Annual report of the Public Health Department / Zanzibar Protectorate.

Zanzibar Protectorate.

Annual Report

ON THE

Medical, Sanitary and Biological Divisions

FOR THE YEAR

1927.

ZANZIBAR:

PRINTED BY THE GOVERNMENT PRINTER.

1928.

OFFICE OF THE DIRECTOR OF
MEDICAL AND SANITARY SERVICES,
Zanzibar, 7th May, 1928.

Sir,

I have the honour to submit, for the information of the British Resident and for transmission to the Right Honourable the Secretary

CORRIGENDA.

Page 4:—Lower Diagram for "tentanus" *read* "tetanus".
Page 5:—for "Total cases 107,109" *read* "Total cases 107,189".
Page 33:—1st line for "Senæ" *read* "Sense".
Page 53:—for "Pulmony" *read* "Pulmonary".
Page 85:—for "Residence" *read* "Resonance".

B. SPEARMAN,
Acting Director of Medical and Sanitary Services,
Zanzibar Protectorate.

The Honourable,
The Chief Secretary to the Government,
Zanzibar Protectorate.

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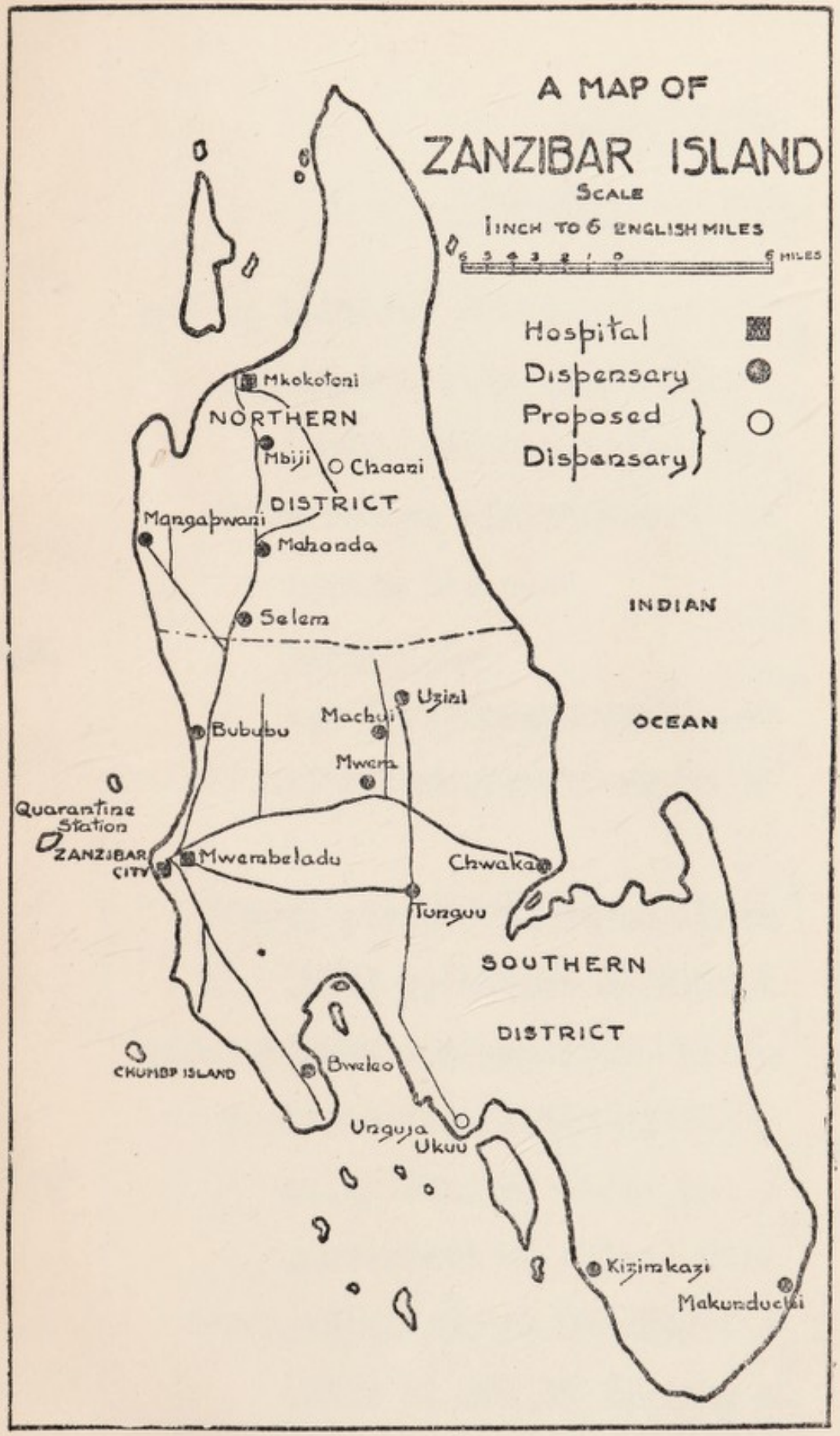
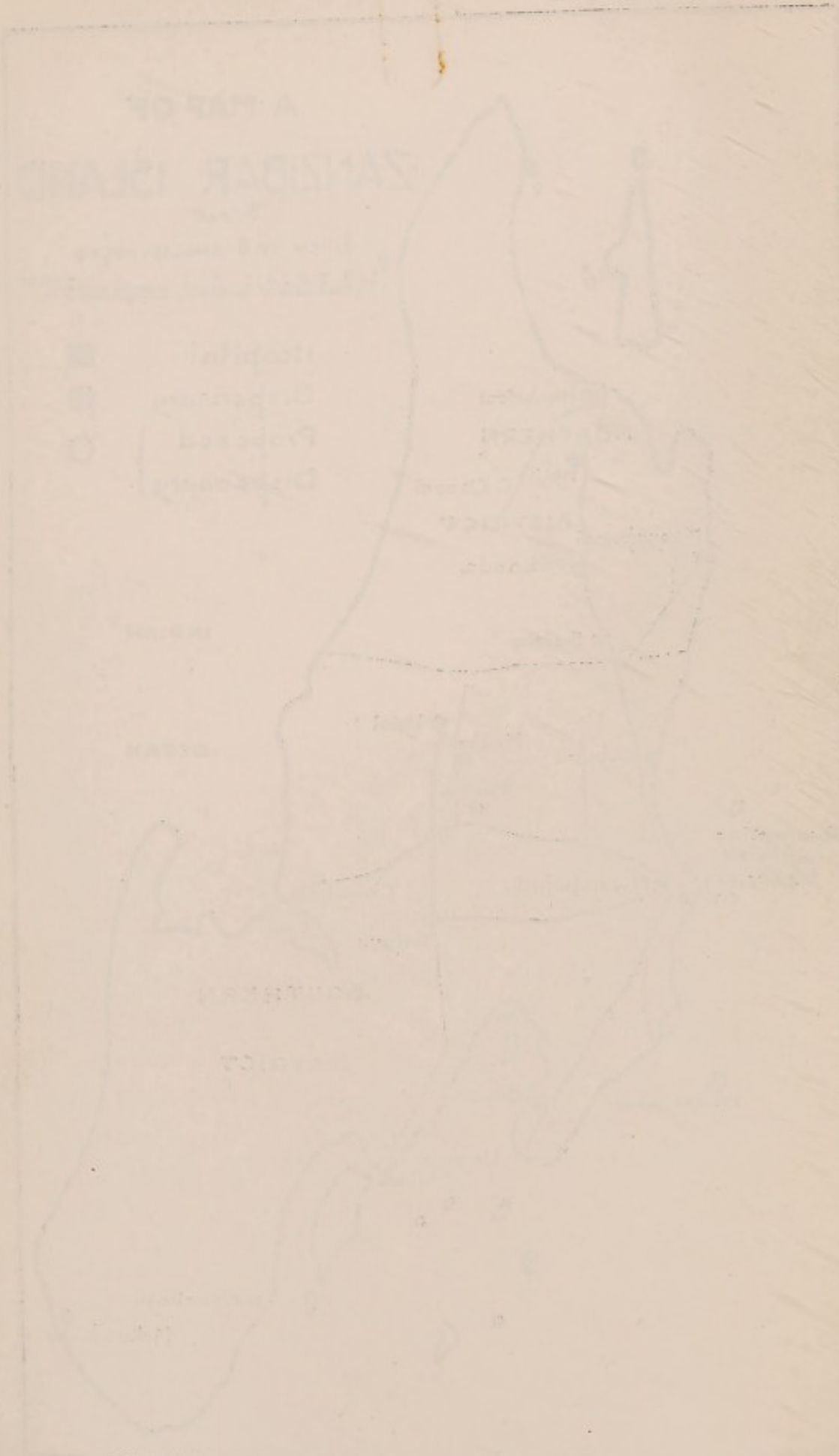

A MAP OF
ZANZIBAR ISLAND
SCALE
1 INCH TO 6 ENGLISH MILES
6 MILES
Hospital
Dispensary
Proposed Dispensary
Mkokotoni
NORTHERN
Mbiji
Chaani
DISTRICT
Mangapwani
Mahonda
Selem
INDIAN
OCEAN
Uzini
Machui
Bububu
Mwera
Quarantine Station
ZANZIBAR CITY
Mwambeladu
Chwaka
Tunguu
SOUTHERN
DISTRICT
CHUMBE ISLAND
Bweleo
Unguja Ukuu
Kizimkazi
Makunduchi



ZANZIBAR PROTECTORATE.

Medical and Sanitary Report 1927.

There is nothing very important recorded in the report. The model has been followed, maps and graphs included. The staff was at full strength. The Director of Medical and Sanitary Services was on leave during the year.

P.3. Financial.

The medical and sanitary expenditure was 8.83% of the actual revenue of the Protectorate for the year.

P.7. Smallpox was prevalent during the year 50 cases with 19 deaths against 53 cases with 15 deaths in 1926.

General education is spreading and consequently there is a gradual improvement in sanitary conditions but it is very uphill work and there is much to be done. The standard of public health is improving.

P.8. 107,189 cases were treated at Government hospitals and dispensaries against 76,585 in 1926. Skin affections are very common, only 8 cases of cancer were reported.

P.9. Malaria.

5,714 cases were treated against 4,808 in 1926. There were 3 cases of Blackwater fever with no deaths.

P.11. Tuberculosis.

The question of Sanatorium treatment is under consideration.

P.12. Vital statistics.

The estimated population is 202,665. Crude death rate 20.6 per mille against 23.1 in 1926. The figures are unreliable as also the birth rate. It is hoped that a fair degree of accuracy may be arrived at

at in future years and the infant mortality estimated.

P.16. Sanitation.

A very considerable amount of anti-malarial work was undertaken, this has been taken over by the Sanitary Department from the Biological Division.

P.20. The vaccination campaign was continued, 37,533 persons were vaccinated.

No case of plague occurred.

P.22. Ankylostomiasis was common. 70% cases examined proved positive.

Schistosomiasis is more prevalent than was realized.

P.30. A school clinic did good work. 1,895 children were treated.

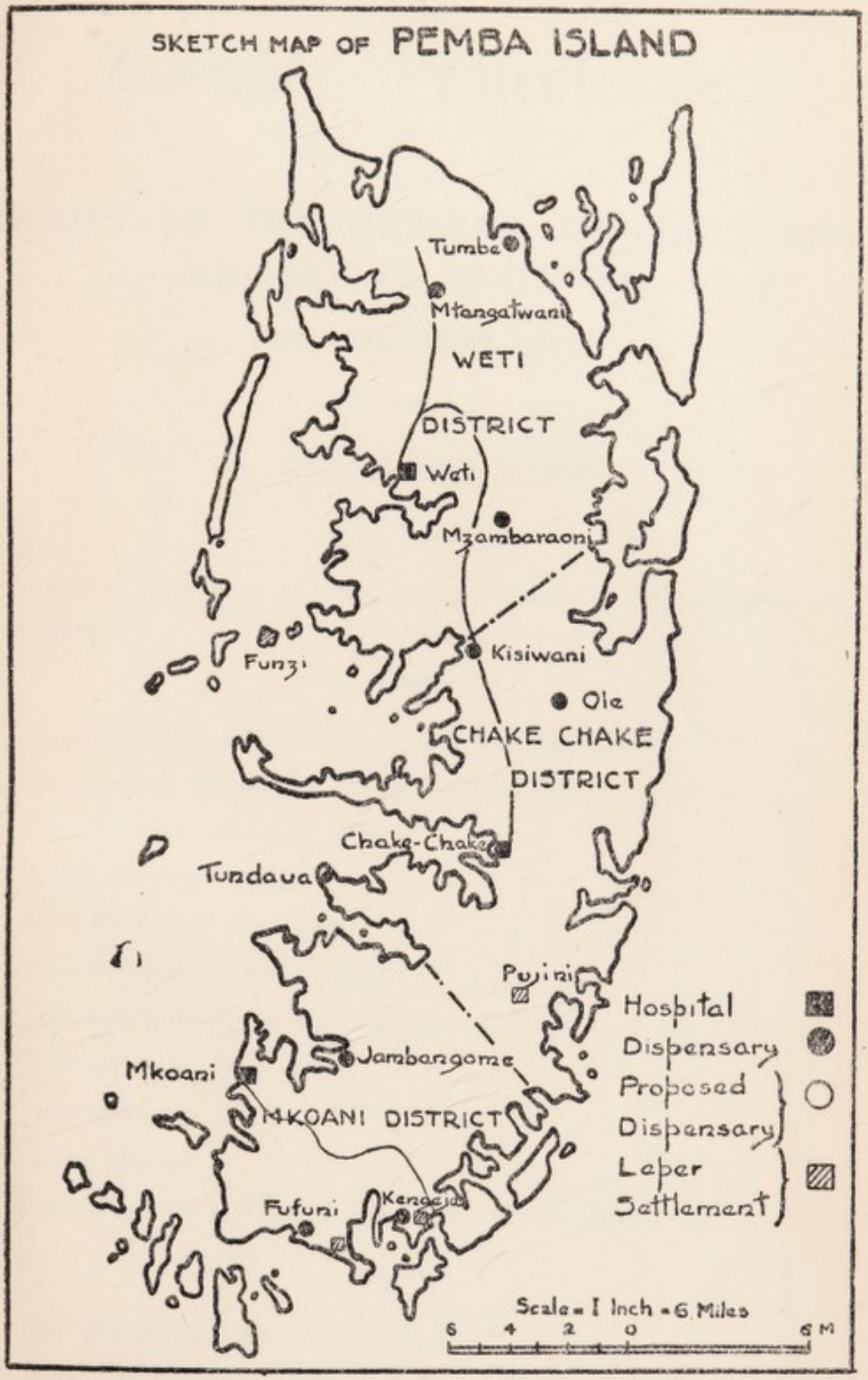
P.33. Elementary lectures in tropical hygiene and public health demonstrations by Dr. A.H.Spurrier and the Economic Biologist were given.

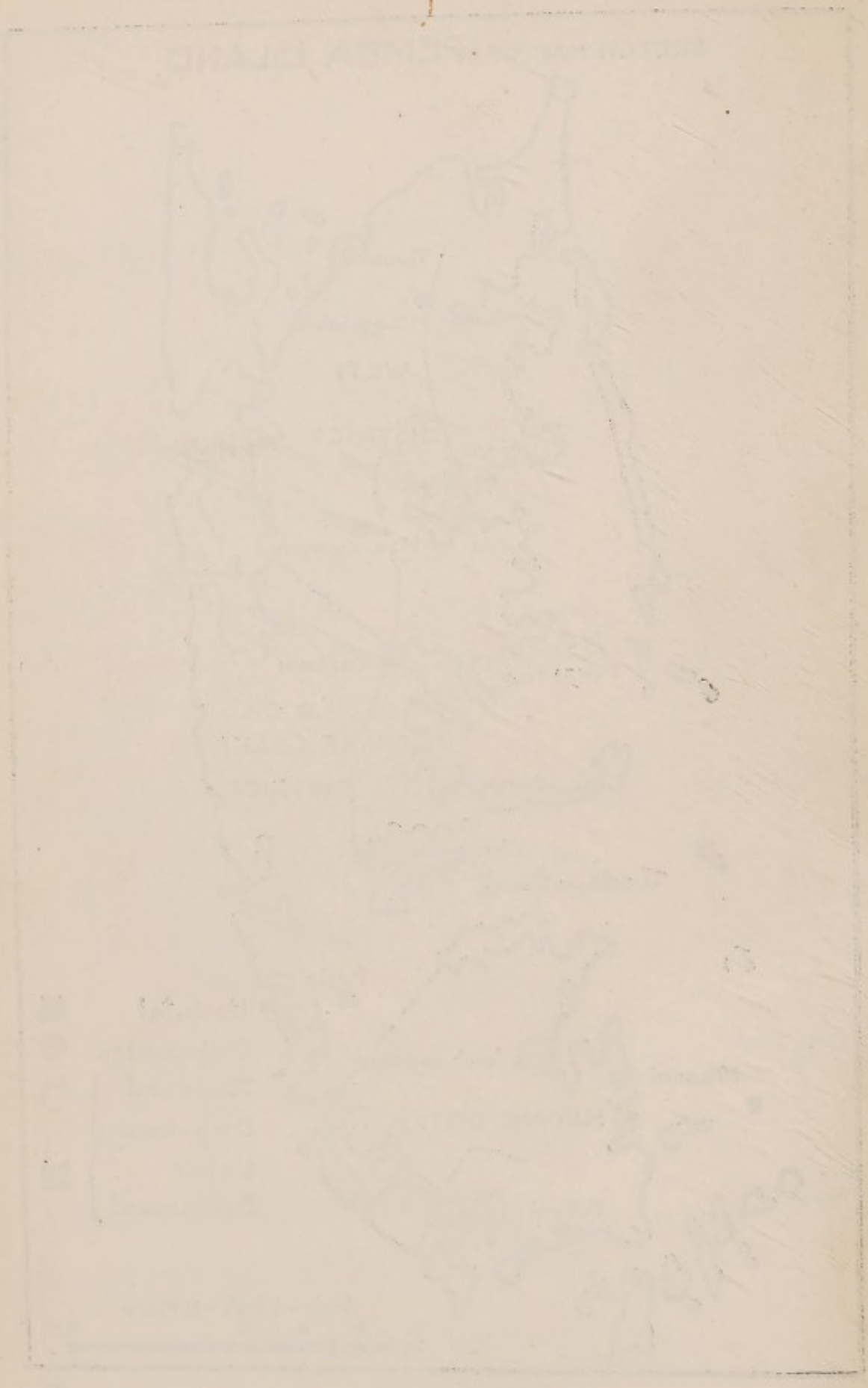
P.34. The appointment of a Lady Medical Officer for Maternity and child welfare work is very necessary. The Committee will wish to endorse this recommendation. The nursing sister in charge hasbeen doing excellent work.

P.49. The report of the Biological Division gives the results of the survey of the health conditions of the Protectorate.

(Signed) G. J. RUTHERFORD.

27.11.28.


SKETCH MAP OF PEMBA ISLAND
Tumbe
Mtangatwani
WETI
DISTRICT
Weti
Mzambaraoni
Funzi
Kisiwani
Ole
CHAKE CHAKE
DISTRICT
Chake-Chake
Tundaua
Pujini
Hospital
Dispensary
Proposed
Dispensary
Leper
Settlement
Jambangome
Mkoani
MKOANI DISTRICT
Fufuni
Kengeja
Scale = 1 Inch = 6 Miles
6 4 2 0 6 M



Zanzibar Protectorate.

REPORT ON THE MEDICAL, SANITARY AND BIOLOGICAL DIVISIONS,

FOR THE YEAR 1927.

I. ADMINISTRATION.

(*a*) STAFF.

The establishment for 1927 as sanctioned in the estimates was as follows:—

EUROPEANS.

One Director of Medical and Sanitary Services.
One Deputy Director of Sanitary Services.
One Resident Surgical Officer.
Eight Medical Officers.
One Economic Biologist.
One Sanitary Superintendent.
One Accountant and Store-keeper.
One Sanitary Inspector.
One Matron.
Seven Nurses.
Two Missionary Nursing Sisters, Leper Settlement.

ASIATICS.

One Senior Sanitary Inspector.
Eight Sub-Assistant Surgeons.
Eight Dispensers.
Twenty-nine Sanitary and Mosquito Inspectors.
One Chief Clerk.
Twelve Clerks.
One Senior Laboratory Assistant.
One Engineer Foreman.

NATIVES.

One Dispenser.

Twenty-five Apprentice Dispensers.

Hospital and Dispensary Attendants.

Infectious Diseases Hospital Attendants.

Vaccinators.

Menial Staff.

(*b*) LEGISLATION AFFECTING PUBLIC HEALTH ENACTED DURING THE YEAR.

Quarantine Decree, 1927.—This Decree was enacted to bring the law relating to Quarantine up-to-date in the light of the Provision of the Internal Sanitary Convention, 1926, to which this Protectorate is a party.

The imposition and control of quarantine has hitherto been governed by certain rules included in the Zanzibar Port Rules, 1922. This latter decree has now been revised and re-enacted in a different form.

Druggist's and Dangerous Drugs Decrees, 1927.—These two decrees came into force on July 1st, 1927. The Druggist's Decree limited the sales of drugs, other than patent medicines and herbal remedies, and the dispensing and compounding of drugs to those who were registered druggists under the decree, while the Dangerous Drugs Decree brought the existing legislation into line with the requirements of the League of Nations with regard to the limitation of sales of preparations of Opium, Cocaine and Cannabis Indica.

All those who applied for Registration under these decrees were visited by a Government Medical Officer who reported to the Registering Committee who rejected or sanctioned the application.

The applicants were divisible into three types:

(*a*) Those who were dispensers and compounders in the accepted meaning of the terms and whose livelihood was entirely derived from the compounding and selling of drugs, etc. These were granted full registration.

(*b*) Those who were dealing in certain drugs which brought in a great portion of their income and which were really not harmful or dangerous. These people were granted registration on the grounds that their livelihood would be taken away if they could not carry on their business of dispensing.

(*c*) Those who could not be licensed or registered under any consideration.

There were registered and licensed during the year twenty-two fully qualified Dispensers and Druggists—these included Government Dispensers.

During the year one candidate presented himself for examination as a Druggist, the examination being conducted by a Government Medical Officer and one of the private druggists of the town. The examiners were satisfied, and the candidate registered.

There was a considerable amount of Poppy Capsules and Drugs in the possession of unregistered people when these Decrees came into force. The Poppy Capsules were taken over by the Government and arrangements are being made for a similar disposition of the drugs.

From time to time during the year druggists were visited by a Government Medical Officer who checks their records of sales of poisons and dangerous drugs and assists in the elucidation of any difficulties that have presented themselves.

(*c*) FINANCIAL.

(*Vide* Table II for further details.)

Revenue.

	£
Hospital fees, sale of drugs, etc.	972
Contribution from other dependencies towards Quarantine services	2,637
	3,609

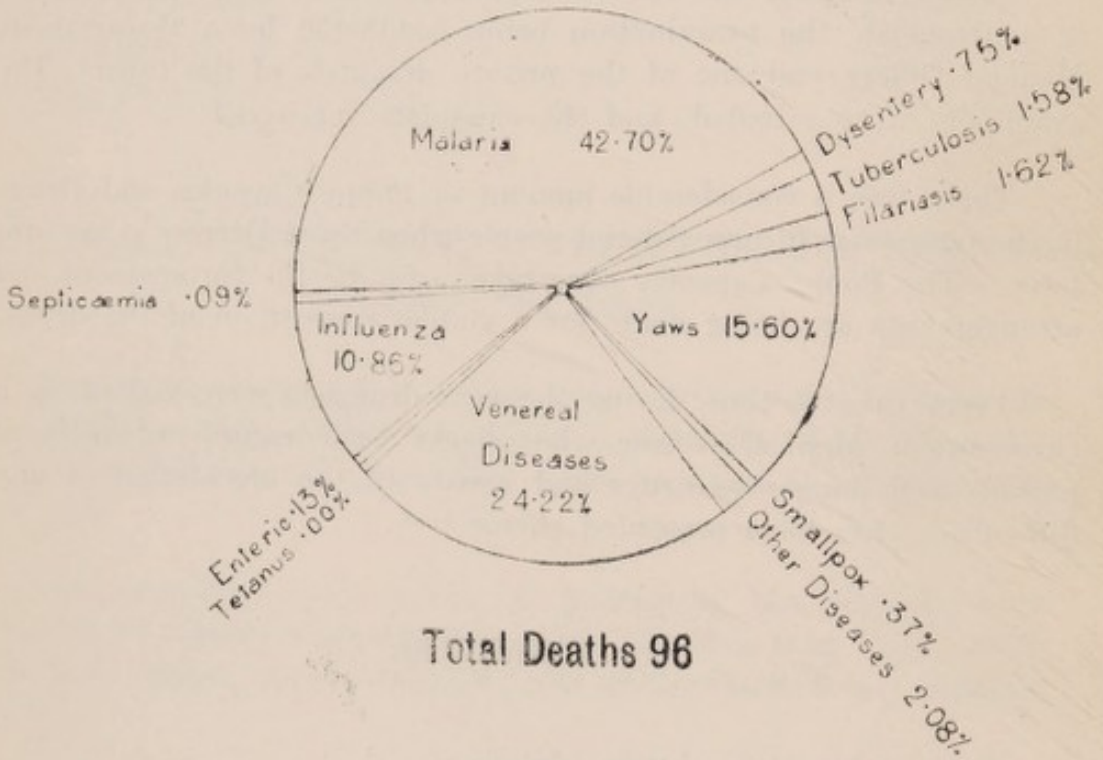
Expenditure.

Personal Emoluments	36,951
Other Charges	11,259
Special Expenditure	345

Deducting the contribution from other dependencies towards the maintenance of the quarantine service, the total expenditure on Medical and Sanitary Services was £47,719 being 8.83 per cent of £540,345, the actual revenue of the Protectorate for the year.

Diagram showing the Proportion of the different Epidemic, Endemic and Infectious Diseases (with deaths) under each Group Treated at Hospitals and Dispensaries.

Total Cases 13,376



Total Deaths 96

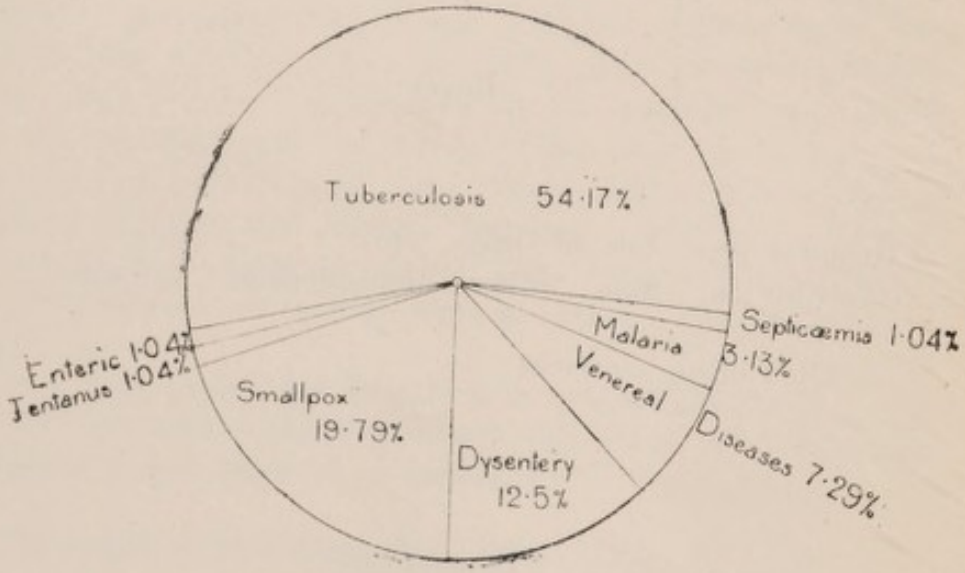
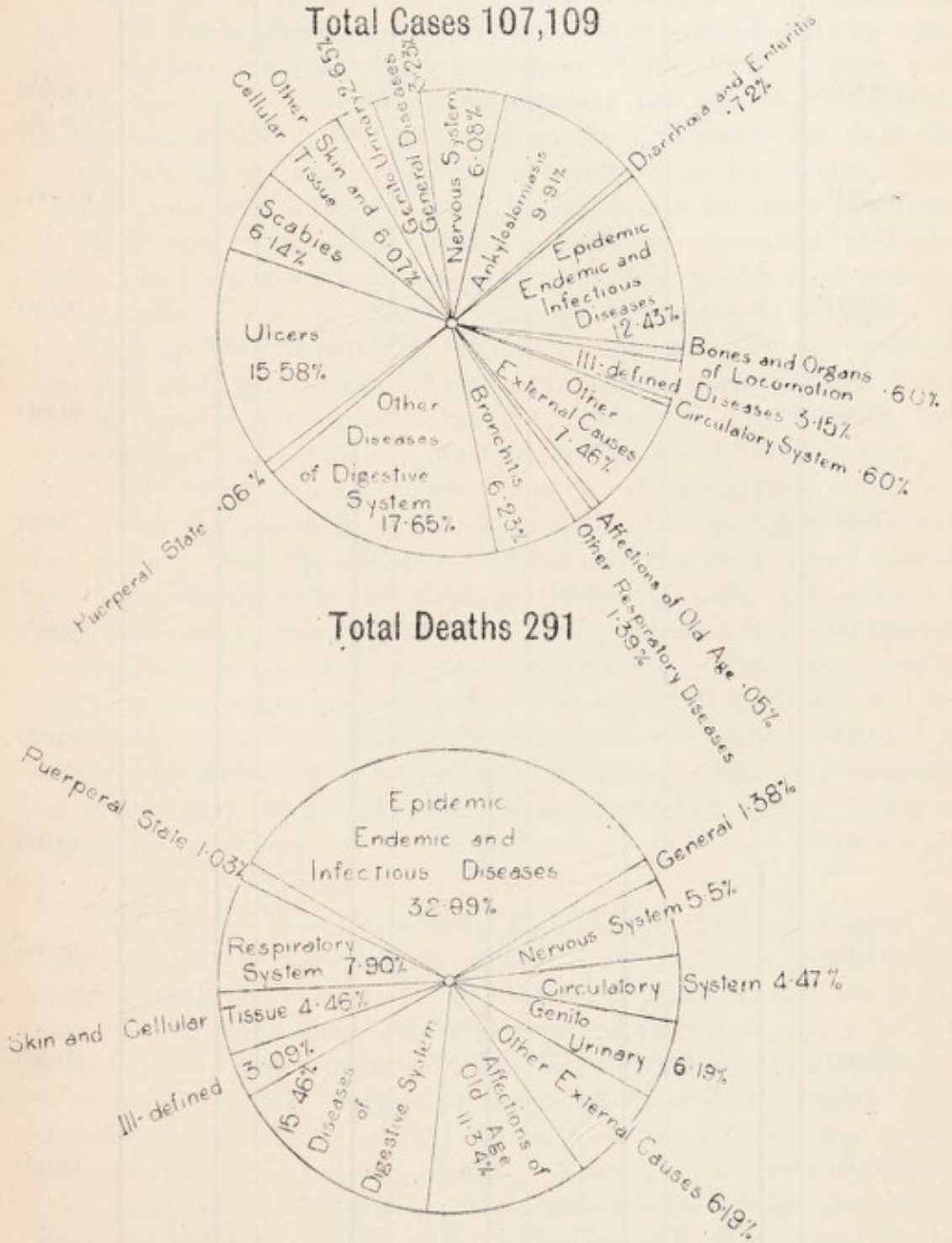
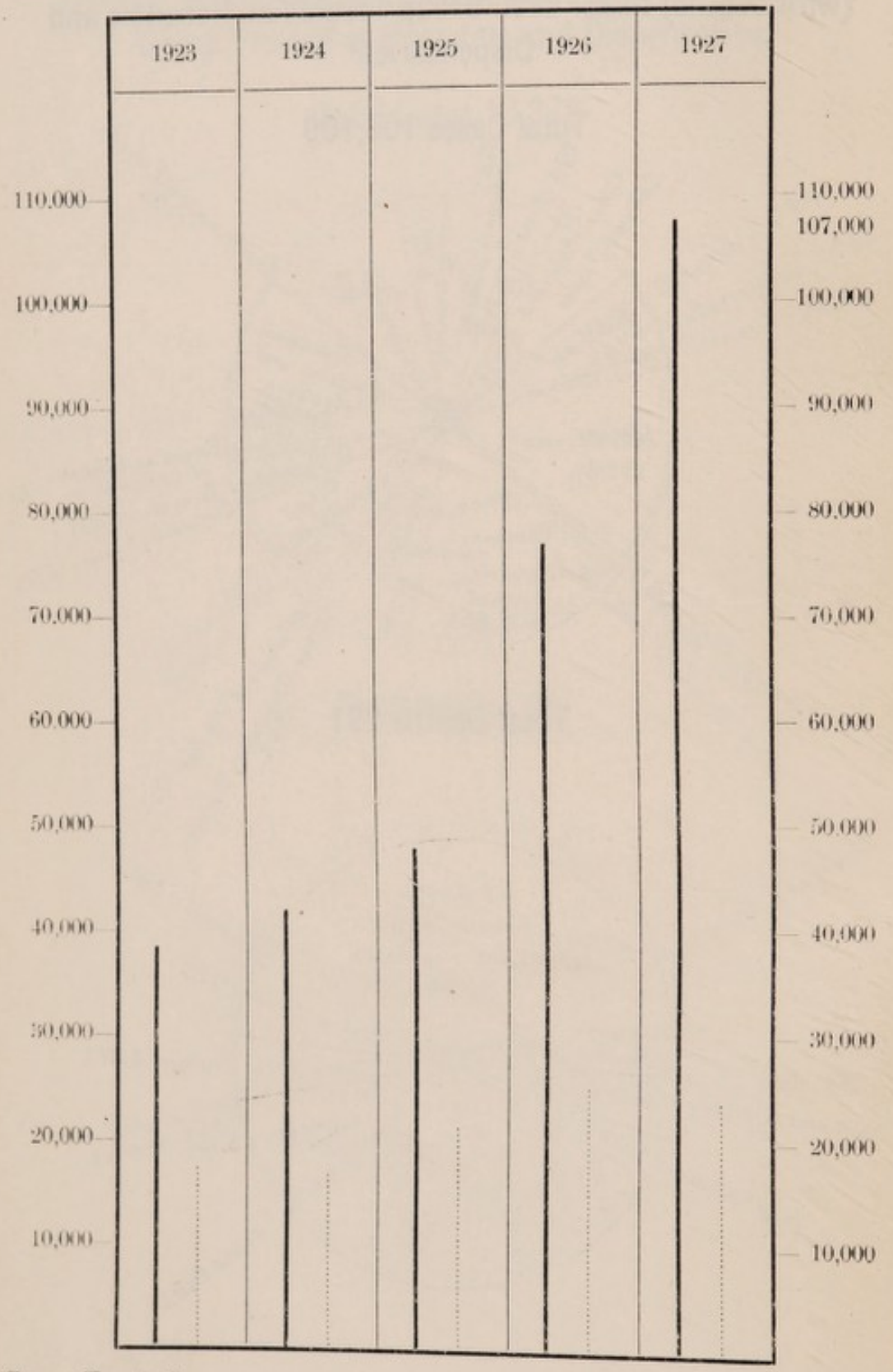


Diagram showing the Proportion of the different Diseases (with deaths) under each Group Treated at Hospitals and Dispensaries.



Comparative chart of cases treated and expenditure during the last five years:—



Cases Treated————
Expenditure.....(in pounds).

Expenditure includes personal emoluments of the Director of Medical and Sanitary Services and the Medical staff, excluding sanitation, biological and veterinary divisions.

The treatment of lepers and expenses in connection with Leper Settlements are not included.

II. PUBLIC HEALTH.

(a) GENERAL REMARKS.

With the exception of the prevalence of small-pox throughout the year, the Public Health of the Protectorate was satisfactory as compared to previous years. As mentioned in last year's report, two groups have to be considered, representing two schools of thought, ancient and modern. Naturally amongst the first group there is much preventible illness and suffering and many avoidable deaths. The second group too, although much healthier and far more amenable to advice and instruction on health and disease prevention, still pay toll to unsatisfactory surroundings, poor housing, ignorance of elementary hygienic laws, ill-balanced diet and the general handicaps of primitive peoples inhabiting tropical countries. But the gradual spread of education throughout the island which is being brought about by the increasing number of excellent schools in the districts, the realisation of the benefits of western medicine and the efficiency of treatment for most tropical complaints, which is similarly being impressed on the people by the opening of the district dispensaries and last but not least the educative influence of the local school master and local dispenser in the different villages formerly untouched by progressive ideas, must inevitably, if perhaps slowly, lead to a general improvement in the ideas and standard of living of the people, and a gradually increasing conviction that disease is not inevitable and irremediable or only to be treated by witchcraft and spells but that it is largely preventible by the exercise of cleanliness, care, and common sense, and that prompt treatment of any individual case of illness is urgent and necessary.

One of the most favourable auguries for the improvement of public health are the excellent arrangements made for games, especially football and cricket, for the natives of Zanzibar and the keenness and the enthusiasm of both players and spectators, and a tribute must be paid to those responsible for this satisfactory state of affairs. A steady, if gradual progress in the standard of public health, may therefore be confidently looked forward to in the future. But undue optimism must be guarded against. Natives of a tropical country have many and varied parasites to contend with. Their past traditions are those of apathy and indifference and these can only be gradually overcome. Nothing dramatic can therefore be expected, but rather a gradual improvement spread over the course of years.

The following table shows the total number of cases in each group of diseases treated at all Government Hospitals and Dispensaries during the year, and the percentage of the number of cases in each group to the total number of cases treated. That the natives of the Protectorate are demanding medical treatment in ever increasing numbers is shown by the noteworthy advance in the number of cases,

the total being 107,189 compared to 76,585 in 1926, and 48,963 in 1925, the total thus being doubled in the last three years.

	Group.	Cases.	Percentage to total number of cases treated.
I	Epidemic, Endemic and Infectious Diseases ...	13,325	12.43
II	General Diseases not included above ...	3,464	3.23
III	Affections of the Nervous System and Organs of Senses	6,518	6.08
IV	Affections of the Circulatory System ...	643	0.60
V	Affections of the Respiratory System ...	8,165	7.62
VI	Diseases of the Digestive System ...	30,299	28.27
VII	Diseases of the Genito-Urinary System (Non-Venereal)	2,839	2.65
VIII	Puerperal State	63	0.06
IX	Affections of the Skin and Cellular Tissues ...	30,427	28.39
X	Diseases of the Bones and Organs of Locomotion (other than Tuberculosis)	3	0.00
XI	Diseases of Infancy	4	0.00
XII	Affections of Old Age	56	0.05
XIII	Affections produced by External Causes ...	7,999	7.46
XIV	Ill-Defined Diseases	3,384	3.16
		107,189	100.00

1. General Diseases.

General Diseases.—The number of diseases recorded under this heading is 3,464 as compared with 1,798 last year. Chronic Rheumatism again shows a marked preponderance. This was commented on in last year's report and the heading would appear to cover various aches and pains derived from innumerable causes, such as gonorrhœa, yaws, filariasis, helminthiasis, muscular rheumatism and numerous other diseases. Rheumatism of the joints with crippling of movement and deformity is very rare, and acute rheumatism or rheumatic fever is unknown. Anæmia as mentioned in last year's report is secondary to various protozoal or helminthic infections, primary anæmia being unknown. Cancer is reported in eight cases as compared to five last year. Eight out of over one hundred thousand is a very small percentage, but it is undoubted that cancer does occur in natives if only to a small extent.

Affections of the Nervous System and Organs of the Senses.—The great majority of the cases under these headings are trivial, headaches, neuralgias, and the remarks above on chronic rheumatism equally apply to them. Of more serious conditions 117 cases of paralysis are reported as compared with 61 last year. Conjunctivis is again the commonest eye disease and is undoubtedly the consequence of climatic and hygienic conditions.

Affections of the Circulatory System.—Lymphangitis and lymphadenitis, as last year, are the most frequent diseases under this category, and are due to filarial infection.

Affections of the Respiratory System.—The total number of cases in this group was 8,165 as compared with 6,111 last year.

Totals of the more important respiratory diseases for the last three years are as follows:—

		1925.	1926.	1927.
Pneumonia	...	77	195	175
Pleurisy	...	42	36	114
Bronchitis	...	3,688	4,945	6,736
Broncho-pneumonia	...	78	27	76
Laryngitis	...	13	47	59

Diseases of the Digestive System.—These diseases numbering 30,299 as compared to 22,717 last year represented over 28% of the total number of cases treated during the year. This number is largely made up of minor digestive troubles such as constipation, dyspepsia, diarrhœa and ankylostomiasis cases. Cases of hernia number 397 as compared to 304 last year. Of these 28 were strangulated necessitating immediate operation.

Diseases of the Genito-Urinary System (Non-Venereal).—These are largely of filarial origin, but it should be noted that 600 cases of Schistosomiasis are recorded during the year as against 420 last year.

Affections of the Skin and Cellular Tissues.—The total number of cases is 30,427 as compared to 20,535 last year and represent about 28% of the total diseases. The vast majority of these cases are ulcers and the great increase is due to the larger numbers treated in the District Dispensaries, which are the means of bringing relief to many suffering from this trying condition, who would otherwise have received no medical assistance with consequent indefinitely continued pain and disability.

It should be noted that the term Scabies is frequently used throughout this Report.

But from investigations now being made by one of the Medical Officers, it appears very doubtful if this condition which has all the appearance of this disease is true Scabies, as in none of the cases so far carefully examined has the Sarcoptes Scabiei been isolated.

2. Communicable Diseases.

(a) *Mosquito and Insect Borne.*

Malaria.—The total number of cases treated was 5,714 as compared with 4,808 in the previous year. The number examined microscopically will be found in the Laboratory Report.

The percentage of cases of malaria to all cases treated for the last three years is shown below:—

1925.	1926.	1927.
6.75	6.27	5.33

Of the European population in Zanzibar, in 32 cases malarial parasites were found in the blood. An analysis of these cases reveals the fact that by far the greater proportion undoubtedly contracted the disease outside the town proper. The greatest incidence occurred after the rains.

Blackwater Fever.—There were three cases with no deaths as compared to nine cases with no deaths in 1926.

Particulars of the cases as follows:—

Sex:—All males.

Ages:—50, 28, 29.

Nationalities:—Hindoos 2, Goan 1.

Occupation:—Jailer, Blacksmith, and Clerk, all in Government employ.

Locality:—One in Zanzibar and two in Pemba.

Period of Residence:—(1) Jailer, many years, (2) Blacksmith, 8 months, (3) Clerk, 10 years.

Previous attacks of malaria:—(1) Many, (2) Six attacks, (3) Many.

Previous attacks of Blackwater:—(2) and (3) nil. The Jailer has had five previous attacks, the last being recorded last year. He would appear to be of the type, who on malarial infection, readily breaks down to blackwater.

Quinine:—Irregular, in all cases.

Cause of attack:—Insufficient quinine, irregularly taken.

Seasonal Incidence:—January, May, July, i.e., the months following the rain.

Dengue.—No case was recorded during the year.

Filariasis.—The number of cases shown in the returns is 217 as compared with 102 last year. As mentioned in last year's Report this affords no indication of the wide spread nature of the disease, nor the suffering it inflicts.

Elephantiasis is an extremely common sight in the streets and must remain so until the culex problem is successfully overcome.

(*b*) *Infectious Diseases.*

The following table shows the number of cases with deaths of the more important infectious diseases treated during 1927, and the previous years:—

	1925.		1926.		1927.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Enteric Group	3	—	8	1	17	1
Small-pox	3	—	53	15	50	19
Whooping Cough	167	—	52	1	64	—
Influenza	359	—	847	—	1,453	—
Mumps	19	—	17	—	117	—
Dysentery	74	3	93	1	100	12
Leprosy	14	—	37	—	26	—
Chicken-pox	5	—	32	—	38	—
Yaws	492	1	1,066	—	2,086	—
Tetanus	8	2	9	4	1	1
Tuberculosis	130	8	175	9	211	52
Syphilis	250	—	383	—	531	7
Soft Chancre	178	—	356	—	528	—
Gonorrhœa	989	—	1,459	—	2,153 (including complications).	—

Enteric Fever.—Two cases of enteric with no deaths occurred during the year. There was a considerable increase in the number of cases of Para B. Reference is made to this in the Deputy Director of Sanitary Services' Report.

Small-pox.—The epidemic which commenced in the last quarter of the previous year continued particularly in the Southern part of the Island. Particulars are given in the Report of the Deputy Director of Sanitary Services.

Influenza.—Was not prevalent during the year under review.

Dysentery.—Numerous cases are returned under the heading Bacillary Dysentery. It is difficult to classify these cases, but the great majority are probably acute or epidemic diarrhœa.

Tuberculosis.—The number of deaths from this disease during the last five years are as follows:—

1923.	1924.	1925.	1926.	1927.
185	167	132	145	136

The prevention and treatment of tuberculosis has been and always will be a problem, whilst the housing conditions and habits of Africans and Asiatics remain what they are. The question of instituting Sanatorium Treatment is under consideration.

Leprosy.—See Appendix (II).

Yaws.—The establishment of the District Dispensaries has given clear proof that this disease is very prevalent throughout both Islands. Treatment by injections of Bismuth Potassium Sodium Tartrate is both efficacious and popular. The number of injections given during the year was 517.

Venereal Diseases.—Gonorrhœa is commoner in the town than in the Districts. This however is only to be expected in view of the fact that Zanzibar is a busy port. Syphilis occurs with fair frequency but is not, as mentioned in last year's Report, a grave cause of disability.

(c) *Helminthic Diseases.*

The following table shows the number of cases of Helminthic Diseases treated last year as compared with the two previous years:—

	1925.	1926.	1927.
Ankylostomiasis ...	3,747	9,222	10,618
Filariasis ...	109	102	217
Schistosomiasis ...	138	420	600
Ascariasis ...	30	17	77

The question of helminthic diseases is fully dealt with in the Report of the Economic Biologist (IX Scientific) and is therefore not discussed in detail. But attention must be drawn to the wide-spread distribution and considerable incidence of Schistosomiasis as revealed by this report and the work of the District Dispensaries.

(b) VITAL STATISTICS.

The estimated native and Arab population according to the census taken in 1924 was 202,665. But as was pointed out in some detail in last year's Report, there is reason to believe that there has been a diminution in the population since that year.

There is however no evidence to show that any further marked diminution of the native population has occurred during the year. In point of fact the immigration figures for the year under review exceed the emigration by two thousand. As, however these do not include Tanganyika natives, who come and go freely, and are probably made up chiefly of Asiatics, they afford no guide.

The total number of deaths throughout the Protectorate was 4129 as compared with 5017 in 1926 and 4573 in 1925.

The crude death rate per mille for the last three years was therefore (approximately):—

1925.	1926.	1927.
20.6	23.1	20.6

In Zanzibar Town the deaths of Arabs and Africans numbered 825. Taking last year's estimate of the native population 28,500 as unchanged, the death rate per mille for 1927 was 28.8 as compared with 44.3 in 1926 and 36.7 in 1925.

This is a decided diminution, and making due allowances for a considerable margin of error, there would appear to be no doubt that the health of the native population in the town was considerably better than in 1926. This is also borne out by the fact that the total number of native deaths was 450 less than in the previous year.

Attention is again drawn to the relatively small number of Africans (105) who were attended in their last illness by a Medical Practitioner, and the remarks there anent in last year's Report endorsed.

No remarks are submitted on the Birth Rate. Investigations carried out during the year by the Administration definitely proved that the native population were not registering births as they should do. In future years it is hoped that a fair degree of accuracy may be arrived at, and thus important facts as regard infantile mortality brought to light.

(2) General European Population.

Two Europeans died in the Protectorate during the year, one of French and one of German nationality. In both cases the patient was landed from a passing ship, French and German respectively, in a moribund condition. The Frenchman came from Madagascar and his death was due to Cirrhosis of liver. The German came from Tanganyika and the cause of death was certified as Myocarditis following acute malaria.

The total number of non-official Europeans treated at Government Hospitals and Dispensaries was 257, the most important illnesses being:—

Malaria	22	Dysentery	3
Influenza	28	Pneumonia	2

Eight births occurred during the year.

(3) European Officials.

The health of the European officials was satisfactory. During the year 317 cases of illness were recorded and 91 placed off duty. The figures for 1926 were 222 and 140, and for 1925 180 and 78 respectively.

The principal causes of illness were:—

Paratyphoid B.	2	Tuberculosis	1
Malaria	17	Heart Disease	1
Influenza	36	Respiratory Diseases	24
Injuries	26		

Medical Boards were held on three officials during the year and one of these was invalided on account of Pulmonary Tuberculosis.

Table showing the Sick, Invalidings and Death rates of European officials.

	1925	1926	1927
Total number of Officials resident	128	128	112
Average number resident	84.5	99.98	99.25
Total number on sick list	78	140	91
Total number of days on sick list	467	516	553
Average daily number on sick list	1.28	1.41	1.51
Percentage of sick to average number resident	1.51	1.40	0.91
Average number of days on sick list for each patient	5.99	3.69	6.09
Average sick time to each resident	5.52	5.16	5.58
Total number invalided	5.00	2.00	3.00
Percentage of invalidings to total residents	6.40	1.57	2.68
Total deaths	0.00	0.00	0.00
Percentage of deaths to total residents	0.00	0.00	0.00
Percentage of deaths to total average number resident	0.00	0.00	0.00

(4) Non-European Officials.

Under this heading are included all non-European officials (Asiatics and Africans) down to and including Grade IV. In all 1,045 cases of illness were recorded, for 616 of which the officials were placed off duty and 101 admitted to hospital.

The principal causes of illness were:—

Paratyphoid	3	Respiratory Diseases	129
Malaria	303	Digestive Diseases	129
Blackwater Fever	3	Skin Diseases	103
Influenza	106	External Injuries	26
Dysentery	6	Undefined Fever	56

Deaths:—No deaths occurred during the year.

Medical Boards:—Eight medical boards were held resulting in the permanent invaliding of five officials, for Chronic Synovitis 1, Heart Disease 1, Blackwater Fever 1, Tuberculosis 1, and General Debility 1.

Table showing the Sick, Invalidings and Death rates of non-European officials for 1927:—

	1926	1927
Total number of officials resident	574	516
Average number resident	497.22	491.67
Total number on sick list	569	445
Total number of days on sick list	3.384	2,495
Average daily number on sick list	9.27	6.87
Percentage of sick to average number resident	1.15	0.90
Average number of days on sick list for each patient	5.95	5.61
Average sick time to each resident	6.80	5.09
Total number invalided	6.00	6.00
Percentage of invalidings to total residents	1.05	1.16
Total deaths	3.00	2.00
Percentage of deaths to total residents	0.52	0.39
Percentage of deaths to total average number resident	0.60	0.40

(5) Police.

The total number of non-commissioned officers and men in the Police in 1927 was 537.

Five deaths occurred during the year and eighteen of the Force were discharged as medically unfit, in four of these the cause of invaliding was pulmonary tuberculosis.

Ziwani Police Lines.—The average number of the Force residing in Ziwani Police Lines was 376 and 2,107 cases of illness were treated. The number admitted to hospital was 259 and among these five deaths occurred, one from ascending paralysis, one from locomotor ataxia, one from broncho-pneumonia, one from pulmonary tuberculosis and one from valvular disease of the heart.

The principal causes of illness were malaria, constipation local injuries, ulcers, diseases of the digestive and respiratory systems, and ankylostomiasis.

The average number of women resident in the Lines was 133 and of children 111. The deaths of one woman and one child occurred during the year.

Weti Police Lines.—The average number resident was 40, and 155 cases of illness were treated.

Chake Chake Police Lines.—The average number resident was 40, and 165 cases of illness were treated.

Mkoani Police Lines.—The average number resident was 23, and 104 cases of illness were treated.

III. HYGIENE AND SANITATION.

REPORT BY THE DEPUTY DIRECTOR OF SANITARY SERVICES.

(A) General Review of Work Done and Progress Made.

The personnel of the Public Health Service remained the same as during 1926.

The small-pox epidemic which began towards the end of last year continued throughout the greater part of 1927 and did not cease finally until October.

The Sanitation of Pemba was under the supervision of the Medical Officers and Sub-Assistant Surgeons assisted by two Asiatic Sanitary Inspectors. The Medical Officers were also responsible for veterinary work, including meat inspection, control of slaughter house, and cattle quarantine.

The work done during the year is shown in detail under the appropriate headings in the following pages.

I. Preventive Measures.

Mosquito and Insect-Borne Diseases.

The transfer, as mentioned in the 1926 report, of the anti-mosquito work from the Biological to the Sanitation Division has resulted in economy of working and has, it is hoped, at least maintained the high degree of efficiency that it had attained under its originator's control.

Among some practical improvements in the detail of this work may be mentioned the substitution of oil sprayers for ladles in the application of oil to the town cesspools. This method has the following advantages over the ladle method:—

(*a*) Increase in number of cesspools oiled in a given time.
(*b*) Better application of oil.
(*c*) Economy in the amount of oil used for each cesspool treated.

The inspection and treatment of boats and lighters continued to be carried out through the courtesy of the owners, but it is hoped that legislation will be introduced next year to put this work on a proper footing.

Table No. 1.

Comparative table showing collections of mosquito larvæ found in the township:—

	1925.	1926.	1927.
Anopheline ...	13	39	31
Culex ...	78	204	484
Stegomyia ...	1,145	5,365	3,856

Table No. 2.

Analysis of breeding places of anopheline found in the township in relation to the months of the year:—

	Temporary pools.	Cement Drains.	Cement Tanks.	Wells	Tins, pots, etc.	Boats	Total
January	...	1	...	...	...	...	1
February	...	...	...	...	2	...	2
March	...	...	...	...	...	...	...
April	...	...	...	...	...	1	1
May	6	1	...	...	...	...	7
June	2	...	1	...	1	...	4
July	...	...	...	...	...	...	...
August	...	...	...	...	...	...	...
September	...	...	...	...	...	...	...
October	...	...	...	...	...	...	...
November	4	...	...	...	...	...	4
December	12	...	...	...	...	...	12
					Total breeding places		31

Table No. 3.

The following adult mosquitoes were caught in the township:—

	1925.	1926.	1927.
Anophelines ...	182	451	464
Culex ...	2,737	2,342	1,998
Stegomyia ...	180	128	258

TABLE No. 4.

Adult anopheline were found in:—

The Government Prisons	on 9 occasions.
Private houses	,, 8 ,,
Ziwani Police Lines	,, 6 ,,
Parsee Temple	,, 4 ,,
Kisimamajongo Police Station	,, 1 ,,
Native Hospital	,, 1 ,,
U.M.C.A. Hospital	,, 1 ,,

TABLE No. 5.

Sullage and cesspits oiled fortnightly during 1927.

January	1,930
February	2,029
March	2,179
April	2,393
May	2,174
June	2,447
July	2,750
August	2,363
September	2,489
October	2,480
November	1,674
December	2,523
Total	27,431

	1925.	1926.	1927.
No. of notices served	121	150	1,520
No. of prosecutions instituted	...	2	16
No. of convictions obtained	...	2	16

A comparison of Tables 1 and 3 will show that by far the largest number of larvæ found are Stegomyia while the largest number of adult mosquitoes found are Culex. The explanation of this lies in the fact that breeding places of Stegomyia are in domestic vessels while those Culex are in cesspools and drains, the age and bad condition of the latter being responsible for innumerable and inaccessable breeding places.

Table 2 illustrates the comparative freedom from anopheline mosquitoes enjoyed by this township, and it was only in the rainy periods of the year that more than two breeding places were found in the same month.

Outside the town, the Prison, Police Lines, and Parsee Temple continue to be the areas where anophelines are found with the greatest frequency. Until some serious effort is made to remove the undergrowth on the neighbouring Government and private land, shelter for breeding places will continue to be afforded, and anophelines will continue to breed in these areas in large numbers.

Anti-Malarial Work.—The canalising of the Saateni Stream carried out in 1926 has proved very satisfactory and this work withstood the heavy rainfall at the end of the year successfully.

The levelling and grading of the Ziwani Swamp has prevented, to a large extent, the retention of water in this area for any length of time; but there has been a little subsidence at one or two points, which should be re-graded.

No funds having been allowed this year for Zanzibar and no maintenance being required, sanction was obtained to utilize money allocated to "Maintenance of Swamps Drainage" for the construction of new work. The total expenditure was Rs. 1,857 and the work consisted chiefly of the completion of the main drainage schemes undertaken last year as enumerated below:—

(1) To drain the rising ground at Kiungani between Kilimani and the sea various small catchment areas were partially filled, graded and drained into the main Ziwani drain by four agricultural drains and two earth drains, the total length of drain constructed being 800 feet.

(2) At Migombani, to drain the hill side below the road and bounded by the agricultural gardens a concrete channel with an agricultural drain extension was constructed draining the area into the concrete channel constructed last year. The total length of each was 300 linear feet and 175 linear feet respectively.

Pemba.—Practically all anti-malarial work with regard to swamp drainage was carried out at Chake Chake.

On the accepted principal of attacking the water table before it reaches the surface, open channel drains of saucer section were laid in the swamp below the European Residential part of the town in 1926, but the time was insufficient to allow of the drains being laid to their fully required lengths. It was agreed that the programme for 1927 should consist of the completion of the 1926 work and this work was accordingly carried out at a cost of Rs. 3,690 and has proved to be satisfactory.

Epidemic Diseases.

Small-pox.—The epidemic which began towards the end of 1926 continued until October, 1927, the last case being found at Mwera. A total of 171 cases were reported of which two were in Pemba.

The following table shows the distribution of the cases reported:—

	No. of Cases.	First Reported.	Last Reported.
Town and Suburbs ..	5	February 19th	April 23rd
Mkokotoni ..	11	January 16th	,, 14th
Mwera ..	24	,, 1st	October 10th
Chwaka ..	129	July 5th	August 29th
Pemba ..	2	January 20th	January 20th
Total ..	171		

The following table shows the number of cases of small-pox in Zanzibar and Pemba Islands during the last five years:—

	1923		1924		1925		1926		1927	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Zanzibar ..	203	56	10	1	3	..	51	22	169	68
Pemba ..	33	4	..	..	..	..	2	..	2	..
Total ..	236	60	10	1	3	..	53	22	171	68

Forty-one small-pox cases in addition to nine remaining from 1926 were treated during the year at the Infectious Diseases Hospital, there being 19 deaths and no patients remaining on December 31st.

The remarks in last year's report in connection with nursing still hold good.

The following table gives particulars of the above cases:—

(a)	Total number of cases	... ...	50
	Died	... ...	19
	Discharged	... ...	31
	Remaining on December 31st, 1927	...	nil
(b)	New cases:		
	Sex:—		
	Males	... ...	26
	Females	... ...	15
			41
(c)	Nationalities:—		
	Swahili	... ...	40
	Arab	... ...	1
			41
(d)	Ages:—		
	1 to 5 years	... ...	3
	16 ,, 20 ,,	... ...	1
	21 ,, 30 ,,	... ...	18
	31 ,, 40 ,,	... ...	13
	41 ,, 50 ,,	... ...	2
	51 ,, 55 ,,	... ...	1
	66 ,, 75 ,,	... ...	2
	81 ,, 85 ,,	... ...	1
			41

TABLE.

The following table shows the number of vaccinations carried out during the year:—

Month.	Town.	Steamers.	Dhows.	Mkoko-toni.	Chwaka.	Weti.	Chake-Chake.	Mkoani.	Total.
January ...	2,627	55	694	...	2,038	610	139	423	6,586
February ...	1,597	29	580	1,552	761	493	94	68	5,165
March ...	2,315	98	320	240	1,695	340	120	35	5,163
April ...	1,372	262	141	1,217	...	301	52	60	3,405
May ...	1,216	137	102	...	82	464	94	38	2,133
June ...	761	163	88	...	395	514	180	10	2,111
July ...	265	58	132	...	2,508	342	162	12	3,479
August ...	322	85	209	...	1,076	214	200	9	2,115
September ...	817	128	98	291	1,373	155	285	...	3,147
October ...	1,480	112	102	...	58	203	14	...	1,969
November ...	850	125	96	...	...	193	30	...	1,294
December ...	500	133	82	...	...	201	50	...	966
Total ...	14,122	1,376	2,644	3,300	9,986	4,030	1,420	655	37,533

Vaccinations continued to be carried out from house to house in the town, and vaccination stations were established in each district in which cases were found.

Chicken-pox.—Seventeen cases were treated in the Infectious Diseases Hospital. This was apparently a continuation of the 1926 epidemic. No deaths occurred and the schools were not affected.

Other Epidemic Diseases.

Plague.—No cases of plague have occurred in the Protectorate since 1911, but the possibility of an epidemic must not be lost sight of and for this reason an unceasing compaign against rats is waged from year's end to year's end.

Of the rats destroyed daily, at least a dozen are examined bacteriologically for plague. This is not a large proportion, but with the laboratory staff available it is very difficult to find the time to deal with more.

Particulars of numbers of rats destroyed, etc., will be found in Section VII.

Tuberculosis.—This accounts for more deaths (12.5% of the total reported) than any other diseases in the Protectorate. The majority of the cases are to be found in Zanzibar town where over-crowding and lack of ventilation and sunlight afford ideal conditions for the growth and spread of the tubercle bacillus.

Every effort is made by this department to improve housing conditions, but since such efforts clash unavoidably with the financial prospects of the landlords, progress is very slow and encumbered by much writing. But the absence of any specific legislation is, perhaps, the greatest hindrance to progress in our efforts to improve the housing conditions of the Asiatic and African population.

Enteric and Dysentery.—All cases of these diseases are, when diagnosed, isolated in hospital or in their own homes. In the latter cases detailed instructions are issued as to the disposal of excreta and other measures to prevent the spread of the disease. The house in which a case has occurred is disinfected subsequently.

In connection with these diseases it is to be noted that active measures of fly destruction—both larvæ and adults—are carried out continuously.

The water supply also is examined bacteriologically every month and chemically at intervals.

Three cases of Enteric, two of Paratyphosus A and 27 of Paratyphosus B occurred during the year. Particulars and remarks concerning these will be found in Section IX in the report on the Bacteriological Laboratory.

There were 15 cases of dysentery of which 11 were due to Entamœba histolytica, 3 to B. dysenteriæ Flexner and 1 to B. dysenteriæ Shiga.

Amœbic dysentery is not common, E. histolytica being found in only 10.5% of suspected cases and in 0.8% of the total stools examined.

Bacillary dysentery is not, as far as laboratory results go, a common disease here and accounts for only 0.3% of excreta examined.

Of the 17 deaths in Zanzibar town returned as "Dysentery" only one was diagnosed bacteriologically, the remaining 16 being mostly reported by the Health Office Death Inspector who has to rely for his diagnosis on the information gleaned from relatives and friends of the deceased.

Leprosy.—Nearly all these cases are from among the poorest section of the community and are found, almost without exception, in the districts and but rarely in the town.

The cases are brought to the laboratory for examination and if positive, are sent to Funzi Leper Settlement. The individual's property is suitably dealt with to prevent any spread of infection.

Particulars concerning treatment and progress of cases will be found in Appendix II.

Helminthic Diseases.

(*a*) *Ankylostomiasis.*—This is one of the most prevalent diseases in the Protectorate, over 70% of suspected cases proving positive on microscopical examination.

An important measure of prevention is the use of suitable cement topped latrines, and the provision of these in appropriate places was carried out during the year.

(*b*) *Schistosomiasis.*—This disease is much more prevalent than was realized before the Economic Biologist conducted an investigation into its etiology and extent. His report will be found in Section IX.

The only other common helminthic infection is Ascariasis which accounts for 4.3% of the stools examined in the laboratory.

GENERAL MEASURES OF SANITATION, ZANZIBAR.

(*a*) *Sewage Disposal and Drainage.*—This remains the same as previously. The replacement of old type square section drains with proper drains has progressed during the year and thirty-eight cesspools were abolished.

Drains.

	Public.			Private.		
	1925	1926	1927	1925	1926	1927
Masonry drains—						
Linear yards ..	No record	No record	No record	No record	No record	No record
Linear yards constructed ..	1,400	1,546	916	1,307	982	7,595
Linear yards repaired ..	2,250	600	400	315	560	7,258
Storm water earth Drains—						
Linear yards ..	5,630	5,630	5,630	..	..	144
Linear yards cleaned and graded ..	15,910	15,910	3,58,515	..	..	..

Cesspools and Cesspits.

	1925	1926	1927
No. of cesspools and cesspits approximately ..	5,300	5,459	6,114
No. of cesspools and cesspits constructed ..	167	35	690
No of cesspools and cesspits abolished ..	8	27	38
No. of cesspools and cesspits cleaned ..	449	281	261

Public Latrines.

For Males.						For Females.					
No.			No. of seats.			No.			No. of seats.		
1925	1926	1927	1925	1926	1927	1925	1926	1927	1925	1926	1927
2	3	4	10	13	18	2	3	3	6	8	8

The new latrine erected during the year is fitted with glazed squatting basins with automatic flushing.

(*b*) *Refuse Disposal and Scavenging.*—This has been carried out as described in last year's report.

	1925	1926	1927
No. of men employed to remove refuse ...	191	191	191
,, ,, carts at work daily ...	46	53	53
No. of loads of refuse removed (daily average) ...	151	201	236
,, ,, ,, ,, ,, burnt, ,, ,, ...	144	147	129
,, ,, ,, ,, ,, buried, ,, ,, ...	7	54	107
,, ,, ,, ,, ,, dust and incombustible material	20	17	23
No. of dust bins provided ...	750	2,048	565

(*c*) *Water Supply.*—The system is low pressure and has been considerably affected by the increased number of connections. There has been no actual shortage but the mains appear to be inadequate to maintain a continuous supply to some parts of the town.

The limited supply has prevented further connections being made to houses and trade premises and points to the necessity of providing some means whereby the water going to waste at the springs could be conveyed to the town.

	1925	1926	1927
PIPE-BORNE WATER:—			
Source	Spring	Spring	Spring
No. of linear yards	25,340	32,597	47,530
No. of standpipes along roads ...	46	49	78
No. of standpipes in compounds and houses	401	459	444
WELLS:—			
Public—			
Number	6	6	6
No. of pumps protected against surface water and mosquito-protected ...	...	...	...
Private—			
Number	88	83	82
No. of pumps protected against surface water and mosquito-protected ...	8	8	8

	1925	1926	1927
TANKS:—			
Public—			
No. underground	...	...	...
No. mosquito-protected and served by pumps	...	...	...
No. above ground	2	2	2
No. mosquito-protected	2	2	2
No. of 400 gallons capacity or less ...	...	...	...
No. above 400 gallons	2	2	2
Private—			
No. underground	5	5	5
No. mosquito-protected	5	5	5
No. above ground	405	408	408
No. mosquito-protected	155	159	160
No. of 400 gallons capacity or less ...	349	352	352
No. above 400 gallons	56	56	56
NATURE OF TANKS:—			
Wood	...	...	...
Iron	155	158	158
Concrete	255	255	255
BARRELS:—			
Number	2,890	2,897	2,897
No. mosquito-protected	1,169	1,169	1,169
No. unprotected	1,721	1,728	1,728

(*d*) *Offensive Trades.*—The six remaining camel-driven oil mills were removed from the town in June.

Pottery and Lime Burning continue to give rise to considerable nuisance.

(*e*) *Clearance of Bush.*—This work has been carried out as usual by the Sanitary Labour. Seventy-three thousand seven hundred and seventy-five square yards of bush and undergrowth was cut down and removed during the year.

(*f*) *Sanitary Inspections.*—The following were inspected by the Director of Medical and Sanitary Services:—Chwaka, Mkokotoni, Weti and Chake Chake.

The Deputy Director of Sanitary Services inspected Chwaka and Mkokotoni on several occasions, and also visited Pemba.

Systematic weekly house to house inspections were made by the mosquito searchers who have proved themselves invaluable for concerted mosquito reduction work and they also bring many nuisances to the notice of Sanitary Inspectors.

The following table summarises the routine work of the Inspectors:—

ZANZIBAR TOWN.

	1925.	1926.	1927.
No. of Sanitary Inspectors employed ...	5	5	6
No. of Apprentice Sanitary Inspectors employed ...	12	11	8
Visits to dwelling houses ...	3,412	285,703	455,384
,, hotels and bars ...	615	141	254
,, eating houses ...	742	1,241	4,570
,, lodging houses ...	1,110	724	3,179
,, aerated water factories ...	254	285	436
,, bake houses ...	330	223	312
,, foodstalls ...	1,300	1,420	2,463
,, cowsheds ...	1,210	802	2,857
,, godowns ...	1,256	618	4,572
,, markets ...	685	1,460	991
No. of boats and dhows inspected for mosquitoes ...	...	784	8,014
No. of notices served to remove insanitary conditions ...	1,822	3,096	3,099
No. of notices not complied with at end of year ...	46	31	28
No. of nuisances abated ...	6,115	7,800	5,270
No. of convictions for not removing insanitary conditions ...	52	141	29
No. of premises where mosquito larvæ were found ...	429	5,416	4,418
No. of mosquito notices served ...	194	150	1,520
No. of mosquito notices not complied with at end of year ...	nil	nil	3
No. of mosquito nuisances abated ...	429	5,416	4,628
No. of convictions obtained for not removing facilities for the breeding of mosquitoes...	nil	2	16
No. of houses cleaned and disinfected ...	2	20	9
No. of drains, tanks and barrels oiled ...	numerous	1,799	6,543
No. of linear yards of drain cleaned out and disinfected ...	2,215	560,740	358,515
No. of W. C's installed ...	...	8	17
No. of cesspools emptied ...	362	218	261
No. of cesspools covered with cement concrete covers ...	465	100	112
Ruins cleaned out ...	138	250	259
Huts demolished ...	5	22	21
No. of public latrines and urinals cleaned out daily ...	16	21	17
No. of regularly cleaned out cattle troughs	4	4	4
Paupers removed ...	...	115	121
Paupers buried ...	146	50	78
Lepers sent to Pemba ...	14	5	9
Cases of infectious disease removed to Isolation Hospital ...	3	15	24

General Measures of Sanitation, Mkoani, Pemba.

Sewage Disposal.

System in Force.—The Assistant District Commissioner's house has a W.C. flushing into a cement covered pit, 30 feet deep.

In the houses of Asiatic officials the bucket system is in force

A number of Indian and native houses are provided with cesspits situated inside or just outside the house. A few of these are provided with cement covers.

Refuse Disposal.—Dustbins are emptied once daily. The material is destroyed by burning in an incinerator.

Water Supply.—Government houses are fitted with tanks for the collection of rain water. During the year a tank capable of holding 30,000 gallons was erected to catch rain water from the clove shed roof. This water is reserved for Government employees.

Two shallow wells of doubtful purity supply the inhabitants.

Borings were made during the year with a view to obtaining an additional supply of water, as during the dry season water has to be obtained from a well half a mile away from the town.

Hygiene and Sanitation, Chake Chake, Pemba.

The Medical Officer also performed the duties of Sanitation Officer during the year.

The staff consisted of an Asiatic Sanitary Inspector, two Mosquito Inspectors, two Mosquito Boys, one Poor Attendant, twelve Sweepers, six Special Gang Boys, one Headman and one Donkey Boy.

During the year the Anti-Malarial drainage system in the Mtenga Swamp was completed and since the completion of the work anopheline larvæ have not been found in the locality.

Five more or less permanent breeding places for Anopheline exist in and around the township and as they cover an area of 18 acres it is obvious that with the above staff, satisfactory control is impossible.

Epidemic Diseases.

No cases of small-pox were reported during the year. Vaccination numbered 1,420.

Tuberculosis.—The number of cases treated is increasing year by year. Very little can be done until a Sanatorium is erected to which cases may be sent for treatment.

Helminthic Diseases.

Ankylostomiasis.—No preventive measures were undertaken during the year. The condition is so widely spread that mass treatment and mass preventive measures are necessary if progress is to be made.

Bilharziasis.—Experimental work is in the hands of the Economic Biologist, Zanzibar. It is almost impossible to say whether this disease is increasing or not as the natives believe the condition to be due to Gonorrhœa and are slow to come for treatment. No centre of infection has been localised.

Ascariasis.—Very few cases have been reported.

General Measures and Sanitation.

Sewage Disposal and Drainage.

(*a*) European quarters are provided with water flushing closets draining to soak-away cesspits.

(*b*) Asiatic Officials' houses have soak-away cesspit privies with cement tops.

(*c*) *Public Latrines.*—One was erected in 1926 in the vicinity of the Markets. It is a cesspit privy with cement top.

(*d*) *Private Latrines, Indian Houses.*—Approximately 160 provided with cement covered soak-away cesspit privies, some inside and others outside the dwelling houses.

Swahili Houses.—Usually a soak-away cesspit privy covered with cement or hard clay laid on lattice work, situated inside or just outside the house, in the latter case connected with a tin pipe to a privy or bathroom within the house. In houses not provided with a cesspit the occupants defæcate in the bush, preferably close to water.

Refuse Disposal and Scavenging.—Dustbins are distributed throughout the town. The contents of the dustbins are emptied once or twice daily into dust carts and removed to the incinerator and burnt. In Kichumgwani the refuse is collected in baskets and burnt or carried to a dust cart for removal to the incinerator. The paths in Kichumgwani are so narrow that a dust cart is unable to pass through them.

One thousand four hundred and seventy-three cart loads of rubbish were removed to the incinerator during 1927.

Water Supply.—This is derived from shallow springs and is liable to contamination from soak-away cesspit privies. The area round the Pumping Station is kept clean and protected. Water is distributed to stand-pipes situated throughout the town; and in the houses of European Officials water is laid on.

Food in Relation to Health and Diseases.

Markets.—Regular inspection is necessary to maintain a standard of cleanliness. The "Meat Section" was "fly proofed" early in the year and the "Fish Section" has been recommended for proofing this year.

Aerated Water Factories.—Factories are inspected regularly.

Slaughter House.—This is satisfactory except for its situation. At high tide the meat is conveyed across the creek in a canoe and carried by labourers from the pier to the Market. Cattle are inspected before slaughter and meat is examined previous to sale.

Reduction of Vermin.—248 rats destroyed and 274 dogs poisoned.

Flies.—Fly plates were made at the Health Office and placed on the Market tables and undoubtedly reduced the nuisance in that locality. All rubbish dumps were burnt.

All such efforts are practically useless as almost every house constitutes a breeding ground.

Tables Relating to the Above.

Approximate area of Township.	Number of proclaimed open Spaces.
200 acres.	Nil.

Population of Township.

No. of Natives approx.	Asiatics.	Europeans.	Total.
2,560	440	15	3,015

Recommendation for Future Work.

(1) Swamp and Surface Drainage.

(2) Provision of latrines for the use of (*a*) inhabitants of huts not provided with cesspits (*b*) for the use of inhabitants whose cesspits are recommended for closure owing to extensive structural defects (*c*) for the use of native servants in Government houses.

Hygiene and Sanitation, Weti, Pemba.

I. Preventive Measures.

(*a*) *Mosquito and Insect-Borne Diseases.*

The usual preventive measures were taken and have been in force throughout the year. These include oiling of tanks and pits, clearing and oiling swamps, clearing of bush, etc.

Mosquito nuisances found numbered 54 for which notices were served and complied with. Fifteen cesspools were oiled weekly and the four large swamps were similarly oiled. Over 29,000 square yards of bush and undergrowth were cleared. By these measures together with frequent inspection of premises to the number of 7,482 during the year, the town was kept reasonably free from mosquitoes.

(b) *Epidemic Diseases.*

There was very little in the way of epidemic disease in Weti during the year. One case of small-pox was diagnosed and was promptly dealt with. Vaccinations during the year numbered 4,030. Sporadic cases of bacillary dysentery arose but the disease never reached epidemic proportions.

Eleven cases of Tuberculosis were diagnosed.

(c) *Helminthic Diseases.*

Ankylostomiasis.—These cases showed a falling off as compared with the previous year of about 90 cases. In 1927, 494 cases were treated. The disease was very common among the mainlanders who came to Weti temporarily for work during the clove harvest.

Bilharziasis.—Twenty-five cases of this disease were treated as against 18 for the previous year. It is found that many cases fail to return for injections as soon as the immediate symptoms are relieved.

Ascariasis.—Is of frequent occurrence and is chiefly found in children.

II. General Measures of Sanitation.

Sewage Disposal and Drainage.—In the case of European and the better class Asiatic house, water-flushed closets draining into pits are used. A few of the houses employ the bucket system and the excreta are deposited in the sea.

Public latrines are not yet completed but will be in use at an tarly date; it is hopd that with the provision of these public latrines Ankylostomiasis will decrease.

Over 7,500 loads of refuse were removed from the town during the year and incinerated. The number of men employed on this work (fifteen) was found to be insufficient for the effective scavenging of the upper parts of the town. This number has lately been increased by six with beneficial results.

The water supply of the town is excellent both in quality and quantity.

Sanitary Inspections were made at intervals by the Medical Officer and constant supervision was given to the work by the Asiatic Sanitary Inspector.

III. School Hygiene.

The School Clinic caters for all children reporting sick from Government and Government aided schools in the town. Though tending to be overshadowed by the treatment of minor illness and injuries, its main function has not been lost sight of and much good work has been done in the way of preventive medicine by diagnosing and treating disease in its early stages.

Venereal Diseases account for 1.7% of the diseases treated. The fact that any non-inherited venereal disease should occur at all among school boys speaks volumes for their home life.

The following table shows the most important defects discovered at routine examinations and their relative distribution among the various races:—

	Arabs.	Swahilis and others.	Indians.
Lack of cleanliness	14%	18%	26%
Defective teeth	40%	19%	33%
Enlarged tonsils	13%	9%	20%
Defective vision	10%	5%	8%
Parasitæmia	26%	28%	7%

The total number of cases treated at the School Clinic during the year was 1,895.

IV. Labour Conditions.

As mentioned in last years report labour is almost entirely agricultural, seasonal and migratory and is widely scattered throughout the plantations during the clove picking season.

With this type of labour, the same supervision cannot be given or such hygienic conditions demanded as could be reasonably required in camps built for permanent labour under contract.

A native dispenser is attached to the larger camps engaged in road construction, and all labour receives free medical attention at the various hospitals and dispensaries.

V. Housing and Town Planning.

With regard to housing and town-planning, a plan for the whole town has been prepared by Mr. H. V. Lanchester, and will be carried out as funds permit. A town-planning decree was enacted in 1925.

The Hollis Road which forms part of the town plan and is carried on a new bridge and embankment across the creek from near the new port to Gulioni was opened to the public in October, and marks a definite and important step forward in the transport facilities of the town.

The continued growth of new native residential areas is doing much to relieve the congestion in the more densely populated areas.

	1925	1926	1927
Total number of houses, Zanzibar Township	3,330	3,351	3,354
Number occupied by Europeans	135	136	137
Number occupied by Natives and Asiatics	3,195	3,212	3,217
Number of huts	7,862	8,112	8,742

VI. Food in Relation to Health and Disease.

(a) *Inspections and Control.*

The number of various articles of food stuffs examined during the year was 82,131 as compared with 3,108 in 1925 and 36,081 in 1926, whilst the number condemned as unfit for human consumption was 10,077 as compared with 3,108 in 1925 and 36,081 in 1926.

(b) *Markets, Zanzibar Town.*

The markets are controlled by the Senior Commissioner and a market master is responsible for the general supervision of the market.

The markets are inspected twice daily by a Sanitary Inspector who is also responsible for cleansing; the labour for this purpose being supplied by the Health Department.

The circulating hot water system which was installed at the end of 1926 has proved a boon and the stalls can rapidly be cleansed and kept scrupulously clean by the use of this water.

(c) *Dairies.*

All the sheds at the Government Dairy were occupied and three temporary sheds were erected to receive the cattle from the last of the licensed cowsheds in the town.

The system of drainage remains unsatisfactory as the cesspools do not absorb the washing water from the sheds and have to be emptied by hand every other day.

A junior sanitary inspector attended the dairy daily to supervise the milking, and the cleansing of the utensils.

No improvement was effected with regard to the milk brought in by natives, but arrangements were made at the end of the year for all native purveyors of milk to bring their supplies to the Milk Depot for examination and it is hoped that this measure will lead ultimately to a proper control of this source of supply.

Ten samples were taken during the year.

(d) *Aerated Water Factories.*

All Aerated Water Factories are inspected at least once a week. Further improvements have been effected and the frequency of metallic contamination has been reduced.

		1925	1926	1927
Samples taken	...	65	80	34

(e) *Slaughter House.*

The slaughter house is under the supervision of the Veterinary Officer who inspects all animals and meat.

VII. Reduction of Vermin.

(a) *Rats.*

Three-grain Barium Carbonate and "Common Senæ" poison baits were used continually throughout the year in addition to nipper and cage traps.

	1925	1926	1927
Number of trappers employed	7	8	7
Rats trapped	9,183	16,654	18,739
Rats purchased	4,251	3,944	3,605

Classification.

	Rattus Rattus.	Mus Norvegicus.	Pachyura Cærulea.	Mus Musculus.	Cricetomys gambianus.	Unclassified.
1925	11,105	1,059	1,027	93	150	..
1926	18,500	477	1,389	58	174	383
1927	20,992	51	1,172	..	129	..

(b) *Flies.*

One thousand four hundred and eighteen breeding places were found during the year and the nuisances abated.

(c) *Pariah Dogs.*

One hundred and seventy-one pariah dogs were destroyed during the year.

(B) Measures Taken to Spread the Knowledge of Hygiene and Sanitation.

Instruction in elementary tropical hygiene is included in the course for teachers at the Government Schools. Short lectures and demonstrations on subjects of Public Health interest are also given by Dr. A. H. Spurrier in the Museum to groups of pupils from various schools in the town.

The Economic Biologist during various tours lectured to villagers and school children on Malaria, Hookworm and Bilharziasis. Practical demonstrations were given, such as recognition of mosquito larvæ, snails suspected of carrying Bilharziasis, and ova of Ankylostomes.

(C) Training of Sanitary Personnel.

Apprentices are selected from locally-born British Indians and Natives who have sufficient education to profit by the instruction given.

The work of a sanitary inspector is arduous and unpleasant and it is difficult to attract the right type of candidate while the advantages of the shorter-timed and more popular clerical appointments are offered at more remunerative salaries.

Elementary lectures are given to these apprentices on infectious diseases, vaccination and general sanitation, and also practical demonstrations in vaccinating, disinfecting, building construction, meat and food inspection, office routine and the general duties of a sanitary inspector.

(D) Recommendations.

The recommendations in last year's report with regard to Insect-Borne and Helminthic Diseases are being gradually carried out, whilst the proposals contained in other recommendations are under consideration.

Attention is again drawn to the desirability of appointing a Lady Medical Officer to undertake Maternity and Child Welfare Work.

Pemba Island.

The opening up of the Island by the construction of a road system, and the opening of District Dispensaries and the establishment of the Leper Settlement at Funzi Island render the appointment of a Sanitation Officer to undertake the care of Funzi, charge of the district dispensaries and general public health work desirable.

Continuation of anti-malarial work and swamp drainage as funds allow.

J. M. SEMPLE,

Acting Deputy Director of Sanitary Services,

Zanzibar Protectorate.

IV. PORT HEALTH WORK AND ADMINISTRATION.

The Port Health Work was undertaken by a Sanitation Officer throughout the year.

Pratique is given to vessels between the hours of 7 a.m. and 10 p m. and for this purpose all vessels are boarded by the Port Health Officer.

Immigrants arriving from Bombay are placed under surveillance for a week after arrival and all vaccinated who are considered to require it.

The baggage of all deck passengers is claytonised before being passed through the Customs.

The crews and passengers of dhows are required, after pratique has been given, to report at the Health Office for inspection and, if necessary, vaccination.

The total number of steamers granted pratique during the year was 553 as compared with 521 in 1926.

The total number of dhows granted pratique was 1,289 as compared with 1,409 in 1926.

No steamers or dhows were quarantined during the year, neither was the port in quarantine.

The following table shows the monthly figures for ships, dhows, and passengers.

Port Sanitation Return 1927.

Months.	Arrivals.			Ships quarantined.	Ships claytonised.	Passengers landed.	Passengers under surveillance.	Number of persons vaccinated	Persons placed in quarantine
	British.	Foreign.	Total.						
Steamers—									
January ..	28	22	50	..	..	2,361	..	55	..
February ..	21	19	40	..	..	1,957	..	20	..
March ..	26	18	44	..	..	1,451	..	98	..
April ..	30	24	54	..	..	1,873	..	262	..
May ..	25	14	39	..	..	1,573	..	137	..
June ..	29	15	44	..	..	1,558	..	163	..
July ..	27	15	42	..	..	1,335	..	58	..
August ..	32	15	47	..	..	1,395	..	85	..
September ..	27	16	43	..	..	1,463	..	128	..
October ..	33	12	45	..	..	1,598	..	112	..
November ..	24	12	36	..	..	1,427	..	125	..
December ..	41	8	49	..	..	1,963	..	133	..
Men-of-War ..	..	..	..	..	..	..	..	..	..
Total ..	343	190	553	..	..	19,954	..	1,376	..
Total for 1926 ..	347	172	521	1	1	23,429	325	4,938	231

Port Sanitation Return 1927.

Months.	Arrivals.			Dhows quarantined.	Dhows claytonised.	Passengers under surveillance	Number of persons vaccinated.	Persons placed in quarantine.	Passengers landed.
	British.	Foreign.	Total.						
Dhows—									
January ..	85	47	132	..	..	..	694	..	809
February ..	83	53	136	..	..	..	580	..	619
March ..	96	75	171	..	..	..	320	..	488
April ..	76	33	109	..	..	..	141	..	251
May ..	81	12	93	..	..	..	102	..	209
June ..	69	11	80	..	..	..	88	..	198
July ..	88	8	96	..	..	..	132	..	230
August ..	87	15	102	..	..	..	209	..	349
September ..	91	1	92	..	..	..	98	..	194
October ..	76	10	86	..	..	..	102	..	240
November ..	93	10	103	..	..	..	96	..	205
December ..	78	11	89	..	..	..	82	..	175
Total ..	1,003	286	1,289	..	..	..	2,644	..	3,967
Total for 1926 ..	1,132	277	1,409	..	..	..	2,131	..	5,419

V. MATERNITY AND CHILD WELFARE.

ZANZIBAR MATERNITY ASSOCIATION.

This association is controlled by a Committee consisting of the Director of Medical and Sanitary Services (President), other Government officials and private persons.

The Government contributes an annual grant to the Association and the necessary balance is provided by private subscriptions and donations, and by fees from patients who can afford to pay.

The Annual Report of the Association is appended (Appendix IV). The natives are gradually learning to appreciate the value of the services rendered, and excellent work is also being done among women and children at the Dispensary attached.

The greatest credit is due to the nursing sister in charge for the excellent work she has done since her appointment. During the year two Arab girls of good family have undergone a course of training in midwifery under her supervision.

Beyond what is done by the above Association, limitation of staff prevents this important branch of public health work being seriously undertaken.

VI. HOSPITALS AND DISPENSARIES.

(*a*) OUT-PATIENTS.

As recorded under Public Health there was a very considerable increase in the total number of attendances at the Government Hospitals during the year under review. This is largely due to the continuation and increase of the work done at the District Dispensaries which is becoming each year a more important factor in the life and health of the people. Throughout the year these District Dispensaries have been under the control of a Medical Officer, who is responsible for the training of the Dispensers and the organization and control of the different dispensaries.

A central training school and dispensary has been established in the buildings known as the Old Barracks. Here the apprentice dispensers, who must be able to read, write, and speak English are taught the elements of anatomy and physiology and given a general outline of common diseases and their treatment. They attend the out-patient practice of the hospital and are taught how to dress wounds and treat minor ailments. In this central dispensary all stock mixtures for the district dispensaries are made up under the supervision of a qualified African Dispenser of many years' service. The apprentice dispensers are required to assist in this work and learn the dosages of ordinary drugs commonly used. It should be pointed out here that all mixtures used in this work are stock mixtures and the prescription and dose are typed on the bottle, and as no drugs containing poison are used no ill-effects due to indiscriminate dosing are

likely to ensue. The apprentice dispensers also attend lectures on sanitation given at the Health Office. The Medical Officer in charge, in addition to this work, visits the different dispensaries weekly where he sees cases reserved for him by the dispensers, does minor surgery such as the extraction of teeth, gives injections of B.P.S.T. for yaws, supervises the work of the dispensers and sees that they are keeping the knowledge they have acquired up to date. It will be realised that owing to the short course of training and lack of primary education of the personnel to be trained that their knowledge is very elementary, nevertheless the success of these dispensaries has been remarkable, and indeed financially embarassing, and they have been the means of bringing to light the prevalence of diseases such as yaws and schistosomiasis which are being proved to be far commoner than was supposed.

In Pemba the supervision of the District Dispensaries is entrusted to the Medical Officers at Weti and Chake Chake, who, owing to the pressure of other work are unable to devote as much time to this work as is the case in Zanzibar. Brief details of the work done at each dispensary in Zanzibar are given below:—

Mwera.	1926	1927
New cases ...	2,209	3,641
Repetitions ...	3,685	6,706

Prevailing diseases were scabies, constipation, ankylostomiasis, bronchitis, malaria, ulcers, and local injuries. More malaria was present than in neighbouring dispensaries. Many of the ankylostomiasis cases were complicated with marked secondary anæmia and cardiac changes.

Mahonda.	1926	1927
New cases ...	2,831	3,666
Repetitions ...	5,968	5,863

Prevailing diseases were ulcers, ankylostomiasis, scabies, boils, abdominal colic, constipation and mumps (slight epidemic). The attendance was steady. The dispensary was greatly used by labourers on neighbouring Government agricultural plantations.

Uzini.	1926	1927
New cases (opened December) ...	49	3,414
Repetitions ...	4	7,059

Prevailing diseases were ulcers, constipation, scabies, abdominal colic, gonorrhœa, bronchitis, neuralgia and local injuries. Forty per cent of the cases were women. On each weekly visit of the Medical Officer over 50 patients were always present.

Chwaka.	1926	1927
New cases ...	2,395	3,772
Repetitions ...	3,996	7,303

Prevailing diseases were ulcers, constipation, scabies, abdominal colic, gonorrhœa, bronchitis, neuralgia and local injuries. Patients attended from villages 10 miles away. Interesting skin cases were seen and several cases of severe ankylostomiasis were noticed. The villages are struggling and scattered. The patients are slowly overcoming their suspicion with regard to western medicine.

Mangapwani.	1926	1927
New cases ...	1,498	2,354
Repetitions ...	3,639	4,360

Prevailing diseases were ulcers, scabies, ankylostomiasis, malaria, bronchitis and conjunctivitis.

After the opening of the new road, enabling a weekly visit to be paid by the Medical Officer, the new cases seen were trebled.

Tunguu.	1926	1927
New cases (opened October) ...	431	2,014
Repetitions ...	889	5,926

Prevailing diseases were ulcers, scabies, ankylostomiasis, malaria and bronchitis. One-third of the patients were women. Always over 25 patients attended on the Medical Officer's weekly visit.

Mbiji.	1926	1927
New cases ...	2,912	3,235
Repetitions ...	4,135	10,277

Prevailing diseases were ulcers, ankylostomiasis, scabies, constipation, bronchitis, malaria, otorrhœa and conjunctivitis. Forty per cent of the patients were women. The great number of repetition cases speaks well for the patients' confidence in the dispensary. There were always 30 patients in attendance on the Medical Officer's weekly visits.

Kizimkazi.	1926	1927
New cases ...	2,400	2,196
Repetitions ...	3,372	3,263

Prevailing diseases were ulcers, scabies, constipation, bronchitis, caries of teeth and conjunctivitis. The slight decrease in the number of patients is partly due to the difficulties of transport preventing a weekly visit by the Medical Officer. The new road to be constructed shortly will be of great benefit in giving extra facilities for this purpose.

Machui.	1926	1927
New cases ...	2,219	3,366
Repetitions ...	2,581	2,762

Prevailing diseases were ulcers, bronchitis, constipation, colic and scabies. Only very simple cases could be treated satisfactorily, the boy in charge being of the Agricultural staff and untrained.

Bweleo (Dimani).	1926	1927
New cases (opened November 26) ...	200	1,390
Repetitions ...	228	1,833

Prevailing diseases were scabies, ulcers, constipation, bronchitis, conjunctivitis, neuralgia and malaria.

The people in some of the villages about three miles from the dispensary are wild and insular. Many of the ulcers treated were tropical ones of a serious nature, chiefly due to neglect on the part of the people.

Selem.	1926	1927
New cases ...	3,734	3,611
Repetitions ...	6,139	6,973

Prevailing diseases were malaria, rheumatism, neuralgia, bronchitis, constipation, colic, ulcers, scabies, ankylostomiasis and local injuries.

The dispensary catered for the neighbouring workers in the Agricultural Department and the small hospital treated post-operative cases of tropical ulcers, pneumonia, malaria and so on, and was greatly appreciated by the natives.

Bububu.	1926	1927
New cases	not opened	2,461
Repetitions	,,	6,260

Prevailing diseases were ulcers, scabies, ankylostomiasis, constipation, bronchitis and malaria.

Passengers on the train were amongst the sick and several of His Highness the Sultan's retainers patronised the dispensary. Towards the close of the year the help of Miss Gunn, of the U.M.C.A. was of the greatest assistance in attracting women for treatment.

From all these dispensaries the Medical Officer and the Dispenser also paid occasional visits to neighbouring plantations and villages.

	1927.		
	Males.	Females.	Total.
Mwembeladu.			
New cases ...	4,435	5,508	9,943
Repetitions			24,206

Average number of patients treated daily = 96.

Prevailing diseases were constipation, ulcers, scabies, bronchitis, malaria, chronic rheumatism, conjunctivitis, gonorrhœa and bronchial catarrh.

From April to November the Medical Officer visited daily. During the rest of the year three visits a week were paid. Practically all types of diseases present in Zanzibar were diagnosed and treated. The dispensary was of great benefit in treating people of the Gulioni District, which is on the outskirts of the town some distance from the Native Hospital. By the influence of the matron of Mwembeladu Maternity Association many of the women patients after having had their symptoms alleviated at the dispensary overcame their fear of operative treatment and were persuaded to proceed as in-patients to the Native Hospital.

During the year the Medical Officer visited several headmen in their villages near by and in all cases a friendly spirit beween them was the result. The number of new cases a month reached its zenith in May when 1,060 were treated. All types of minor operations took place and irrigation treatment for gonorrhœa was instituted. Yaws, syphilis and suitable cases of malaria were treated by intra-muscular injections. Bilharzia was treated with intravenous injections of antimony tartrate. Auroscopic and Opthalmoscopic clinics were started.

A daily sick parade from the local Government school attended.

His Excellency the British Resident and His Highness the Sultan graciously favoured the dispensary with a visit of inspection during the year.

It was noticed that huge tropical ulcers so prevalent at the beginning of the year were absent towards its close and on the whole the health of the people of this district would appear to be vastly improving.

Mkokotoni Hospital.

Prevailing diseases were ulcers, yaws, constipation, scabies, malaria, local injuries, ankylostomiasis, bronchitis and rheumatism.

Yaws.—Five hundred and twenty-five cases were treated, chiefly patients coming from outlying villages. Great help was received from the Assistant District Commissioner who used his influence in starting the campaign. The Akida and Masheha marshalled the patients who attended weekly at the Hospital and were injected with Sodium Potassium Bismuth Tartrate.

Table of Attendances.

		1925	1926	1927
Out-Patients	...	2,881	2,470	4,268
In-Patients	...	46	90	70
Deaths	...	1	—	1
Cases of Yaws	...	3	11	525
Repetitions	...	2,908	2,531	3,286

Cause of Death—Lobar Pneumonia.

Prisons, Police Lines and Markets were inspected periodically from time to time. Nine hundred and fourteen people were vaccinated and 177 dhows examined as to the fitness of their crews.

TABLE.

The following table shows, by stations, the number of cases treated at the Government Hospitals and Dispensaries during 1925, 1926 and 1927:—

Stations.	Cases treated.		
Zanzibar Island.	1925	1926	1927
Zanzibar Hospital ...	16,544	24,505	20,618
Mwembeladu ...	—	—	9,943
Selem ...	1,660	3,734	3,611
Mkokotoni ...	2,881	2,470	4,268
Mwera ...	1,263	2,209	3,641
Chwaka ...	1,425	2,395	3,772
Mbiji ...	2,872	2,912	3,235
Machui ...	1,740	2,219	3,366
Mahonda ...	1,446	2,831	3,666
Mangapwani ...	1,756	1,498	2,354
Kizimkazi ...	673	2,400	2,196
Bweleo ...	—	200	1,390
Tunguu ...	—	431	2,014
Uzini ...	—	49	3,414
Bububu ...	—	—	2,461
Walezo ...	—	—	2,285
Pemba Island.			
Weti ...	3,464	4,153	4,257
Chake Chake ...	8,049	8,675	8,052
Mkoani ...	3,355	5,589	4,862
Kengeja ...	1,557	2,000	3,394
Mtangatwani ...	—	1,567	3,015
Jambangome ...	278	1,492	1,940
Tumbe ...	—	816	1,071
Fufuni ...	—	891	1,478
Tundaua ...	—	1,008	1,834
Stambuli ...	—	1,695	1,510
Mzambaraoni ...	—	604	1,915
Ole ...	—	242	1,632
Total	48,963	76,585	107,189

The apparent reduction in the total number of patients treated at Zanzibar Hospital is due to the fact that in last year's returns the total number of patients treated at the Hospital and Mwembeladu were recorded under the heading Zanzibar, whilst this year figures for Mwembeladu Dispensary and Zanzibar Hospital are given separately.

(*b*) IN-PATIENTS.

The total number of patients admitted to all Hospitals in 1927 was 3,650 with 291 deaths as compared with 3,224 patients with 187 deaths in 1926 and 2,966 patients with 123 deaths in 1925.

European Hospital, Zanzibar.—The number of patients admitted was 59 with 2 deaths as compared with 76 admissions and 2 deaths in 1926 and 62 admissions with no death in 1925.

The most important causes of admission were:—

Paratyphoid B.	2	Heart Disease	1
Malaria	11	Appendicitis	2
Dysentery	1	Injuries	5
Tuberculosis	1		

Asiatic and Native Hospitals.—The number of Non-Europeans, admitted to all Hospitals was 3,406 as compared with 3,148 in 1926 and 2,898 in 1925.

The following table shows the number of admissions, with deaths, at each station during the past and previous years.

	1925.		1926.		1927.	
	Cases.	Deaths.	Cases.	Deaths	Cases.	Deaths.
Zanzibar Island:						
Zanzibar	1,699	76	1,922	137	2,110	212
Mkokotoni	95	1	90	—	70	1
Selem	39	—	46	1	86	—
Pemba Island:						
Weti	398	15	467	16	497	29
Chake Chake	529	30	496	27	491	42
Mkoani	138	1	127	4	152	5
Total	2,898	123	3,148	185	3,406	291

The most important causes of admission were:

Typhoid Fever	1	Paralysis	17
Paratyphoid A.	1	Heart Diseases	23
Paratyphoid B.	11	Broncho-Pneumonia	37
Malaria	306	Pneumonia	44
Blackwater Fever	2	Ankylostomiasis	196
Small-pox	42	Hernia	127
Influenza	77	Orchitis	25
Dysentery	46	Hydrocele	177
Tuberculosis	98	Cellulitis	144
Syphilis	59	Ulcer	402
Gonorrhœa & Complications	46	Elephantiasis	83
Apoplexy	1	Injuries	330

(c) OPERATIONS.

The attached table gives the number of operations performed at the three different hospitals during the year.

	Operations regarded as Major.	Operations regarded as Minor.
Zanzibar	584	628
Weti	190	103
Chake Chake	293	518
Total	1,067	1,249
Total Operations		2,316

The work at these different hospitals, including operations was undertaken as follows throughout the year:—

Zanzibar.—Dr. Vassallo until the date of his departure on leave on 27th July, 1927, when he was relieved by Dr. Young.

Weti.—Dr. Young until this date, when relieved by Dr. Pitchford.

Chake Chake.—Dr. Young until Dr. Austin returned from leave and took over charge on 15th May, 1927.

Dr. McCarthy assisted the Resident Surgical Officer at the Native Hospital from the date of his arrival on March 1st to the end of the year.

(d) X-RAY EXAMINATIONS.

Screenings numbered 72 and 21 photographs were taken. The valuable assistance of the Director of Railway and Electricity and his staff is again gratefully recorded

(e) POST-MORTEMS.

The number of post-mortems performed during the year was 16. Many interesting pathological conditions were found and ankylostome counts done, but pressure of other work prevented adequate reports being made and lack of space prevents full details being recorded in this report.

(f) MEDICAL BOARDS AND EXAMINATIONS.

During the year 84 Medical Boards were held at the Zanzibar Hospital, 211 candidates were medically examined for Government and Naval employment, and 101 officials (Europeans and Non-Europeans) were examined prior to proceeding on leave

(g) DENTAL SERVICE.

As last year this work was undertaken by Captain Newton of Tanganyika who again rendered valuable service. He spent 99 days in the Protectorate and the following statistics of his work are given :—

Attendances	229
Fillings	75
Extractions	313
Pulp treatment	11
Scalings	35

(h) *Infectious Diseases Hospital.*

The following table shows the admissions in the Gulioni Infectious Diseases Hospital during the year 1927.

	Remaining from 1926.	Admitted during 1927.	Total.	Died.	Discharged.	Remaining end of 1927.
Small-pox	9	41	50	19	31	...
Suspected Small-pox	...	1	1	...	1	...
Measles	...	1	1	...	1	...
Chicken-pox	5	12	17	...	17	...
Leprosy	...	9	9	...	9*	...
Suspected Leprosy	...	5	5	...	5	...
Total	14	69	83	19	64	...
Contacts :— Small-pox	2	39	41	...	41	...
Total	2	39	41	...	41	...
Grand Total	16	108	124	19	105	...

* 6 sent to Funzi, 1 sent to India and 2 sent to Bagamoyo.

(*i*) BUILDINGS.

Statement of work carried out during 1927.

Zanzibar.	Rs.	Cts.
Addition to Native and Subordinates Hospital ...	42,283	13
Addition to Health Building ...	17,466	63
Dispensary at Makunduchi ...	3,931	50
Latrine and Lavatory at Native Hospital ...	1,216	95
Prison Island Quarantine Station ...	2,272	00
Pemba.		
Leper Settlement at Funzi Island ...	14,936	37

VII. PRISON AND ASYLUM.

PRISONS.

At the beginning of 1927 there were 256 prisoners in all the Protectorate prisons. During the year 1,261 were admitted, 1,291 discharged, 10 died, leaving 216 in prison at the end of the year.

The cause of deaths were recorded is as follows:—

Chronic Nephritis	1
Cellulitis	1
Bac. Dysentery	2
General Debility	2
Cerebral Embolism	1
Drowned in sea	1
Chronic Bronchitis	1
Amœbic Dysentery	1
Total	10

CENTRAL PRISON, ZANZIBAR.

At the beginning of 1927 there were 157 prisoners in the Central Prison. During the year 1,014 were admitted, 1,005 were discharged and 8 died from causes shown above, leaving 168 in prison at the end of the year. The average daily number in prison were 152.90.

The total number of cases of illness treated was 1,226, of these 255 were admitted to the hospital, the average number in hospital being 2.55.

The principal causes of illness were Malaria, Ankylostomiasis, Respiratory, Digestive, and Skin diseases.

LUNATIC ASYLUM.

	M.	F.	Total.
Patients remaining on 31st December, 1926 ...	13	7	20
,, admitted during 1927 ...	16	1	17
,, discharged during 1927 ...	12	1	13
,, died during 1927 ...	6	—	6
,, remaining on 31st December, 1927 ...	11	7	18

The following deaths occurred during the year:—Dysentery 1, Ankylostomiasis and G.P.I. 2, General debility 1, Injury 1, and Leprosy 1.

The number treated for conditions other than mental were 104; out of these 5 were admitted to hospital. The chief ailments being respiratory and digestive diseases and injuries.

POOR ASYLUM.

The following table gives the number of in-patients treated during the year:—

Particulars.	M.	F.	Total.
Remaining on 1st January, 1927 ...	69	35	104
Admitted during the year ...	328	67	395
Died during the year ...	61	29	90
Discharged during the year ...	225	35	260
Remaining at the end of the year ...	71	36	107

LEPER SETTLEMENTS.

See Appendix II. (Page 105).

VIII. METEOROLOGY.

The meteorological elements recorded during the year in Zanzibar (Town) and in Pemba (Banani) compared with the normals are as follows:—

	Zanzibar (Town)		Pemba (Banani).	
Temperature of the air:	1892-1926	1927	1899-1926	1927
Mean of daily maxima F.	84.5	84.6	86.6	86.1
Mean of daily minima	76.5	76.4	76.0	77.1
Mean of daily range	8.0	8.0	10.6	9.0
Mean	80.5	80.5	81.3	81.6
Rainfall (inches)	59.43	70.53	81.72	66.17
Rainy Days	100	140	162	161

These figures are supplied by the courtesy of the Honourable the Chief Secretary.

B. SPEARMAN,
Acting Director of Medical and Sanitary Services.

IX. SCIENTIFIC.

(a) ANNUAL REPORT OF THE BIOLOGICAL DIVISION FOR 1927.

Staff.—Comprises the Economic Biologist and three Native Attendants.

At the request of the Director of Medical and Sanitary Services a survey was started to ascertain the intensity of various Helminthological infestations in the Protectorate.

Special attention was to be given to Ankylostomiasis and Bilharziasis. From previous reports both from Zanzibar and Pemba, the incidence for Ankylostomiasis was supposed to be in the region of 85 per cent.

These records were based on direct smear preparations only, presumably a number of light infections were missed.

The following plan of investigation was drawn up.

That groups of natives from various parts of the Protectorate employed in different occupations and as far as possible from areas showing varied meteorological and geographical features should be investigated. That these groups should be examined by the flotation method and a quantitative analysis made of the specimens submitted and expressed in the terms of "the number of ova per gramme".

The following graphs show the result of the findings.

Graph No. 1.—All those examined were adult male Swahilis in Government employment. The majority lived in Ngambo and their houses were fitted with concrete topped privy pits. None of them complained of feeling indisposed and were able to carry out their duties efficiently. Some of them were sweepers which entailed hard manual labour. Most of them did not wear boots.

As will be seen from the sampling of 100 employees the average number of ova per gramme was 2843 which equals about 14 worms per man.

Graph No. 2.—All those examined were adult native women, most of them domiciled in Ngambo. As far as could be ascertained the majority used concrete topped privy pits. If the six cases which were showing severe clinical symptoms of over 10,000 ova per gramme are eliminated, the average is 2,194 ova per gramme.

Graph No. 3.—Represents 50 Askaris from Ziwani Lines. The men were selected by the Officer-in-Command and Sergeant-Major as being physically and mentally fit. In fact they were considered to be first-class constables. It will be seen that a number of them show very heavy infections.

Those showing severe infestations, that is to say over 6,000 ova per gramme, were examined by the Medical Officer in charge of the Native Hospital, whose remarks are attached. The Police Lines are provided with an up-to-date system of privy pits.

Graph No. 4.—A group of male natives from Kizimkazi. Kizimkazi is a small village in tht south of the island with a population of about 1,000. The climate is dry, rainfall not excessive, soil a light red loam between outcropping coral rock. The natives are mostly fishermen and owners of domesticated stock, a little ground around the village is planted with various food-stuffs. As far as could be ascertained the majority of the natives defæcate on the beach, there was very little evidence of soil pollution in the bush and around the village.

The average number of ova per gramme was 1,935.

Graph No. 5.—A group of natives from Ungujaukuu. Ungujaukuu is situated in the south of the island in a fertile cultivated belt. The rainfall is abundant and the country around the scattered village well cultivated. Most of the inhabitants are agriculturists. On enquiry it was found that the majority defæcated in the bush and that the beach some distance from the village, was not often used.

Evidence of soil pollution was found at many spots around the hamlet generally in deep shade and on a light loam. Soil samples passed through the Baerman apparatus revealed a number of sheathed larvæ presumably the offspring of human Ankylostomes.

It will be seen from these graphs and figures that the incidence of Ankylostomiasis is very high and that the average number of ova per gramme for all cases lies between 3,000 to 4,000. That is to say about 20 worms per person.

As far as could be judged all those who presented specimens of stools were fit and had nothing to complain of.

A series of cases were selected by the Medical Officers of the Native Hospital. They were judged to be clinically typical of Ankylostomiasis.

GRAPH No. 1.

Occupation	No. Examined	No. Positive	No. Negative	E. P. G. 1-1000	E. P. G. 1000-2000	E. P. G. 2000-3000	E. P. G. 3000-4000	E. P. G. 4000-5000	E. P. G. 5000-6000	E. P. G. 6000-7000	E. P. G. 7000-8000	E. P. G. 8000-9000	E. P. G. 9000-10000	Over G. 10000
Swahili-Males Government Employees	100	99	1	38	21	9	9	7	2	8	1	1	0	4

Average number of eggs per gramme for the group = 2843 = 24 worms per person.

GRAPH No. 2.

Swahili women from Mwembeladu Dispensary. The majority from Ngambo many with concrete topped privies.

Occupation	No. Examined	No. Positive	No. Negative	E. P. G. 1-1000	E. P. G. 1000-2000	E. P. G. 2000-3000	E. P. G. 3000-4000	E. P. G. 4000-5000	E. P. G. 5000-6000	E. P. G. 6000-7000	E. P. G. 7000-8000	E. P. G. 8000-9000	E. P. G. 9000-10000	Over G. 10000
Swahili women from Ngambo Mwembeladu Dispensary	60	55	5	16	13	8	4	2	1	1	3	1	0	6

Average number of eggs per gramme = 3770 = 18 worms per person.

If the 6 cases (which were showing severe clinical symptoms) of over 10,000 ova are eliminated, the average is 2194 O.P.G. 10 worms per person.

GRAPH No. 3.

Occupation	No. Examined	No. Negative	No. Positive	E. P. G. 1-1000	E. P. G. 1000-2000	E. P. G. 2000-3000	E. P. G. 3000-4000	E. P. G. 4000-5000	E. P. G. 5000-6000	E. P. G. 6000-7000	E. P. G. 7000-8000	E. P. G. 8000-9000	E. P. G. 9000-10000	Over 10000
Askaris ...	50	1	49	9	10	16	2	0	3	1	1	1	1	5

Askaris from Ziwani Lines.

Average number of eggs per gramme for the group = 3710 = 18 worms per person.

MEDICAL EXAMINATION OF A GROUP OF ASKARIS BY THE MEDICAL OFFICER, NATIVE HOSPITAL.

Askari No.	Mental State	Nutrition and Physique	Complaints elicited	Anæmia of Conjunctivæ	Tongue	Oedema	Ascites	Liver	Spleen	Respirations	Other notes	Area of Cardiac dulness	Cardiac murmurs	Cardiac action	Lungs	Pulse rate				Conclusions	Ova Count.
																Before 100 yd. run	After 100 yd. run	2 mins. after 100 yd. run	5 mins. after 100 yd. run		
288	Fair intelligence	On the spare side	Nil	+	Clean and fairly red	Slight	Nil	Nil	Nil	22	Nil	Normal	Nil	Normal	Nil	66	120	76	80	Would hardly suspect Ankylostomiasis	5,400
103	Intelligent	Excellent	Darkness of vision	Nil	Clean and red	Faint suspicion	Nil	Nil	Nil	24	Nil	Normal	Nil	Normal	Nil	74	116	80	78	Excellent health best of the lot. Darkness of vision suspicious	5,900
752 (57)	A jolly fellow who jumps to wrong conclusions	Excellent	Nil	Nil	Clean and red	Faint suspicion	Nil	Nil	++	22	Left Hydrocele	Normal	Nil	Normal	Nil	84	132	90	88	Not a case of Ankylostomiasis	11,100
24	Intelligent	Very good but stature small	Nil	Nil	Clean and red	Faint suspicion	Nil	Nil	Nil	22	Nil	Normal	Nil	Normal	At Rt. Apex P.N. impd. and expn. prolonged	70	104	86	80	Not a case of Ankylostomiasis	9,100
770 (351)	Half reluctant and fearful	Fair	Constipation	+	White fur	Faint suspicion	Nil	Nil	Nil	24	Tartar of teeth	Normal	Nil	Rapid	Nil	76	90	84	80	Might suspect Ankylostomiasis	7,200
769 (392)	Slow	On spare side .	Nil	+++	Anæmia White fur	Faint suspicion	Nil	Nil	Nil	26	Tinea corporis	Normal	Soft systolic at pulmony. and apex to axilla	Heavy 1st and aortic pulsation	Nil	78	108	86	82	A fairly obvious case of Ankylostomiasis	12,600
746 (164)	Intelligent	Good	Nil	Suspicion	Dirty Foul breath	Very slight	Nil	Nil	Nil	28	Nil	Normal	Nil	Normal	Nil	74	108	94	88	Constipation	24,000
748 (405)	Slowish	Fair small	Blowing in ears and diarrhœa	Slight jaundice	Clean and red	Slight	Nil	+ Tender	Nil	28	Ptosis of face	Normal but apex beat Vth space within dull area	Venous pulsation in neck	Missed beats in 2, 3 or 4	Nil	63	118	80	76	Would suspect possible Ankylostomiasis	18,000
278	Dullish	Good	Nil	Nil	Dirty Foul breath	Nil	Nil	Nil	Nil	28	Gleet ++	Normal	Nil	Normal	Nil	82	140	96	80	Constipated	9,000

GRAPH No. 4.

Swahili adult males from Kizimkazi Village.

Occupation	No. Examined	No. Positive	No. Negative	E. P. G. 1-1000	E. P. G. 1000-2000	E. P. G. 2000-3000	E. P. G. 3000-4000	E. P. G. 4000-5000	E. P. G. 5000-6000	E. P. G. 6000-7000	E. P. G. 7000-8000	E. P. G. 8000-9000	E. P. G. 9000-10000	Over 10000
Fishermen and agriculturists	28	28	0	9	12	3	2	0	1	0	0	0	0	1

Average ova per gramme = 1935 = 9 worms per man.

GRAPH No. 5.

Adult male Swahilis from Ungujaukuu.

Occupation	No. Examined	No. Positive	No. Negative	E. P. G. 1-1000	E. P. G. 1000-2000	E. P. G. 2000-3000	E. P. G. 3000-4000	E. P. G. 4000-5000	E. P. G. 5000-6000	E. P. G. 6000-7000	E. P. G. 7000-8000	E. P. G. 8000-9000	E. P. G. 9000-10000	Over 10000
Farmers ...	17	17	0	1	1	2	5	3	0	0	1	1	2	1

Average number of ova per gramme for the group = 5452 = 27 worms per man.

The results are as follows:—

No. 1. Swahili Male	...	39,000
No. 2. Swahili Male	...	4,500
No. 3. Swahili Male	...	11,400
No. 4. Swahili Male	...	13,500
No. 5. Swahili Male	...	17,700
No. 6. Swahili Male	...	7,500
No. 7. Somali Male	...	5,400
Total		99,000

Average number of ova for the 7 cases=
=14,000
=70 worms per person.

The Species of Ankylostome in Zanzibar.—A large number of worms were obtained by washing stools at the hospital, out of 400 identified the results were as follows:—

Necator americanus.	Males.	...	24%
Necator americanus.	Females.	...	68%
Ankylostoma duodenale.	Males.	...	8%
Ankylostoma duodenale.	Females.	...	4%

The figures represent:—

Necator americanus.	...	92%
Ankylostoma duodenale.	...	8%

No attempts were made to investigate the incidence of Ankylostomiasis by worm counts. It was found impossible and impracticable to collect all the faeces from a patient after treatment for 72 hours. An attempt was also made to enumerate the number of adult worms found in the duodenum from post-mortems. An average of 8 worms per person was found. I cannot vouch for the accuracy of these counts, as some of the worms may have been overlooked. The method used was to open up the duodenum wash all the liquid contents through a fine sieve. Worms attached to the mucosa of the duodenum were removed by fine forceps. The methods used for estimating the number of ova per gramme were those devised by Stoll throughout. All estimations were based on formed stools. Mushy and watery motions were not counted for ova. Many samples were too small in quantity or of a mushy or watery consistency, these were examined for incidence only.

Total number of stools examined	...	275	
Total number positive for Ankylostomes	...	257	93.4%

Soil Pollution.—The ripe or encysted larvæ of human Ankylostomes.—In the Zanzibar Protectorate soil pollution is extremely common. Sme of the better class natives of Ngambo have constructed deep privy pits with concrete tops, which are undoubtedly non-infective as regards Ankylostome larvæ. On the other hand there exist in the native quarter a large number of privy pits with earth tops, these have proved to be infective.

The majority of the natives defæcate in the open generally selecting shady spots or any bushed areas. Others are not so selective but deposit their ordure anywhere. Favourite sites are naturally in proximity to water where the necessary ablutions after defæcation can be carried out. Many natives who have no conveniences in their houses defæcate in the bush near by and return to their houses and perform the necessary ablutions in a small room at the back of the house. The soil around the bathing tub in these primitive bath rooms has been tested and was found to harbour sheathed larvæ.

The beaches around the town are popular sites for defæcation, there seems to be some doubt as to their infectivity as regards Ankylostome larvæ.

Considering that the rainfall of Zanzibar is about 55 inches a year and the extreme humidity for the greater part of the year, the conditions seem ideal for the development of Ankylostomes. The following experiments were undertaken to test various sites in the neighbourhood of the town as to their infectivity with ripe Ankylostome larvæ.

The apparatus used was that devised by Baermann.

Copper funnels of various sizes were employed. Sieves with a fine mesh lined inside and outside with cloth were fitted into these funnels.

One pound samples of soil were taken and placed in the sieves, water at a temperature of 45 degrees centigrade was run into the funnels until it came into contact with the soil in the sieve. The samples were set up at night; 50 c.c. was removed the next morning and after one hour the liquid was pipetted off to 10 c.c. This 10 c.c. of liquid was examined and counted for the number of sheathed larvæ.

Cultures of fæces heavily infected with Ankylostome ova had been previously strewn on sterile soil and passed through the Baermann apparatus, they were examined on the sixth day. Large numbers of sheathed Ankylostome larvæ were naturally forthcoming; these were studied as to their morphological characteristics and used for comparison with sheathed larvæ obtained from soil samples in the open. The following results were obtained:—

Series No. 1.—All soil samples were collected from open beaches around Zanzibar Town. In the majority of cases the fæces were deposited on pure sea sand which would be covered by high tides. In no case was there any deep shade, the samples taken would be exposed daily to several hours of strong sunshine.

Each sample consisted of one pound taken from sand immediately under semi-dry fæces. From the appearance of the stools they were judged to be about 3 to 5 days old.

It will be seen that 9 out of 14 samples showed sheathed larvæ closely resembling those of human Ankylostomes.

Series No. 2.—Were set up as a control to Series No. 1. The method adopted was to fill some flower pots with one pound of sterile black garden soil and to sow on these pots a rich culture of ripe

Ankylostome larvæ procured from a suitable case of Ankylostomiasis. The method of obtaining these cultures was described on page 56. These flower pot cultures were buried flush at various places on beaches as in Series No. 1 and left exposed to sun, air, and washing of tides for 16 days. After this period they were put through the Baermann apparatus and the larvæ isolated. The following results were obtained:—

Five showed sheathed larvæ, two were negative. In the latter the larvæ were probably washed out of the flower pots by high tides.

Series No. 3.—The same experiments as in Series No. 2, except that in this case the sterile soil used, was obtained in each case from the sites mentioned.

As will be seen from the results in the majority of cases it was sea sand.

All proved positive after burial for 16 days.

Series No. 4 and 5.—The Creek. This tidal inlet divides the European and Indian quarters of Zanzibar from the African Town. The bed of the creek at low water is a mixture of black slime and mud. Many main drains from the town run into this tidal inlet. At high tides the creek is filled: at neap tides only partially. The banks of the creek are favourite sites for defæcation, evidence of gross pollution can be observed at many spots.

The same set of experiments were carried out here, that is to say one series of flower pots containing sterile black garden soil and many ripe Ankylostome larvæ were buried in the creek mud, a further control was made with sterile creek mud and likewise buried at different sites.

All proved negative.

These two experiments are of interest; there is evidently some chemical substance or gas inimical to ripe hookworm larvæ in the creek.

This is fortunate considering that the edges of the creek are favourite defæcating grounds and that on a falling tide or at low water the natives wade across. Many native boys gain a few pence by digging up lug worms for bait in the bed of the creek.

Series No. 6.—Soil samples from various sites in the town including the African quarter of Ngambo.

The specimens were collected only from places showing evidence of extreme pollution. As will be seen in the table, types of soil, shade conditions, etc., varied greatly.

Series No. 7.—Consists of two experiments only.

A rich culture of sheathed hookworm larvæ were placed on sterile soil in a flower pot. This was buried in red earth under the eaves of a native house. It had been previously stated that children defæcated at night under the eaves of houses.

A second culture was put up under the same conditions in the centre of the Recreation Park well exposed to the sun. Slight evidence of soil pollution can always be found on the football ground.

Both proved positive.

SERIES No. 1.

Samples from Various Beaches around Zanzibar Town.

Date.	Number.	Place.	Result.	Remarks.
26-4-27	1	E.T.C. Beach	Negative	Sea Sand. Area selected covered by sea at high tide. Much evidence of pollution.
27-4-27	2	Bank India Beach	Positive	Sea sand mixed with muddy slime near outlet of main drain. No shade. Area selected covered by sea water at high tide. Many sheathed larvæ isolated. Much pollution.
29-4-27	3	French Hospital Beach	Negative	Sea sand only. No shade. Much evidence of pollution. In all probability the fæces were from Europeans as the samples were taken from near the house drain.
29-4-27	4	Col. Murphy's Beach	Negative	Sea sand only. Taken from end of drain. Much pollution.
2-5-27	5	Residency Beach	Positive	Sea sand and black soil. Taken from outlet of boys drain. No shade. Covered by sea water at high tide. A few sheathed larvæ found. Three in 10 c.c. Evidence of much pollution.
2-5-27	6	Residency Beach	Negative	Sea sand and black soil. No shade. Washed by high tides. Under Residency walls. No signs of pollution.
2-5-27	7	Native Hospital Beach	Positive	Sea sand and muddy slime. No shade. Washed by high tides. Taken at outlet of drain. Much pollution. Two larvæ in 10 c.c.
5-5-27	8	Oil Pier Beach	Positive	Sand and earth. No shade. Washed at high spring tides. Much evidence of pollution, a public communal defæcating ground. Many sheathed larvæ found.
6-5-27	9	Oil Pier Beach	Positive	A second sample same as No. 8. Many larvæ found. Fifty in 10 c.c.
6-6-27	10	Oil Pier Beach	Positive	Sea sand in coral pockets. No shade. Much evidence of pollution. Covered by sea at high water. Twenty sheathed larvæ in 10 c.c.
9-6-27	11	Mnazi Moja Beach	Negative	Sea sand underneath soil bank. No shade. Much evidence of old and new pollution.

SERIES No. 1.—(*Continued.*)

Samples from Various Beaches around Zanzibar Town.

Date.	Number.	Place.	Result.	Remarks.
22-6-27	12	Gulioni Bridge	Positive	Sea sand and loam. Deep shade. Covered by sea water at high tide. Fresh water from surface drains for the greater part of the day. Much evidence of pollution, a favourite defæcating ground. Thirty sheathed larvæ in 10 c.c.
23-6-27	13	Pigaduri Beach	Positive	Sea sand. Fully exposed to sun, no shade. Washed by high tide. Gross pollution in every direction. Thirty-eight larvæ in 10 c.c.
8-7-27	14	Mnazi Moja Beach	Positive	Near European bathing station. Sea sand. No shade. A tidal inlet, filled at high tide with sea water. Gross pollution in every direction.

SERIES No. 2.

Cultures on Sterile Soil in Flower Pots on Various Beaches.

Date.	Number.	Place.	Time exposed.	Remarks.
5-7-27	1	Oil Pier Beach	16 days	Buried on top of beach in sandy soil, washed by high water. Exposed to sun. Result. Positive. Many active sheathed larvæ.
13-7-27	2	India Bank Beach	16 days	Buried on top of beach under old French Hospital. Washed by high tides. Fully exposed to sun. Result. Positive. Many sheathed larvæ all of same morphological appearance.
20-7-27	3	Shangani Beach	16 days	Buried in sea sand. Washed by high tides. Fully exposed to sun. Result. Positive. Many sheathed larvæ.
26-7-27	4	Gulioni Bridge	16 days	Underneath bridge buried in gravelly soil. Deep shade. Trickle of fresh water for most of the day from surface drains. High tide reached and covered culture. Result. Negative. Probably larvæ were washed out.
26-7-27	5	Gulioni Beach	16 days	Buried in sea sand on beach. Fully exposed to sun. Washed by high tides. Result. Positive. Many sheathed larvæ isolated.
2-8-2	6	Dhobie Lines Beach	16 days	In mangrove swamp. Buried in black mud, saturated with sea water. Well shaded by mangrove bushes. Result. Positive. A few sheathed larvæ found.
2-8-27	7	Dhobie Lines Beach	16 days	At side of fresh water stream in mangrove swamp, well exposed to sun. Buried in sand saturated with fresh water at low tide and covered by sea water at high tide. Result. Negative. Probably larvæ were washed away.

SERIES No. 3.

Cultures in Flower Pots Obtaintd from Various Sites on Various Beaches.

Date.	Number.	Place.	Time exposed.	Remarks.
16-8-27	1	Oil Pier Beach	16 days	Sterile sea sand. Same conditions as Series 2, No. 1. Result. Positive. Many active sheathed larvæ.
16-8-27	2	India Bank Beach	16 days	Sterile sea sand. Same conditions as Series 2, No. 2. Result. Positive. Few sheathed larvæ.
23-8-27	3	Shangani Beach	16 days	Sterile sea sand. Same conditions as Series 2, No. 3. Result. Positive. Many active and sheathed larvæ.
23-8-27	4	Gulioni Bridge	16 days	Sterile gravel. Same conditions as Series 2, No. 4. Result. Positive. Many active and sheathed larvæ.
23-8-27	5	Gulioni Beach	16 days	Sterile sea sand. Same conditions as Series 2, No. 5. Result. Positive. Many active and sheathed larvæ.
31-8-27	6	Dhobie Lines Beach	16 days	Sterile mangrove mud. Same conditions as Series 2, No. 6. Result. Positive. Few sheathed larvæ found.

SERIES No. 4.

Samples from Various Sites in the Creek.

Date.	Number.	Place.	Result.	Remarks.
9-5-27	1	Creek	Negative	At outlet of Public Works drain. Thick oozy black slime in a semi-liquid condition. Around mouth of drain great collections of fæces. Sample taken during neap tides, not covered by sea water.
9-5-27	2	Creek	Negative	At outlet of school drain near large wooden exit flap. Heaps of semi-dry fæces and freshly passed stools on black earth away from sea water. One specimen of Trichuris trichuris found and many flagellates.
13-5-27	3	Creek	Negative	At outlet of drain from public latrines. Much evidence of freshly discharged fæces. Soil black slimy ooze. Washed by sea water at high tides.
13-5-27	4	Creek	Negative	On shore beneath public latrine. Much evidence of partially dried fæces. Soil consisted of sand and stone.

SERIES No. 5.

Cultures on Sterile Soil in Flower Pots in the Creek.

Date.	Number.	Place.	Time exposed.	Remarks.
20-7-27	1	Creek	16 days	Same conditions as Series 4, No. 1. Result. Negative.
22-7-27	2	Creek	16 days	Same conditions as Series 4, No. 2. Result. Negative.
22-7-27	3	Creek	16 days	Same conditions as Series 4, No. 3. Result. Negative
24-7-27	4	Creek	16 days	Same conditions as Series 4, No. 4. Result. Negative.

SERIES No. 6.

Soil Samples from Various Sites in the Town including the African Quarter Ngambo.

Date.	Number.	Place.	Result.	Remarks.
9-6-27	1	Parsee Temple	Positive	In a plantation facing the temple. Shady area covered with bush. Soil sand and humus. Much evidence of pollution old and fresh. Twenty-five sheathed larvæ in 10 c.c.
18-6-27	2	Mianzini River Bed	Positive	In dry river bed, deep shade from trees and bush. Soil sand and humus. Much evidence of pollution old and fresh, some completely disintegrated. Twenty-five sheathed larvæ in 10 c.c.
22-6-27	3	Mlandege	Positive	A small area near the wood market. Soil sand and earth. Partial shade for the greater part of the day. Much evidence of pollution. Nineteen larvæ in 10 c.c.
24-6-27	4	Patel's Shamba	Positive	Opposite Ziwani Swamp No. 2. Deep shade all the day. Soil sand and humus. Little evidence of pollution. Fifteen sheathed larvæ in 10 c.c.
24-6-27	5	Ziwani Shamba	Positive	Orange shamba on the way to Ziwani Lines. Orange trees and deep shade. Light sandy soil covered with grass. Much evidence of pollution. Thirty larvæ in 10 c.c.
28-6-27	6	Malindi Kokoni	Positive	From underneath overhanging defæcating platforms. Partial shade. Soil black mud. Washed by high tides. Masses of fæces. Uncountable number of sheathed larvæ in 10 c.c.
28-6-27	7	Miafuni Ngambo	Positive	Near Indian Ithnasheri Burial Ground. Partial shade. Soil sand and humus. Little evidence of pollution. Three sheathed larvæ in 10 c.c.
15-7-27	8	Gongoni Ngambo	Positive	Near Comoro Cemetery. Light shade. Soil sand.
22-7-27	9	Shangani	Positive	In a lane leading to the main beach. Sand and rubbish, etc. Partial shade. Much evidence of pollution. Twelve larvæ in 10 c.c.
27-7-27	10	Saateni	Positive	Large dug out area. Soil sand and red clay. Well exposed to sun for the greater part of the day. Much evidence of pollution, a public defæcatiny ground for the inhabitants of the neighbourhood. Twenty-fife sheathed larvæ in 10 c.c.
9-8-27	11	Old Wireless	Positive	In a shamba light sandy soil and deep shade. Much evidence of pollution. Thirty-eight sheathed larvæ in 10 c.c.

SERIES No. 7.

Cultures on Sterile Soil in Flower Pots.

Date.	Number.	Place.	Time exposed.	Remarks.
2-8-27	1	Kikwajuni	16 days	Buried under eaves of house in red earth. Partial shade for part of the day, at times fully exposed to the sun. Result. Many sheathed larvæ isolated.
2-8-27	2	Recreation Ground	16 days	In centre near goal post. Hard light sandy soil covered with grass. No shade fully exposed to the sun. Result. Very few sheathed larvæ recovered by the isolation apparatus

From these series of experiments it will be seen that sheathed Nematode larvæ can be found in may sites in Zanzibar Town, and that the native unshod population has many chances of coming in contact with ripe larvæ.

The creek as previously stated proved under all experimental conditions negative, the open beaches of sea sand are suspicious.

Two further experiments were undertaken to test the suitability of sea sand and creek mud as a breeding medium for Ankylostome larvæ. Sterile sea sand and creek mud were sown with a rich culture of hookworm larvæ. The cultures were kept in the laboratory and on the 6th day were passed through the Baermann apparatus, many larvæ fully sheathed were isolated.

This proves that sea sand and creek mud in themselves are suitable for rearing hookworm larvæ.

The next question which arose was if the earth topped privies as used by the natives were infected with Ankylostome larvæ.

Deep pits of 8 to 12 feet deep are dug by the natives, on completion they are covered with any convenient earth and rammed tight. A small orifice is left in the centre for defæcating through. A number of these were carefully inspected and attention was paid as to evidence of soiling around the orifice. On few occasions slight traces of fæcal matter was found around the opening and about six inches away on the earth platform. It was stated that this was owing to the carelessness of children.

A number of soil samples were taken from such privies in the native quarter of Ngambo.

Twenty-eight samples were taken from different pits in various districts of Ngambo. The soil was collected from around the orifice. Fifteen showed sheathed larvæ in varying quantities after being passed through the Bærmann apparatus.

This shows that such types of privy pits may be a source of infection. When one takes into consideration that these pits are roofed with plaited coconut leaf and sorrounded by walls and that after defæcation much water is used for ablution purposes, the conditions as regard to shade and humidity are ideal for hookworm larvæ.

Many natives, who have no privy pits defæcate on ground or in bush in close proximity to their houses, have attached to their compounds a small room which they use for bathing. I was informed that after defæcation they retired to their bathrooms and there carried out around a small tub the necessary cleansing ablutions

Soil samples were taken from around the tubs. Five bathrooms were tested, the soil was of sandy nature and wet, all showed sheathed hookworm larvæ.

A small series of investigations were also carried out in different parts of the island.

The following results were obtained:—

Kombeni.—A small village in the south of the island. It is on the fringe of the stony wanda country. Some of the huts are situated on heavy red soil, others on rocky coral country. Soil samples from 12 earth-topped privy pits were investigated. Five samples showed sheathed larvæ.

Dunga.—A large scattered village in the centre of the island. Soil heavy, much cultivation and deep shade. Soil samples were taken from twelve earth-topped privies, five showed sheathed larvæ, one in particular showed a large number, thirty-five in 10 c.c.

Chwaka.—A small village on the East Coast. Between the village and the sea-shore there is a long narrow strip of bushed sandy waste. On investigation this area seemed to be a public communal defæcating ground. On all sides and under most of the bushes signs of pollution were noticeable. The soil was of a light sandy texture covered by straggling grass and shady. Twelve samples were selected from various sites, as far as possible from areas in deep shade. The soil was taken from underneath and around fæces judged to be about six days old. All showed sheathed larvæ, some of them heavy infections. This result is of interest, as here one has to deal with a public defæcating ground. The same conditions have not been found elsewhere in Zanzibar. Soil pollution in Chwaka is heavy and concentrated over a small area.

Kizimkazi.—A small village in the extreme south of the Protectorate. Scattered huts built on open wanda country. Around the settlement small patches of cultivation. Most of the inhabitants are fishermen. On enquiry it was stated that the majority of the natives defæcate on the beach. A careful search was made in and around the village, one small area was found showing obvious signs of pollution. Soil light red friable loam in shade. The single sample showed sheathed larvæ.

Ungujaukuu.—A large scattered settlement in the south. Much cultivation and bush. Beach situated a considerable distance from dwellings. All natives asked, admitted to defæcating in the bush. Samples were collected from different sites and mixed. Result, many sheathed larvæ.

It will be noticed that the term sheathed larvæ has been generally used. As to the sheathed larvæ found in various soils samples being the progeny of A. duodenale or N. americanus seems to be somewhat doubtful.

Material was sent to specialists in England and America. No definite answer was obtainable as to the identity of the larvæ submitted. As mentioned in this report hookworm larvæ were cultured on sterile soil and carefully compared with the wild specimens obtained from soil cultures.

CONCLUSIONS.

1. The incidence of Ankylostomiasis in the Protectorate by smear and flotation methods is 93%.
2. The average number of ova per gramme for all groups of natives investigated is between 3,000—4,000. This indicates about 14 worms per person.
3. That generally persons showing over 10,000 ova per gramme reveal clinical symptoms.
4. That perhaps the local native has attained some sort of natural immunity.
5. That soil pollution is rife throughout the Protectorate.
6. That sea beaches, such favourite sites for defæcation, are probably infective.
7. That privy pits constructed with earth tops are infective.
8. That the Creek for some unknown reason is not infective.
9. That in the majority of cases the natives do not make use of communal defæcating grounds, so that soil pollution is very scattered.

Ankylostomiasis of Dogs.—A. caninum and A. brasiliense are extremely common in dogs.

Many dogs killed by the Health Authorities were examined and hookworms collected.

No records have been obtained of these parasites occurring in man. Over 1,000 human hookworms were obtained by washing stools and from post-mortems, all of which proved to be A. duodenale or N. americanus.

Ascariasis.—Ascaris lumbricoides is a common parasite and prevalent throughout the Protectorate. Some curious factors which are at present unexplainable as to the intensity of infection in some villages and very slight infestation in others have come to light. Two hundred and seventy-five stools were examined, 67 showed Ascariad ova=24.7%. Certain villages in the south of the island show an infection rate of nearly 90%.

The climate of the south is much drier than that of the north and high winds are prevalent. The villages are supplied with deep wells. All those which I examined had good protecting coping walls about two feet high. It seemed improbable that much fæcal contamination of drinking water was taking place.

That washing in water, which is subsequently used for drinking, is one important factor is unquestionable, and one would expect to find a high incidence where the drinking water is much polluted. It may be possible that owing to the dryness of the climate in the south that eggs after complete dessication of the fæces are blown on to food.

On enquiry and by personal observation it is well-known that dogs are prone to devour human fæces, this may help in the general dissemination of Ascarid ova.

Cattle should also be considered. I have never seen them actually devouring fæces, but as they gain their nourishment solely by grazing they must at times ingest Ascarid and Ankylostome ova.

Ascarids from other Sources than Man.—Domesticated pigs are scarce in Zanzibar; there are a few piggeries near the town owned by Goans. The stomachs and intestines of some of them were examined but no Ascarids were found.

Wild bush pigs are extremely common throughout the Protectorate, whether they act as hosts for A. lumbricoides is unknown to me. I take A. suilla to be synonym for A. lumbricoides. One post-mortem was performed with a negative result. It is intended later to have the fæces of wild pigs collected and examined for Ascarid ova.

Trichuriasis.—Trichuris trichura is one of the commonest parasites of man in Zanzibar.

Two hundred and eighty-three stools were examined, 196 showed ova of Trichuris = 72.1%. The way of infection is presumably the same as that of A. lumbricoides.

Tæniasis.—Is practically unknown. A few natives from the mainland have been found infected with T. saginata, owing probably to the fact of eating raw or improperly cooked meat. The natives of Zanzibar eat little meat and when used is cut into small pieces and thoroughly cooked.

The Veterinary Division condemns a number of cattle carcases annually for infection with Cysticercus bovis. The cattle are imported from the mainland; local animals, as far as is known, are not infected.

Bilharziasis.—Schistosomum hæmatobium. This parasite has been proved to be far commoner than previously thought. The following records have been obtained:—

Total number of school children examined	...	287
Total number showing ova in urine	...	34 = 11.9%

The following statistics show the infection rate for the various schools examined:—

MWERA SCHOOL.

Number examined	...	40
Number positive	...	6 = 15%

The average age of the children was about 8 years. All of them admitted to bathing in the Mwera River and adjacent swamps in the district.

Mangapwani School.

Number examined	...	43
Number positive	...	5=11%

Mangapwani is a well-watered district, swamps and rivers are abundant. All children admitted to bathing in fresh water.

Ndijani School.

Number examined	...	46
Number positive	...	9=19%

Ndijani is situated in the centre of the island. There are no swamps or rivers in the proximity of the school. A few of the boys admitted to bathing in swamps at Ubago and Chejuu, both about 8 miles distant from the school.

Mkokotoni School.

Number examined	...	36
Number positive	...	7=19%

Mkokotoni is a well-watered district, swamps and rivers are a feature of the countryside.

Kiungani School.

Number examined	...	51
Number positive	...	4=7.8%

The school is situated near Zanzibar town and is under the control of "The Universities Mission to Central Africa". Many of the boys came from the Mainland. The pupils said they always bathed in the sea. Those infected probably contracted the disease on the Mainland.

Kizimkazi School.

Number examined	...	71
Number positive	...	3=4.2%

In Kizimkazi there are no rivers or swamps. The boys showing infection had spent their holidays at Mtende. In Mtende there are a series of swamps which are permanent for the greater part of the year.

These records show that the local inhabitants of the island are infected with Schistomsomiasis. It also proves that the infection was gained locally. The majority of the school children examined had never been out of the island.

A number of urines were sent in from various hospitals, dispensaries, institutions, etc. They were clinically suspicious of Bilharziasis.

Total number examined	...	50
Total number positive	...	33=66%

The majority were adult males and represent all types of natives both from Zanzibar and the Mainland.

The Intermediate Host of Schistosomum Hæmatobium.

The following Molluscs have been recorded from the Protectorate:—

1. Bulinus forskali
2. Planorbis gibbonsi
3. Cleopatra ferruginea
4. Melanoides tuberculatus
5. Cerithidea decollata
6. Theodoxus natalensis
7. Limnæa cailliaudi
8. Succinea concisa
9. Isodora ovoidea
10. Lanistes purpureus
11. Ureodoxis gagates
12. Meladomus olivaceus
13. Melania amarula
14. Ampullaria gradata

Only two of these come under suspicion namely Isodora ovoidea and Planorbis gibbonsi.

Long series of dissections were made of Isodora ovoidea found in ponds and swamps from various parts of the island.

Number dissected	...	249
Positive for Cercariæ	...	9

Snails were dissected regularly from May to December to study the seasonal incidence.

Isodora ovoidea was also found to harbour the Cercariæ of some unknown Trematode.

In the nine infected snails, the cercariæ had all the morphological characteristics of S. hæmatobium.

Experiments Undertaken to Try and Infect Isodora Ovoidea with the Miracidia of Scistosomum Hæmatobium.

Numbers of Isodora ovoidea were collected from two ponds at Marahubi Gardens. As these ponds are used for ornamental purposes and are constructed of cement, it was thought that they would not be accidentally infected. One hundred of them were dissected; none showed Cercariæ. Specimens of Isodora ovoidea from these ponds were isolated in small aquaria and large test tubes. Infective urine

rich in ova of S. hæmatobium was added. They were dissected regularly from the sixth to the thirtieth day. No Cercariæ were recovered. In some instances the ova were first hatched in an incubator and the resulting active Miracidia were added to the aquaria, no definite results were obtained.

From these findings it will be seen that there is still some doubt as to Isodora ovoidea being the definite intermediate host of Schistosomum hæmatobium.

The Bionomics and Distribution of Isidora Ovoidea in Zanzibar.

This mollusc has been found in most of the swamps and ponds in the island. It has no marked preference for certain types of water or aquatic flora. They are generally found in abundance on the underside of waterlily leaves and attached to the stems of a species of Papyrus. At times, when in profusion, they attach themselves to any driftwood or convenient foliage. I have never found them in rivers or swiftly moving water. At certain seasons they are very abundant generally in the cold weather, the same swamp revisited after a few months in the hot season was practically negative. They have been found in every part of the Protectorate.

Conclusions.

1. That Schistisomiasis (S. Hæmatobium) is common in the Island.

2. That the disease is locally contracted.

3. That in all probability Isodora ovoidea is the intermediate host of Scistosomum hæmatobium.

Recommendations.

1. Destruction of the adult worms in man by means of suitable drugs.

2. Destruction of the intermediary Mollusc by chemicals such as Copper Sulphate. Clearing of favourite food plants from swamps. Encourage the natives to keep ducks, they are known to feed with avidity on Molluscs.

3. Propaganda. Short concise pamphlets dealing with the disease and its etiology. The danger of bathing and washing clothes in swamps should be stressed.

Schistosomiasis due to Schistosomum Mansoni.—Two cases out of 275 fæcal examinations showed lateral spined ova. Both patients came from the mainland and were not suspected of rectal Bilharziasis. As will be seen from the list of indigenous Molluscs only one species of Planorbis has been found.

Planorbis gibbonsi is a very small species and has a restricted range in the Protectorate.

Fleas.—A survey was started in 1927 to ascertain the species of the common rat fleas and their monthly incidence. The following results were obtained and tabulated monthly.

FLEA RECORDS. JULY 1927.

Date.	Rat Species.	Locality.	No. Cheopis.	No. Astia.	No. Brasiliensis.	Total No. fleas.
11-7-27	E. norvegicus	Shangani	5	0	0	5
20-7-27	R. rattus	Miembene	0	0	1	1
20-7-27	R. rattus	Baghani	17	0	0	17
21-7-27	R. rattus	Mkunazini	3	0	0	3
21-7-27	E. norvegicus	Vuga	0	0	1	1
22-7-27	R. rattus	Gongoni	0	0	4	4
22-7-27	E. norvegicus	Shangani	11	0	0	11
23-7-27	R. rattus	Shangani	6	0	0	6
23-7-27	R. rattus	E. Club	3	0	0	3
23-7-27	Pachyura	Vuga	0	0	3	3
23-7-27	R. rattus	Shangani	0	0	3	3
25-7-27	E. norvegicus	Ngambo	0	0	1	1
25-7-27	R. rattus	Ngambo	1	0	1	2
27-7-27	R. rattus	Vuga	4	0	1	5
27-7-27	E. norvegicus	Shangani	11	0	0	11
28-7-27	E. norvegicus	Market	2	0	0	2
28-7-27	R. rattus	Shangani	12	0	0	12
29-7-27	R. rattus	Baghani	7	0	0	7
30-7-27	E. norvegicus	Shangani	1	0	0	1
		Total	83	0	15	98

Total number of Rats	...	19
Total number of E. norvegicus	...	7
Total number of R. rattus	...	11
Total others	...	1
Total number of Cheopis on Rattus	...	53
Total number of Brasiliensis on Rattus	...	10
Total number of Cheopis on Norvegicus	...	30
Total number of Brasiliensis on Norvegicus	...	2
Average number of fleas per rat for July	...	5

Flea Records. August 1927.

Date.	Rat Species.	Locality.	No. Cheopis.	No. Astia.	No. Brasiliensis.	Total No. fleas.
1-8-27	E. norvegicus	Kikwajuni	6	0	0	6
2-8-27	R. rattus	Kikwajuni	6	0	0	6
4-8-27	R. rattus	Mkunazini	6	0	0	6
5-8-27	E. norvegicus	Mkunazini	8	0	0	8
6-8-27	E. norvegicus	Sokomohogo	13	0	0	13
6-8-27	E. norvegicus	Shangani	8	0	0	8
8-8-27	E. norvegicus	Sokomohogo	10	0	0	10
9-8-27	E. norvegicus	Kikwajuni	0	0	1	1
9-8-27	E. norvegicus	Sokomohogo	5	0	3	8
10-8-27	R. rattus	Kikwajuni	5	0	3	8
10-8-27	E. norvegicus	Kibokoni	4	0	0	4
11-8-27	R. rattus	Malindi	0	0	3	3
11-8-27	R. rattus	Kikwajuni	1	0	2	3
12-8-27	R. rattus	Kisimamajongo	1	0	5	6
12-8-27	R. rattus	Sokohomogo	29	0	5	34
15-8-27	E. norvegicus	Kikwajuni	3	0	1	4
15-8-27	E. norvegicus	Mji Mpia	1	0	0	1
16-8-27	E. norvegicus	Mkunazini	2	0	2	4
17-8-27	R. rattus	Kikwajuni	0	0	1	1
17-8-27	E. norvegicus	Mkunazini	10	0	0	10
19-8-27	E. norvegicus	Kibokoni	1	0	4	5
19-8-27	E. norvegicus	Native Hospital	6	0	0	6
22-8-27	R. rattus	Vuga	8	0	6	14
24-8-27	E. norvegicus	Kajificheni	0	0	0	0
24-8-27	E. norvegicus	Miembeni	0	0	0	0
25-8-27	E. norvegicus	Mwembeladu	0	0	1	1
26-8-27	E. norvegicus	Sokohomogo	0	0	0	0
26-8-27	E. norvegicus	Ngambo	0	0	5	5
30-8-27	E. norvegicus	Old Jail	4	0	1	5
30-8-27	E. norvegicus	Gongoni	0	0	0	0
31-8-27	E. norvegicus	Old Jail	9	0	0	9
31-8-27	E. norvegicus	Kibokoni	0	0	1	1
31-8-27	E. norvegicus	Old Jail	3	0	1	4
		Total	149	0	42	191

Total number of Rats	...	33
Total number of E. norvegicus	...	24
Total number of R. rattus	...	9
Total number of Cheopis on Rattus	...	56
Total number of Brasiliensis on Rattus	...	25
Total number of Cheopis on Norvegicus	...	93
Total number of Brasiliensis on Norvegicus	...	17
Average number of fleas per rat	...	5.7

Flea Records. September 1927.

Date.	Rat Species.	Locality.	No. Cheopis.	No. Astia.	No. Brasiliensis.	Total No. fleas.
1-9-27	E. norvegicus	Mkunazini	7	0	2	9
1-9-27	E. norvegicus	Kikwajuni	0	0	1	1
2-9-27	R. rattus	Kisimamajongo	0	0	2	2
2-9-27	E. norvegicus	Mkunazini	5	0	1	6
5-9-27	E. norvegicus	Mkunazini	15	0	0	15
5-9-27	E. norvegicus	Old Jail	0	0	2	2
6-9-27	R. rattus	Kiponda	2	0	0	2
6-9-27	E. norvegicus	Mwembe Tanga	2	0	41	43
7-9-27	R. rattus	Changa Bazaar	5	0	0	5
7-9-27	E. norvegicus	Kikwajuni	0	0	1	1
8-9-27	R. rattus	Hurumzi	1	0	0	1
8-9-27	E. norvegicus	Kikwajuni	0	0	1	1
9-9-27	E. norvegicus	Old Jail	7	0	0	7
9-9-27	R. rattus	Mkunazini	10	0	2	12
10-9-27	E. norvegicus	Hospital	1	0	7	8
10-9-27	E. norvegicus	Kajificheni	4	0	0	4
12-9-27	E. norvegicus	Kajificheni	14	0	0	14
12-9-27	E. norvegicus	Old Jail	23	0	0	23
16-9-27	E. norvegicus	Mwembe Tanga	0	0	5	5
17-9-27	E. norvegicus	Kibokoni	1	0	2	3
19-9-27	R. rattus	Vuga	0	0	1	1
20-9-27	E. norvegicus	Mkunazini	0	0	0	0
20-9-27	E. norvegicus	Sbangani	1	0	0	1
21-9-27	E. norvegicus	Kibokoni	2	0	6	8
21-9-27	E. norvegicus	Kibokoni	13	0	1	14
22-9-27	E. norvegicus	Mkunazini	8	0	2	10
22-9-27	E. norvegicus	Kikwajuni	0	0	0	0
23-9-27	R. rattus	Malindi	16	0	1	17
24-9-27	E. norvegicus	Mkunazini	0	0	7	7
24-9-27	E. norvegicus	Mkunazini	10	0	0	10
26-9-27	E. norvegicus	Kikwajuni	0	0	0	0
27-9-27	R. rattus	Sokomohogo	16	0	4	20
27-9-27	E. norvegicus	Sokomohogo	0	0	3	3
28-9-27	E. norvegicus	Mwembeladu	3	4	0	7
29-9-27	R. rattus	Sokomohogo	4	0	5	9
30-9-27	E. norvegicus	Kiponda	14	0	1	15
30-9-27	E. norvegicus	Kidutani	0	0	4	4
		Total	184	4	102	290

Total number of Rats	...	37
Total number of E. norvegicus	...	28
Total number of R. rattus	...	9
Total number of Cheopis on Rattus	...	54
Total number of Brasiliensis on Rattus	...	15
Total number of Cheopis on Norvegicus	...	130
Total number of Brasiliensis on Norvegicus	...	86
Total number of Astia on Norvegicus	...	4
Average number of fleas per rat	...	7.9

Flea Records. October 1927.

Date.	Rat Species.	Locality.	No. Cheopis.	No. Astia.	No. Brasiliensis.	Total No. fleas.
3-10-27	E. norvegicus	Kikwajuni	0	0	1	1
5-10-27	R. rattus	Sokomohogo	2	0	0	2
6-10-27	E. norvegicus	Mwembe Tanga	1	0	0	1
7-10-27	R. rattus	Kisiwandui	1	0	0	1
7-10-27	R. rattus	Kikwajuni	4	0	3	7
8-10-27	E. norvegicus	Sokomohogo	5	0	0	5
10-10-27	E. norvegicus	Baghani	4	0	0	4
12-10-27	E. norvegicus	Changa Bazaar	11	0	0	11
12-10-27	E. norvegicus	Kikwajuni	2	0	0	2
13-10-27	E. norvegicus	Mbuyuni	1	0	0	1
14-10-27	R. rattus	Hammam	3	0	9	12
17-10-27	E. norvegicus	Mlandege	13	0	0	13
18-10-27	E. norvegicus	Kikwajuni	1	0	3	4
19-10-27	E. norvegicus	Mkunazini	0	0	2	2
19-10-27	E. norvegicus	Kikwajuni	0	0	6	6
20-10-27	R. rattus	Kikwajuni	2	0	3	5
20-10-27	R. rattus	Chambawima	0	0	1	1
21-10-27	R. rattus	Kisiwandui	0	0	3	3
22-10-27	E. norvegicus	Mkunazini	0	0	1	1
25-10-27	R. rattus	Kisiwandui	0	0	1	1
26-10-27	R. rattus	Miembeni	1	0	0	1
26-10-27	E. norvegicus	Sokomohogo	12	0	0	12
27-10-27	R. rattus	Kikwajuni	0	0	1	1
28-10-27	E. norvegicus	Kajificheni	2	0	1	3
		Total	65	0	35	100

Total number of Rats	...	24
Total number of E. norvegicus	...	14
Total number of R. rattus	...	10
Total number of Cheopis on Rattus	...	12
Total number of Cheopis on Norvegicus	...	52
Total number of Brasiliensis on Rattus	...	23
Total number of Brasiliensis on Norvegicus	...	13
Average number of fleas per rat	...	4

Flea Records. November 1927.

Date.	Rat Species.	Locality.	No. Cheopis.	No. Astia.	No. Brasiliensis.	Total No. fleas.
3-11-27	E. norvegicus	Kajificheni	2	0	0	2
4-11-27	E. norvegicus	Kikwajuni	0	0	9	9
4-11-27	E. norvegicus	Changa Bazaar	2	0	4	6
7-11-27	E. norvegicus	Mkunazini	2	0	0	2
7-11-27	E. norvegicus	Vikokotoni	25	0	11	36
7-11-27	E. norvegicus	Kajificheni	1	0	0	1
9-11-27	R. rattus	Mkunazini	0	0	9	9
10-11-27	R. rattus	Kikwajuni	9	0	3	12
11-11-27	E. norvegicus	Baghani	76	0	3	79
12 11-27	R. rattus	Darajani	4	0	0	4
12-11-27	E. norvegicus	Mkunazini	6	0	0	6
14-11-27	R. rattus	Kiponda	6	0	0	6
16-11-27	E. norvegicus	Baghani	9	0	0	9
17 11-27	R. rattus	Changa Bazaar	9	0	0	9
19-11-27	R. rattus	Kiponda	13	0	0	13
21-11-27	R. rattus	Kikwajuni	0	0	0	0
23-11-27	R. rattus	Mkunazini	5	0	0	5
23-11-27	R. rattus	Ziwani	0	0	6	6
24-11-27	R. rattus	Kikwajuni	1	0	0	1
26-11-27	R. rattus	Kibokoni	2	0	2	4
29-11-27	R. rattus	Bibi Joka	3	0	1	4
		Total	175	0	48	223

Total number of Rats	...	21
Total number of E. norvegicus	...	9
Total number of R. rattus	...	12
Total number of Cheopis on Rattus	...	52
Total number of Cheopis on Norvegicus	...	123
Total number of Brasiliensis on Rattus	...	21
Total number of Brasiliensis on Norvegicus	...	27
Average number of fleas per rat	...	15.7

FLEA RECORDS. DECEMBER 1927.

Date.	Rat Species.	Locality.	No. Cheopis.	No. Astia.	No. Brasiliensis.	Total No. fleas.
2-12-27	R. rattus	Mchambawima	3	0	0	3
5-12-27	E. norvegicus	Mwembe Tanga	1	0	12	13
6-12-27	R. rattus	Sokomohogo	1	0	0	1
7-12-27	E. norvegicus	Miembeni	2	0	4	6
8-12-27	E. norvegicus	Kikwajuni	0	0	5	5
8-12-27	R. rattus	Africa Hotel	2	0	0	2
8-12-27	R. rattus	Shangani	3	0	0	3
12-12-27	E. norvegicus	Miembeni	2	0	1	3
12-12-27	E. norvegicus	Shangani	3	0	0	3
13-12-27	E. norvegicus	Mchambawima	4	0	0	4
16-12-27	E. norvegicus	Changa Bazaar	1	0	1	2
17-12-27	R. rattus	Mlandege	1	0	4	5
17-12-27	R. rattus	Kisiwandui	0	0	5	5
19-12-27	E. norvegicus	Kajificheni	5	0	9	14
19-12-27	E. norvegicus	Changa Bazaar	6	0	0	6
20-12-27	R. rattus	Kikwajuni	2	0	5	7
21-12-27	E. norvegicus	Kibokoni	3	0	3	6
		Total	39	0	49	88

Total number of Rats	...	17
Total number of E. norvegicus	...	10
Total number of R. rattus	...	7
Total number of Cheopis on Rattus	...	12
Total number of Cheopis on Norvegicus	...	27
Total number of Brasiliensis on Rattus	...	14
Total number of Brasiliensis on Norvegicus	...	39
Average number of fleas per rat	...	5.2

These findings show that Xenopsylla cheopis is the commonest species of flea on all rats, Xenopsylla brasiliensis is also captured frequently, Xenopsylla astia is extremely rare. Xenopsylla crinita has been recorded from Cricetomys gambianus. Other fleas recorded from the common town rats are Echidnophaga gallinaceus and Ctenocephalus felis. These latter not being concerned in the dissemination of plague have not been inserted in the tables.

The following rodents captured in the town have been identified:—

1. Rattus rattus rattus.
2. Rattus rattus frugivorus.
3. Rattus norvegicus.
4. Epimys hibernicus. A melanotic form of Rattus norvegicus.
5. Cricetomys gambianus.

The Insectivore Pachyura cærulea is often trapped in the town, it is a host of Xenopsylla cheopis.

W. MANSFIELD-ADERS,
Economic Biologist.

(*b*) BACTERIOLOGICAL AND PUBLIC HEALTH LABORATORIES.

The work being done in the laboratory is growing steadily in amount. The number of examinations made this year shows an increase of more than two thousand over 1926 and more than five thousand over each of the years 1924 and 1925. The only limit to the amount that can be done is the difficulty in finding the time (and money) to do it. There is no doubt that the material available is more than sufficient to justify the employment of a whole time European Officer, but even with two Sanitation Officers in addition to the Director of Medical and Sanitary Services it is impossible for either to give as much attention to the laboratory as it deserves without neglecting other work.

The water supply at Bububu was examined monthly, and towards the end of the year, showed an improvement in quality as judged by the decrease in sugar-fermenting bacteria. About the middle of the year a barrier of wooden piles had been driven in so as to encircle the conduits from the springs, with the idea of preventing contamination with surface water, and this was no doubt responsible for the improvement in quality.

Blood films of 1,170 children were examined as part of the routine examination in the School Clinic and of these 162 or 13.8% were found to be positive for malaria parasites.

Widal reactions showed an increase of 16 over last year, the majority being for paratyphoid B. These figures should not be taken as an indication of the incidence of the disease in the town as all were single examinations and in no case was a series of examinations asked for, by which alone, on a rising titre, can a diagnosis of active disease be made. A single positive Widal only indicates that the individual, (a) has been inoculated, (b) has had the disease previously, (c) is suffering from the disease. It is therefore, only by a series of examinations at definite intervals that (a) and (b) can be ruled out.

All Police cases, generally examinations for blood or spermatozoa and of which 29 were submitted during the year, are conducted by a Sanitation Officer personally.

J. M. SEMPLE,

Acting Deputy Director of Sanitary Services,

Zanzibar Protectorate.

Bacteriological Laboratory Return for the year 1927.

Rat Examination.			Vaccines.		Chemical.	
Total:—4405.	Pos.	Neg.	Total:—8.	Number.	Total:—235.	Number.
B. Pestis ...	0	4405	Staphylococci & Streptococci	1	Fresh Milk ...	22
Miscellaneous. Total:—194.	Pos.	Neg.	Gonococci ...	2	Condensed Milk ...	5
			B. coli ...	1	Water ...	47
Smear from Ulcer for Spirochæta pallida ...	25	133	Pyorrhea ...	1	Food-Stuffs ...	4
,, ,, ,, ,, Ducrey's Bacilli ...	1	0	Others ...	3	Legal cases ...	29
Gum Smear for Staphylococci, Streptococci ...	1	0			Invoices ...	121
Micrococcus catarrhalis, Spore bearing bacilli and Gram Positive Spirillum ...	1	0			Ghee ...	3
Smear from Penis, Staphylococci ...	0	1			Fresh Butter ...	3
Stomach contents for free Hydrochloric Acid ...	1	0			Sulphuric Acid ...	1
Stomach contents for Combined Acid ...	1	0				
Fluid from Sinus for Bile ...	0	1				
,, ,, ,, ,, Micro-organisms ...	0	3				
Pus from Abscess ...	0	1				
,, ,, Gland for T. B. ...	1	0				
,, Smear for Staphylococci etc. ...	0	1				
Eye discharge for Gonococci ...	0	1	Pathological Examination of Tissues Total:—5.	Number.		
,, ,, ,, Koch Week's Bacilli ...	0	1				
Anal discharge for Human Spermatozoa ...	1	0				
Fluid for Fungi and Staphylococci ...	0	1				
Throat Swab for Fungi ...	0	2				
,, ,, ,, B. diphtheria ...	0	2				
,, ,, ,, Vincent's Angina ...	2	1				
Fluid from Knee joint; Staphylococci and Streptococci ...	3	0	Malignant ...	4		
Cerebro Spinal Fluid for Lymphocytes etc. ...	1	0	Simple ...	1		
Smear from Ear discharge; Staphylococci and Grampositive Diplococci ...	0	1				
Smear from Ulcer Epizootic Lymphangitis ...	2	0				
Scraping from Ulcer, Staphylococci, B. pyocyaneus and Gram pos. Diplococci ...	1	0				
Breast Milk for General Examination ...	1	0				
Breast Milk for Staphylococci and Streptococci ...						
Cultural Examinations:—						
Throat Swab for General Examination ...	1	0				
Pus for B. typhosus ...	0	1			Total:—12,936.	
Discharge from teeth Staphylococci, Streptococci & Micrococcus catarrhalis	1	0				

Bacteriological Laboratory Return for the year 1927.

Blood.

Total :— 5098.	Positive.	Negative.
Tryponasomes ...	0	2
Sugar estimation ...	3	0
Cul. Exam. for Staphylococci and Streptococci ...	0	1
Filaria ...	24	68
Spirochæta obermeieri ...	2	0
Kala azar ...	0	1
Hæmoglobin, Colour Index ...	2	0
Hæmoglobin ...	39	0
Red Cells Count ...	59	0
Differential Counts ...	68	0
White Cells Count ...	21	0
Widal's test:— ...		
B. typhosus ...	3	36
B. paratyphosus A ...	1	
B. ,, B ...	26	
Wassermann's reaction ...	82	67
Pernicious Anæmia ...	1	0

	Undefined	S. T.	B. T.	Q	Neg.
*Malaria	449	167	691	6	3,279

Sputum.

Total :— 413.	Positive.	Negative.
Tubercle Bacilli ...	99	289
Pneumococci ...	12	2
Micrococcus catarrhalis ...	4	0
Spirochæta bronch alis ...	5	0
Micro-filaria ...	1	0
Staphylococci ...	1	0

Fæces.

Total :— 1,371.			Pos.	Neg.
Amœbæ	E. histolytica	11	13	91
	A. coli	2		
Ankylostoma ...			847	296
Ascaris ...			59	12
Tænia	Solium	1	2	0
	Saginata	1		
Giardia Intestinalis ...			4	0
Bilharzia ...			1	0
Tricocephalus dispar ...			3	0
Blood ...			0	2
Cul. Exam. B. dysentery	Shiga	1	4	15
	Flexner	3		
,, ,, B. typhosus ...			3	18
Chemical Examination ...			1	0

Urine.

Total :— 1150.	Positive.	Negative.
Sugar ...		
Albumin ...	45	20
Casts ...	54	0
Bilharzia ...	3	2
Urea ...	55	54
General Examination ...	1	0
Bile ...	431	0
Uric Acid ...	2	0
Chyle ...	1	0
Gonococci ...	1	0
Spermatozoa ...	193	238
Diazo Reaction ...	2	8
Leptospira Hebdomadalis ...	10	9
Phosphates ...	0	2
Pus Cells ...	1	0
Cul. Exam. B. coli ...	1	0
,, ,, B. typhosus ...	3	1
,, ,, B. tuberculosis ...	2	10
,, ,,	0	1

Nasal Secretions.

Total :—57.	Pos.	Neg.
B. lepræ ...	5	52

*This number includes the routine examination of School Children 1170, out of which number 162 were Positive but Undefined Parasites and 1008 were Negative.

(c) INTERESTING CASES.

By Dr. W. A. Young, M.A., M.B. Oxon.

1. Two Cases of Extra Peritoneal Abscess Attributed to Filariasis.

The Deep Filarial Abscess a few years ago was one of the commonest conditions necessitating operative treatment, more particularly in Zanzibar than in Pemba, but during the year 1927 it has been less frequently encountered in Zanzibar Native Hospital.

The following two cases, however, assumed to be of this nature, serve to shew what may be the immensity of this trouble, termed merely "Abscess" and are moreover curious for their extra peritoneal burrowing in the abdominal wall.

Case A. Male, age 30 years.—Three months history of fever, illness and pain in right iliac fossa. Tongue clean. Temperature 101°. Pulse fair. Nothing abnormal found in heart, lungs or abdomen except resistance in right iliac fossa where a tumour of indefinite limits in the abdominal wall, but not noticeably bulging the same, seemed to extend from harder, enlarged, matted lymph glands above Poupart's Ligament, indefinitely down into the pelvis. Nothing abnormal about external genitals. No septic spots on legs. Blood films at 8 p.m. shewed no microfilariæ. Trace of albumen present in urine. Ova of Ankylostoma found in stools.

Operation.—Incision just a little further out and lower down than MacBurney's for Appendicectomy. External oblique tendon divided in the line of its fibres and internal oblique at right angles to this incision. Into the lateral side of this incision a sort of wall of the tumour seemed to bulge, but the limits downward of this wall could not be traced. The Peritoneal cavity was still intact. The wall of the tumour was incised and proved to be quarter of an inch thick. It was opened the full length of the original incision and from the cavity within were evacuated several pints of creamy pus, a sample of which was taken for culture by the Health Office Laboratory. Exploration of the abscess cavity proved it to extend widely in the pelvis, outside the peritoneum. Burrowing extra peritoneally, it exposed to palpation not only the upper part of the pelvis but the pelvic brim and the true pelvis and actually had raised the external iliac artery up from the floor. This artery was in fact traced from Poupart's Ligament, one quarter of an inch from the lower end of the incision over the anterior and medial wall of the abscess cavity to the inner and upper limit of the cavity where its roof met the spine. Here the internal iliac could be felt taking off from the common iliac and passing down into the pelvis in the floor of the cavity.

No tube was inserted in view of the proximity of the large vessels. Dry dressings were applied to the open wound. Each day for a fortnight the cavity was reopened and emptied with the gloved hand and dressed with aseptic precautions, the walls being allowed to fall gradually together from within towards the surface. Within 33 days the wound had completely healed.

The pus taken at operation proved completely sterile.

Case B. Female 31 years.—History of illness for many weeks. Anæmia intense and general condition very bad. Temperature 99° and pulse rate 146. No organic disease in heart or lung or abdomen. Striæ of former pregnancy present. Right thigh absolutely fixed, or held, in 30° of flexion and also abducted, slight œdema of right foot and fullness about right hip joint where skin shewed native needling marks, but where no heat or tenderness could be detected. No arthritic grating in other joints. Teeth perfect. No gonnorrhœal discharge. Ova of ankylostoma present in stools. Blood shewed no parasites, Polymorphonuclears 62, Lymphocytes 36, Eosinophilis 2.

On the day after admission patient shewed very severe signs of collapse. The pulse was barely distinguishable at the wrist. There was slight twitching of eyelids and fingers. Dyspnœa became extreme but nothing could be heard in the chest except harsh breath sounds. The pupils reacted and were equal.

The next day the patient was better and ran a temperature of 102°. Heat and fullness became evident in right groin and front aspect of thigh.

Operation on 4th day.—An incision in the thigh vertically below the right anterior superior Iliac Spine down among the muscles to the femur failed to disclose pus and was closed. Another incision just laterally to McBurney's appendicectomy incision, through external and internal oblique muscles, outside the peritoneum, evacuated several pints of creamy pus.

The abscess cavity extended all over the pelvis, true and false, outside and below the peritoneum. No drain was inserted as the external iliac artery was exposed in the cavity. The wound was left open and dressed with dry dressings.

At 9-45 p.m. that night the patient's temperature rose to 105°. Subcutaneous salines were being administered. The patient was incontinent.

On the following day the patient's condition was rather better. The cavity was gently cleaned out with the gloved finger. Subcutaneous Salines were continued.

On the next day the patient had a second attack of dyspnœa with prolonged respiratory sounds, sibilant rales and inaudible heart sounds.

On the 7th day, 3 days after operation, the relatives including case A, who was now found to be case B's husband, insisted on taking the patient home lest she died in Hospital. A week or so later I was informed she was still alive and getting better.

2 Note on the Prevalence of Certain Clinical Signs and Symptoms in Hospital In-Patients.

Statistics of admissions to Hospital are based on single term diagnoses and must be supplemented by generous records on our individual in-patient case sheets if we are not to cover up the very objective clinical material we are so anxious to sort out. From the in-patient records of the 550 patients admitted to the Zanzibar Native Hospital during the last 5 months of the year 1927, it appears that the following signs or symptoms were noted in the course of the examination of these patients in the percentages below:—

Anæmia (of obvious degree as judged from conjunctive and mucous membranes	...		8 %
Jaundice (similarly judged)	...	...	1½%
Papular or Papulo-pustular condition of the skin (probably mostly mycotic in origin: occurs under "Scabies" or "Pustular dermatitis in out-patient Returns)	...		2½%
Mottling of the skin	...	...	2 %
Areas of thickened skin	...	...	1½%
Onychia	...	...	½%
Native needling marks (probably by no means all recorded)	...	...	1½%
Native burning marks	...	...	1 %
Deformities (e.g., equinovarus, hair lip, ankylosed joints, but exclusive of lost digits)	...	...	2 %
Groin Adenitis	...	5%	
Other Adenitis	...	1%	
			6 %
Bubo (Venereal)	...	...	1 %
Soft Chancre	...	...	2½%
Penile Scars (probably not all noted)	...		2 %
Urethral discharge (possible not all slighter degrees noted)	...	...	7 %
Pyrrhœa	...	...	2½%
Enlarged Tonsils, less than	...	...	1 %
Oedema (of fairly obvious degree)	...		4 %
Ascites	...	...	1 %
Hæmorrhoids	...	...	3 %
Enlargement of spleen (sufficient to be noted on palpation	...	...	8 %
Enlargement of Liver	...	...	5 %
Increase in area of cardiac dulness	...		5 %
Abnormal cardiac rhythm...	...	...	2 %
Abnormality of cardiac sounds	...	...	3 %
Cardiac murmurs (many anæmic)	...		7 %

The percentages given below for lung signs are probably higher than the normal average, as in November and December occurred an outbreak of Influenza which, though in the case of most Europeans taking the form of a mere coryza and in Asiatics of a rather more severely febrile disease, produced in Africans a very appreciable number of cases of Pneumonia and Pleurisy.

In these days, however, when the supply of native patients ever exceeds the accommodation available, so that the Medical Officer is at all times summing up the possibility of moving out some just recovering patient to make room for a more needy case, certain beds are regarded with a covetous eye. These beds are the ones occupied by the increasing supply of Pulmonary Tuberculosis cases. Such patients seem to lie on our hands, possibly infecting our other patients and, after many days leave our Hospital only somewhat relieved.

Impaired Percussion Note	10 %
Altered Vocal Residence	10 %
Altered Types of Breath Sounds	9 %
Adventitious Pulmonary Sounds	15 %
Asymmetrical expansion	15 %
Dyspnœa	1 %
Cataract	1 %
Conjunctivitis	1 %
Keratitis	2 %
Blepharitis	inappreciable
Numbness complained of...	1 %
Altered tendon reflexes	1½ %
Tumours (such as ganglions and lipomata) ...	1½ %

The general picture that one obtains from the above percentages coincides fairly with one's general impression of the Zanzibaris as a people with a very extensive incidence of fungoid diseases of the skin and enlargement of the groin glands, with the impression that a fairly large proportion are suffering from the results of universal ankylostome and malarial infection, even though resistence to these diseases in the native is remarkable and widespread; with the belief that a very heavy proportion of them have contracted venereal diseases, more especially gonorrhœa at some time or other; and finally that generally the native is very susceptible to colds and bronchitic infections.

It may be mentioned that Filariasis, and not the widely diffused gonorrhœa is assumed to be the cause of the remarkable incidence of Hydrocele.

TABLE I.

A. EUROPEAN STAFF.

Name.	Rank of Appointment.	Where Stationed on 31st December, 1927.
J. A. Taylor ..	Director of Medical and Sanitary Services	Zanzibar
B. Spearman ..	Deputy Director of Sanitary Services	,,
S. M. Vassallo ..	Resident Surgical Officer ..	On leave
J. M. Semple ..	Medical Officer ..	Zanzibar
W. A. Young ..	,, ,, ..	,,
T. A. Austin ..	,, ,, ..	(Pemba) Chake Chake
H. O. Watkins-Pitchford ..	,, ,, ..	(Pemba) Weti
W. H. Smith ..	,, ,,	On leave
J. B. C. Madge ..	,, ,, ..	,,
W. L. Gopsill ..	,, ,, ..	Zanzibar
D. D. McCarthy ..	,, ,, ..	,,
Miss A. E. Chambers ..	Matron ..	,,
,, V. I. Dargan ..	Nursing Sister ..	(Pemba) Weti
,, I. Pegg ..	,, ,, ..	Zanzibar
,, A. S. Milne ..	,, ,, ..	,,
,, D. E. Johnstone ..	,, ,, ..	,,
,, I. F. Webb ..	,, ,, ..	,,
W. M. Aders ..	Economic Biologist ..	,,
P. Cairns ..	Sanitary Superintendent ..	,,
E. H. Lavers ..	Sanitary Inspector ..	,,

B. PRINCIPAL MEMBERS OF SUBORDINATE STAFF.

Name.	Rank.	Where Stationed on 31st December, 1927.
K. V. Joshi ..	Assistant Surgeon ..	Zanzibar
F. P. Paul ..	Sub-Assistant Surgeon ..	On leave
C. D. Rana ..	,, ,, ..	(Pemba) Mkoani
M. L. Mehta ..	,, ,, ..	Zanzibar
M. V. Vaidya ..	,, ,, ..	Mkokotoni
R. C. Sood ..	,, ,, ..	(Pemba) Chake Chake
T. W. Dev ..	,, ,, ..	Ziwani
Dinanath Kaura ..	,, ,, ..	Zanzibar
S. Livingstone ..	Dispenser ..	,,
A. J. Rawal ..	,, ..	,,
J. F. de Cruz ..	,, ..	,,
C. Almeida ..	,, ..	,,
L. A. Vaz ..	,, ..	(Pemba) Weti
M. da Silva ..	,, ..	Zanzibar
S. B. P. Fernandes ..	,, ..	,,
J. J. Antao ..	,, ..	,,
I. B. Martin ..	Chief Clerk ..	,,
F. de Souza ..	Senior Sanitary Inspector ..	,,
Jadowji K. Gohel ..	Sanitary Inspector ..	On leave
A. A. Madhani ..	,, ,, ..	Zanzibar
J. M. Noronha ..	Cashier ..	On leave
A. G. Kark ..	Laboratory Assistant ..	,,

C. APPOINTMENTS, CHANGES, ETC., IN STAFF.

Appointments.

Name.	Rank of Appointment.	Date.
	(*a*) Europeans.	
Dr. D. D. McCarthy ..	Medical Officer ..	1.3.27
Miss I. F. Webb ..	Nursing Sister ..	3.3.26
	(b) Asiatics.	
F. X. Lobo ..	Cashier ..	Transferred from Administration Dept. 1.7.27.
K. R. Trivedi ..	Clerk ..	Transferred from P.W.D. 6.7.27.
M. R. Naidu ..	,, ..	,, 7.8.27.
U. S. Dave ..	,, ..	Transferred from Railway and Electricity Dept. 4.10.27.

Acting Appointments.

Dr. W. A. Young, Medical Officer, as acting Resident Surgical Officer, from 27th July, 1927 to end of year.

Miss M. Gittins, Nursing Sister, as acting Matron from 7th January, 1927 to 13th July, 1927.

Termination of Appointments.

Miss G. M. Rainey, Nursing Sister, on 3rd October, 1927.

Retirement.

Miss M. Gittins, Nursing Sister, on 2nd November, 1927.

Leave.

Name.	Rank of Appointment.	Date.
	Europeans.	
Dr. S. M. Vassallo ..	Resident Surgical Officer ..	27.7.27 to 31.12.27
Dr. T. A. Austin ..	Medical Officer ..	1.1.27 ,, 11.5.27
Dr. H. O. W. Pitchford ..	,, ,, ..	1.1.27 ,, 16.8.27
Dr. J. B. C. Madge ..	,, ,, ..	21.11.37 ,, 31.12.27
Dr. J. M. Semple ..	,, ,, ..	1.1.27 ,, 10.8.27
Dr. W. H. Smith ..	,, ,, ..	21.9.27 ,, 31.12.27
Dr. W. M. Aders ..	Economic Biologist ..	1.1.27 ,, 30.3.27
Miss A. E. Chambers ..	Nursing Sister ..	7.1.27 ,, 13.7.27
,, M. Gittins ..	,, ,, ..	27.7.27 ,, 2.11.27
,, G. M. Rainey ..	,, ,, ..	5.7.27 ,, 3.10.27
,, D. Johnson ..	,, ,, ..	19.12.27 ,, 31.12.27
	Asiatics.	
K. V. Joshi ..	Assistant Surgeon ..	1.1.27 ,, 22.5.27
M. V. Vaidya ..	Sub-assistant Surgeon ..	26.12.27 ,, 31.12.27
F. P. Paul ..	,, ,, ..	5.9.27 ,, 31.12.27
J. F. de Cruz ..	Dispenser ..	1.1.27 ,, 9.6.27
J. M. Noronha ..	Cashier ..	16.8.27 ,, 31.12.27
J. F. Rodrigues ..	Clerk ..	28.11.27 ,, 31.12.27
S. R. Fernandes ..	Storekeeper ..	1.1.27 ,, 10.3.27
D. K. Nagar ..	Clerk ..	14.12.27 ,, 31.12.27
F. J. Fernandes ..	,, ..	1.1.27 ,, 19.6.27
A. B. Furtado ..	,, ..	13.6.27 ,, 21.11.27
Shah Mohammed Khan ..	Veterinary Officer ..	1.1.27 ,, 23.9.27
A. G. Kark ..	Senior Laboratory Assistant ..	24.8.27 ,, 31.12.27
J. K Gohel ..	Sanitary Inspector ..	13.7.27 ,, 31.12.27
Mohammed Ali Remtulla ..	,, ,, ..	21.9.27 ,, 31.12.27

TABLE II.

(A) Expenditure:—

		£	£
Personal Emoluments:—			
Salaries and Allowances			36,951
Other Charges:—			
Hospitals and Dispensaries:			
Maintenance of Hospitals	...	2,119	
Medical and Surgical Stores	...	2,529	
			4,648
Sanitation Division:			
Sanitary Equipment	...	499	
Maintenance of patients in Infectious Diseases Hospitals	...	335	
Maintenance of Quarantine Station	...	45	
Maintenance of Motor Launch	...	104	
Maintenance of Lepers	...	1,899	
Drugs, Incidental and burial of destitutes	...	91	
Rewards for killing Rats	...	36	
			3,009
Laboratories:			
Upkeep of Laboratory equipment	...	102	
Maintenance of Biological Division	...	17	
Vaccines and Serums	...	294	
Suppression of Rinderpest	...	6	
			419
Miscellaneous Expenditure:			
Uniforms	...	100	
Incidentals	...	58	
Passages	...	1,262	
Travelling Expenses and Transport	...	797	
Books	...	31	
Purchase of Opium for sale	...	61	
Course of Instruction	...	44	
			2,353
Special Expenditure:			
Instruments and Appliances	...	210	
Experimental Animals	...	2	
Typewriters	...	24	
Dental Equipment	...	7	
Microscope	...	96	
			339
Total Expenditure			£47,719

(B) Receipts:—

	£
Hospital fees, sale of drugs, etc. ...	972
Contribution from neighbouring dependencies for Quarantine Services ...	2,637
	£3,609

(2) Births registered in the Island of Zanzibar, 1921-1927:—

	1921.	1922.	1923.	1924.	1925.	1926.	1927.
Town area ...	479	481	413	501	424	437	471
Mkokotoni district	986	1,090	785	1,064	1,073	846	1,102
Mwera district ...	513	459	282	301	350	401	470
Chwaka district ...	613	628	555	768	499	285	476
Kizimkazi district	—	—	—	—	—	229	87
Total ...	2,591	2,658	2,035	2,634	2,346	2,198	2,606

(3) Deaths registered in the Island of Zanzibar 1921-1927:—

	1921.	1922.	1923.	1924.	1925.	1926.	1927.
Town area ...	1,076	1,262	1,258	1,043	1,379	1,560	1,097
Mkokotoni district	839	888	1,009	749	854	799	658
Mwera district ...	780	803	705	476	746	957	707
Chwaka district ...	512	504	482	564	400	335	400
Kizimkazi district	—	—	—	—	—	181	63
Total ...	3,207	3,457	3,454	2,832	3,379	3,832	2,925

(4) Comparative Statement of Births and Deaths registered in the Island of Zanzibar 1921-1927:—

	1921.	1922.	1923.	1924.	1925.	1926.	1927.
Town area—							
Births ...	479	481	413	501	424	437	471
Deaths ...	1,076	1,262	1,258	1,043	1,379	1,560	1,097

District—							
Births ...	2,112	2,177	1,622	2,133	1,922	1,761	2,135
Deaths ...	2,131	2,195	2,196	1,789	2,000	2,272	1,828
Total—							
Births ...	2,591	2,658	2,035	2,634	2,346	2,198	2,606
Deaths ...	3,207	3,457	3,454	2,832	3,379	3,832	2,925

(5) Comparative Statement of Births and Deaths registered in the Island of Pemba 1921-1927:—

District	1921.	1922.	1923.	1924.	1925.	1926.	1927.
Chake Chake—							
Births ...	640	625	485	565	860	689	1,047
Deaths ...	533	328	366	476	446	377	422
Weti—							
Births ...	689	467	350	376	419	517	699
Deaths ...	554	491	621	461	441	491	530
Mkoani—							
Births ...	342	575	319	340	749	426	406
Deaths ...	271	397	302	342	307	317	251
Total—							
Births ...	1,671	1,667	1,154	1,281	2,028	1,632	2,152
Deaths ...	1,358	1,216	1,289	1,279	1,194	1,185	1,204

(6) Comparative Statement of Births and Deaths registered in the Zanzibar Protectorate 1921-1927:—

Zanzibar Island—	1921.	1922.	1923.	1924.	1925.	1926.	1927.
Births ...	2,591	2,658	2,035	2,634	2,346	2,198	2,606
Deaths ...	3,207	3,457	3,454	2,832	3,379	3,832	2,925
Pemba Island—							
Births ...	1,671	1,667	1,154	1,281	2,028	1,632	2,152
Deaths ...	1,358	1,216	1,289	1,279	1,194	1,185	1,204

Total—

Births ...	4,262	4,325	3,187	3,915	4,374	3,830	4,758
Deaths ...	4,565	4,673	4,743	4,111	4,573	5,017	4,129
Excess of Deaths over Births ...	303	348	1,554	196	199	1,187	—
Excess of Births over Deaths ...	—	—	—	—	—	—	529

(7) Births—Zanzibar Township.

(*a*) Total number of Births registered in the Town of Zanzibar during the year 1927, was as follows:—

Births registered	...	471
Still-born	...	56
Total	...	527

(*b*) Nationality:—

Europeans	...	8
Asiatics	...	401
Natives Indigenous	...	15
Natives others	...	47
Total	...	471

(8) Deaths—Zanzibar Township.

(*a*) The total number of Deaths registered in the Town of Zanzibar during the year 1927, was as follows:—

Males	...	588
Females	...	509
Total	...	1,097

(*b*) Nationality of the diseased:—

Europeans	...	2
Asiatics	...	340
Africans, indigineous	...	592
Africans, others	...	163
Total	...	1,097

(9) Return of Causes of Deaths in Zanzibar Town during 1927:—

I. Epidemic, Endemic and Infectious Diseases:

Diseases.		No.
Typhoid Fever	...	1
Fever Type not defined	...	6
Malaria Tertian	...	123
Malaria Chronic	...	10
Malaria Remittant	...	1
Malarial Cachexia	...	5
Small-pox	...	18
Measles	...	1
Whooping Cough	...	2
Influenza	...	13
Leprosy	...	1
Tetanus	...	2
Tuberculosis, Pulmonary	...	136
Tubercular glands of neck	...	1
Tuberculosis Abdominalis	...	1
Dysentery Bacillary	...	1
Dysentery Amœbic	...	1
Dysentery undefined or due to other causes	...	16
Syphilis	...	10
Septicæmia	...	4
Pyæmia	...	2
Gonorrhœa	...	2
Cancer	...	3

II. General Diseases not mentioned above:

Acute Rheumatism	...	26
Chronic Rheumatism	...	3
Diabetes	...	4
Anæmia	...	26
Anæmia Pernicious	...	1
Rickets	...	3
Beri Beri	...	5
Tumour (Abdominal)	...	2

III. Affections of Nervous System and Organs of the Senses:

Meningitis	...	3
Epilepsy	...	8
Paraplegia	...	2
Hemiplegia	...	13
Paralyses	...	5
Cerebral Hæmorrhage	...	3
Apoplexy	...	1
Neuritis (Peripheral)	...	1
Convulsions (Infantile)	...	23
Mastoiditis	...	1
Mania and Confusional insanity	...	1
Carried forward	...	491

IV. Affections of the Circulatory System:

Brought forward	...	491
Cardio-Vascular Degeneration	...	1
Myocarditis	...	2
Aneurism	...	1
Valvular	...	5
Mitral insufficiency	...	1
Arterio-Sclerosis	...	1

V. Affections of the Respiratory System:

Chronic Bronchitis	...	17
Bronchitis	...	70
Broncho-Pneumonia	...	44
Asthma	...	8
Pleurisy	...	2
Pneumonia (lobar)	...	24
Pneumonia (double)	...	7

VI. Diseases of the Digestive System:

Strangulated Hernia	...	5
Diarrhœa and Enteritis under two years	...	13
Diarrhœa and Enteritis two years and over	...	52
Ankylostomiasis	...	22
Cirrhosis of Liver	...	5
Peritonitis	...	1
Acute Yellow Atrophy of Liver	...	1
Toxæmia	...	2
Suppurative Pyleophlebitis	...	1
Gastritis	...	1
Enlarged liver	...	1

VII. Diseases of the Genito-Urinary System (Non-Venereal):

Extravasation of urine	...	1
Chronic Nephritis	...	12
Retention of urine	...	1
Bright's Disease	...	4
Bilharzia	...	1
Uterine Sepsis	...	1
Hydrocele Septic	...	2
Carried forward	...	800

	Brought forward ...	800
VIII. Puerperal State:		
Puerperal Fever	...	2
Puerptral Septicæmia	...	2
Retention of Placenta	...	1
Eclampsia	...	1
IX. Affections of the Skin and Cellular Tissues:		
Acute Cellulitis	...	3
Ulcers	...	4
Elephantiasis	...	1
Abscess (leg)	...	1
Abscess (liver)	...	1
X. Diseases of Bones and Organs of Locomotion (other than Tuberculosis):	...	0
XI. Diseases of Infancy:		
Premature Birth	...	6
Malonutrition Chronic	...	2
Insufficient Nourishment	...	2
Asphyxia Neonatorum	...	1
XII. Affections of Old Age:		
Senility	...	213
XIII. Affections Produced by External Causes:		
Burns	...	3
Accidental Poisoning	...	1
Other Injuries	...	3
Drowning	...	3
Fractured Skull	...	4
Compound Fracture	...	1
XIV. Ill-Defined Diseases:		
Ascites	...	2
Debility	...	29
Unknown	...	1
Marasmus	...	1
Syncope	...	7
Dropsy	...	2
	Total ...	1,097

TABLES IV AND V.

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total. Admissions.	Yearly Total. Deaths.	Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
I. EPIDEMIC, ENDEMIC AND INFECTIOUS DISEASES.								
1 Enteric Group—								
(*a*) Typhoid Fever ..	1	1	..	2	..	2	..	2
(*b*) Paratyphoid A ..	..	1	1	1	..	1	..	1
(*c*) Paratyphoid B ..	..	13	..	13	..	12	2	14
(*d*) Type not defined ..	..	..	..	..	1	..	..	..
3 Relapsing Fever ..	..	1	..	1	..	2	..	2
5 Malaria—								
(*a*) Tertian (Benign) ..	..	207	..	207	4	3,257	791	4,048
(*b*) Quartan	..	7	..	7	..	19	6	25
(*c*) Aestivo-autumnal ..	..	58	2	58	1	459	95	554
(d) Cachexia Chronic ..	..	45	1	45	..	773	328	1,101
(*e*) Blackwater	..	2	..	2	..	3	..	3
6 Small-pox	9	41	19	50	..	..	..	..
7 Measles	..	1	..	1	..	10	4	14
9 Whooping Cough ..	..	..	..	..	..	32	32	64
11 Influenza	..	84	..	84	3	1,190	263	1,453
13 Mumps	..	1	..	1	..	94	23	117
16 Dysentery—								
(*a*) Amœbic	..	5	..	5	..	6	..	6
(*b*) Bacillary	..	39	12	39	..	43	10	53
(*c*) Undefined or due to other causes	..	5	..	5	..	34	7	41
20 Leprosy—								
Mixed	..	10	..	10	..	26	..	26
25 Other Epidemic Diseases—								
(*b*) Varicella (Chicken-pox)..	..	14	..	14	..	36	2	38
(*e*) Dengue	..	..	..	..	..	1	..	1
(*g*) Yaws	2	16	..	18	..	1,537	549	2,086
29 Tetanus (Lock Jaw) ..	..	1	1	1	..	1	..	1
30 Mycosis—								
Madura foot	..	1	..	1	..	2	..	2
31 Tuberculosis, Pulmonary and Laryngeal	2	99	52	101	4	186	25	211
35 Tuberculosis of Bones and Joints	1	3	..	4	..	3	1	4
36 Tuberculosis of other Organs—								
(*b*) Lymphatic System ..	..	2	..	2	..	1	3	4
38 Syphilis—								
(*a*) Primary	..	7	..	7	3	121	28	149
(*b*) Secondary	..	3	..	3	..	19	14	33
(*c*) Tertiary	..	26	3	26	1	39	6	45
(*e*) Period not indicated ..	..	23	4	23	..	218	86	304
39 Soft Chancre	..	11	..	11	..	491	37	528
40 A.—Gonorrhœa and its complications	..	33	..	33	..	1,990	163	2,153
B.—Gonorrhœal Ophthalmia	..	4	..	4	..	2	7	9
C.—Gonorrhœal Arthritis ..	..	8	..	8	1	14	..	14
D.—Granuloma Venereum ..	..	1	..	1	..	2	3	5
Carried forward ..	15	773	95	788	18	10,606	2,485	13,091

TABLES IV AND V.—(*Continued.*)

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total. Admissions.	Yearly Total. Deaths.	Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
Brought forward ..	15	773	95	788	18	10,606	2,485	13,019
41 Septicæmia—								
Blood poisoning ..	..	..	..	..	..	5	..	5
Infective Wound ..	..	1	..	1	..	2	2	4
Multiple Abscess ..	..	2	1	2	..	3	..	3
42 Other Infectious Diseases—								
Filariasis	..	21	..	21	..	183	34	217
Papular Fever ..	..	2	..	2	..	3	3	6
II. GENERAL DISEASES NOT MENTIONED ABOVE.								
46 Cancer or other malignant Tumours of the Female Genital Organs	..	1	..	1	..	..	1	1
48 Cancer or other malignant Tumours of the Skin	..	..	..	..	..	2	..	2
49 Cancer or other malignant Tumours of organs not specified	..	2	..	2	..	6	2	8
50 Tumours (non-malignant)—								
Adenoma ..	..	5	..	5	..	37	10	47
Cyst ..	..	3	..	3	..	9	6	15
Dermoid Cyst ..	..	..	..	..	..	1	..	1
Molluscum Contagiosum ..	1	4	..	5	..	5	2	7
Osteoma ..	..	1	..	1	..	1	1	2
Papilloma ..	..	..	..	..	..	2	..	2
Polypus ..	..	1	..	1	..	2	1	3
Sebaceous Cyst ..	..	2	..	2	..	12	5	17
Fibroma ..	..	..	..	..	..	3	1	4
51 Acute Rheumatism ..	..	1	..	1	..	41	10	51
52 Chronic Rheumatism—								
Arthritis ..	..	12	..	12	..	1,300	906	2,206
Rheumatoid Arthritis ..	..	..	..	..	..	1	..	1
55 Beri-Beri ..	..	10	1	10	1	18	1	19
56 Rickets ..	..	..	..	..	..	..	1	1
57 Diabetes (not including Insipidus)	..	..	..	..	..	11	3	14
58 Anæmia—								
(*a*) Pernicious ..	..	1	1	1	..	..	1	1
(*b*) Other Anæmias and Chlorosis	..	3	1	3	..	461	239	700
59 Diseases of the Pituitary Body	..	..	..	..	..	..	1	1
60 Diseases of the Thyroid Gland—								
(*a*) Exophthalamic Goitre ..	..	1	..	1	..	7	2	9
(*b*) Other Diseases of the Thyroid Gland	..	..	..	..	..	2	6	8
61 Diseases of the Para-Thyroid Glands—								
Tetany ..	..	..	..	..	..	1	..	1
Carried forward ..	16	846	99	862	19	12,724	3,723	16,447

TABLES IV AND V.—(*Continued.*)

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total. Admissions.	Yearly Total. Deaths.	Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
Brought forward ..	16	846	99	862	19	12,724	3,723	16,447
II GENERAL DISEASES NOT MENTIONED ABOVE—*(Contd.*								
64 Diseases of the Spleen—								
Splenitis	..	1	..	1	..	173	153	326
Other Diseases of the Spleen	..	..	..	..	..	2	..	2
65 Leukæmia—								
(*a*) Leukæmia	..	1	..	1	..	1	..	1
66 Alcoholism—								
Acute ..	..	..	..	..	..	3	..	3
Inebriety	..	2	..	2	..	2	..	2
69 Other General Diseases—								
Auto-intoxication ..	..	3	1	3	..	4	1	5
Purpura Hæmorrhangica ..	..	2	..	2	..	1	2	3
Obesity	..	..	..	..	..	1	..	1
III. AFFECTIONS OF THE NERVOUS SYSTEM AND ORGANS OF THE SENSES.								
71 Meningitis (not including Tuberculous Meningitis or Cerebro-Spinal Meningitis)	..	3	2	3	..	2	1	3
72 Locomotor Ataxia ..	..	5	1	5	..	13	3	16
73 Other Diseases of the Spinal Cord—								
Myelitis	..	1	1	1	..	1	..	1
Spastic Paraplegia ..	1	..	..	1	..	1	..	1
74 Apoplexy—								
(*a*) Hæmorrhage ..	..	1	1	1	..	1	..	1
(*b*) Embolism ..	..	..	..	..	..	2	..	2
75 Paralysis—								
(*a*) Hemiplegia ..	..	8	5	8	..	25	6	31
(*b*) Other Paralysis ..	..	9	2	9	..	54	15	69
77 Other forms of Mental Alienation—								
Dementia	..	4	..	4	..	5	..	5
Delusional Insanity ..	..	1	..	1	..	1	..	1
Other Mental Diseases ..	..	13	3	13	..	10	5	15
78 Epilepsy	..	11	1	11	..	19	6	25
79 Convulsions (non-puerperal) 5 years or over	..	..	..	..	..	4	1	5
80 Infantile Convulsions ..	..	..	..	..	..	2	..	2
28 A.—Hysteria	..	1	..	1	..	..	5	5
B.—Neuritis	..	3	..	3	..	60	19	79
C.—Neurasthenia ..	..	2	..	2	..	15	1	16
D.—Hemicrania ..	..	..	..	..	..	2	2	4
F.—Migraine	..	..	..	..	..	6	4	10
Carried forward ..	17	917	116	934	19	13,134	3,947	17,081

TABLES IV AND V.—(*Continued.*)

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total. Admissions.	Yearly Total. Deaths.	Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
Brought forward ..	17	917	116	934	19	13,134	3,947	17,081
III. AFFECTION OF THE NERVOUS SYSTEM AND ORGANS OF THE SENSES—(*Continued*).								
G.—Neuralgia	..	4	..	4	...	1,000	388	1,388
H.—Sciatica	..	1	..	1	..	39	3	42
I.—Headache	..	..	..	..	...	735	146	881
J.—Vertigo	..	..	..	..	..	8	..	8
84 Other affections of the Nervous System, such as Paralysis Agitans	..	1	..	1	..	11	..	11
85 Diseases of the Eye and Annexa—								
Blepharitis	..	..	..	..	..	24	15	39
Cataract	..	19	..	19	..	118	44	162
Chalazion	..	1	..	1	..	1	..	1
Conjunctivitis	1	21	..	22	..	1,462	497	1,959
Ectropion	..	1	..	1	..	2	..	2
Foreign Body	..	..	..	..	..	7	..	7
Glaucoma	..	..	..	..	..	2	..	2
Iritis	..	13	..	13	..	53	6	59
Keratitis	..	3	..	3	..	86	19	105
Optic Neuritis	..	1	..	1	..	3	..	3
Ptosis	..	..	..	..	..	1	..	1
Stye	..	2	..	2	..	14	1	15
Tumour	..	..	..	..	1	..	..	..
Ulcer of Cornea ..	..	3	..	3	..	100	40	140
Other Diseases	..	8	..	8	..	112	18	130
86 Affections of the Ear and Mastoid Sinus—								
Mastoiditis	..	3	..	3	..	3	3	6
Otorrhœa	..	1	..	1	..	219	107	326
Otitis Externa	..	3	..	3	..	22	4	26
,, Interna	..	..	..	..	..	10	2	12
,, Media	..	3	..	3	..	309	109	418
Other Diseases	..	4	..	4	..	381	90	471
Cerumen in Ear ..	..	..	..	..	..	12	2	14
IV. AFFECTIONS OF THE CIRCULATOY SYSTEM.								
87 Pericarditis	..	2	..	2	..	2	..	2
88 Acute Endocarditis and Myocarditis	..	4	3	4	..	5	1	6
89 Angina Pectoris	..	..	..	..	..	1	..	1
90 Other Diseases of the Heart—								
(*a*) Valvular—								
Mitral	..	16	5	16	..	48	14	62
Aortic	..	2	..	2	..	3	1	4
(*b*) Myocarditis	..	11	2	11	1	24	8	32
Carried forward ..	18	1,044	126	1,062	21	17,951	5,465	23,416

TABLES IV AND V.—(*Continued.*)

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total. Admissions.	Yearly Total. Deaths.	Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
Brought forward ..	18	1,044	126	1,062	21	17,951	5,465	23,416
IV. AFFECTIONS OF THE CIRCULATORY SYSTEM—(*Continued*).								
(*c*) Disordered action of Heart—								
Bradycardia ..	..	..	..	..	..	1	..	1
Tachycardia ..	..	..	..	..	..	1	..	1
(*d*) Functional Diseases ..	..	..	..	..	..	1	..	1
(*e*) Hypertrophy of Heart ..	..	..	..	..	..	1	..	1
91 Diseases of the Arteries—								
(*a*) Aneurism ..	..	1	..	1	..	3	2	5
(*b*) Arterio-Sclerosis ..	..	..	..	..	..	1	..	1
92 Embolism or Thrombosis (non-cerebral)	..	1	1	1	..	1	..	1
93 Diseases of the Veins—								
Hæmorrhoids	..	33	1	33	1	84	27	111
Varicose Veins & Vericocele	1	6	..	7	..	23	2	25
Phlebitis	..	1	1	1	..	1	..	1
94 Diseases of the Lymphatic System—								
Lymphangitis	..	30	..	30	..	128	13	141
Lymphadenitis, Bubo (non-specific)	..	53	..	53	3	212	22	234
95 Hæmorrhage of undetermined cause—								
Epistaxis	..	..	..	..	..	10	3	13
V. AFFECTIONS OF THE RESPIRATORY SYSTEM.								
97 Diseases of the Nasal Passages—								
Polypus	..	1	..	1	..	10	3	13
Rhinitis	..	..	..	..	..	219	133	352
Coryza	..	1	..	1	..	416	48	464
98 Affections of the Larynx—								
Laryngitis	...	8	..	8	..	38	13	51
99 Bronchitis—								
(*a*) Acute	..	52	2	52	..	4,984	1,416	6,400
(*b*) Chronic	..	6	2	6	2	221	57	278
100 Broncho-Pneumonia ..	1	37	9	38	2	33	5	38
101 Pneumonia—								
(*a*) Lobar	..	27	3	27	..	71	7	78
(*b*) Unclassified ..	1	17	4	18	..	49	3	52
102 Pleurisy—								
(*a*) Empyema	..	1	..	1	..	1	..	1
(*b*) Other Pleurisy ..	..	29	2	29	..	75	10	85
105 Asthma	..	12	..	12	..	257	84	341
106 Pulmonary Emphysema ..	..	2	..	2	..	5	..	5
Carried forward ..	21	1,362	151	1,383	29	24,797	7,313	32,110

TABLES IV AND V.—(*Continued.*)

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total. Admissions.	Yearly Total. Deaths.	Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
Brought forward ..	21	1,362	157	1,383	29	24,797	7,313	32,110
V. AFFECTIONS OF THE RESPIRATORY SYSTEM—(*Continued*).								
107 Other affections of the Respiratory System—								
Pneumothorox ..	..	1	1	1	..	1	..	1
Fibrosis lung	..	..	..	..	..	1	..	1
108 Congestion of lungs ..	..	..	..	..	..	2	3	5
VI. DISEASES OF THE DIGESTIVE SYSTEM.								
108 Diseases of the Buccal Cavity ond Adnexa—								
Alveolar Abscess ..	..	3	..	3	..	8	2	10
Dental Caries	..	7	..	7	..	2,674	828	3,502
Pyorrhœa Alveolaris ..	..	..	..	..	..	32	16	48
Stomatitis	..	..	..	..	..	84	20	104
Glossititis	..	..	..	..	..	8	3	11
Unceration of Mouth ..	..	1	..	1	..	..	1	1
109 Affections of the Pharynx or Tonsils—								
Sore Throat or Pharyngitis	..	3	..	3	..	373	48	421
Tonsillitis	..	15	..	15	..	844	248	1,092
Other Diseases of Pharynx or Tonsils	..	3	..	3	..	73	10	83
111 A.—Ulcer of the Stomach	..	2	..	2	..	5	4	9
B.—Ulcer of the Duodenum	..	1	..	1	..	1	..	1
112 Other affections of the Stomach—								
Gastritis	..	2	..	2	..	54	37	91
Dyspepsia, etc. ..	..	13	..	13	..	617	265	882
Gastric Catarrh ..	..	..	..	..	..	7	4	11
Hæmatemesis	..	..	..	..	..	1		1
113 Diarrhœa and Enteritis—								
Under two years ..	..	5	..	5	..	96	10	106
114 Diarrhœa and Enteritis—								
Two years and over ..	..	29	6	29	..	515	142	657
Colic	..	25	..	25	..	2,118	541	2,659
Colitis	..	..	..	..	..	37	9	46
115 Ankylostomiasis ..	7	196	23	203	6	7,063	3,555	10,618
116 Diseases due to Intestinal Parasites—								
(c) Nematoda (other than Ankylostoma)	..	..	..	..	..	..	..	..
Ascaris	..	5	..	5	..	51	26	77
Oxyuris	..	..	..	..	..	54	5	59
117 Appendicitis	..	2	..	2	..	3	4	7
Carried forward ..	28	1,675	181	1,703	35	39,519	13,091	52,613

TABLES IV AND V.—*(Continued.)*

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total. Admissions.	Yearly Total. Deaths.	Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
Brought forward ..	28	1,675	181	1,703	35	39,519	13,094	52,613
VI. DISEASES OF THE DIGESTIVE SYSTEM—*(Contd).*								
118 Hernia—								
(*a*) Inguinal	3	113	7	116	9	372	7	379
(*b*) Umbilical	..	1	..	1	..	1	2	3
(*c*) Strangulated ..	..	13	2	13	1	13	2	15
119 Affections of the Anus, Fistula, etc.								
Fæcal Fistula	..	2	1	2	..	5	..	5
Fissure of Anus ..	..	3	..	3	..	3	..	3
Prolapse of Anus ..	..	1	..	1	..	1	1	2
119 B.—Other affections of the Intestines—								
Enteroptosis	..	2	..	2	..	3	4	7
Constipation	..	12	..	12	..	6,190	3,055	9,245
120 Acute Yellow Atropy of the Lever	..	1	1	1	..	1	..	1
122 Cirrhosis of the Liver ..	..	1	1	1	..	2	..	2
(*a*) Alcoholic	..	..	..	..	..	1	..	1
(*b*) Other forms ..	..	3	2	3	1	2	1	3
124 Other affections of the Liver—								
Abscess	..	1	..	1	..	6	..	6
Hepatitis	..	10	..	10	..	63	13	76
Jaundice	..	2	..	2	..	16	2	18
126 Peritonitis (of unknown cause)	..	6	2	6	..	8	..	8
127 Other affections of the Digestive System	..	3	..	3	..	24	8	32
VII. DISEASES OF THE GENITO-URINARY SYSTEM (NON-VENEREAL).								
128 Acute Nephritis ..	..	5	1	5	..	12	5	17
129 Chronic Nephritis ..	1	12	7	13	..	26	17	43
130 B.—Schistosomiasis ..	..	13	..	13	..	556	44	600
131 Other affections of the Kidneys								
Pyelitis	..	1	..	1	..	12	4	16
Acidosis	..	..	..	..	..	..	1	1
Hæmaturia (non-Bilharzial)	..	1	..	1	..	11	..	11
132 Urinary Calculus ..	..	..	..	..	..	1	..	1
133 Diseases of the Bladder—								
Cystitis	..	13	2	13	..	94	18	112
Incontinence of Urine ..	..	1	..	1	..	5	1	6
Retention of Urine ..	..	11	1	11	..	45	..	45
Rupture of Bladder ..	..	4	1	4	..	2	3	5
Carried forward ..	32	1,910	209	1,942	46	46,994	16,282	63,276

TABLES IV AND V.—(*Continued.*)

Return of Diseases and Deaths (In-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total. Admissions.	Yearly Total. Deaths.	Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
Brought forward ..	32	1,910	209	1,942	46	16,994	16,282	63,276
VII. DISEASES OF THE GENITO-URINARY SYSTEM (NON-VENEREAL)—(*Continued*).								
134 Diseases of the Urethra—								
Stricture	..	7	..	7	..	63	5	68
Abscess	..	8	..	8	1	8	..	8
Fistula	1	4	...	5	..	4	1	5
Rupture	1	..	..	1	..	7	..	7
135 Diseases of the Prostate—								
Hypertrophy	..	1	1	1	..	1	..	1
Prostatitis	..	2	..	2	..	3	..	3
136 Diseases (non-Venereal) of the Genital Organs of Man—								
Epididymitis	..	6	..	6	..	39	1	40
Orchitis	..	25	..	25	1	379	..	379
Hydrocele	10	177	4	187	6	513	..	513
Ulcer of Penis	..	3	..	3	1	176	..	176
Phimosis	1	43	..	44	..	377	..	377
Para-Phimosis	..	9	..	9	..	24	..	24
137 Cysts or other non-malignant Tumours of the Ovaris	..	1	..	1	..	..	5	5
138 Salpingitis—								
Abscess of the Pelvis ..	..	5	..	5	..	..	25	25
139 Uterine Tumours (non-malignant)—								
Fibroid	..	9	..	9	..	..	51	51
141 A.—Metritis	..	9	1	9	..	..	26	26
B.—Other affections of the Female Genital Organs—								
Displacement of Uterus ..	..	2	..	2	..	..	9	9
Amenorrhœa	..	..	..	..	..	..	72	72
Dysmenorrhœa ..	..	..	..	..	..	..	14	14
Leucorrhœa	..	1	..	1	..	..	9	9
Ovaritis	..	1	..	1	..	..	5	5
Menorrhagia	..	..	..	..	..	..	62	62
Prolapse	..	..	..	..	..	..	44	44
Vaginitis	..	..	..	..	..	..	8	8
Vulvitis	..	..	..	..	..	..	5	5
142 Diseases of the Breast (non-puerperal)—								
Mastitis	1	2	..	3	..	..	36	36
Abscess of Breast ..	1	..	..	1	..	..	4	4
Other Diseases of the Breast	..	1	..	1	..	..	6	6
VIII. PUERPERAL STATE.								
143 A.—Normal Labour ..	..	17	..	17	1	..	21	21
Delayed Labour ..	..	..	..	..	..	.	2	2
Carried forward ..	47	2,243	215	2,290	56	48,588	16,693	65,281

TABLES IV AND V.—(*Continued.*)

Return of Diseases and Deaths (in-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total.		Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
		Admissions.	Deaths.					
Brought forward ..	47	2,242	215	2,290	56	48,588	16,693	65,281
VIII. PUERPERAL STATE—(*Cont*).								
B.—Accidents of Pregnancy—								
(*a*) Abortion	..	5	1	5	..	..	26	26
(*c*) Vomiting	..	.	..	..	..	..	3	3
(*d*) Ante-partum hæmorrhage	..	3	..	3	..	..	3	3
144 Retained Placenta ..	..	1	1	1	..	..	3	3
Puerperal Hæmorrhage ..	..	..	..	..	..	..	2	2
146 Puerperal Septicæmia ..	2	..	1	2	..	..	1	1
148 Puerperal Eclampsia ..	..	..	..	..	..	..	1	1
149 Sequelae of Labour ..	..	..	..	..	..	..	1	1
150 Hydolidiform mole ..	..	1	..	1	..	..	1	1
IX. AFFECTIONS OF THE SKIN AND CELLULAR TISSUES.								
151 Gangrene	3	7	..	10	..	11	6	17
152 Boil	..	5	..	5	..	681	154	785
Carbuncle	..	5	..	5	..	10	..	10
153 Abscess—								
Whitlow	3	61	1	64	1	273	58	331
Cellulitis	2	144	5	146	2	1,378	303	1,681
154 A.—Tinea	..	..	..	..	..	668	185	853
B.—Scabies	1	9	..	10	..	4,905	1,677	6,582
E.—Tropical Ulcer ..	..	2	..	2	..	14	2	16
F.—Other Ulcers ..	13	400	4	413	4	13,856	2,843	16,699
155 Other Diseases of Skin—								
Erythema	..	..	..	..	..	5	3	8
Urticaria	..	1	..	1	..	12	6	18
Eczema	1	3	..	4	..	442	126	568
Herpes	..	..	..	..	..	20	1	21
Psoriasis	..	..	..	..	..	7	..	7
Prickly Heat	..	..	..	..	..	74	7	81
Elephantiasis	1	83	1	84	4	203	49	252
Myasis	..	1	..	1	..	1	..	1
Chiggers	..	17	1	17	..	688	147	835
Cutaneous Leishmaniasis..	..	1	..	1	..	1	..	1
Dermatitis	..	13	..	13	..	417	53	470
Acne	..	..	..	..	..	8	1	9
Impetigo	..	..	..	..	..	34	12	46
,, Contagiosa ..	..	2	..	2	..	8	1	9
Lichen	..	..	..	..	..	2	1	3
Seborrhœa	..	..	..	..	..	1	..	1
Wart	..	..	..	..	..	6	4	10
156 Diseases of Bones—								
Osteitis	3	5	..	8	..	22	7	29
Osteo-myelitis ..	1	11	..	12	1	16	6	22
157 Diseases of Joints—								
Arthritis	1	28	1	29	..	177	30	207
Synovitis	1	15	..	16	..	176	34	210
Carried forward ..	79	3,066	231	3,145	68	72,655	22,449	95,104

TABLES IV AND V.—(*Continued.*)

Return of Diseases and Deaths (in-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total. Admissions.	Yearly Total. Deaths.	Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
Brought forward ..	79	3,066	231	3,145	68	72,655	72,449	95,104
158 Other Diseases of Bones or Organs of Locomotion—								
Bursitis	..	..	..	..	..	3	..	3
Ganglion	..	3	..	3	..	16	4	20
Lumbago	..	1	..	1	..	185	65	250
Myalgia	..	1	..	1	..	294	67	361
Torticollis	..	..	..	..	..	8	1	9
Hallux Valgus	..	1	..	1	..	1	1	2
Flat Foot	..	..	..	..	..	1	..	1
X. MALFORMATIONS.								
159 Malformations—								
Hydrocephalus ..	..	..	..	..	..	1	..	1
Ingrowing toe-nail ..	..	1	..	1	..	1	..	1
Equino-Varus ..	..	1	..	1	..	1	..	1
XI. DISEASES OF INFANCY								
162 Other affections of Infancy ..	..	..	..	..	..	..	1	1
163 Infant Neglect (infants of three months or over)	..	..	..	..	..	2	1	3
XII. AFFECTIONS OF OLD AGE.								
164 Senility—								
Senile Debility ..	..	53	33	53	1	55	1	56
XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.								
166 Corrosive Poisoning (Intentional)	..	1	1	1	..	1	..	1
175 Food Poisoning—								
Ptomaine Poisoning ..	..	1	..	1	..	3	..	3
176 Attacks of Poisonous Animals Insect Bite	..	..	..	..	..	..	1	1
177 Other accidental Poisonings	..	2	..	2	.	9	2	11
178 Burns (by Fire) ..	1	12	3	13	2	52	51	103
182 Drowning (accidental) ..	..	2	1	2	..	2	..	2
184 Wounds (by cutting or stabbing Instruments)	..	84	2	84	1	1,191	312	1,503
185 Wounds (by Fall) ..	2	137	7	139	9	3,895	498	4,393
186 Wounds (in Quarries or Mines	..	..	..	..	..	79	..	79
188 Wounds (crushing, e.g., rail accidents, etc.)	2	1	..	3	..	458	60	518
189 Injuries inflicted by Animals, Bites, Kicks, etc.	..	29	..	29	..	30	10	40
Carried forward ..	84	3,396	278	3,480	81	78,913	23,524	102,467

TABLES IV AND V.—(*Continued.*)

Return of Diseases and Deaths (in-Patients) and of Diseases (Out-Patients) for the year 1927.

Diseases.	In-patients.					Out-patients.		
	Remaining in Hospital at the end of 1926.	Yearly Total. Admissions.	Yearly Total. Deaths.	Total Cases Treated.	Remaining in Hospital at the end of 1927.	Males.	Females.	Total.
Brought forward ..	84	3,396	278	3,480	81	78,943	23,524	1,02,467
194 Exposure to Heat—								
Sunstroke	..	1	..	1	..	2	1	3
201 A.—Dislocation ..	2	4	..	6	..	10	3	13
B.—Sprain	1	2	..	3	1	74	11	85
C.—Fracture	3	40	4	43	..	56	12	68
202 Other external Injuries—								
Concussion	..	4	..	4	..	4	1	5
Contusion	..	12	..	12	1	1,140	11	1,151
Foreign body (except eye)..	..	2	..	2	..	5	3	8
Strain	..	2	..	2	..	8	4	12
XIV. DEFINED DISEASES.								
205 A.—Diseases not already specified or ill-defined—								
Ascites ..	..	7	1	7	..	5	..	5
Œdema	..	1	..	1	..	145	34	179
Asthenia or Debility ..	1	29	7	30	2	330	77	407
Febricula	..	..	..	..	..	1	2	3
Malnutrition ..	..	7	..	7	..	80	40	120
Pyrexia of uncertain origin	1	50	1	51	..	2,288	362	2,650
N. Y. D. ..	..	..	..	..	..	4	..	4
B.—Malingering ..	..	..	..	..	..	1	..	1
Observation	..	1	..	1	..	1	..	1
Examinations ..	..	..	..	..	..	3	4	7
Total ..	92	3,558	291	3,650	85	83,100	24,089	1,07,189

APPENDICES.

I. Registration of Medical Practitioners and Dentists.

II. Report on Leper Settlements.

III. Control of Opium.

IV. Report of Zanzibar Maternity Association.

APPENDIX I.

Registration of Medical Practitioners, Dentists and Druggists

The Registration Board consists of the Director of Medical and Sanitary Services, the Deputy Director of Sanitary Services and one registered Medical Practitioner not in Government Service.

During the year the Board met on three occasions, and three medical practitioners were registered. Two of these were private practitioners and one in Government Service.

One dentist was registered during the year.

Twenty-two druggists were registered, and 35 dispensers licensed to dispense medicines whilst in the employ of the Government, or charitable agencies.

APPENDIX II.

Leper Settlements.

In April 1927 the bungalow for lady missionaries at Funzi Island was completed and in that month Miss Bartlett, U.M.C.A. Nursing Sister took up her residence there, and in June Miss Dunford belonging to the same Missionary Society joined her. Miss Bartlett undertook the medical treatment and care of the lepers under the supervision of the Medical Officer, Weti, whilst Miss Dunford assisted her, undertaking the material care of the patients and starting classes in elementary education. Undoubtedly the presence of these ladies has made the greatest possible difference to the well-being and happiness of the unfortunate lepers, and too high a tribute cannot be paid to them for their self-sacrificing work.

The Medical Officer Weti was in charge of the Island throughout the year.

The Director of Medical and Sanitary Services paid visits of inspection on 11th April 1927 and 19th December 1927, the Deputy Director of Sanitary Services in 25th March, 1927.

Inspections were made by His Excellency the British Resident and the Right Reverend the Bishop of Zanzibar.

Mr. Frank Oldrieve, Secretary of tht British Empire Leprosy Relief Association, visited Zanzibar during the year and inspected

Funzi Island and expressed himself satisfied with the general arrangements. He also gave a lantern lecture on the subject of Leprosy and afforded this Department every assistance from his large store of experience in the organization of leper asylums throughout the British Empire.

The bungalow for the nursing sisters was completed in April. A supply of running water from the main water tanks was installed at the Dispensary in July and the permanent buildings for the lepers were completed towards the middle of the year.

A somewhat serious epidemic of dysentery occurred in March and April, and resulted in ten deaths. Fortunately Miss Bartlett arrived opportunely in March and on account of this epidemic obtained permission to take up her residence in the Island without waiting for Miss Dunford as had originally been decided. Thanks to her active measures of treatment and nursing the epidemic was soon controlled. Owing to this epidemic and to the fact that many lepers were found to be suffering from Ankylostomiasis, and to a less extent from Syphilis, treatment for leprosy was suspended for a time and the lepers given specific treatment for the above mentioned diseases.

Routine injections of Sodium Morrhuate and E.C.C.O. (Muir's formula) were resumed in the beginning of June, and in addition a supply of hydnocarpus anthelmintica nuts was received from Siam and the nuts given daily.

In August a supply of Alipol was received from Calcutta. Miss Bartlett writes "I started to give the nuts daily beginning with four until they were able to digest as many as fifteen or twenty daily. This treatment in conjunction with the injections of "Rydnocreol" has proved very popular with the lepers as several who refused injection have been very willing to take the nuts and those who were having injections only needed one injection a week instead of two.

"The nuts have been very beneficial, as they act as a mild purgative. Care has to be taken, as they are able to take larger quantities of the nuts, that intestinal irritation does not result. This occurred in one or two cases.

"Increased exercise resulting from the lepers cultivating the land more than they did has also had a good effect on their general health. The great drawback to a greater improvement is due, I think, to the very promiscuous relations of the sexes, a condition of things it is impossible to alter here. But I think there is no doubt that the treatment during the past months has improved the health of the lepers generally and in about twenty or thirty cases there are marked signs of improvement and even hopes of a cure in the future.

"Some cases—particularly advanced nodular cases—show no signs of improvement and in four cases the condition has become worse. These were nodular cases of three and four years standing and two are under seventeen years of age".

Nine lepers were selected in June by the Medical Officer Weti for treatment by injection of a preparation of Hydnocarpate of Sodium

sent by Messrs. Burroughs and Welcome at the request of Sir Leonard Rogers. Appended are notes of these cases.

No. 1.	Leper No. 55. Admitted 27th August, 1926. Age 25. Sex Female.
Condition 27-8-26.	Puffiness of face and patchy infiltration of nostrils, lips and left eyebrow. Nasal Smears show many well formed B. Lepræ.
Treatment 1926.	Sodium Morrhuate.
1927.	Sodium Morrhuate till June.
Condition 11-6-27.	Infiltration of face passing to pea-size nodules. Bean-size plaques on left arm. Nasal Smears positive.
Treatment 20-6-27.	Three per cent intramuscular Sodium Hydnocarpate.
Condition 21-12-27.	Marked improvement since treatment with Sodium Salts from Hydnocarpus and Hydnocarpus nuts. Nodules on face are much smaller and general conditions are good.
No. 2.	Funzi Leper No. 13. Admitted 2nd July, 1923 Age 24, Sex Male.
Condition 2-7-23.	A two years history of plaques on face, hands, feet and body. Nerves large. Many B. Lepræ recovered from nose.
Condition 11-6-27.	Active ulceration on left hand. Deformity of both ears. Nodules size of broad beans on lips, nose, and cheeks show infiltration amounting almost to nodulation. Dermatitis of legs. All fingers thickened. Small nodules round right breast, and nipples themselves hypertrophied. Nerves very much thickened.
Treatment 20-6-27.	Three per cent intramuscular Sodium Hydnocarpate.
Condition 21-12-27.	General health improved. No marked improvement in disease.
No. 3.	Funzi Leper No. 16. Admitted 29th July, 1923. Age 15, Sex Male.
Condition 29-7-23.	Unknown.
Condition 31-5-26.	Pea-size nodules on chin, cheeks and lips. Spleen much enlarged. Nasal Smears show many B. Lepræ.
Treatment 1924.	Regular Sodium Morrhuate.
1925.	,, ,, ,,
1926.	Regular Sodium Morrhuate up to June.
1926 June	Muir's E.C.C.O. till June.
1927.	Muir's E.C.C.O. till June.
Condition 11-6-26.	Infiltration of chin, cheeks and lips amounting almost to nodulation. No active ulceration. Nasal Smears show few and broken up B. Lepræ.

Treatment 20-6-27.	Three per cent intramuscular Sodium Hydnocarpate.
Condition 21-12-27.	General health improved, nodules on face rather smaller.
No. 4.	Funzi Leper No. 46. Admitted 13th November, 1925. Age 22, Sex Female.
Condition 13-11-25.	Unknown.
Condition 31-5-26.	Infiltration of nose and ulcerating nodules on face, hands and arms. Nipples much hypertrophied. Nasal Smears positive but bacilli scattered.
Treatment 1925.	Regular Sodium Morrhuate.
1926.	,, ,, ,,
1927.	Regular Sodium Morrhuate till June, 1927.
Condition 11-6-27.	Collapse of bridge of nose. Infiltration of face which is almost leonine. Ulceration of ears and of right hand, both legs and of face. Nasal Smears negative for B. Lepræ but showing many diplococci.
Treatment 20-6-27.	Three per cent intramuscular Sodium Hydnocarpate.
Condition 21-12-27.	General health poor. Showed improvement for about two months on new treatment. Injections after that time stopped owing to severe reaction. Condition improved again on Hydnocarpate nuts.
No. 5.	Funzi Leper No. 61. Admitted 29th October, 1926. Age 25, Sex Male.
Condition 29-10-26.	Nose and face infiltrated considerably and some pea-size nodules. Severe pea-size nodules on backs of forearm and elbows. Nasal Smears full of B. Lepræ.
Treatment 1926.	Sodium Morrhuate.
1927.	Sodium Morrhuate till June.
Condition 11-6-27.	Severe nodulation of face, the nodules having a full appearance and the face tending to be leonine. Nipples hypertrophied. Skin of left elbow much thickened. Has lately had fever.
Treatment 20-6-27.	Three per cent intramuscular Sodium Hydnocarpate.
Condition 21-12-27.	General health very good. Nodules on face very much smaller. Several nodules on forearm and elbow disappeared.
No. 6.	Funzi Leper No. 5. Admitted 4th March, 1927. Age 15, Sex Male.
Condition 4-3-27.	Pea-size plaques on both cheeks, ears, lips and nostrils. Thickened skin. Elephantiasis of legs.
Treatment 1927.	Sodium Morrhuate till June.

Condition 26-6-27.	Large nodules on face. Infiltration of ears. Elephantiasis of both feet. Nipples much raised. Thickening of skin over elbow.
Treatment 20-6-27.	Three per cent intramuscular Sodium Hydnocarpate.
Condition 21-12-27.	At first local improvement but treatment had lately been stopped owing to severe inflammation of eyes. Restarted on 1st December, 1927, seems better again.
No. 7.	Funzi Leper No. 132. Admitted 26th March, 1925. Age 40, Sex Female.
Condition 26-5-26.	Unknown.
Condition 31-5-26.	Plaques on cheeks and nose. Deformity of right big toe. Nasal Smears show very many well formed B. Lepræ.
Treatment 1925.	Regular Sodium Morrhuate.
1926.	Regular Sodium Morrhuate till June.
1926 June	Muir's E.C.C.O. till June, 1927.
Condition 11-6-27.	No active ulceration. Thickening of skin on backs of elbows. The nodules on the face have almost completely disappeared and there only remains a slight semi-circular rim of infiltration round the nostrils. Anæsthesia nil. Nasal Smears:—here and there is a cell completely filled with much broken up B. Lepræ, but the picture is improved out of all knowledge to that of 31st May, 1926.
Treatment 20-6-27.	Three per cent intramuscular Sodium Hydnocarpate.
Condition 21-12-27.	General health much improved under treatment but a relapse occurred after she became pregnant.

At the end of February the Leper Settlement at Nduuni in the North of Pemba Island was evacuated and the inmates to the number of fifteen—ten men and five women were brought, in accordance with their own wishes at the time, to Funzi.

There remain now only the two settlements at Pujini and Kengeja which are under the control of the Medical Officer, Chake Chake. These lepers are also being gradually transferred to Funzi as they become willing to move to the central settlement. Under present conditions, beyond supplying them with food and clothing, little else can be done. The Fufuni Settlement which consisted of three lepers who had resided together for many years in a remote spot has ceased to exist, two having died and the survivor gone to Kengeja. With the completion of the building programme and the installation of two nurses on the island with consequently more regular treatment and systematic care of the lepers, both as regards their physical and mental needs, the year under review is a milestone in the history of leprosy and its prevention in the Protectorate of Zanzibar.

The following table compares particulars of Funzi Settlement with the previous year.

FUNZI LEPER SETTLEMENT.

	1926.			1927.		
	M.	F.	Total.	M.	F.	Total.
Remaining on 1st January ...	51	39	90	63	45	108
Admitted during the year ...	22	12	34	14	6	20
Died during the year ...	5	5	10	8	4	12
Discharged during the year ...	4	—	4	2	1	3
Remaining on 31st December ...	62	46	108	77	51	128
Escaped during the year ...	4	—	4	—	—	—
Transferred from Nduuni ...	—	—	—	5	5	10

The following table shows the numbers of lepers of each sex segregated in the different settlements at the end of 1926 and 1927.

	1926.			1927.		
	M.	F.	Total.	M.	F.	Total.
Funzi ...	63	45	108	77	51	128
Nduni ...	11	5	16	—	—	—
Pujini ...	17	17	34	16	14	30
Kengeja ...	8	11	19	8	11	19
Fufuni ...	3	—	3	—	—	—
Total ...	102	78	178	101	76	177

APPENDIX III.

CONTROL OF OPIUM.

The number of registered habitués receiving the controlled issue of opium is now 95 as against 109, at the end of 1926 and the average monthly consumption has decreased from 2 lbs. 1 oz. to 1 lb. 13 oz.

The following table shows the caste, race, community or religion and sex of those on the register at the close of 1927 compared with 1926.

TABLE.

Nationality	Males	Females	1926 Tolas	1927 Tolas
Ismaili Khojas ..	6	14	25	20
Sunni Mohamedan ..	17	8	28	25
Ithnasheri Khojas ..	5	4	9	9
Hindoo ..	..	..	1	..
Baluchi ..	1	..	2	1
Swahilis ..	26	2	31	28
Arab ..	8	..	9	8
Persian ..	1	..	1	1
Shihiri ..	1	..	1	1
Comorians ..	2	..	2	2
Total ..	67	28	109	95

APPENDIX IV.

Ninth Annual Report of the Zanzibar Maternity Association for the year ended 31st December, 1927.

Steady progress can be recorded during the year under review.

General.—Two hundred and fifty maternity cases were attended by the Association midwives in and outside the Maternity Home, as compared with 262 cases in 1926. In 46 instances attendance was rendered free, and in 25 at reduced rates. Of the total number of cases treated during the year, 70 were Arab or African—the same number as in 1926—and 180 belonged to other nationalities.

Staff.—The Association midwives, Mrs. Neuman, Miss Locket and Mrs. Aranki rendered sterling work throughout the year. Two Arab pupil midwives—both members of well-known families—who were brought under indenture training in October of last year have made satisfactory progress.

The Maternity Home.—The out-patient department for the treatment of ante-natal, post-natal cases and of diseases in general, which was opened in May 1926 on the ground-floor of the Home, has proved a great success as will be seen from the figures given in Appendix VI.

Financial Position.—A statement of accounts for the year, and a statement of receipts and expenditure for the period 1920 to 1927, are given in the appendices IV and V.

Appendices showing in detail the activities of the Association in 1927 are given below.

P. SHELDON,

Honorary Secretary.

Appendix I.

Births attended by the Association Midwives during 1927.

Nationality.	Association Records. Births.	Abortions.	Total.	Births registered at the Health Office
Arabs ...	17	—	17	35
Swahilis ...	35	9	44	15
Comorians ...	8	—	8	8
Shihiris ...	1	—	1	7
Bohoras ...	42	4	46	41
Goans ...	11	1	12	29
Hindoos (other than Bhattias) ...	4	—	4	
Bhattias ...	18	2	20	66
Ithnashari Khojas ...	79	2	81	64
Other Indian Mohammedans ...	11	1	12	37
Parsees ...	2	—	2	2
Seychellians ...	1	—	1	2
Greeks ...	1	—	1	1
Anglo-Indians ...	—	—	—	1
Indian Christians ...	1	—	1	—
Total	231	19	250	308

Appendix II.

Comparative statement of work done by the Association.

	1919	1920	1921	1922	1923	1924	1925	1926	1927
Arabs ...	—	—	20	13	21	31	27	18	17
Swahilis ...	—	—	11	11	12	18	18	38	44
Comorians ...	—	2	6	6	4	6	7	12	8
Shihiris ...	—	—	—	1	4	2	3	2	1
Persians ...	—	—	—	—	—	2	—	—	—
Total ...	—	2	37	31	41	59	55	70	70
Foreign Communities ...	46	59	55	147	96	182	197	196	180
Grand Total ...	46	61	92	178	137*	241*	252	266	250

*Note.—Total cases including abortions in 1923 and 1924 were 151 and 253 respectively.

Appendix III.

Statement showing the number of cases treated free or at reduced rates under each nationality during the year 1927.

	Free.	Reduced rate.
Swahilis ...	44	—
Arabs ...	—	8
Comorians ...	1	4
Goans ...	—	5
Hindoos ...	1	5
Indian Mohammedans...	—	1
Indian Christian ...	—	1
Seychellians ...	—	1
Total ...	46	25

Appendix IV.

Receipts and Expenditure of the Zanzibar Maternity Association from 1920 to 1927.

Year.	Receipts.			Expenditure.		
	Rs.	as.	ps.	Rs.	as.	ps.
1920	8,274	8	0	5,969	6	6
1921	9,148	0	0	6,775	4	3
1922	9,848	0	0	7,405	4	3
1923	11,487	13	9	8,077	0	9
1924	14,956	4	0	13,472	12	9
1925	14,259	10	6	16,836	13	6
1926	15,300	15	0	24,621	12	6*
1927	15,787	0	0	14,189	14	0

*Includes Rs. 9,592-5-2 borne by the Association of the cost of building the Maternity Home.

Appendix V.

Mwembeladu Maternity Home.

Confinement and other cases treated at the Home in 1927.

Nationality.	Confinements.	Miscarriages.	Total.
Swahili	24	7	31
Arabs	2	—	2
Comorians	3	—	3
			36

Out-Patients.

New cases treated	...	5,982
Repetitions (excluding new cases)	...	12,598

Appendix VI.

THE ZANZIBAR MATERNITY ASSOCIATION.

Statement of Receipts and Payments for the year 1927.

	Rs. as. p.	Rs. as. p.		Rs. as. p.	Rs. as. p.
Balance brought forward		4,962 6 9			
Receipts :—			Payments :—		
Subscriptions	4,620 0 0		Salaries	11,866 0 0	
Fees	3,082 0 0		Servants	132 0 0	
Donations	150 0 0		Rent	1,500 0 0	
Miscellaneous Receipts	435 0 0		Contingencies	73 8 0	
Government Grant	7,500 0 0		Uniforms for Midwives	36 10 0	
		15,787 0 0	Equipment for Midwives	0 12 0	
			Maternity Home—		
			Servants	420 0 0	
			Contingencies	133 0 0	
			Equipment	28 0 0	
					14,189 14 0
			Balance—		
			Cash at Bank	2,559 8 9	
			Cash on Fixed Deposit, N.B.I.	4,000 0 0	
					6,559 8 9
Total Rs.		20,749 6 9	Total Rs.		20,749 6 9

A. A. ALBUQUERQUE.
Hon. Treasurer.

ANNUAL VETERINARY REPORT.

FOR THE YEAR 1927.

SECTION I.—ADMINISTRATION.

A.—STAFF.

The Veterinary Staff of the Protectorate consists of:—

Veterinary Officer	1
Assistant Veterinary Officer	1
Veterinary Cadets	3
Attendants	14

Mr. Shah Mohammed Khan returned on 23rd September from combined privilege and study leave spent in Europe during which time he took an advanced course in Veterinary Science at the Royal Veterinary College.

B.—FINANCIAL.

(a) The expenditure for the totalled Rs. 17,594-85.

(b) The revenue from Veterinary Services totalled Rs. 17,970-39. The revenue is derived from the following sources:—

		Rs.	Cts.
Cattle importation and exportation fees		5,513	00
Veterinary Hospital	...	161	75
Abattoir fees	...	6,356	00
Landing of Cattle	...	2,343	09
Wharfage charges for landing cattle	...	545	85
Rent for Mji Mpia dairy sheds	...	2,551	00
Rent for dairy shed sites at Mji Mpia	...	20	00
Goat lairage at Gulioni	...	220	00
Cremation fees	...	260	00
	Total Rs.	17,970	39

EXPENDITURE ON NEW BUILDINGS, REPAIRS, ETC., DURING THE YEAR 1927.

		Rs.	Cts.
Mji Mpia Dairies	...	12	04
Cattle pen at Pigaduri	...	759	25
Shed at Pigaduri	...	37	85
Dipping tank at Pigaduri	...	1,266	05
Goat shed at Kisiwandui	...	53	31
Gulioni Abattoir	...	149	12
	Total Rs.	2,277	62

SECTION II.—DISEASES OF ANIMALS.

Diseases of Cattle.

Rinderpest.—There was an outbreak of this disease at Mji Mpia Dairy beginning on June 30th, and involving some 400 cows and calves. The source of the infection was undoubtedly some recent importations from Kenya. These were imported on June 4th and detained for 14 days in the Cattle Quarantine Station. They all (thirteen of them) bore the A.M. brand (i.e., actively immunised against rinderpest) but nevertheless the disease appeared first among these animals. Immediate steps were taken to prevent the spread of infection and serum inoculations was given to 545 animals. The mortality, about 10 per cent, was accounted for mostly by locally bred stock.

The Department was fortunate in obtaining the services of Mr. Hornby, Pathologist to the Veterinary Department of Tanganyika Territory, who happened to be in the Protectorate at the time, and rendered invaluable assistance.

East Coast Fever.—There were three outbreaks of the disease during the year. One at Mji Mpia Dairy and two in the Cattle Quarantine Station at Pigaduri. Details are as follows:—

1. On January 21st five grade cows at Mji Mpia Dairy were reported to be sick and on examination blood and gland smears proved to be positive for East Coast Fever. As these animals had been some time in the dairy and had been dipped regularly at five days intervals it was not understood at first how they could have contracted the disease. But on further investigation it was discovered that the owner had been in the habit of washing each cow with soap and water after it had been dipped, being under the impression that by so doing he would rectify the slight decrease in milk yield caused by dipping. The loss of his cows convinced him, and others, that the security given by dipping was more than sufficient compensation for the slight loss of milk.

2. On February 4th some animals, of a consignment of 24 cows and 22 calves imported a week previously from Kenya sickened in the Cattle Quarantine Station. Examination of smears proved to be positive for East Coast Fever and 11 cows and 8 calves died.

3. On October 6th 13 cows and 7 calves were imported from Kenya and the first case of East Coast Fever occurred 8 days later. Other cows and calves sickened and a total of 8 cows and 6 calves died. This outbreak was one of combined East Coast Fever and Red Water Fever.

Trypanosomiasis.—Local Stock. Forty-eight cattle were examined and four shewed T. congolense.

Trypanosomiasis.—Imported Stock. One hundred and thirty-nine cattle imported from Kismayu were examined and three showed parasites of T. uniformi type.

East Coast Fever.—Imported Stock. The gland smears of 73 animals were examined and 26 proved positive on microscopical examination.

Piroplasmosis.—Thirteen cows imported from Kenya were examined and nine shewed P. bigeminum in blood smears.

Distomiasis.—A few cases were discovered, after slaughter, among cattle imported from Tanganyika Territory.

Echinococcosis.—Cysts have been seen in the lungs and livers of slaughtered milch cows, especially of the Indian breed.

Diseases of Goats and Sheep.

Scabies.—Some cases were found in imported sheep.

Hæmonchiasis.—A common parasite of imported and local goats and sheep. Sometimes when the animals have lost their vitality owing to sickness or bad feeding this parasite gives rise to Gastro-enteritis and ultimatly death.

Pleuro-pneumonia of Goats.—Some cases of it were detected in imported goats.

Oesophagostomiasis.—"Pimply-gut," very common in local goats.

Diseases of Equines.

Horse sickness.—No case reported.

Glanders.—No case reported.

All horses and mules imported into the Protectorate and not accompanied by satisfactory certificates are subjected to the mallein test.

Ulcerative Lymphangitis.—Diagnosed in a horse. This animal was treated and recovered.

Tetanus.—One case detected in a donkey. The animal was destroyed.

Trypanosomiasis.—The blood smears of 50 local donkeys were examined and four returned as positive for T. congolense.

Diseases of Canines.

Piroplasmosis.—Two dogs proved positive on blood examination; these were treated and recovered.

Ankylostomiasis.—The Sanitary Department destroyed a large number of pariah dogs by poisoning. Out of these 17 were post-mortemed and one dog was found infected with A. caninum.

F. immitis.—Was found in the heart of two dogs.

Rabies.—No case reported or detected.

Diseases of Birds.

Ascaris mystax.—Three chickens examined and one found infected.

SECTION III.—MJI MPIA COWSHEDS.

No more sheds were constructed by the Government during the year under review. The ten existing sheds were occupied by 181 cows 10 bulls and 152 calves on 31st December, 1927.

Two other cow-keepers were removed from the town owing to the insanitary condition of their sheds and permitted to build temporary sheds on vacant Government ground near Mji Mpia. 20 cows, 1 bull and 27 heifers and calves were accommodated in these sheds at the end of the year.

All the stock kept at Mji Mpia is regularly and systematically dipped at a five days' interval.

The total number of dippings performed during the year was 13,355.

SECTION IV.—MEAT INSPECTION.

All meat sold in the Market has been killed at the Government Abattoir which is under the personal supervision of the Veterinary Officer.

Animals for slaughter are brought to the Abattoir before 3-30 p.m. on the day before slaughter. Here an ante-mortem inspection is made and animals unfit for slaughter are rejected.

Slaughtering begins at 4 a.m. and the dressed carcasses are afterwards examined by the Veterinary Officer before removal to the Market. "Measly" meat if only slightly infected is thoroughly boiled on the premises and sold at a cheap rate, otherwise the carcase is burnt.

During the year 45,760 animals were slaughtered and of these 5,454 were partially condemned and 76 were wholly condemned.

Occasionally sanction is given by the Senior Commissioner, after consultation with the Sanitation Officer to slaughter an animal (usually a goat) on private premises for religious purposes. These animals are inspected by the Veterinary Officer before being slaughtered.

SECTION V.—PIGADURI QUARANTINE STATION.

All live stock imported into the Protectorate undergoes a period of Quarantine. In the case of cattle this is a fortnight, whilst goats and sheep are detained for 5 days. Horses and mules imported and not accompanied by a satisfactory Veterinary certificate of health are subjected to a "Mallein" test.

Blood films are taken from a large number of animals imported from Lamu and Jubaland and microscopically examined for trypanosomiasis. Animals showing infection are not allowed to be removed from Quarantine and are forthwith slaughtered. The meat is passed for sale.

Dogs and cats are not allowed to be imported unless accompanied by a certificate from a qualified Veterinary Surgeon to the effect that the animal is free from rabies. Failing this the animal is quarantined for six months.

The dipping tank was continuously in use throughout the year, cattle being dipped at a three days interval. The number of dippings amounted to 8,337.

SECTION VI.—LAIRAGE FOR GOATS.

There are ten sheds, with accommodation for 500 goats, which were leased to butchers for housing their slaughter goats and sheep. There were complaints from the lessees, that the cement floors were slippery and that animals received severe injuries due to falls; it was decided to overcome this drawback by allowing them to spread a 6-inch deep layer of sand, to be changed at frequent intervals. Since then no complaints have been received.

SECTION VII.—RECOMMENDATIONS.

1. A small dispensary should be built at Mji Mpia Dairy for use in case of emergency and for the every day treatment of sick animals. There are 400 odd cattle on the dairy premises and at present no facilities exist there for their treatment.

2. Proper drainage is absolutely necessary if a really pure milk supply is ever to be obtained from this dairy.

SHAH MOHAMMED KHAN,
Veterinary Officer.

TABLE I.

Comparative table of deaths in Zanzibar Town and Quarantine Station during the three years 1925-1927.

	1925	1926	1927
Milch cows ...	57	59	96
Calves ...	52	52	79
Cart Bullocks ...	21	21	13
Goats ...	258	136	25
Sheep ...	5	21	—
Horses ...	4	3	2
Donkeys ...	31	19	23
Mules ...	7	8	1
Buffalo ...	—	1	—
Camels ...	4	—	1
	439	320	240

The increase in the number of deaths among cows and calves was due to outbreaks of Rinderpest and East Coast Fever as reported in Section II. There is a noticeable decrease of mortality in imported goats and sheep. In previous years pleuro-pneumonia was mostly responsible for the heavy losses but fortunately during the year under review these animals arrived free from this sickness. No deaths were reported in sheep.

TABLE II.

Comparative table of animals imported during the three years 1925-1927.

	1925	1926	1927
Oxen ...	4,455	3,195	2,666
Cows ...	121	91	67
Calves ...	113	67	53
Goats ...	17,931	12,100	6,105
Sheep ...	5,020	3,657	2,849
Horses ...	4	14	—
Mules ...	20	7	—
Donkeys ...	21	18	23
Camels ...	18	14	—
Dogs ...	4	2	—
	27,707	19,165	11,765

It is evident from the above table that the importation of animals during the past year has considerably decreased as compared with the previous two years, there being a difference between the imports of 1925 and 1927 of over seventeen hundred cattle, twelve thousand goats, and two thousand sheep. In previous years large number of animals used to arrive by dhows during the north-east monsoon from Arabia, Socotra and various Somali ports but no such stock arrived in 1927.

The Socotran cows, which more or less resemble Jerseys in appearance, were once very popular with cow-keepers here. But these cows are not heavy milkers and as soon as high grade milch cows from Kenya began to be imported, and were found to yield at least three times as much milk, their popularity diminished.

TABLE III.

Comparative table of animals exported during the three years 1925-1927.

		1925	1926	1927
Oxen	...	501	345	267
Cows	...	4	31	1
Calves	...	—	—	—
Goats	...	1,931	619	312
Sheep	...	305	20	31
Camels	...	—	3	12
Horses	...	7	1	3
Mules	...	—	—	—
Donkeys	...	195	47	32
		2,943	1,066	658

It will be seen from the above table that exports, too, have fallen considerably as compared with the previous two years.

TABLE IV.

Table showing the number of animals treated at Veterinary Hospital, Kisiwandui, during the year 1927.

Horses	...	248
Mules	...	22
Donkeys	...	471
Cows	...	51
Calf	...	1
Bulls	...	81
Camels	...	8
Dogs	...	228
Cats	...	13
Rabbit	...	1
Fowls	...	5
Monkey	...	1
Parrot	...	1
Total		1,131

TABLE V.

Table showing the number of animals examined and slaughtered in the Government Abattoir during 1927 compared with the previous two years:—

Species.	Slaughtered in Government Abattoir.			Carcases Condemned.					
				Wholly.			Partially.		
	1925	1926	1927	1925	1926	1927	1925	1926	1927
Oxen	3,496	2,914	2,503	119	58	37	2,264	2,413	1,792
Cows	52	47	49	..	..	..	19	17	14
Calves	15	47	37	..	..	..	..	2	10
Goats	15,415	12,855	10,856	62	156	31	3,759	3,557	2,734
Sheep	3,470	3,282	2,311	18	4	8	1,363	1,695	101
Camels	9	3	4	..	..	..	4	4	3
Buffaloes	2	..	..	..	..	..	..	..	..
Total	22,459	19,149	15,760	199	218	76	7,409	7,688	5,454

Thirty-seven oxen carcases were condemned for c. bovis, and 31 goats and 8 sheep for Pleuro-pneumonia and emaciation

TABLE VI.

Table showing the number of examinations carried out in the Veterinary Laboratory during 1927.

	Number Examined.	Positive.	Negative.
Trypanosomiasis (local stock):—			
Cattle	52	4	48
Camels	77	—	—
Donkeys	50	4	46
Horses	4	—	4
Dogs	7	—	7
Buffalo	1	—	1
Trypanosomiasis (imported stock):—			
Cattle	142	3	139
Donkeys	8	—	8
East Coast Fever (local stock):—			
Cows	59	34	25
Calves	13	7	6
East Coast Fever (imported stock):—			
Cows	45	18	27
Calves	25	6	19
Bullocks	3	2	1
Piroplasmosis (imported stock):—			
Cows	13	9	4
Filaria Immitis:—			
Dogs	17	1	16
Ankylostomiasis:—			
Dogs	17	1	16
Piroplasmosis:—			
Dogs	2	2	—
Ulcerative Lymphangitis:—			
Horse	1	1	—
Donkeys	2	—	1
Coccidiosis:—			
Rabbit	1	1	—
Ascaris mystax:—			
Chickens	3	1	2

Table VII.

Table showing the number of Post-Mortems during the year 1927:—

	Number Performed	E. C. Fever	Tympanites	Malnutrition	Septicæmia	Undiagnosed	Colic	Paralysis	Tetanus	F. imitis and A. caninum	Salt water poisoning	Pleuro-pneumonia	General debility
Oxen ...	1	...	...	...	...	...	...	...	...	...	1	...	...
Cows ...	48	30	1	...	6	8	...	1	...	...	...	1	1
Calves ...	2	...	...	2	...	...	...	...	...	...	...	...	...
Camels ...	1	...	...	...	1	...	...	...	...	...	...	...	...
Buffaloes ...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goats ...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sheep ...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fowls ...	1	...	...	...	...	1	...	...	...	...	...	...	...
Donkeys ...	3	...	1	...	...	...	1	...	1	...	...	...	...
Dogs ...	17	...	...	...	...	...	...	...	...	17	...	...	...
Bulls ...	6	1	1	...	2	2	...	...	...	...	...	...	...
Total ...	79	31	3	2	9	11	1	1	1	17	1	1	1