to the Government it is evident that more help could be given by this Laboratory in ensuring that materials supplied to the Government are genuine. Full use is made of this Laboratory by the Naval Authorities in testing their local supplies of kerosene and petrol and in testing their fuel oil, coals and battery acids, but except for isolated instances no general use of the facilities of this Laboratory are made by Government Departments.

During the year all the books in the old City Hall Library and some from Central Magistracy were fumigated in batches (6) with Hydrocyanic Acid gas. The strong rooms and Library of the Colonial Secretary's Office were also treated with the same fumigant.

During the year every consignment of coal for the Harbour Department and the P. W. D. were sampled and tested here in order to arrive at the price to be paid to the contractor.

Semi-official Work.

The tanks of 84 ships were tested for inflammable vapour with the Clowes Redwood Lamp. The majority of the other work under this head was for the Naval or Military Authorities. An interesting investigation was started and is still being carried on, in connection with the corrosion of Recuperator & Buffer systems of guns.

Unofficial Work.

Although the actual number of samples of work under this head is only about $\frac{1}{4}$ of the total number submitted to the Laboratory, unofficial work represents more than half the total work done here. During the summer, owing to one of the outside consulting laboratories practically ceasing to function, many more samples under this head were submitted, so much so, that had the amount increased any further, delay would have occurred in reporting results. Otherwise the normal duties, *i.e.* Government work, would have been interfered with. There is no doubt that if this Laboratory dealt with the 3,000 Food & Drug Samples under the Ordinance and was made use of to the full extent for testing Government materials, the staff here would be fully occupied with this and semi-official work alone, and unless the staff were increased, unofficial work done in competition with the two outside consulting laboratories would have to be eliminated.

Wolfram ore and refined tin accounted for the increase in numbers of analyses under the heading of minerals and metals. The actual amount of tin sampled and analysed here was 5,363 tons, the value of which was about £1,130,000 sterling.

A large increase in the number of lard samples analysed was shewn during the year, the number being 85 against 22 for 1932. The actual amount of lard this represents is about 1,420 tons, all of which was for export, mainly to England.

Sampling.

The following list gives the amount of sampling done by the Sampler attached to the Laboratory.

Tin	5,363 tons.
Coal	1,444 tons.
Wolfram Ore	448 bags.
Wood Oil	1,384 tons.
Teaseed Oil	114 tons.
Lard	43,069 cases.
Cassia Oil	50 drums.
Anise Oil	21 drums.
Soy	10 casks.
Firecrackers	10 cases.
Nitric Acid	310 cases.
Chlorate of Potash	181 casks.
Sodium Nitrate	200 casks.
Water Samples	1,262 samples.

Special Investigations.

Mention has been made of the work in connection with corrosion of gun parts for the Military Authorities.

A small fumigation chamber has been constructed and work is in progress in order to ascertain if it is possible to deal with flour imported into the Colony on similar lines to those adopted by the Naval Authorities, who fumigate every batch of flour before issuing it to ships, in order to ensure that no weevil-infested flour is used. This work is being done in consequence of the discovery of thousands of sacks of weevil-infested flour, stored in the Colony.

In the Spring, an investigation was made into the methods of, and means of preventing the alleged re-use of postage stamps which had been through the post. A report was made to the P.M.G.

Staff and Equipment.

Mr. Jackson, the senior assistant analyst, took over the duties of Monopoly Analyst and Assistant Superintendent of Imports and Exports from February 25th to November 30th during the absence of leave of Mr. H. A. Taylor.

Mr. Jackson proceeded on long leave on December 6th.

No other changes in the staff have occurred during the year.

An ultra-violet analytical lamp has been installed in the Laboratory and has been found of great use, *e.g.*, for detecting the presence of mineral oil adulteration of wood oil.

The latest type bomb calorimeter as recommended by the Director of Fuel Research in England has recently arrived and is a great improvement on the old type.

A considerable amount of defective apparatus has been sent home for repair and the Laboratory at present is better equipped than it has ever been before.

The doorway between the two main laboratories, mentioned in the last report, has been made and has proved a real boon; all delicate apparatus has now been removed from the main laboratory, away from fumes, and yet is easily available.

The main laboratory however, owing to the lack of adequate draught has been very uncomfortable during the year, and the health of the staff has suffered. It has been decided to install a forced draught system and this is now being done. A wind furnace for dealing with the assay of precious metals is also being constructed.

Revenue.

The fees paid into the Treasury during the year amounted to \$42,347.50 as against \$30,604.00 in 1932. The value of the work done, both Government and commercial, as determined from the Tariff of Fees (Government Notification No. 887 of 1932) was \$84,723.50 as against \$67,404.00 in 1932.

Expenditure for 1932 and 1933 Compared.

	1932.	1933.
Personal Emoluments	\$45,218.30	\$46,109.87
Other Charges:—		
Apparatus and Chemicals	3,941.65	4,162.13
Books and Journals	187.94	161.69
Conveyance Allowance	295.00	180.00
Fuel and Light	707.19	807.11
Incidental Expenses	241.40	379.13
Uniforms	154.96	133.25
	<hr/>	<hr/>
Other Charges Total	\$5,528.14	\$5,823.31
	<hr/> <hr/>	<hr/> <hr/>
Repairs and Calibration of Instruments		\$560.98

Revenue for 1932 and 1933 Compared.

<i>Head of Revenue.</i>	1932.	1933.
Analyses	\$30,604.00	\$42,347.50

Expenditure and Revenue for the Past Ten Years.

<i>Year.</i>	<i>Expenditure.</i>	<i>Revenue.</i>
1924	\$30,405.92	\$22,616.00
1925	36,626.42	23,000.00
1926	34,776.52	16,422.50
1927	37,442.88	16,146.00
1928	29,333.98	15,562.00
1929	35,290.43	24,974.00
1930	44,677.95	19,891.50
1931	57,341.16	19,295.50
1932	50,746.44	30,604.00
1933	52,494.16	42,347.50

APPENDIX D.

✓ **UNIVERSITY CLINICAL UNITS AT THE GOVERNMENT CIVIL HOSPITAL.**

MEDICAL UNIT—Report by the Professor of Medicine.

PROFESSOR WILLIAM I. GERRARD, O.B.E., M.D., Ch.B.,
M.R.C.P. (Lond.), D.P.H.

Cases treated as In-Patients in the University Medical Wards:—

Men	246
Women	117
Children under 12	66
(523) Total	<u>429</u>
Number of cases died	22
Number of cases died within 24 hours after admission into hospital	7
Total deaths	<u>29</u>

Cases treated as Out-Patients at the University Medical Out-Patient Clinics:—

1. Morning Clinic (General Medical Cases) Thursdays and Saturdays—
✓ 759 cases seen and treated (Men, women and children).
2. Afternoon Clinic (General Medical Cases) Mondays and Thursdays—
✓ 4,225 new cases seen and treated (Men, women and children): many of these cases attended more than once bringing to a total of 8,806 cases.
3. Children's Clinic Thursday mornings—
✓ 627 new cases seen and treated: many of these cases attended more than once, bringing to a total of 1,341 cases.

(9036) The total of cases seen and treated by the Medical Unit at Out-Patient Department during the year 1933 was 10,906 (this figure included old and new cases, men, women and children).

The following special tests are being carried out:—

From January—December, 1933.

No. of Blood Urea done	61
No. of Blood Sugar done	29
*No. of Blood Sedimentation Rate tests done	252

*Continued from last year.

SURGICAL UNIT.—Report by the Professor of Surgery.

PROFESSOR KENELM H. DIGBY, M.B., B.S., F.R.C.S. (England).

356 In-patients were treated in the three wards of the Surgical Clinic at the Government Civil Hospital. (462)

660 Surgical operations under anaesthesia were performed.

The Out-patient attendance in the Surgical Clinic (including Ear, Nose and Throat and Orthopaedics) numbered 3,899. (3136)

There were also 2,574 new patients who attended the ophthalmic out-patients Clinic. (2643)

OBSTETRICAL AND GYNAECOLOGICAL UNIT.

Report by the Professor of Obstetrics and Gynaecology.
PROFESSOR R. E. TOTTENHAM, B.A., M.D., C.H.B., F.R.C.P.I.,
L.M., D.P.H., F.C.O.G.

*Statistics of Maternity Cases in the Maternity Block,
G.C.H., 1933.*

Total admissions	888	
„ deliveries	832	(620 University, 212 M.O.)
Discharged not in labour	43	University.
„ „ „ „	13	M.O.
Deaths	2	

(1 patient died of Septicaemia
1 „ „ „ Myocarditis).

Death of babies :—Cause of deaths—

11	from Prematurity.
1	„ Pneumonia.
1	„ Asphyxia.
1	„ Congenital Syphilis.
1	„ Imperforated Anus.
1	„ Cerebral Haemorrhage.
1	„ Haemorrhage from Urinary tract and Mouth.
1	„ Acute Jaundice (Mother had a positive Wassermann).
9	Stillborn babies.

Nationality of patients delivered :—

English	1
Portuguese	1
Japanese	10
Indians	40
Chinese	780

Cervix:—

Erosion of	2
Polypus	5
Hypertrophy of	1
Curettage	25
Prolapse	14
Ventro-suspension	3
Hysterectomy (subtotal)	3
Myomectomy	5

Tubes and Ovaries:—

Ovariectomy	12
Salpingostomy	1
Dermoid cyst	2
Luteal cyst	2
Broad ligament cyst	3

Miscellaneous:—

Mammary abscess	1
Exploratory Laparotomy	1
Carcinoma of cervix treated with Surgical Diathermy and Radium	9
Retroperitoneal Malignant tumor	1

Nature and Number of Cases Treated Without Operations.

Refused operation	3
No operation indicated	2
Pregnancy with vomiting	1
Threatened Miscarriage	1
Incomplete Miscarriage	3
Threatened Abortion	2
Incomplete Abortion	2
Puerperal sepsis	1
Retroversion	4
Chronic salpingitis	2
Cystitis	1
Carcinoma of liver	1
Mitral Stenosis and Mitral Regurgitation....	1
Divarication of recti	1
Mortality	3

No. of cases in Outpatient Department 3,570
 Antenatal cases 105

Return of Diseases and Deaths (In-Patients) for the Year 1933.

APPENDIX E.

APPENDIX F.

Diseases.	GOVERNMENT HOSPITALS.				CHINESE HOSPITALS.					
	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.
		Admis- sions.	Deaths.				Admis- sions.	Deaths.		
I.—Epidemic, Endemic, and Infectious Diseases.										
Enteric Group :—										
(a) Typhoid Fever	2	66	9	68	4	2	142	18	144	1
(b) Paratyphoid A.....	...	9	...	9	...	...	...	...	...	...
(c) Paratyphoid B.....	...	2	...	2	...	...	...	...	...	...
Relapsing Fever.....	...	1	...	1	1	...	2	...	2	...
Malaria:—										
(a) Benign Tertian	2	195	...	197	1	25	191	7	216	20
(b) Quartan	2	12	...	14	...	...	1	...	1	...
(c) Sub-Tertian.....	2	159	8	161	4	4	291	51	295	4
(d) Cachexia	1	41	...	42	...	...	45	10	45	8
(e) Unclassified .....	...	68	...	68	...	...	397	140	397	...
Smallpox.....	4	14	5	18	...	...	180	80	180	1
Measles .....	...	14	...	14	...	...	13	2	13	...
Scarlet Fever .....	...	1	...	1	...	...	...	...	...	...
Whooping Cough .....	...	2	...	2	...	...	17	1	17	2
Diphtheria	7	29	7	36	2	...	66	30	66	...
Influenza	3	768	...	771	6	20	960	93	980	31
Miliary Fever.....	...	...	...	...	...	20	1	...	21	...
Mumps .....	...	12	...	12	...	...	16	...	16	...
Dysentery :—										
(a) Amœbic	4	60	...	64	...	24	432	77	456	8
(b) Bacillary .....	...	88	3	88	...	4	154	38	158	1
(c) Undefined or due to other causes .....	...	19	...	19	...	...	2	...	2	1
Leprosy	2	13	4	15	3	...	12	...	12	...
Erysipelas .....	...	4	...	4	...	...	28	1	28	2
Acute Poliomyelitis .....	...	2	...	2	...	...	2	...	2	...
Encephalitis Lethargica .....	...	2	...	2	...	...	1	...	1	...
Epidemic Cerebro-spinal Fever .....	...	12	5	12	2	1	119	47	120	...
Other Epidemic Diseases :—										
(a) Rubeola (German measles)...	...	2	...	2	...	...	...	...	...	...
(b) Varicella (Chicken-pox).....	...	10	...	10	...	...	...	...	...	...
(c) Dengue.....	2	12	...	14	...	...	18	...	18	...
(d) Yaws .....	...	...	...	...	...	...	1	...	1	...
Rabies .....	...	2	2	2	...	...	...	...	...	...
Tetanus .....	...	6	6	6	...	...	26	17	26	...
Mycosis .....	...	...	...	...	...	...	5	...	5	...
Glandular Fever.....	...	1	...	1	1	...	...	...	...	...
<i>Carried forward.....</i>	31	1,626	49	1,657	24	100	3,122	612	3,222	79

Return of Diseases and Deaths (In-Patients) for the Year 1933.

APPENDIX E.

APPENDIX F.

Diseases.	GOVERNMENT HOSPITALS.					CHINESE HOSPITALS.				
	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.
		Admis- sions.	Deaths.				Admis- sions.	Deaths.		
<i>Brought forward</i>	31	1,626	49	1,657	24	100	3,122	612	3,222	79
<i>I.—Epidemic, Endemic, and Infectious Diseases,—(Continued.)</i>										
Tuberculosis Pulmonary and Laryngeal	14	240	45	254 ⁶⁹ 12	12	83	2,005	1,220	2,088 ⁷⁹ 85	85
Tuberculosis of the Meninges or Central Nervous System	1	14	13	15	...	17	181	106	198	...
Tuberculosis of the Intestines or Peritoneum .....	...	7	2	7	...	8	44	18	52	1
Tuberculosis of the Vertebral Column	2	9	...	11	1	4	24	2	28	...
Tuberculosis of Bones and Joints.....	5	20	1	25	5	...	38	4	38	3
Tuberculosis of other organs :—										
(a) Skin or Subcutaneous Tissue (Lupus) .....	...	5	...	5	...	...	19	...	19	...
(b) Bones	1	1	...	1	...	...	5	...	5	...
(c) Lymphatic System	3	26	...	29	2	3	110	14	113	7
(d) Genito-urinary.....	...	3	...	3	1	...	10	3	10	...
(e) Other organs .....	...	...	...	...	...	...	12	1	12	...
Tuberculosis disseminated :—										
(a) Acute .....	...	8	8	8	...	...	73	52	73	...
(b) Chronic.....	...	...	...	...	...	...	...	...	...	...
Syphilis :—										
(a) Primary	5	57	...	62	6	20	53	...	73	...
(b) Secondary.....	3	17	...	20	1	...	66	...	66	3
(c) Tertiary	3	9	...	12	1	14	169	87	183	9
(d) Hereditary .....	...	1	...	1	...	1	8	...	9	...
(e) Period not indicated .....	...	...	...	...	...	3	...	...	3	...
Soft Chancre .....	...	189	...	189	1	...	6	...	6	...
Gonorrhœa and its complications	1	251	...	252	3	5	41	...	46	...
Gonorrhœal Ophthalmia .....	...	3	...	3	1	...	5	...	5	...
Gonorrhœal Arthritis	1	13	...	14	1	...	22	...	22	...
Granuloma Venereum .....	...	4	...	4	...	...	2	...	2	...
<i>Carried forward.....</i>	70	2,503	118	2,572	59	258	6,015	2,127	6,273	187

Return of Diseases and Deaths (In-Patients) for the Year 1933.

APPENDIX E.

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Diseases.	GOVERNMENT HOSPITALS.					CHINESE HOSPITALS.				
	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.
		Admis- sions.	Deaths.				Admis- sions.	Deaths.		
<i>Brought forward.....</i>	70	2,503	118	2,572	59	258	6,015	2,127	6,273	187
<i>I.—Epidemic, Endemic and Infectious Diseases,—(Continued).</i>										
Septicæmia .....	...	6	5	6	...	13	4	3	17	...
Other Infectious Diseases :—										
Filariasis .....	...	4	...	4	...	...	6	...	6	...
<i>II.—General Diseases not mentioned above.</i>										
Cancer or other malignant Tumours of the Buccal Cavity.....	3	24	7	27	8	...	33	15	33	...
Cancer or other malignant Tumours of the Stomach or Liver .....	...	11	3	11	1	...	20	9	20	3
Cancer or other malignant Tumours of the Peritoneum Intestines, Rectum .....	...	3	1	3	2	...	11	4	11	...
Cancer or other malignant Tumours of the Female Genital Organs ...	2	6	2	8	3	1	13	4	14	1
Cancer or other malignant Tumours of the Breast	2	11	1	13	3	...	22	1	22	4
Cancer or other malignant Tumours of the Skin	4	8	...	12	...	...	4	3	4	...
Cancer or other malignant Tumours of Organs not specified .....	...	7	1	7	...	...	4	...	4	...
Tumours non-Malignant	4	93	4	97	3	...	15	...	15	...
Acute Rheumatism.....	1	34	...	35	2	...	1	...	1	...
Chronic Rheumatism .....	...	33	...	33	...	8	32	4	40	5
Scurvy (including Barlow's Disease) .	...	1	...	1	...	...	...	...	...	...
Beri-Beri	3	67	3 ✓	70 ✓	1	97	649	220 ✓	746 ✓	29
Diabetes (not including Insipidus) ...	...	13	2	13	...	...	2	...	2	..
Anæmia :—										
(a) Pernicious .....	...	2	1	2	1	...	...	...	...	...
(b) Other Anæmias & Chlorosis	2	25	...	27	...	4	145	22	149	5
<i>Carried forward.....</i>	91	2,851	148	2,941	83	381	6,976	2,412	7,357	234

Return of Diseases and Deaths (In-Patients) for the Year 1933.

APPENDIX E.

APPENDIX F.

Diseases.	GOVERNMENT HOSPITALS.					CHINESE HOSPITALS.				
	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.
		Admis- sions.	Deaths.				Admis- sions.	Deaths.		
<i>Brought forward.....</i>	91	2,851	148	2,941	85	381	6,976	2,412	7,357	234
II.—General Diseases not mentioned above,— (Continued).										
Diseases of the Pituitary Body.....	...	...	...	...	...	...	...	...	...	...
Diseases of the Thyroid Gland.....	...	...	...	...	...	...	...	...	...	...
(a) Exophthalmic Goitre	1	12	1	12	...	...	4	...	4	...
(b) Other diseases of the Thyroid Gland, Myxœdema.....	...	...	...	...	...	...	3	...	3	...
Diseases of the Supra-Renal Glands .	...	...	...	...	...	...	1	...	1	...
Diseases of the Spleen	1	1	...	2	...	...	5	...	5	...
Leukæmia :—										
(a) Leukæmia .....	...	5	2	5	1	...	...	...	...	...
Alcoholism	1	29	1	30	...	...	1	...	1	...
Chronic poisoning by mineral sub- stances (lead, mercury, &c.).....	...	6	...	6	...	...	...	...	...	...
Chronic poisoning by organic sub- stances (Morphia, Cocaine, &c.)...	2	178	...	180	2	...	184	...	184	13
Other General Diseases :—										
Auto-intoxication .....	...	1	...	1	...	...	...	...	...	...
Hæmophilia.....	...	...	...	...	...	...	1	...	1	...
Diabetes Insipidus .....	...	...	...	...	...	...	3	3	3	...
III.—Affections of the Nervous System and Organs of the Senses.										
Encephalitis (not including En- cephalitis Lethargica) .....	...	...	...	...	...	...	...	...	...	...
Meningitis (not including Tuberculous Meningitis or Cerebro-spinal Meningitis).....	...	6	2	6	...	2	84	44	86	...
Locomotor Ataxia	2	15	2	17	1	...	8	4	8	...
Other affections of the Spinal Cord ...	1	9	...	10	1	...	17	9	17	...
<i>Carried forward.....</i>	99	3,113	156	3,210	90	383	7,287	2,472	7,670	247

Return of Diseases and Deaths (In-Patients) for the Year 1933.

APPENDIX F.

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Diseases.	GOVERNMENT HOSPITALS.					CHINESE HOSPITALS.				
	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.
		Admis- sions.	Deaths.				Admis- sions.	Deaths.		
<i>Brought forward.....</i>	99	3,113	156	3,210	90	383	7,287	2,472	7,670	247
III.—Affections of the Nervous System and Organs of the Senses,— <i>(Continued).</i>										
Apoplexy :—										
(a) Hæmorrhage	3	12	14	15	...	16	109	82	125	20
(b) Embolism .....	...	1	1	1	...	...	1	...	1	...
(c) Thrombosis .....	...	2	1	2	...	1	8	..	9	...
Paralysis :—										
(a) Hemiplegia .....	...	19	...	19	3	1	90	32	91	6
(b) Other Paralyses .....	...	8	...	8	2	...	8	...	8	...
General Paralysis of the Insane .....	...	2	...	2	...	...	10	8	10	...
Other forms of Mental Alienation.....	...	20	...	20	1	...	8	...	8	...
Epilepsy .....	...	21	...	21	...	3	50	8	53	1
Insomnia .....	...	6	...	6	...	...	...	...	...	...
Eclampsia, Convulsions (non-puer- peral) 5 years or over .....	...	1	...	1	...	...	3	1	3	...
Infantile Convulsions .....	...	1	...	1	...	3	73	16	76	...
Hysteria .....	...	2	...	2	...	...	6	...	6	...
Neuritis	2	55	...	57	3	56	1,729	159	1,785	97
Neurasthenia .....	...	12	...	12	...	...	4	...	4	...
Other affections of the Nervous System such as Paralysis Agitans..	...	3	...	3	...	...	3	2	3	...
Affections of the Organs of Vision :—										
(a) Diseases of the Eye .....	...	...	...	...	...	...	212	...	212	17
(b) Conjunctivitis	2	36	...	38	1	3	130	...	133	5
(c) Trachoma.....	...	11	...	11	...	4	376	...	380	22
(d) Tumours of the Eye .....	...	...	...	...	...	...	14	...	14	6
(e) Other affections of the Eye...	1	22	...	23	1	...	12	...	12	...
Affections of the Ear or Mastoid Sinus..	1	46	...	47	1	...	18	1	18	1
IV.—Affections of the Circulatory System.										
Pericarditis .....	...	3	...	3	...	...	...	...	...	...
Acute Endocarditis or Myocarditis ...	2	5	2	7	2	8	147	102	155	...
Angina Pectoris.....	...	1	...	1	...	...	...	...	...	...
<i>Carried forward.....</i>	110	3,402	174	3,510	104	478	10,298	2,883	10,776	422

Return of Diseases and Deaths (In-Patients) for the Year 1933.

APPENDIX E.

APPENDIX F.

Diseases.	GOVERNMENT HOSPITALS.				CHINESE HOSPITALS.					
	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.
		Admis- sions.	Deaths.				Admis- sions.	Deaths.		
<i>Brought forward.....</i>	110	3,402	174	3,510	104	478	10,298	2,883	10,776	422
<i>IV.—Affections of the Circulatory System,—(Continued).</i>										
Other Diseases of the Heart :—										
(a) Valvular	1	2	...	3	...	...	...	...	...	...
Mitral	3	36	7	39	5	3	254	122	257	11
Aortic	2	6	1	8	2	1	45	8	46	...
Tricuspid.....	...	...	...	...	...	...	20	2	20	...
Pulmonary .....	...	...	...	...	...	7	27	18	34	1
(b) Myocarditis	2	20	5	22	1	4	106	70	110	4
Diseases of the Arteries :—										
(a) Aneurism .....	...	5	...	5	...	...	5	3	5	...
(b) Arterio-Sclerosis .....	...	...	...	...	...	...	19	4	19	...
(c) Other diseases.....	...	1	...	1	...	...	...	...	...	...
Embolism or Thrombosis(non-cerebral)	...	2	1	2	...	...	...	...	...	...
Diseases of the Veins :—										
Hæmorrhoids	3	45	...	48	1	5	71	...	76	...
Varicose Veins	2	9	...	11	...	...	1	...	1	...
Phlebitis .....	...	1	...	1	...	...	...	...	...	...
Diseases of the Lymphatic System:—										
Lymphangitis.....	...	13	...	13	...	1	13	...	14	...
Lymphadenitis, Bubo (non-specific)	3	18	...	21	1	1	28	...	29	2
Hæmorrhage of undetermined cause...	...	2	...	2	...	...	...	...	..	...
Other affections of the Circulatory System .....	...	6	...	6	...	...	...	...	...	...
<i>V.—Affections of the Respiratory System.</i>										
Diseases of the Nasal Passages.....										
Adenoids .....	...	10	...	10	...	...	13	...	13	1
Polypus .....	...	8	...	8	...	...	5	...	5	...
Polypus .....	...	21	...	21	...	...	7	...	7	...
<i>Carried forward.....</i>	126	3,607	188	3,731	114	500	10,912	3,110	11,412	441

Return of Diseases and Deaths (In-Patients) for the Year 1933.

APPENDIX E.

APPENDIX F.

Diseases.	GOVERNMENT HOSPITALS.					CHINESE HOSPITALS.				
	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.
		Admis- sions.	Deaths.				Admis- sions.	Deaths.		
<i>Brought forward.....</i>	126	3,607	188	3,731	114	500	10,912	3,110	11,412	441
<i>V.—Affections of the Respiratory System,—(Continued).</i>										
Diseases of the Nasal Passages,— <i>Contd.</i>										
Rhinitis .....	...	5	...	5	...	...	10	...	10	...
Coryza.....	...	11	...	11	...	...	...	...	...	...
Affections of the Larynx :—										
Laryngitis .....	...	14	...	14	1	...	27	...	27	7
Bronchitis :—										
(a) Acute	3	123	...	126	2	77	898	157	975	8
(b) Chronic.....	...	207	...	207	1	41	1,195	236	1,236	34
Broncho-Pneumonia	2	105	34	107	1	52	1,233	889	1,285	12
Pneumonia :—										
(a) Lobar	2	99	22	101	3	65	751	480	816	11
(b) Unclassified .....	...	5	...	5	...	...	...	...	...	...
Pleurisy, Empyema	2	38	1	40	2	2	123	10	125	5
Gangrene of the Lungs .....	...	...	...	...	...	...	1	1	1	...
Asthma	1	127	...	128	...	21	272	44	293	12
Pulmonary Emphysema.....	...	...	...	...	...	...	6	...	6	...
Other affections of the Lungs—										
Pulmonary Spirochaetosis.....	1	...	...	1	...	...	...	...	...	...
<i>VI.—Diseases of the Digestive System.</i>										
Diseases of Teeth or Gums—Caries, Pyorrhœa, &c.										
.....	2	139	3	141	4	1	4	...	5	...
Other affections of the Mouth :—										
Stomatitis .....	...	17	...	17	...	...	2	...	2	...
Glossitis, &c. ....	...	12	...	12	1	1	7	...	8	...
<i>Carried forward.....</i>	139	4,509	248	4,646	129	760	15,441	4,927	16,201	530

Return of Diseases and Deaths (In-Patients) for the Year 1933.

APPENDIX E.

APPENDIX F.

Diseases.	GOVERNMENT HOSPITALS.				CHINESE HOSPITALS.					
	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.
		Admis- sions.	Deaths.				Admis- sions.	Deaths.		
<i>Brought forward.....</i>	139	4,509	248	4,646	129	760	15,441	4,927	16,201	530
<i>VI.—Diseases of the Digestive System,—(Continued).</i>										
Affections of the Pharynx or Tonsils:—										
Tonsillitis	3	160	...	163	1	3	72	1	75	...
Pharyngitis	1	18	...	19	...	...	7	...	7	...
Affections of the Oesophagus										
Ulcer of the Stomach	2	26	1	28	2	1	5	2	6	...
Ulcer of the Duodenum.....	...	13	...	13	...	...	4	1	4	...
Other affections of the Stomach:—										
Gastritis	2	59	...	61	2	32	371	48	403	12
Dyspepsia, &c. ....	...	27	...	27	1	29	366	19	395	7
Diarrhœa and Enteritis:—										
Under two years .....	...	108	20	108	1	53	1,000	555	1,053	15
Diarrhœa and Enteritis:—										
Two years and over	1	235	...	236	2	2	490	175	492	17
Colitis	1	12	...	13	...	1	409	165	410	11
Ulceration .....	...	...	...	...	...	21	226	25	247	3
Sprue .....	...	4	...	4	...	...	...	...	...	...
Ankylostomiasis.....	2	19	...	21	1	2	28	7	30	...
Diseases due to Intestinal Parasites:—										
(a) Cestoda (Tænia) .....	...	3	...	3	...	1	29	...	30	1
(b) Trematoda (Flukes).....	...	10	...	10	...	...	...	...	...	...
(c) Nematoda (other than Ankylostoma):—										
Ascaris .....	...	27	...	27	...	...	29	...	29	...
Oxyuris .....	...	...	...	...	...	...	2	...	2	...
(d) Other parasites	1	...	...	1	...	...	...	...	...	...
(e) Unclassified .....	...	...	...	...	...	...	1	...	1	...
Appendicitis	4	48	2	52	5	2	34	12	36	...
Hernia.....	4	34	...	38	3	...	57	2	57	1
Affections of the Anus, Fistula, &c.	5	26	...	31	2	...	30	...	30	3
<i>Carried forward.....</i>	165	5,349	271	5,512	149	907	18,601	5,939	19,508	600

Return of Diseases and Deaths (In-Patients) for the Year 1933.

APPENDIX E.

APPENDIX F.

Diseases.	GOVERNMENT HOSPITALS.					CHINESE HOSPITALS.				
	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.
		Admis- sions.	Deaths.				Admis- sions.	Deaths.		
<i>Brought forward.....</i>	165	5,349	271	5,512	149	907	18,601	5,939	19,508	600
<i>VI.— Diseases of the Digestive System,—(Continued).</i>										
Other affections of the Intestines :—										
Enteroptosis .....	...	...	...	...	...	...	...	...	...	...
Constipation .....	...	190	...	190	2	...	179	1	179	4
Cirrhosis of the Liver :—										
(a) Alcoholic	1	...	...	1	...	1	87	46	88	6
(b) Other forms .....	...	19	2	19	...	...	2	...	2	...
Biliary Calculus	1	8	1	9	1	...	...	...	...	...
Other affections of the Liver :—										
Abscess .....	...	3	...	3	1	...	3	1	3	...
Hepatitis.....	...	2	...	2	...	...	3	...	3	...
Cholecystitis	1	10	...	11	...	...	30	6	30	...
Jaundice .....	...	13	...	13	...	...	34	2	34	...
Diseases of the Pancreas .....	...	...	...	...	...	1	...	...	1	...
Peritonitis (of unknown cause).....	...	9	2	9	2	...	...	...	...	...
Other affections of the Digestive System .....	...	12	...	12	...	...	80	3	86	...
<i>VII.— Diseases of the Genito-urinary System (non-Veneral).</i>										
Acute Nephritis .....	...	7	1	7	...	30	792	152	822	29
Chronic .....	...	127	11	127	3	37	663	208	700	7
Chyluria .....	...	...	...	...	...	...	4	...	4	...
Schistosomiasis .....	...	...	...	...	...	...	...	...	...	...
Other affections of the Kidneys,										
Pyelitis, &c.	3	18	1	21	3	...	3	2	3	...
Urinary Calculus	4	33	1	37	3	...	54	...	54	2
Diseases of the Bladder :—										
Cystitis .....	...	23	...	23	2	1	23	2	24	...
<i>Carried forward.....</i>	175	5,823	290	5,996	166	977	20,558	6,362	21,535	648

Return of Diseases and Deaths (In-Patients) for the Year 1933.

APPENDIX E.

APPENDIX F.

Diseases.	GOVERNMENT HOSPITALS.				CHINESE HOSPITALS.					
	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.
		Admis- sions.	Deaths.				Admis- sions.	Deaths.		
<i>Brought forward.....</i>	175	5,823	290	5,996	166	977	20,558	6,362	21,535	648
<i>VII.— Diseases of the Genito-urinary System (non-Venereal),—(Contd.)</i>										
Diseases of the Urethra :—										
(a) Stricture	3	23	...	26	...	...	56	3	56	2
(b) Other .....	...	1	1	1	...	...	70	2	70	...
Diseases of the Prostate :—										
Hypertrophy	2	3	1	5	2	...	5	...	5	...
Prostatitis .....	...	...	...	...	...	...	3	...	3	...
Diseases (non-Venereal) of the Genital Organs of Man :—										
Orchitis	1	10	...	11	...	...	17	...	17	...
Hydrocele .....	...	3	...	3	...	...	11	...	11	1
Ulcer of Penis	4	8	...	12	...	...	26	...	26	...
Phymosis .....	...	23	...	23	1	...	8	...	8	...
Cysts or other non-malignant Tumours of the Ovaries.....	2	23	1	25	2	...	41	...	41	...
Salpingitis :—										
Abscess of the Pelvis.....	...	34	...	34	1	1	23	2	24	1
Uterine Tumours (non-malignant) ...	...	16	...	16	...	...	6	...	6	...
Uterine Hæmorrhage (non-puerperal)..	...	5	...	5	...	...	1	...	1	...
Metritis	2	59	...	61	3	...	7	1	7	...
Other affections of the Female Genital Organs.....										
Displacements of Uterus	2	7	...	9	1	...	...	...	...	...
Amenorrhœa	2	37	...	39	...	1	13	...	14	...
Dysmenorrhœa .....	...	2	...	2	...	2	21	1	23	...
Leucorrhœa.....	...	4	...	4	...	1	21	...	22	1
...	...	2	...	2	...	...	22	1	22	...
Diseases of the Breast (non-puerperal :—										
Mastitis .....	...	3	...	3	...	...	19	...	19	...
Abscess of Breast .....	...	11	...	11	...	1	16	...	17	1
<i>Carried forward.....</i>	193	6,097	293	6,288	176	983	20,944	6,372	21,927	654

Return of Diseases and Deaths (In-Patients) for the Year 1933.

APPENDIX E.

APPENDIX F.

Diseases.	GOVERNMENT HOSPITALS.					CHINESE HOSPITALS.				
	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.
		Admis- sions.	Deaths.				Admis- sions.	Deaths.		
<i>Brought forward.....</i>	193	6,097	293	6,288	176	983	20,944	6,372	21,927	654
<i>VIII.—Puerperal State.</i>										
Normal Labour	29	921	2	950	21	37	6,128	...	6,165	64
Accident of Pregnancy .....	...	3	...	3	...	...	...	...	...	...
(a) Abortion .....	...	28	1	28	...	...	65	...	65	...
(b) Ectopic Gestation	1	6	...	7	...	...	6	2	6	...
(c) Other accidents of Pregnancy .....	...	5	...	5	1	...	159	8	159	...
Puerperal Hæmorrhage .....	...	...	...	...	...	...	24	3	24	...
Other accidents of Parturition .....	...	2	...	2	...	...	35	...	35	...
Puerperal Septicæmia .....	...	...	...	...	...	...	25	12	25	...
Phlegmasia Dolens.....	...	...	...	...	...	...	21	1	21	...
Puerperal Eclampsia .....	...	...	...	...	...	...	33	2	33	...
Sequelæ of Labour.....	...	6	...	6	...	...	2	...	2	...
Not in Labour .....	...	100	...	100	...	...	...	...	...	...
<i>IX.—Affections of the Skin and Cellular Tissues.</i>										
Gangrene .....	...	15	...	15	...	...	25	8	25	...
Boil	1	44	...	45	1	...	...	...	...	...
Carbuncle	1	45	...	46	...	3	122	20	125	1
Abscess .....	...	137	...	137	4	...	200	...	200	...
Whitlow	7	33	...	40	...	18	527	17	545	13
Cellulitis	10	299	...	309	12	18	573	36	591	50
Other Diseases of the Skin .....	...	37	...	37	...	...	...	...	...	...
Tinea .....	...	15	...	15	...	22	18	...	40	...
Scabies .....	...	23	...	23	...	1	92	...	93	...
Erythema .....	...	1	...	1	...	...	...	...	...	...
Urticaria .....	...	5	...	5	...	1	19	...	20	1
Eczema	2	27	...	29	1	...	48	...	48	...
Herpes.....	...	7	...	7	...	...	...	...	...	...
Elephantiasis .....	...	22	...	22	1	...	3	...	3	...
Dermatitis .....	...	24	...	24	1	...	...	...	...	...
<i>Carried forward.....</i>	244	7,902	296	8,144	218	1,083	29,069	6,481	30,152	783

Return of Diseases and Deaths (In-Patients) for the Year 1933.

APPENDIX E.

APPENDIX F.

Diseases.	GOVERNMENT HOSPITALS.					CHINESE HOSPITALS.				
	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.
		Admis- sions.	Deaths.				Admis- sions.	Deaths.		
<i>Brought forward.....</i>	244	7,902	296	8,144	218	1,083	29,069	6,481	30,152	783
<i>X.—Diseases of Bones and Organs of Locomotion (other than Tuberculosis).</i>										
Diseases of Bones :—										
Osteitis	1	13	...	14	2	...	...	...	...	...
Diseases of Joints :—										
Arthritis	3	33	...	36	3	6	176	2	182	6
Synovitis .....	...	24	...	24	...	...	10	...	10	...
Other Diseases of Bones or Organs of Locomotion.....	...	7	...	7	1	...	1	...	1	...
<i>XI.—Malformations.</i>										
Malformations.....	...	5	1	5	...	...	...	...	...	...
Hydrocephielas	1	2	2	3	...	...	...	...	...	...
Hypospadias .....	...	2	...	2	...	...	...	...	...	...
Spina Bifida, &c.	4	...	...	4	...	...	6	5	6	...
Cleft Palate .....	...	4	...	4	...	...	...	...	...	...
Harelip .....	...	7	...	7	...	...	6	...	6	...
Cleft Palate and Harelip com- bined .....	...	3	...	3	...	...	...	...	...	...
Supernumary digits .....	...	2	...	2	...	...	...	...	...	...
Congenital cardiac Disease .....	...	1	...	1	...	...	...	...	...	...
Congenital Talipes.....	...	6	...	6	2	...	1	...	1	...
<i>XII.—Diseases of Infancy.</i>										
Congenital Debility .....	...	...	...	...	...	10	116	97	126	2
Premature Birth.....	...	...	...	...	...	...	38	26	38	...
Other affections of Infancy .....	...	4	2	4	...	...	3	3	3	...
Infant neglect (infants of three months or over) .....	...	6	...	6	1	...	...	...	...	...
<i>XIII.—Affections of Old Age.</i>										
Senility :— .....	...	...	...	...	...	...	46	34	46	...
Senile Dementia.....	1	8	1	9	2	2	372	123	374	14
<i>Carried forward.....</i>	254	8,029	302	8,281	229	1,101	29,844	6,771	30,945	805

Return of Diseases and Deaths (In-Patients) for the Year 1933.

APPENDIX E.

APPENDIX F.

Diseases.	GOVERNMENT HOSPITALS.					CHINESE HOSPITALS.				
	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.
		Admis- sions.	Deaths.				Admis- sions.	Deaths.		
<i>Brought forward.....</i>	254	8,029	302	8,281	229	1,101	29,844	6,771	30,945	805
<i>XIV.—Affections produced by External Causes.</i>										
Suicide by Poisoning.....	...	51	13	51	...	...	31	2	31	...
Corrosive Poisoning (intentional).....	...	14	4	14	...	...	8	1	8	...
Suicide by Hanging or Strangulation.....	...	2	1	2	...	...	...	...	...	...
Suicide by Drowning.....	...	60	...	60	...	...	...	...	...	...
Suicide by cutting or stabbing										
Instruments.....	...	3	2	3	...	...	...	...	...	...
Other Suicides.....	...	3	...	3	...	...	...	...	...	...
Food Poisoning .....	...	29	1	29	...	...	...	...	...	...
Attacks of poisonous animals:—										
Snake Bite .....	...	2	...	2	...	...	...	...	...	...
Insect Bite .....	...	...	...	...	...	...	6	...	6	...
Other accidental Poisonings .....	...	11	...	11	1	...	...	...	...	...
Burns (by Fire)	3	72	3	75	1	...	28	3	28	...
Burns (other than by Fire)	3	21	5	21	1	12	25	2	37	1
Scalds .....	...	19	1	19	...	...	...	...	...	...
Poisoning by Gas (accidental) .....	...	1	...	1	...	...	...	...	...	...
Drowning (accidental) .....	...	5	1	5	...	...	...	...	...	...
Wounds (by Firearms, war excepted)... ..	1	16	1	17	...	...	...	...	...	...
Wounds (by cutting or stabbing										
Instruments)	4	86	...	72	4	24	70	...	94	...
Wounds (by Fall)	1	45	...	46	...	7	64	...	71	...
Wounds (in Mines or Quarries) .....	...	2	...	2	...	...	2	...	2	...
Wounds (by Machinery) .....	...	12	...	12	2	...	44	...	44	...
Wounds (crushing, e.g. railway accidents, &c.)	6	34	13	40	3	...	96	...	96	...
Injuries inflicted by Animals, Bites, Kicks, &c. ....	...	10	1	10	...	...	2	...	2	...
Exposure to Heat:—										
Heatstroke .....	...	3	...	3	...	...	...	...	...	...
Murder by Firearms .....	...	1	...	1	...	...	...	...	...	...
<i>Carried forward.....</i>	272	8,531	348	8,780	241	1,144	30,220	6,779	31,364	806

Return of Diseases and Deaths (In-Patients) for the Year 1933.

APPENDIX E.

APPENDIX F.

Diseases.	GOVERNMENT HOSPITALS.				CHINESE HOSPITALS.					
	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.	Remain- ing in Hospital at end of 1932.	Yearly Total.		Total Cases Treated.	Remain- ing in Hospital at end of 1933.
		Admis- sions.	Deaths.				Admis- sions.	Deaths.		
<i>Brought forward.....</i>	272	8,531	348	8,780	241	1,144	30,220	6,779	31,364	806
<i>XIV.—Affections produced by External Causes,—(Continued).</i>										
Dislocation	1	33	...	34	3	2	62	...	64	...
Sprain .....	...	14	...	14	1	6	164	...	170	4
Fracture	8	233	16	241	24	23	117	3	140	15
Other external Injuries	13	807	53	820	20	16	45	3	61	17
<i>XV.—Ill-Defined Diseases.</i>										
Diseases not already specified or ill-defined :—										
Ascites	1	4	...	5	...	8	112	4	120	10
Edema .....	...	2	...	2	...	1	...	...	1	...
Asthenia .....	...	16	...	16	...	...	...	...	...	...
Shock .....	...	...	...	...	...	...	1	1	1	...
Hyperpyrexia .....	...	1	1	1	...	...	15	1	15	...
Pyrexia of Unkown Origin .....	...	145	...	145	...	...	44	1	44	...
Malingèring .....	...	15	...	15	...	...	179	...	179	...
Under Observation	1	378	...	379	2	...	146	...	146	...
In Attendance .....	...	32	...	32	1	...	...	...	...	...
Opium Addicts .....	...	72	...	72	...	...	...	...	...	...
Special X—Ray Examinations.....	...	98	...	98	...	...	...	...	...	...
Rape .....	...	1	...	1	...	...	...	...	...	...
TOTAL.....	296	10,382	418	10,655	292	1,200	31,105	6,792	32,305	852

APPENDIX G.

Mortuaries—Return of Diseases for the year 1933.

Diseases.	Male.	Female.
<i>I.—Epidemic, Endemic, and Infectious Diseases.</i>		
Malaria:—		
(a) Sub-Tertian	7	2
(b) Unspecified	1	...
Smallpox	182	210
Diphtheria.....	2	5
Influenza	2	...
Miliary Fever .....	...	1
Dysentery:—		
(a) Bacillary	6	...
Leprosy.....	4	...
Encephalitis Lethargica	4	...
Epidemic Cerebro-spinal Fever	14	9
Tuberculosis Pulmonary and Laryngeal	225	158
Tuberculosis of the Meninges or Central Nervous System.....	12	5
Tuberculosis of the Intestines or Peritoneum	8	9
Tuberculosis of Bones and Joints ...	1	...
Tuberculosis disseminated:—		
(a) Acute	53	68
Syphilis:—		
(a) Tertiary	3	...
(b) Hereditary	12	10
<i>II.—General Diseases not mentioned above.</i>		
Cancer or other malignant Tumours of the Female Genital Organs...	...	1
Beri-beri	48	10
<i>Carried forward.....</i>	584	488

Mortuaries—Return of Diseases for the year 1933.

Diseases.	Male.	Female.
<i>Brought forward</i>	584	488
 <i>II.—General Diseases not mentioned above, (Continued).</i>		
Anæmia:—		
(a) Pernicious	1	...
Chronic poisoning by organic substances (Morphia, Cocaine, &c.)..	1	1
 <i>III.—Affections of the Nervous System and Organs of the Senses.</i>		
Meningitis not including Tuberculous Meningitis or Cerebro-spinal Meningitis	4	3
Apoplexy:—		
Hæmorrhage.....	1	1
 <i>IV.—Affections of the Circulatory System.</i>		
Pericarditis	2	1
Acute Endocarditis or Myocarditis...	3	1
Other Diseases of the Heart:—		
(a) Valvular:—		
Mitral	1	...
Aortic	4	1
(b) Myocarditis	8	...
Diseases of the Arteries:—		
(a) Aneurism	13	2
(b) Arterio-Sclerosis	18	1
<i>Carried forward</i>	640	499

Mortuaries—Return of Diseases for the year 1933.

Diseases.	Male.	Female.
<i>Brought forward</i>	640	499
<i>V.— Affections of the Respiratory System.</i>		
Bronchitis:—		
(a) Acute.....	196	211
(b) Chronic	2	...
Broncho-Pneumonia	576	598
Pneumonia:—		
(a) Lobar	119	87
Pleurisy, Empyema	28	24
Gangrene of the Lungs	1	...
Pulmonary Emphysema	27	26
Other affections of the Lungs.....	1	...
<i>VI.— Diseases of the Digestive System.</i>		
Diarrhœa and Enteritis: —		
Under two years	336	346
Diarrhœa and Enteritis:—		
Two years and over.....	21	30
Appendicitis	1	...
Hernia	1	...
B.—Other affections of the intestines	1	1
Enteroptosis	1	...
Cirrhosis of the Liver:—		
(a) Other forms	2	...
Other affections of the Liver: —		
Hepatitis	4	1
Diseases of the Pancreas	1	...
Peritonitis (of unknown cause)	1	2
Other affections of the Digestive System	2	...
<i>Carried forward</i>	1,961	1,825

Mortuaries—Return of Diseases for the year 1933.

Diseases.	Male.	Female.
<i>Brought forward</i>	1,961	1,825
<i>VII.—Diseases of the Genito-urinary System (non-Venereal).</i>		
Acute Nephritis	2	6
Chronic	7	2
Other affections of the Kidneys Pyelitis, &c.	2	2
Diseases of the Bladder:—		
Cystitis	1	1
Diseases of the Urethra:—		
(a) Other	1	...
<i>VIII.—Puerperal State.</i>		
Puerperal Septicæmia .....	...	1
Puerperal Tetanus .....	...	1
<i>IX.—Affections of the Skin and Cellular Tissues.</i>		
Abscess:—		
Whitlow .....	...	2
<i>X.—Diseases of Bones and Organs of Locomotion (other than Tuberculous.)</i>		
Diseases of Bones:—		
Osteitis .....	...	1
Diseases of Joints:—		
Arthritis .....	...	1
<i>Carried forward</i>	1,974	1,842

Mortuaries—Return of Diseases for the year 1933.

Diseases.	Male.	Female.
<i>Brought forward</i>	1,974	1,842
<i>XI.—Malformations.</i>		
Malformations	1	4
<i>XII.—Diseases of Infancy.</i>		
Congenital Debility	251	321
Premature Birth	37	35
Other affections of Infancy.....	111	91
<i>XIII.—Affections produced by External Causes.</i>		
Suicide by Poisoning	2	5
Suicide by Hanging or Strangulation.	16	8
Suicide by Drowning	22	19
Suicide by Firearms.....	3	...
Suicide by cutting or stabbing Instruments	2	...
Suicide by jumping from a height ...	5	...
Attacks of poisonous animal:—		
Snake Bite	1	...
Burns (by Fire)	7	9
Burns (other than by Fire).....	4	2
Suffocation (accidental)	1	...
Drowning (accidental).....	7	3
Wounds (by cutting or stabbing Instruments).....	3	1
Wounds (by Fall).....	10	6
Wounds (by Machinery).....	31	11
Wounds (crushing, <i>e.g.</i> railway accidents, &c.)	13	3
Electric Shock	1	...
<i>Carried forward</i>	2,502	2,360

Mortuaries —Return of Diseases for the year 1933.

Diseases.	Male.	Female.
<i>Brought forward.....</i>	2,502	2,360
<i>XIII.—Affections produced by External Causes,—Continued.</i>		
Murder by Firearms.....	1	...
Murder by cutting or stabbing Instruments	1	...
Murder by other means	1	2
Fracture	5	...
Deaths by Violence of unknown cause	2	2
<i>XIV.—Ill-Defined Diseases.</i>		
Diseases not already specified or ill- defined :—		
Shock	1	...
<i>XV.—Diseases, the total of which have not caused 10 Deaths</i>		
Stillbirth (viable Foetus).....	11	13
Stillbirth (non-viable Foetus).....	14	8
Decomposed	104	84
Skeletons	2	2
<i>Total.....</i>	2,644	2,471

APPENDIX H.

REPORT OF THE REGISTRAR OF BIRTHS AND DEATHS.

The Births and Deaths Registration Ordinance of 1896, which up to 1911 applied only to the Colony Proper, was in the latter year extended to cover the New Territories.

Though applicable to the New Territories little action was taken to enforce compliance with the law until 1932 when the Director of Medical and Sanitary Services became Registrar. In the island of Cheung Chau and in the Police District of Tai O there were a considerable number of registrations but elsewhere in the New Territories there were very few and the Ordinance was more or less a dead letter.

In 1932 it was decided to make an attempt to persuade the inhabitants of the New Territories to comply with the law. The results of persuasion were negligible and it was therefore decided to prosecute for failure to comply. Prosecutions had the desired effect, and registration for the first time became the rule rather than the exception.

The paucity of registrations have up to date made it impossible to calculate death rates and birth rates for the New Territories, but such has been the success of the campaign that in 1934 it should be possible to compile the necessary statistics.

The machinery for the registration of births and deaths in Hong Kong is somewhat complicated and must be studied to be understood. There is a Registrar, and a number of Deputy Registrars. There is a general Registry Office at Medical Headquarters in Victoria. There are a number of District Registry Offices for the registration of Chinese deaths and a separate set of District Registry Offices for the registration of Chinese births. In the New Territories there are District Registrar Offices for Chinese births and deaths.

Chinese can register births and deaths in the districts in which they are living but non-Chinese whether in the New Territories, Kowloon, or on the island of Hong Kong, are obliged to register at the General Registry Office in Victoria.

Why there should be this distinction with regard to race is not clear and it is hoped to bring about a change in the law whereby all will be treated alike.

Death registration in the Colony Proper being a necessary preliminary to a permit to bury it may be taken for granted that practically all deaths are registered. Most deaths in the New Territories were not registered.

Before registering the Registrar or Assistant Registrar must be satisfied that the cause of death given is the true cause and in case of doubt it is his duty to institute or cause to be instituted immediate enquiries with a view to ascertaining the true cause of death.

The authorities certifying the cause of death are:—

- (a) the medical practitioners in attendance during the last illness whether in hospital practice, dispensary practice or private practice.
- (b) the Tung Wah Hospitals for bodies where there has been no registered medical practitioner attending.
- (c) the Medical Officer of Health for bodies found in houses and for which he is called for diagnosis.
- (d) the Coroner—for all bodies examined at the Public Mortuaries—including medico legal cases and bodies dumped in the street or left at convents for disposal.
- (e) the friends and relatives or the police in certain cases.

The following table shows the number of deaths certified by the various authorities certifying:—

RETURN OF DEATHS (1933).

Authority certifying cause of death.	Non-Chinese.		Chinese.	
	Number of Cases.	Percentage of the whole.	Number of Cases.	Percentage of the whole.
Medical Practitioner in Attendance ...	209	89.7	10,327	57.6
Medical Officer of Health	1	0.4	224	1.3
Tung Wah Hospital..	—	—	1,042	5.8
Tung Wah Eastern Hospital	—	—	413	2.3
Kwong Wah Hospital	—	—	853	4.8
Coroner from information received from the M.O. i/c Mortuaries....	23	9.9	5,069	28.2
Total.....	233	—	17,928	—

Deaths Registered in 1933.

Chinese deaths	17,928
Non-Chinese deaths	233
	18,161

The following are death registries:—

Births and Deaths Office, Medical Dept., Victoria.	
No. 2 Police Station	} Hong Kong Island [Villages.
No. 7 Police Station	
Shaukiwan Police Station	
Stanley Police Station	
Aberdeen Police Station	} Kowloon.
Kowloon Disinfecting Station	
Kowloon City Police Station	
Shamshuipo Police Station	

Classification of Non-Chinese Deaths.

British	73
American	6
French	3
Malay	6
Portuguese	37 (4 still-
Panamaian	1 [births).
Indian	66 (1 still-
Persian	1 [birth).
Swiss	2
Italian	2
German	2
Japanese	13
Peruvian	1
Australian	1
Annamite	1
Russian	1
Filipino	10
Norwegian	1
Danish	1
Polish	1
Spanish	1
Mexican	1
African	1
Eurasian	1
	233

There were 219 civilian, 7 army and 7 navy = 233 (5 still-births).

Death Registration in the New Territories.

Total of deaths registered in 19331,370

Northern Territory Registration Districts.	1931 Census Population.	No. of Deaths Registered.
Shatin	4,346	67
Taipo	12,684	196
Sha Tau Kok	8,941	98
Sheung Shui	10,208	111
Lok Ma Chau	4,377	66
Au Tau	12,877	215
Ping Shan	12,660	156
Sai Kung	7,585	85
Southern Territory Registration Districts.		
Tsun Wan	5,355	119
Cheung Chau	5,477	179
Tai O (Lantern Island)...	7,409	78

Total of population for New Territories101,276 *(Chinese)*
22 (European & other)

Births Registries.

107,248 (p. 28)

Births and Deaths Office, Medical Department
for all races.

Central Chinese Public Dispensary	}	Hong Kong Island.
Western do. do.		
Eastern do. do.		
Aberdeen do. do.		
Shaukiwan do. do.	}	Kowloon.
Yaumati do. do.		
Hung Hom do. do.		
Kowloon City do. do.		
Shamshutipo do. do.		
Stanley Police Station, Hong Kong Island.		
The above are for Chinese only.		

The total number of Chinese births registered 14,909, of which 8,230 were male and 6,679 female. There were 69 cases of late registration.

Total of Non-Chinese births 453

Classification of Non-Chinese births:—

British	206	(23)
Portuguese	59	(1)
Australian	1	
Indian	101	(2)
Dutch	2	
Romanian	1	
German	8	
Malay	9	
French	1	
American	14	(1)
Annamite	8	
Newzealander	1	
Swiss	1	
Danish	1	
Norwegian	2	
Arabian	1	
Siamese	1	
Italian	4	
Filipino	17	
Parsee	1	
Brazilian	1	
Eurasian	4	(1)
Spanish	2	
Danish	2	
Ceylonese	1	
Chilian	1	
Japanese	1	
Canadian	2	
	<hr/>	
	453	
	<hr/> <hr/>	

Classification of sex—Male 251, Female 202.

There were 28 late registration of births after 12 months.

()—Figures for late registration after 12 months.

Births Registration in the New Territories.

Total of births registered in 1933 3,380

Classification of sex—Male 1,821

Female 1,559

3,380

Northern Territory Registration Districts.	1931 Census Population.	No. of Births Registered.
Shatin	4,346	194
Taipo	12,684	466
Sha Tau Kok	8,941	244
Sheung Shiu	10,208	371
Lok Ma Chau	4,377	121
Au Tau	12,887	526
Ping Shan	12,660	313
Sai Kung	7,585	270
Southern Territory Registration Districts.		
Tsun Wan	5,355	164
Cheung Chau	5,477	538
Tai O (Lantau Island) ...	7,409	173

Total of population for New Territories.....101,276

Birth registration is not complete. Though every facility has been given for registration a considerable number of births are never registered and this is especially noticeable in the case of females.

Vaccination.

Under the Vaccination Ordinance the guardians of every child born must, unless there be a medical reason to the contrary, furnish to the Registrar of Births and Deaths a certificate of vaccination on receipt of which the Registrar must record the facts in the Births Register. Notices containing advice on this matter are handed to the parent at the time of registration, or if the person notifying be not the parent notice is sent by post.

If the necessary certificates are not received reminders are sent by post to the parents.

The non-Chinese make a good response and the majority of infants are vaccinated. The Chinese on the contrary do not make a good response and the majority of infants remain unvaccinated or at any rate uncertified. The majority of the Chinese are of course working class people who can neither read nor write English or Chinese.

Many of these people hold the belief that a child should not be vaccinated until it has experienced two Chinese New Years, which means that one born just after the New Year would be nearly two years old before the propitious time arrives.

Under the circumstances very few prosecutions are instituted for neglect to certify as to successful vaccination.

The following table shows the position in detail:—

Vaccination return for Registered Children 1933.

Registry	Brought forward from 1931 Unvaccinated.	New Birth.	Total Liable.	Vaccinated.	Dead.	Left Colony.	Cannot be found.	Had Small-pox.	Insusceptible.	Unft.	Carried forward to 1933 unvaccinated.	Total
B. & D. Non-Chinese...	62	425	487	336	—	32	25	—	2	15	79	487
B. & D. Chinese.....	69	1,015	1,084	490	1	52	57	—	—	1	483	1,084
Central Chinese	138	806	944	608	1	73	143	—	—	2	117	944
Public Dispensary ...												
Eastern Chinese												
Public Dispensary...	1,043	2,892	3,935	1,216	240	657	577	—	—	—	1,245	3,935
Western Chinese												
Public Dispensary...	1,444	1,783	3,227	1,497	—	6	234	—	—	—	1,490	3,227
Shaikiwan Chinese												
Public Dispensary...	99	590	689	283	21	10	246	—	—	1	128	689
Aberdeen Chinese												
Public Dispensary...	55	319	374	24	2	3	293	—	—	—	52	374
Shamshuipo Chinese												
Public Dispensary...	316	1,043	1,359	782	12	5	30	—	1	4	525	1,359
Hunghom Chinese												
Public Dispensary...	29	101	130	77	—	7	20	—	—	—	26	130
Kowloon City Chinese												
Public Dispensary ...	117	657	774	258	4	57	307	—	—	—	148	774
Yaumati Chinese												
Public Dispensary...	1,590	5,630	7,220	3,404	89	20	922	—	—	35	2,750	7,220
Total	4,962	15,261	20,223	8,975	370	922	2,852	—	3	58	7,043	20,223

MAP OF
HONG KONG
AND
NEW LEASED TERRITORY

Scale 1:100,000
0 1 2 3 4 5 6 7 8 Miles

KWONG-TUNG PROVINCE CHINA

Hong Kong

MIRS BAY

HAU HOI WAN OR DEEP BAY

TOLO HARBOUR

Little Island

Sau Chau

The Brothers

TRUNG I.

KOWLOON

VICTORIA HARBOUR

LANTAU

WEST

LAMMA

CHUNKI CHAN

EAST LAMMA CHANNEL

HONG KONG

TYLAW BAY

Drawn and Engaged for the Directory & Chronicle

Scale 1:100,000



MAP OF
HONG KONG
AND
NEW LEASED TERRITORY

Scale 1:50,000

