

## **Annual sanitary report of the Province of Assam.**

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ANNUAL PUBLIC HEALTH REPORT  
of the  
Province of Assam  
for the year 1933

BY

LIEUT.-COLONEL T. D. MURISON, D.P.H., I.M.S.,  
DIRECTOR OF PUBLIC HEALTH, ASSAM.



SHILLONG :

PRINTED AT THE ASSAM GOVERNMENT PRESS

1934

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**GOVERNMENT OF ASSAM**

**OFFICE OF THE DIRECTOR OF PUBLIC HEALTH, ASSAM**

No 8902

**FROM**

**LIEUT.-COLONEL T. D. MURISON, D.P.H., I.M.S.,  
DIRECTOR OF PUBLIC HEALTH, ASSAM,**

**To**

**THE SECRETARY TO THE GOVERNMENT OF ASSAM  
IN THE TRANSFERRED DEPARTMENTS.**

*Dated Shillong, the 23rd July 1934.*

**SIR,**

I HAVE the honour to submit herewith the Annual Public Health Report of the Province of Assam for the year 1933.

Your obedient servant,

**T. D. MURISON, *Lieut.-Colonel. I.M.S.,***

*Director of Public Health, Assam.*

GOVERNMENT OF ASSAM

OFFICE OF THE DIRECTOR OF PUBLIC HEALTH, ASSAM

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TO

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Dated Shillong, the 23rd July 1931

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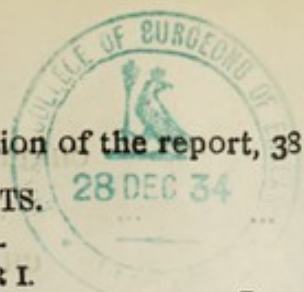
Your obedient servant,

T. D. MURISON, Lieut.-Col. I.M.S.

Director of Public Health, Assam.

[Maximum limit of narrative portion of the report, 38 pages.]

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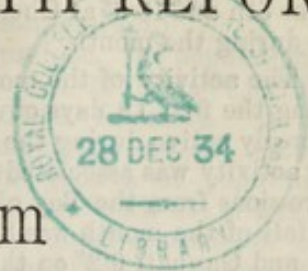
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# ANNUAL PUBLIC HEALTH REPORT

## of the Province of Assam for the year 1933



### CHAPTER I.

#### METEOROLOGY; ECONOMIC CONDITIONS, I.E., PRICES OF FOOD-GRAINS, ETC.

The Meteorologist, Calcutta, has furnished the following note on the chief Meteorological conditions of the Province of Assam for the year 1933 :—

*The cold weather period—January and February.*—Disturbances from the west which affected Assam were in general feeble and less active than usual during both these months. Only two disturbances affected the province towards the end of January and consequently the rainfall during this month was in defect by 38 per cent. In February, though there were as many as five western disturbances, the total precipitation during the month was slightly below normal. During January, skies were less clouded and in February the minimum temperature showed a slight excess. Maximum temperature and humidity were more or less normal in both the months.

*The hot weather period—March to May.*—The activity of western disturbances was practically absent in March though a few falls occurred on the 9th and 10th and there were intermittent scattered thundershowers throughout the month. Rainfall, as a consequence, was 84 per cent. in defect and the temperature during the day, above normal. Cloud amount and humidity were also in defect. In April, three disturbances from the west gave fairly widespread rainfall on the 5th, 6th, 11th to 16th and on the 22nd. Of the several nor-wester squalls which occurred during the month, the one of the 13th seems to have, according to newspaper reports, caused heavy loss of life and property. The aggregate rainfall of the month was, however, 16 per cent. in defect, the temperature appreciably below normal between 12th and 17th and humidity also in defect.

Conditions improved in the month of May in connection with three disturbances from the west and widespread thundershowers occurred in Assam between 4th-6th, 9th-11th and 14th-17th. With the advance of the south-west monsoon in the Bay, conditions became unsettled in the centre of the Bay on the 22nd. These intensified into a storm which moving slowly first northwards and then north-eastwards crossed the coast near Akyab on the 26th morning and rapidly filled up thereafter. It caused widespread rain in Assam after the 20th and was responsible to a great extent for the month's total rainfall reaching the normal value. The distribution of temperature was more or less governed by the distribution of rainfall and both temperature and humidity were normal during the month. Skies were also more clouded than usual.

*The monsoon period—June to September.*—In the wake of the May storm in the Bay of Bengal, the Bay monsoon established itself in Burma during the last week of May and extended into Assam on the 4th June, when widespread thunder-rain occurred in the province with locally heavy falls in Cachar. The activities of the south-west monsoon between the 10th and 20th were controlled by a depression which formed off the Circars—Orissa coast—on the 12th morning and moving north-westwards crossed the coast near Chandbali on the 16th and filled up over Orissa on the 18th. During the last week of the month the monsoon was fairly strong in Assam under the influence of two depressions, the first of which formed over Bengal on the 24th and filled up over the Darjeeling hills on the next day and the 2nd formed over the west United Provinces on the 23rd and persisted there till the

end of the month, when it filled up. Some of the noteworthy falls during the month being, 8·7" at Srimangal and 5·9" at Silchar on the 4th, 4·7" at Sibsagar on the 5th and 10·6" at Cherrapunji on the 25th. The amount of rainfall was normal during the month.

The activity of the monsoon was confined only to the submontane districts during the first 12 days of July after which it strengthened. Later it remained generally active during the rest of the month and the rainfall was well-distributed. The activity was associated with the westward or north-westward movement of four depressions from the Bay of Bengal through the central parts of India. The average rainfall of the month was 8 per cent. in defect, though Cherrapunji had 14·5" of rain and Gauhati 9·2" on the 3rd, Srimangal 4·1" on the 4th and Tezpur 4·3" on the 13th.

The monsoon rainfall, during August, was also well-distributed. Its activity during the first two weeks was controlled by a storm and a depression which formed in the North Bay of Bengal and moved to north-west India. Total rainfall of the month was 10 per cent. in excess. Some of the noteworthy falls are as follows:—Cherrapunji 10·9" and Shillong 4·5" on the 13th, Dibrugarh 4·5" on the 18th and Silchar 4·1" on the 29th.

The monsoon remained more or less active during the first three weeks of September, being governed by two depressions and a storm in the Bay. Towards the end of the 3rd week the monsoon began to weaken and finally withdrew by the 27th. After this a rapid transition to the north-east monsoon type of weather took place. The rainfall was 23 per cent. in defect.

Temperature, humidity and cloudiness were practically normal during the whole of this period.

*The retreating monsoon period—October to December.*—In October, scattered thunderstorms were reported from the province during the first four days. Later a storm formed in Central Bay on the 13th which moving northwestwards crossed Circars coast between Cocanada and Masulipatam on the 18th and then travelled northwards. Under its influence rainfall occurred mainly during the latter part of the 3rd week and beginning of the 4th week of the month. In November and December weather was dry except for occasional scattered falls. The total amount of rain was in slight defect in October and in moderate to large defect in November and December. Skies were less clouded in November. Other elements were practically normal for the whole period.

Economic conditions, prices of food-grains, etc.

2. The Report deals with the plains districts of the province. Rice is the staple food of the populace in the plains districts.

The sub-joined table shows the average quantity of common rice that was sold per rupee in 1933 and in the previous five years:—

Districts.	1933.	1932.	1931.	1930.	1929.	1928.
1	2	3	4	5	6	7
	S. ch.	S. ch.	S. ch.	S. ch.	S. ch.	S. ch.
Cachar ... ..	14 11	15 4	10 15	8 7	6 9	6 2
Sylhet ... ..	13 12	10 9	9 12	7 1	6 5	5 11
Goalpara ... ..	16 1	14 12	11 2	7 6	6 11	5 11
Kamrup ... ..	15 7	14 4	10 4	8 9	6 0	5 11
Darrang ... ..	14 8	12 12	11 1	8 9	6 0	5 14
Nowgong ... ..	15 7	13 12	11 9	9 3	7 4	6 0
Sibsagar ... ..	11 13	10 9	8 10	6 7	5 15	5 3
Lakshimpur ... ..	11 13	10 8	7 15	6 5	5 12	5 3

From the figures in the above table it will be seen that in all districts, except Cachar, more rice was obtained per rupee than during the previous year. There is also a corresponding decline in the price of other food-grains. The decline in the price of food-grains is attributed to the world-wide trade depression.

## CHAPTER II.—VITAL STATISTICS.

(Including Population and Emigration and Immigration.)

3. The report deals with the plains districts of the province, the population of which, according to the Census of 1931, was 7,927,953 (4,187,085 males and 3,740,868 females). As in previous years, the birth and death-rates have been calculated on the Census population of 1931 without taking into consideration the growth of population during the year. The appended table, drawn up in accordance with the orders of Government, shows the corrected population of each district under registration and indicates what the birth and death-rates would have been had they been calculated on the corrected population:—

Table 'D' for the year 1933.

Districts	Mid year population.	Number of births.	Birth-rate per mille based on the intercensal population.	Birth-rate per mille based on the present method.	Number of deaths.	Death-rate per mille based on the intercensal population.	Death-rate per mille based on the present method.	Difference in the birth-rates (3)–(4).	Difference in the death-rates (6)–(7).
1	2	3	4	5	6	7	8	9	10
Cachar ...	543,921	18,303	33·82	34·14	12,188	22·41	22·62	+·33	+·21
Sylhet ...	2,748,342	100,103	36·42	36·74	64,799	23·58	23·79	+·32	+·21
Goalpara ...	898,777	28,452	31·66	32·23	20,857	23·21	23·63	+·57	+·42
Kamrup ...	1,005,288	22,312	22·19	22·84	13,635	13·56	13·96	+·66	+·40
Darrang ...	599,133	16,791	28·03	28·71	11,611	19·38	19·85	+·68	+·47
Nowgong ...	584,523	11,119	19·02	19·76	6,799	11·63	12·09	+·74	+·46
Sibsagar ...	948,010	26,854	28·33	28·77	16,704	17·62	17·90	+·44	+·28
Lakhimpur ...	742,982	22,094	29·74	30·49	14,461	19·46	19·96	+·75	+·50
Total for the province	8,071,481	246,118	30·49	31·04	161,054	19·95	20·31	+·55	+·36

Registration is only partially carried out in Hill Districts and its results are shown separately in paragraph (11) of this report.

## Births and Birth-Rates.

The birth-rate of the province for the year 1933 was 31·04 against 30·06 in the preceding year and is compared below with the ratios recorded in other provinces in India:—

Provinces.	Birth-rate.		
	1928-32.	1932.	1933.
	2	3	4
Assam ...	28·12	30·06	31·04
Bengal ...	26·81	26·6	29·58
Bihar and Orissa ...	33·4	33·8	35·7
Central Provinces ...	45·54	45·20	44·25
Madras ...	37·5	36·03	37·72
Burma ...	27·09	27·75	29·83
Bombay ...	37·16	35·89	36·89
United Provinces ...	36·02	34·66	39·22
Punjab ...	40·25	41·36	44·44
North West Frontier Province ...	29·71	28·89	30·05

The birth-rate of Assam was higher than that of Bengal, Burma and the North West Frontier Province but lower than that of other provinces.

4. The total number of births registered during the year under review was 2,43,118, as compared with 2,38,319 in the preceding year, thus yielding a birth-rate of 31·04 per 1,000 of the population against 30·06 in the previous year. The number of births registered in 1933 was higher than that recorded in 1932 by 7,799. The average birth-rate for the previous five years was 28·12. As in the previous year, the district of Sylhet recorded the highest birth-rate (36·74), followed by Cachar (34·14) and Goalpara (32·23). These three districts returned a birth-rate above the Provincial average (31·04) and the other five districts below it. The lowest birth-rate (19·76) was recorded in the district of Nowgong. The increase in the number of births recorded during 1933 is shared by all districts except Nowgong.

As in the last year, the highest birth-rate of 3·45 in December was followed by 3·43 in January. The lowest rate (1·80) was recorded in August. During the year, births exceeded deaths by 85,064 or 10·73 per mille of population. The number of males to every 100 females born was 106.

5. The total number of births registered in urban areas during the year 1933 was 6,045 and the birth-rate per mille of population was 31·08, as compared with 5,641 and 29·01 respectively in the preceding year. As in the previous year, the highest rate (60·39) was recorded in the town of Barpeta followed by Palashbari (47·19), Sunamganj (38·68), Habiganj (36·56), Nowgong (34·67), Dhubri (33·28), Jorhat (33·24), Karimganj (33·03) and Nazira (33·01). The lowest rate (13·68) was again recorded in the town of Doom Dooma as in the previous year. This low rate may be due to the low proportion of females in this town as stated in the report for the previous year. The birth-rate exceeded the death-rate in all towns except Haflong. The excess varied from 35·71 in Barpeta to 3·15 in Doom Dooma.

6. The total number of births registered in rural areas during the year was 2,40,073 or 31·03 per mille of population, as compared with 2,32,678 or 30·09 respectively in 1932. Considering registration circles individually, the highest rate (47·35) was recorded in the Lakhai circle in the Sylhet district followed by Kalaigaon (47·24) in Darrang, Madhabpur (44·43), Fenchuganj (43·62), Habiganj (43·49), Baniachung (43·44), Golapganj (42·17), Karimganj (40·58), Bahubal (40·49) and Nabiganj (40·39) in Sylhet. The circles reporting low birth-rates were Margherita-Digboi (5·85) in Lakhimpur, Kalia-bor (7·56) in Nowgong and Majuli (8·45) in Sibsagar. These low rates are probably due to defective registration. The proportion of females to males residing in these areas is low.

*Deaths and death-rates.*—The death-rate of the province for the year 1933 was 20·31 against 18·96 in the preceding year, and is compared below with the rates of other provinces in India :—

Provinces.	Death-rate.		
	1928-32.	1932.	1933.
1	2	3	4
Assam ... ..	18·67	18·96	20·31
Bengal ... ..	21·89	20·5	24·00
Bihar and Orissa ... ..	24·2	20·6	22·1
Central Provinces ... ..	33·59	26·89	26·55
Madras ... ..	24·38	21·96	23·66
Burma ... ..	19·65	17·30	18·71
Bombay ... ..	26·84	23·04	24·79
United Provinces ... ..	24·96	22·23	18·69
Punjab ... ..	24·67	24·70	28·16
North West Frontier Province ... ..	21·02	20·00	21·28

The death-rate of Assam was higher than that of Burma and the United Provinces but lower than that of all other provinces.

7. The total number of deaths registered in the province during the year under review was 161,054 as compared with 150,321 in the preceding year; the death-rate per 1,000 of the population being 20·31 and 18·96 respectively. The number of deaths registered in 1933 was higher than that recorded in 1932 by 10,733. The quinquennial average was 18·67. The districts of Cachar, Sylhet, Goalpara, Darrang and Lakhimpur returned death-rates above, and the other three below, the quinquennial average.

The highest death-rate was recorded in the district of Sylhet (23·79), followed by Goalpara (23·63) and Cachar (22·62). The death-rate in the Nowgong district was lower than that of the previous year and was also the lowest in the province. The increase in the total mortality during 1933 is mainly accounted for by an increase of 2,915 in infant mortality and a noticeably larger number of deaths recorded under "Fever" in Sylhet, Kamrup and Sibsagar; under "Dysentery and Diarrhoea" in Sylhet, Sibsagar and Lakhimpur and under "Other Causes" in Sylhet, Cachar and Lakhimpur. The appended table shows the number of deaths reported from each district in 1933, as compared with that of 1932:—

	1933.	1932.	Increase or decrease.
1	2	3	4
Cachar	12,188	10,397	+1,791
Sylhet	64,799	54,914	+9,885
Goalpara	20,857	20,973	-116
Kamrup	13,635	15,064	-1,429
Darrang	11,611	11,647	-36
Nowgong	6,799	8,631	-1,832
Sibsagar	16,704	15,931	+773
Lakhimpur	14,461	12,764	+1,697

The number of male deaths to every 100 female death was 110.

8. The total number of deaths registered during the year under report in urban areas in which registration is compulsory was 3,318, yielding a death-rate of 17·06, as compared with 3,340 and 17·17 in 1932. The quinquennial average was 16·54. The highest death-rate (29·36) was reported from Hailong. This increase is due to a larger number of deaths recorded in this town under "Dysentery and Diarrhoea," "Respiratory diseases," "Injuries" and "Other Causes." Other high rates were in Barpeta (24·68), Hailakandi (20·98), Jorhat (20·27) and Mangaldai (20·05). Fever was mainly responsible for the high death-rates in each of these towns. Low rates were recorded in Tinsukia (8·72), Sibsagar (9·90) and Doom Dooma (10·53). These low rates were due either to better health conditions prevailing during the year or to defective registration. In the under-mentioned table is given the number of deaths recorded under each of the main heads of mortality in towns in the years 1932 and 1933:—

Head of mortality.	1933.	1932.	Increase or decrease in 1933.
1	2	3	4
Cholera	31	76	-45
Small-pox	13	6	+7
Fever	930	1,001	-21
Dysentery and Diarrhoea	337	409	-72
Respiratory diseases	412	409	+3
Injuries	120	114	+6
All other causes	1,425	1,325	+100
Total	3,318	3,340	-22

9. The total number of deaths registered in rural areas in 1933 was 1,57,736 or 20.40 per mille of population, as compared with 146,981 and 19 01 in 1932. The quinquennial average was 18.73. The number of deaths in rural circles under each of the main heads of mortality in the years 1932 and 1933 is contrasted in the sub-joined table:—

Head of mortality.	1933.	1932.	Increase or decrease in 1933.
1	2	3	4
Cholera ...	5,477	4,895	+582
Small-pox ...	234	625	-391
Fevers ...	102,910	97,210	+5,700
Dysentery and Diarrhoea ...	8,930	7,832	+1,098
Respiratory diseases ...	5,032	4,949	+83
Injuries ...	1,982	1,735	+247
All other causes ...	33,171	29,735	+3,436
Total ...	157,736	146,981	+10,755

The highest rate was reported from the Bokakhat circle (37.15) in the Sibsagar district. Other circles reporting high rates were Paneri (32.79) in Darrang, Golokganj (32.45) in Goalpara, Jaintiapur (32.26) in Sylhet, Udalguri (31.92) and Kalaigaon (31.78) in Darrang. The lowest rate was recorded in Margherita-Digboi (5.83) in Lakhimpur, Lahorighat (6.31) in Nowgong, Sarbhog (6.31) in Kamrup and Jamunamukh (6.73) in Nowgong. These low rates are due to defective registration.

Fever was mainly responsible for the high rates in each of the above-mentioned areas, other contributory causes being small-pox in Bokakhat and Udalguri, dysentery and other causes in Bokakhat, Udalguri, Jaintiapur, Paneri and Kalaigaon, respiratory diseases in Bokakhat, Golokganj and Jaintiapur, and injuries in Jaintiapur, Golokganj and Paneri.

10. Mortality was highest (2.17) in the month of December and lowest (1.27) in March. Fever was mainly responsible for the high death-rate in December, a contributory cause being mortality from cholera in the Sylhet district during this month.

11. Births and deaths are registered in certain areas only in the Hill districts. The birth and death-rates in Hill districts in 1933 are compared in the sub-joined table with those of the preceding year:—

Districts.	Population under registration.	1933.		1932.	
		Birth-rate.	Death-rate.	Birth-rate.	Death-rate.
1	2	3	4	5	6
Khasi and Jaintia Hills ...	64,128	22.84	14.22	24.31	14.64
Naga Hills ...	3,974	41.19	45.17	36.32	32.33
Lushai Hills ...	124,404	42.16	27.94	41.13	30.17
Garó Hills ...	190,911	29.88	20.15	28.80	20.97

It will be seen from the above table that the birth-rate in all Hill districts, except Khasi and Jaintia Hills district was higher and the death-rate, except in the Naga Hills, lower than that of the preceding year.

*Khasi and Jaintia Hills.*—The total numbers of births and deaths in the Khasi and Jaintia Hills district were 1,465 and 912 respectively. The part of the district in which births and deaths are recorded was free from cholera and small-pox, but in other areas there were 16 cases with 13 deaths. The number of persons inoculated with cholera vaccine was 1,396. Infection was brought in from the Sylhet district. The outbreaks were quickly brought under control. Vigorous measures were taken to prevent infection coming into Shillong, mainly by making arrangements for the inspection of passengers on the main routes *via* Nongpoh, Cherra and Dawki. These inspections were carried out without any complaints or inconvenience to the public. There were outbreaks of influenza and whooping cough in the Nongpoh area and the Jowai subdivision. A Sub-Assistant Surgeon of the Gauhati Epidemic Unit was deputed to these areas and the outbreaks were rapidly brought under control. Malaria broke out in an epidemic form in certain villages in the Jowai subdivision, with 475 cases and 19 deaths. The Epidemic Unit Sub-Assistant Surgeon also visited this area. Batches of mosquitoes were collected and sent for identification. *A. Maculatus* was found to be a carrier in this area. The incidence of malaria at Nongpoh appears to have been much reduced when compared with previous years. The draining of the lake, provision of mosquito-proof netting to most of the Government quarters, Paris-greening of the breeding grounds and other anti-malarial measures appear to have been effective. Shillong was less malarial during the year than in the preceding year. Six hundred and forty boxes of quinine were sold in the district against 434 in the previous year.

The total number of births and deaths recorded in Shillong in 1933 was 532 or 24·97 and 252 or 11·83 respectively as compared with 596 or 27·98 and 258 or 12·11 respectively in the preceding year. The town was free from cholera. There was one imported case of small-pox which was discharged cured. The following cases and deaths from infectious diseases were recorded by the Shillong Municipality during the year:—

Di-ease.	Cases.	Deaths.	Cured.	Otherwise.
1	2	3	4	5
Tuberculosis	15	12	...	3 left Shillong.
Enteric	26	10	16	...
Small pox	1	...	1	...
Diphtheria	16	2	14	...
Leprosy	6	1	...	5 sent to Sylhet.
Others	2	1	1	...

Out of the 15 cases of tuberculosis, 9 came from outside Shillong and the other cases were among the indigenous population. The construction of a Tuberculosis Sanatorium in Shillong is receiving the consideration of the Municipal Board. The conservancy and water-supply of the town leave much to be desired. Owing to the growth of population in the town, both these problems demand immediate attention.

*Naga Hills.*—In the Naga Hills district, registration of births and deaths is undertaken only in Kohima town and Dimapur rural circle, the combined population of which is 3,974. The birth and death-rates as given against this district do not therefore accurately indicate the health of the whole district. This district was free from cholera and small-pox. The total number of deaths is 204 and the death-rate was higher than in the previous year and this is attributed to a larger number of deaths from malaria. Anti-malarial measures were continued at Kohima and Dimapur. Only 76 packets of quinine were sold in this district.

*Lushai Hills.*—The health of the district was better in 1933 than in 1932. The number of deaths was 3,476, principally from malarial fevers (1,395), dysentery and diarrhoea (500), and respiratory diseases (1,504). The Civil Surgeon has stressed the necessity for another tank at Aijal for water-supply and also for a Sub-Assistant Surgeon trained in malariology to be posted to the Lushai Hills. The Inspector General of Civil Hospitals has been requested to consider this latter proposal. There was no epidemic in the district during the year under report. The



campaign against syphilis was, as usual, carried out during the year. There were 5 deaths from cholera among Kukis and 358 persons were inoculated with cholera vaccine. Five cases of Yaws came under treatment with good results.

**Garo Hills.**—The state of public health in this district is far from satisfactory. The total number of deaths was 3,847 against 4,004 in 1932. Malaria was responsible for 1,190 deaths. There were 13 cases of cholera with 9 deaths. Anti-cholera inoculations were given to 296 persons. Twelve deaths from small-pox were reported during the year. A total of 252 lepers were treated in the Tura Leper colony.

**Sadiya Frontier Tract.**—There was no change in the system of recording vital statistics in this area. The total number of births and deaths was 603 and 471 respectively, as compared with 634 and 445 respectively in the preceding year. Fever is mainly responsible for the increase in the number of deaths. Anti-malarial measures were continued at Pasighat. Only fifty-nine packets of quinine were sold in the district. Eleven lepers received treatment at the Pasighat dispensary. This district was free from epidemic diseases, but there was a small outbreak of influenza and 5 cases of enteric fever were reported from the Sadiya town.

**Manipur State.**—Births and deaths are not recorded in this State. There were 23 cases of cholera with 11 deaths. The number of inoculations performed was 1,176. There was no case of small-pox. A total of 148 lepers were treated during the year. An anti-malarial survey was undertaken by the Civil Surgeon, Manipur. Only 48 parcels of quinine were sold during the year. Malaria has a low endemicity in this State. The cases that occurred were almost entirely imported.

12. The following table shows the birth and death rates reported from tea estates during the year 1933, as compared with those for 1932:—

Districts.	Birth-rate.		Death-rate.	
	1933.	1932.	1933.	1932.
1	2	3	4	5
Cachar ... ..	36.46	31.32	23.38	18.95
Sylhet ... ..	31.54	29.11	16.93	14.44
Goalpara ... ..	35.96	22.90	20.94	14.61
Kamrup ... ..	23.31	12.24	13.62	10.04
Darrang ... ..	26.53	21.00	14.23	13.85
Nowgong ... ..	32.44	31.02	17.49	15.83
Sibsagar ... ..	43.77	37.35	23.36	20.05
Lakhimpur ... ..	32.24	31.49	22.82	21.51
Total ... ..	34.47	30.82	20.75	18.21

The birth and death-rates on tea estates during the year under review were 34.47 and 20.75 respectively, as compared with 30.82 and 18.21 respectively in the preceding year. Birth and death-rates on tea estates are in excess of the provincial rates, which are 31.04 and 20.31. The registration of Vital Statistics in tea garden areas is now compulsory under the Bengal Births and Deaths Registration Act, 1873. The increase in the birth-rate is due, in all probability, to better health conditions of the labour force. The total number of births and deaths on tea estates in 1933 was 33,620 and 20,244 respectively, as compared with 30,173 and 17,117 respectively in the preceding year. The largest number of deaths (8,839) was recorded under "other causes" and this is followed by "Dysentery and Diarrhoea" (3,735) "Respiratory Diseases" (3,670) and "Fever" (3,446). A total of 277 deaths from cholera and 15 deaths from small-pox was reported during the year under review, against 287 and 25 deaths respectively in the preceding year. Deaths from *kala azar* were 60 during the year 1933 against 75 in 1932. As usual, tea gardens obtained their supplies of Urea-Stibamine at concession rates.

13. The total number of births and deaths within railway limits during the year 1933 was 115 and 143 respectively, against 130 and 165 respectively in the preceding year. As in the last year, the largest number of births and deaths was reported from the Lakhimpur

district. The highest mortality (64) was recorded under "Other Causes" and this was followed by (37) under "Respiratory Diseases" during the year under report.

*Mortality according to sex.*—A total of 84,464 males and 76,590 females died in 1933, as compared with 78,593 and 71,728 respectively in 1932. The death-rates of 20·17 for males and 20·47 for females were in excess by 1·40 for males and 1·30 for females over those in 1932, but were more by 1·62 for males and by 1·66 for females than those of the previous quinquennium. The female death-rate exceeded the male death-rate in 5 districts. The highest death-rate for males (24·79) was returned from the Goalpara district as in the last year, followed by Cachar (23·63) in respect of females. The lowest death-rates for both sexes, *viz.*, 12·06 for males and 12·11 for females, were returned from the Nowgong district.

*Mortality according to class.*—Classified according to religion 1,260 Christians, 87,754 Hindus, 58,694 Muhammadans, 197 Buddhists and 13,149 other classes, died during the year 1933. The death-rates per mille are shown by classes in the sub-joined table :—

Classes.	Ratio of deaths per mille, 1932.	Ratio of deaths per mille, 1933.	Difference.
1	2	3	4
Christians ...	14·01	16·02	+ 2·01
Hindus ...	17·20	18·18	+ ·98
Muhammadans ...	19·14	21·40	+ 2·26
Buddhists ...	21·65	18·00	- 3·65
Other classes ...	50·28	49·20	- 1·08

The district of Sylhet recorded the highest mortality rate both among the Hindus (22·30), and Muhammadans (24·76). The lowest rates (12·89 and 8·31) for these two principal communities were returned from the Nowgong district.

*Mortality according to age.*—The table below shows the rate of mortality by sexes in different age groups and the excess or defect of the female death-rate :—

Age periods.	1933.		Excess or defect of female death-rate.
	Male.	Female.	
1	2	3	4
Under one year ...	172·62	153·71	- 18·91
1—5 ...	55·44	73·19	+ 17·75
5—10 ...	15·87	19·70	+ 3·83
10—15 ...	4·93	5·36	+ ·43
15—20 ...	4·26	6·40	+ 2·14
20—30 ...	19·10	26·95	+ 7·85
30—40 ...	15·61	16·58	+ ·97
40—50 ...	13·00	9·57	- 3·43
50—60 ...	12·60	8·33	- 4·27
60 years and upwards ...	73·72	54·52	- 19·20
Total ...	20·17	20·47	+ ·30

It will appear that the highest mortality was recorded amongst infants under one year of age and the lowest amongst males between 15 and 20 years of age and amongst females between 10 to 15 years.

In the sub-joined table are compared the deaths and death-rates amongst infants, calculated on the births for the last ten years :—

Year.	Births.			Deaths of infants.			Death-rate of infants.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1	2	3	4	5	6	7	8	9	10
1923	101,861	95,657	197,518	19,367	16,089	35,456	190·13	168·19	179·50
1924	110,117	102,648	212,765	21,636	17,671	39,307	196·49	172·15	184·75
1925	103,009	96,252	199,261	19,009	15,733	34,742	184·53	163·45	174·35
1926	108,967	102,266	211,233	21,029	17,403	38,432	192·98	170·17	181·94
1927	107,461	99,828	207,289	19,253	16,266	35,509	179·16	162·94	171·35
1928	110,774	103,283	214,057	20,233	16,587	36,820	182·65	160·59	172·01
1929	116,177	108,417	224,594	19,374	15,987	35,361	166·76	147·46	157·44
1930	110,400	104,345	214,835	20,166	17,310	37,476	182·66	165·75	174·44
1931	115,139	107,867	223,006	18,465	15,624	34,089	160·37	144·84	152·86
1932	122,845	115,474	238,319	20,398	16,918	37,316	166·05	146·51	156·58
1933	126,882	119,236	246,118	21,903	18,328	40,231	172·62	153·71	163·46

The infant mortality for the province in 1933 was higher than in 1929, 1931 and 1932, but was lower than that of any of the other previous years. A total of 40,231 infants died during the year and of these 20,982 died within one month of birth, 12,858 died within one to six months and 6,391 died within one year.

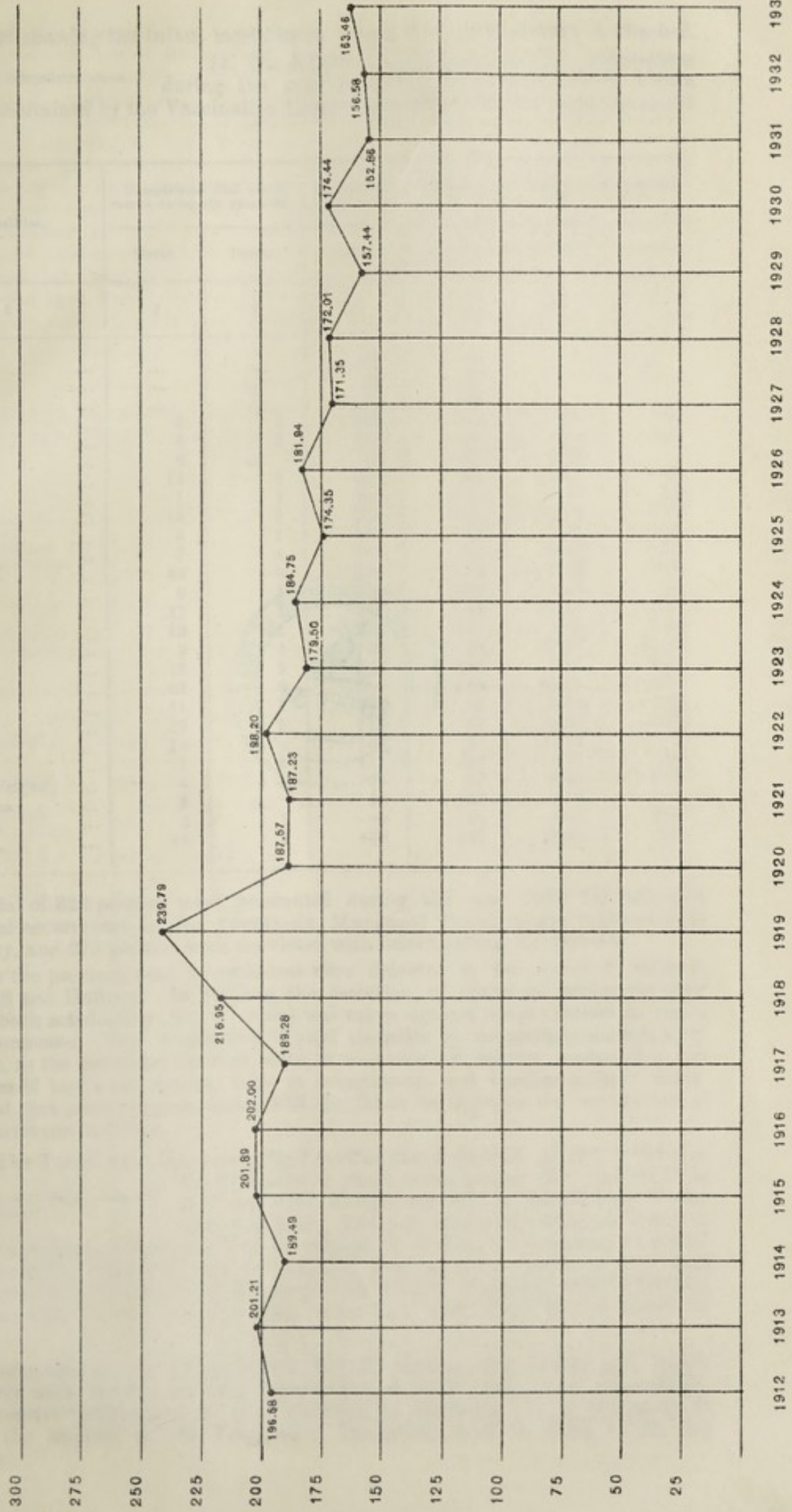
The infant mortality rate of Assam for 1933 is compared in the appended table with that of other provinces in India :—

Provinces.	Rates.
Assam	163·46
Bengal	200·12
Bihar and Orissa	135·2
Central Provinces	200·07
Madras	184·84
Burma	192·26
Bombay	160·66
United Provinces	137·88
Punjab	192·55
North West Frontier Province	137·36

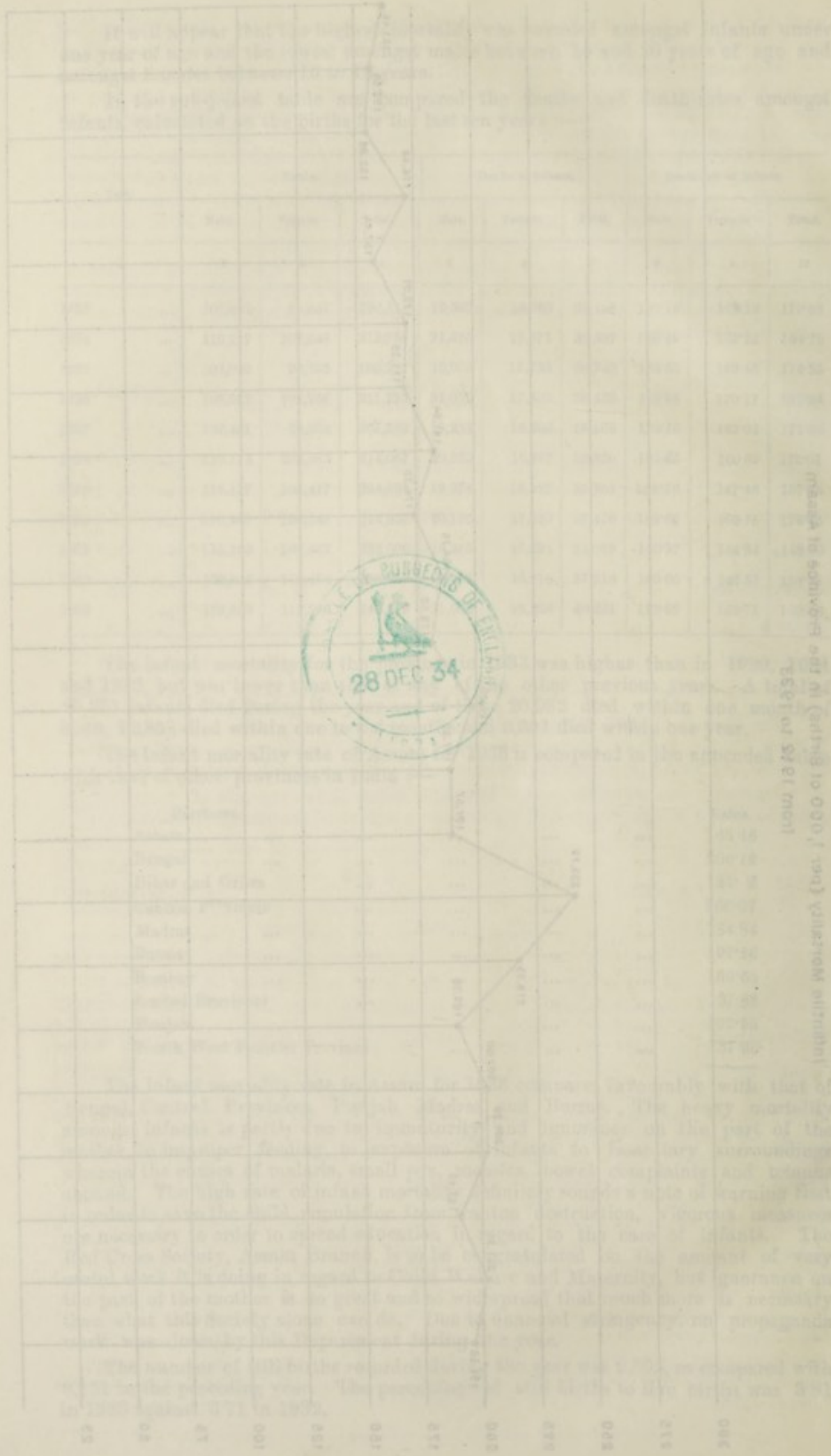
The infant mortality rate in Assam for 1933 compares favourably with that of Bengal, Central Provinces, Punjab, Madras and Burma. The heavy mortality amongst infants is partly due to immaturity and ignorance on the part of the mother, to improper feeding, to exposure of infants to insanitary surroundings wherein the causes of malaria, small-pox, measles, bowel complaints and tetanus abound. The high rate of infant mortality definitely sounds a note of warning that in order to save the child population from wanton destruction, vigorous measures are necessary in order to spread education in regard to the care of infants. The Red Cross Society, Assam Branch, is to be congratulated on the amount of very useful work it is doing in regard to Child Welfare and Maternity, but ignorance on the part of the mother is so great and so widespread that much more is necessary than what this Society alone can do. Due to financial stringency, no propaganda work was done by this Department during the year.

The number of still births recorded during the year was 9,395, as compared with 8,851 in the preceding year. The percentage of still births to live births was 3·81 in 1933 against 3·71 in 1932.

CHART NO I  
 Infantile Mortality (per 1,000 of Births) in the Province of Assam  
 from 1912 to 1933



1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023



1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023

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A chart showing the infant mortality in Assam from 1912 to 1933 is attached.

14. The defects in registration of vital occurrences during the year under report in Compulsory Urban Areas, as ascertained by the Vaccination Inspecting Staff, are shown in the statement below :—

Municipalities.	Unregistered vital occurrences during the year 1933.		Recorded vital occurrences.		Percentage of omissions.	
	Births.	Deaths.	Births.	Deaths.	Births.	Deaths.
1	2	3	4	5	6	7
Silchar ...	...	...	261	150	...	...
Hailakandi ...	...	...	62	42	...	...
Haflong ...	...	...	31	33	...	...
Sylhet ...	5	1	639	313	78	32
Karimganj ...	8	3	180	97	4.26	3.00
Maulvibazar ...	6	...	93	57	6.06	...
Habganj ..	11	3	266	135	3.97	2.17
Sunamganj ...	1	1	205	105	4.9	9.4
Dhubri ...	13	2	301	168	4.14	1.18
Goalpara ...	3	1	160	84	1.84	1.18
Gauripur ...	7	4	157	91	4.27	4.21
Gauhati ...	48	9	606	404	7.34	2.18
Barpeta ...	9	1	823	239	1.08	2.9
Polasbari ...	17	1	146	63	10.43	1.56
Tezpur ...	19	11	240	171	7.34	6.04
Mangaldai ...	9	4	36	30	20.00	11.76
Nowgong ...	12	9	349	182	3.32	4.71
Jorhat ...	32	6	245	163	11.55	3.55
Sibsagar ...	11	1	186	65	5.58	1.52
Goaghat ...	19	5	112	82	14.50	5.75
Nazira ...	12	...	103	43	10.43	...
Dibrugarh ...	7	2	417	332	1.65	6.0
North Lakhimpur ...	4	3	60	37	6.25	7.50
Doom Dooma ...	2	...	24	20	7.65	...
Tinukia ...	3	1	85	44	3.41	2.22
Shillong ...	64	1	468	251	12.03	4.0

A total of 322 persons were prosecuted during the year 1933 for failing to report vital occurrences in the twenty-six Municipal Towns where registration is compulsory, and 275 persons were convicted with fines totalling Rs. 280 6 0.

As in the previous year, no omissions were detected in the towns of Silchar, Hailakandi and Haflong. In Shillong, the detection of omissions during the year 1933 has been satisfactory, but no action was taken against persons failing to report vital occurrences. The verification of vital statistics in compulsory areas is very important, as the omissions detected serve as an index of defects prevalent in the registration of births and deaths, both in compulsory and non-compulsory areas. It is hoped that more vigorous action will be taken to improve the verification of vital occurrences in future.

15. The Vaccination Inspecting Staff verified the records of 51,653 births and 30,427 deaths in rural areas during the year 1933, as compared with 51,053 and 30,734 respectively in the preceding year. The percentage of omissions detected was 5.12 in respect of births and 2.97 in respect of deaths, as compared with 5.87 and 3.50 in 1932. The district of Sylhet stood first, as in the previous year, with 37,833 entries tested, followed by Kamrup with 10,279, Nowgong with 8,149 and Lakhimpur with 7,834. Darrang again stood last with 1,977 entries tested in 1933.

Out of a total of 240,073 births and 157,733 deaths only 51,658 and 30,427 respectively were verified, yielding percentages of 21.52 and 19.29 respectively. More extensive verification of vital statistics is necessary. It is obligatory to increase the number of the Vaccination Inspecting Staff in order to do this efficiently.

16. There was no change during the year under report in the agencies for the collection of Vital Statistics, either in urban or rural areas. The system of granting rewards to selected gaonburas for good work in this connection was discontinued from 1932, as such remuneration did not result in any appreciable improvement. During the year, the question of how to improve the system of registration of vital statistics was considered by Government, with negative results. It was decided that an improvement could be effected only through the employment of a better and more literate staff than the existing gaonburas and chaukidars. This will entail additional expense to Government. This is impossible at the present time of financial difficulty but it is hoped that the question will be taken up when the financial conditions of the province improve. As usual, weekly Epidemic Reports and monthly returns of vital statistics were regularly published in the provincial Gazette and in certain local papers for the information of the general public.

17. A statement showing month by month the number of coolies leaving for Assam by different routes, during the year 1933 is appended below :—

Emigration and Immigration.		Total number of immigrants left for Assam during the year 1933.	
Months.			
		Via Santabar and Amingaon.	Via Chandpur.
January ...	...	5,953	44
February ...	...	10,001	167
March ...	...	9,648	46
April ...	...	5,143	70
May ...	...	3,841	46
June ...	...	2,041	9
July ...	...	986	9
August ...	...	375	9
September ...	...	466	3
October ...	...	242	7
November ...	...	288	6
December ...	...	1,635	2
Total ...	...	40,619	418

There were only six cases of sickness among emigrants *viz.*, three of conjunctivitis, one of influenza, one of diarrhoea, and one of apoplexy. All the cases were discharged cured except the last named which ended fatally. A total of 418 immigrants arrived in Cachar and Sylhet *via* Chandpur, there was no sickness amongst them nor any death or desertion. No emigrants were received for repatriation.

The following statement shows the number of sick coolies treated month by month in the Emigration Hospitals at Gauhati and Tezpur during the year 1933 :—

Disease.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>Tezpur hospital.</i>													
Chickenpox	...	...	...	1	...	...	...	...	...	...	...	...	1
Malaria	...	...	...	...	1	...	...	...	...	...	...	...	1
Smallpox	...	...	...	...	1	...	...	...	...	...	...	...	1
Total	...	...	...	1	2	...	...	...	...	...	...	...	3
<i>Gauhati hospital—</i>													
Scabies	1	...	1	2	...	...	...	...	...	...	...	...	4
Malaria	1	13	6	3	2	1	...	...	2	1	...	...	32
Conjunctivitis	7	51	60	48	41	14	13	...	...	...	...	2	236
Dysentery	1	...	...	...	1	...	...	...	...	...	...	...	2
Bronchitis	1	...	2	...	...	...	...	...	...	...	...	...	3
Diarrhoea	...	1	3	...	...	...	...	1	...	...	...	...	5
Sprained knee	...	1	...	...	...	...	...	...	...	...	...	...	1
Pneumonia	...	2	...	...	...	...	...	...	...	...	...	...	2
Influenza	...	2	2	...	...	...	...	...	...	...	...	2	6
Corneal ulcer	...	...	1	...	...	...	...	...	...	...	...	...	1
Measles	...	...	2	...	...	...	...	...	...	...	...	...	2
Chickenpox	...	...	...	1	1	...	...	...	...	...	...	...	2
Puerperal fever	...	...	...	...	...	...	...	...	...	...	1	...	1
Total	11	70	77	54	45	15	13	1	2	1	2	6	297

The total number of Emigrants passing through the Tezpur Coolie Depôt during the year under report was 1,313 against 6,755 in the preceding year. This decrease was due to the fact that since June 1933, emigrants were passed by the Eastern Bengal Railway via Rangapara Railway station. From the 6th November 1933 this depôt was totally closed. No case of epidemic disease came to notice on the forwarding routes.

18. *Railway Coolie Camp.*—No new lines were under construction in Assam during the year 1933 either by the Eastern Bengal or Assam Bengal Railways. There were however three coolie camps, *viz.*, Dittockcherra Ballast siding and Dittockcherra Boulder siding in Cachar district, and Behubar quarry in Sibsagar district, in connection with old lines. The population of these camps varied from 371 to 480. Kutcha huts were provided and their surroundings were kept clean. Sweepers were employed for conservancy. Water-supply was good and sufficient. General health of the coolies was satisfactory. Malaria was prevalent in camps. There was no epidemic of cholera or smallpox etc. during the year under the report. One hospital Assistant and one Compounder were employed for the treatment of ailments.

### CHAPTER III.

#### THE STATE OF PUBLIC HEALTH AND THE HISTORY OF CHIEF DISEASES.

19. The information recorded in the preceding paragraphs will show that the state of Public Health in the Province during the year under review was not very satisfactory. Deaths under all heads of mortality, with the exception of smallpox, were larger during the year 1933. There was a severe outbreak of cholera epidemic in the Surma Valley districts during the year. The largest increase in the number of deaths was from "Fever" and this was followed by the increase under "All Other Causes".

A total of 161,054 deaths were recorded during the year, of which 5,508 were from cholera, 247 from smallpox, 103,890 from fever, 9,267 from dysentery and diarrhoea, 5,444 from respiratory diseases, 2,102 from injuries and 34,596 from "All Other Causes".



The following statement shows the death-rates per mille from the chief causes of mortality during 1933, as compared with the decennium ending 1932.

Diseases.	1923-32.			1933.		
	Urban.	Rural.	Combined.	Urban.	Rural.	Combined.
1	2	3	4	5	6	7
Cholera ...	.59	1.10	1.09	.16	.71	.69
Smallpox ...	.14	.38	.38	.08	.03	.03
Plague ...	...	...	...	...	...	...
Fever ...	5.25	12.21	12.04	5.04	13.31	13.10
Dysentery and Diarrhoea	2.49	1.16	1.20	1.73	1.15	1.17
Respiratory diseases ...	2.20	.70	.74	2.12	.65	.69
Injuries ...	.48	.24	.24	.62	.26	.27
All Other Causes ...	6.32	3.95	4.01	7.33	4.29	4.36
Total ...	17.47	19.74	19.70	17.06	20.40	20.81

The death-rate for the year 1933 was higher than the average rate by 61. Noticeable increase was reported in the number of deaths from "Fever". The increase in the mortality from "Fever" by 5,679 was the principal factor in raising the death-rate recorded in 1933. Next to "Fever" the increase of 3,536 deaths was recorded under "All other Causes".

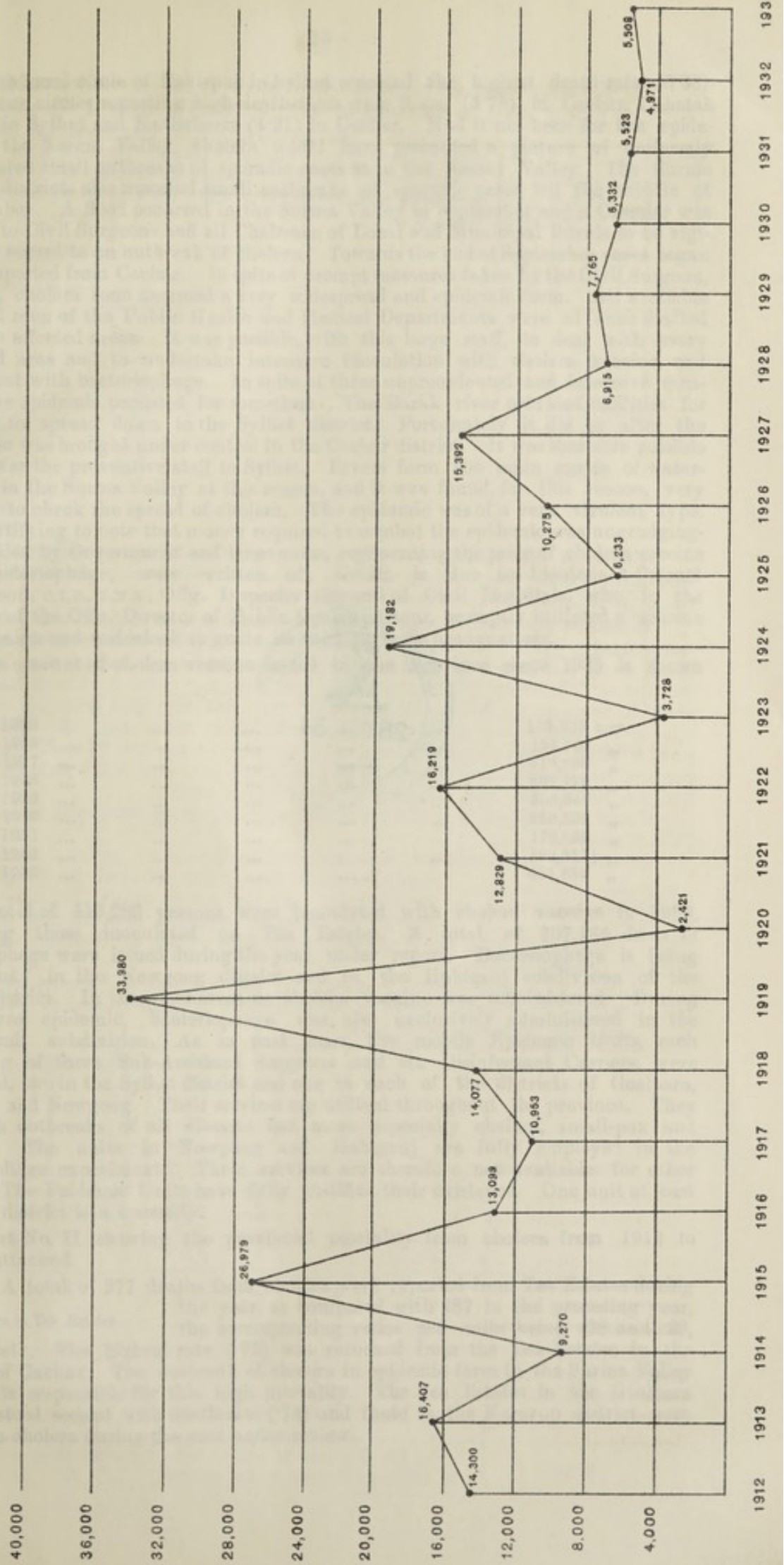
20. The total number of deaths from cholera reported during the year was 5,508, as compared with 4,971 in 1932. The death-rate per 1,000 of population was .69 against .63 in 1932. The decennial average was 1.09, as shown in the subjoined table:—

Districts.	Death-rate per mille.	
	1923-32.	1933.
Cachar ...	1.01	2.03
Sylhet ...	1.38	1.49
Goalpara ...	1.22	.03
Kamrup ...	1.90	.09
Larrang ...	.79	.19
Nowgong ...	.78	.04
Sibsagar ...	.39	.06
Lakhimpur ...	.19	.09
Total ...	1.09	.69

The districts which suffered most from cholera during the year were Cachar and Sylhet. Cachar, with its death-rate of 2.03, headed the list, followed by Sylhet (1.49). The remaining districts returned death-rates below 1 per mille and the provincial average was .69. The lowest death-rate was returned from Goalpara district. Cholera was responsible for 3.42 per cent of the total deaths in the Province in 1933. Deaths from cholera were reported from 91 out of 147 registration circles and from 1,903 villages out of 23,333 in the Province, showing an increase by 670 over 1932. The annual seasonal peak in the incidence of cholera occurred in November (1,992) followed by December (1,537) and October (964). The lowest mortality was recorded in January.

During the year under report, 31 deaths from cholera occurred in towns and 5,477 in rural areas. Deaths from cholera were reported from six towns. Silchar (15) headed the list, followed by Sylhet (10). The other towns in which deaths from cholera occurred are Maulvibazar (2), Hailakandi (2), Karimganj (1), and Gauhati (1).

CHART NO II  
Mortality from Cholera in Assam  
from 1912 to 1933





The rural circle of Tahirpur in Sylhet reported the highest death-rate (6.93). The other circles reporting high death-rates were Sonai (4.78) in Cachar, Chhatak (4.25) in Sylhet and Katlicherra (4.21) in Cachar. Had it not been for the epidemic in the Surma Valley, cholera would have presented a picture of uniformly distributed small outbreaks of sporadic cases as in the Assam Valley. The Surma Valley districts also reported small outbreaks of sporadic cases till the middle of September. A flood occurred in the Surma Valley in September and a Circular was issued to Civil Surgeons and all Chairmen of Local and Municipal Boards to be vigilant in regard to an outbreak of cholera. Towards the end of September cases began to be reported from Cachar. In spite of prompt measures taken by the Civil Surgeon, Cachar, cholera soon assumed a very widespread and epidemic form. All available medical men of the Public Health and Medical Departments were at once drafted into the affected areas. It was possible, with this large staff, to deal with every infected area and to undertake intensive inoculation with cholera vaccine and treatment with bacteriophage. In spite of these unprecedented and intensive measures the epidemic persisted for sometime. The Barak river provided facilities for cholera to spread down to the Sylhet district. Fortunately it did so after the epidemic was brought under control in the Cachar district. It was therefore possible to transfer the preventive staff to Sylhet. Rivers form the main source of water-supply in the Surma Valley at this season, and it was found, for this reason, very difficult to check the spread of cholera. The epidemic was of a very virulent type. It is gratifying to note that money required to combat the epidemic was ungrudgingly provided by Government and large sums, representing the price of cholera vaccine and bacteriophage, were written off. Credit is due to Lieutenant-Colonel J. Morison, C.I.E., I.M.S., Offg. Inspector General of Civil Hospitals, who, in the absence of the Offg. Director of Public Health on tour, promptly initiated a scheme of campaign and undertook to guide its working from headquarters.

The amount of cholera vaccine issued in the Province since 1925 is shown below:—

1925	...	...	...	...	108,930 c. cs.
1926	...	...	...	...	154,760 "
1927	...	...	...	...	419,880 "
1928	...	...	...	...	297,773 "
1929	...	...	...	...	356,047 "
1930	...	...	...	...	220,532 "
1931	...	...	...	...	170,820 "
1932	...	...	...	...	169,317½ "
1933	...	...	...	...	451,884 "

A total of 413,282 persons were inoculated with cholera vaccine in 1933, excluding those inoculated on Tea Estates. A total of 707,164 doses of bacteriophage were issued during the year under report. Bacteriophage is being "tried out" in the Nowgong district and in the Habiganj subdivision of the Sylhet district. In these two areas no cholera vaccine was administered. During the severe epidemic, bacteriophage was also exclusively administered in the Hailakandi subdivision. As in past years, five mobile Epidemic Units, each consisting of three Sub-Assistant Surgeons and six Disinfectant Carriers, were employed, two in the Sylhet district and one in each of the districts of Goalpara, Kamrup and Nowgong. Their services are utilised throughout the province. They deal with outbreaks of all diseases but more especially cholera, small-pox and malaria. The units in Nowgong and Habiganj are fully employed in the bacteriophage experiment. Their services are therefore not available for other duties. The Epidemic Units have fully justified their existence. One unit at least in every district is a necessity.

Chart No. II showing the provincial mortality from cholera from 1912 to 1933 is attached.

21. A total of 277 deaths from cholera were reported from Tea Estates during the year, as compared with 287 in the preceding year, the corresponding ratios per mille being .28 and .29, respectively. The highest rate (.75) was returned from the Tea Estates in the district of Cachar. The outbreak of cholera in epidemic form in the Surma Valley districts is responsible for this high mortality. The Tea Estates in the Goalpara district stood second with death-rate (.74) and those in the Kamrup district were free from cholera during the year under review.

22. The total number of deaths from small-pox during the year 1933 was 247 against 631 in 1932, showing a decrease of 384 deaths. The gradual fall in the mortality from this disease is due to the prompt preventive measures taken to deal with isolated small outbreaks of the disease and to the thoroughness of vaccination. The death-rate was .03 per mille compared with .08 in 1932 and .38 the decennial average, as shown in the table below:—

Districts.	Death-rate per mille.	
	1923-32.	1933.
Cachar ... ..	.22	...
Sylhet ... ..	.34	.02
Goalpara ... ..	.51	.08
Kamrup ... ..	.52	.07
Darrang ... ..	.19	.04
Nowgong ... ..	.31	.002
Sibsagar ... ..	.66	.03
Lakhimpur ... ..	.16	.01
Total ... ..	.38	.03

A total of 146 villages out of 28,333 were affected with small-pox in 1933. Deaths from small-pox were reported from 54 out of 147 circles. As in the previous year, the seasonal peak occurred in May (38).

Three districts yielded death-rates from small-pox slightly above the provincial average (.03). As in the previous year, Goalpara with its death-rate (.08) heads the list, followed by Kamrup (.07). The district of Cachar was free from small-pox. There was only one death in the Nowgong district. The other districts recorded death-rates below the provincial rate and the quinquennial mean. A total of 13 deaths from small-pox was reported from towns and 234 deaths from rural circles. Twenty-four children below one year of age and 31 children between one and ten years of age died in 1933 from small-pox, against 56 and 94, respectively, in 1932. The rest, *viz.*, 192, occurred among adults.

Chart No. III showing the provincial mortality from small-pox from 1912 to 1933 is attached.

23. Deaths from small-pox were reported from only six towns, Gauripur in Goalpara stood first (1.43) followed by Golaghat (.21) in Sibhsagar. Among rural circles Bokakhat in the district of Sibhsagar reported the highest death-rate (.50). Other high rates were reported from Bijni (.35) in Goalpara and Boko (.23) in Kamrup district.

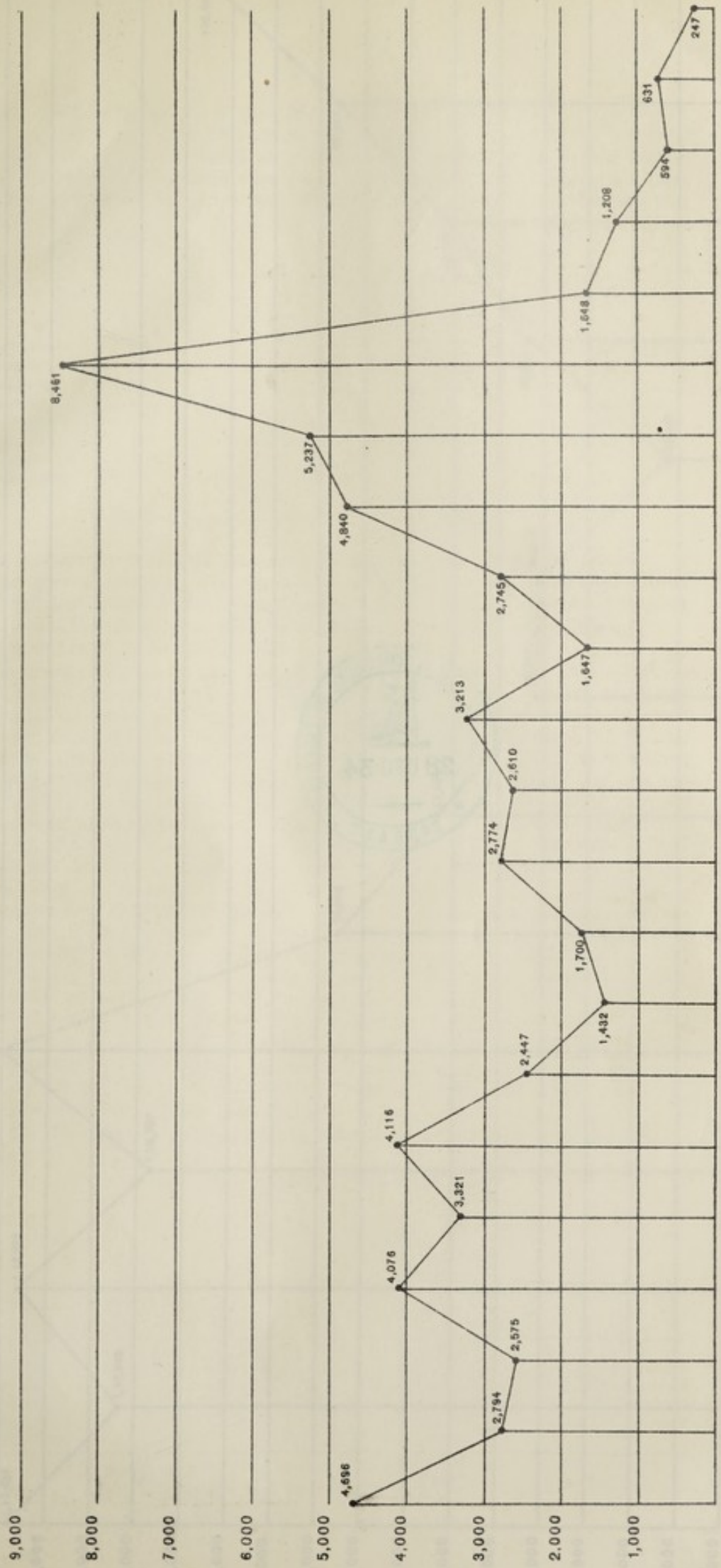
There is no special hospital in Assam for the isolation and treatment of small-pox. Particulars of cases treated in the Infectious Diseases Hospitals, where such exist, are given in the appended table:—

Municipal towns.		Number of small-pox patients treated.	Vaccinated as evidenced by presence of one or more vaccination cicatrices.	Stated to have been successfully vaccinated, but no vaccination cicatrices present.	Stated to be unvaccinated (or vaccinated unsuccessfully) and no cicatrices present.	Previously unvaccinated but vaccinated during the incubation of small-pox.	Stated to have been successfully vaccinated.
1	2	3	4	5	6	7	
Dhubri ... ..	...	12	...	...	...	...	12
Sbillong ... ..	...	1	...	...	1	...	...
Gauhati ... ..	...	...	...	...	...	...	...
Tezpur ... ..	...	1	1	...	...	...	...

Plague.

24. No case of plague was reported from any districts during the year under review.

CHART NO III  
 Mortality from Small-pox in Assam  
 from 1912 to 1933



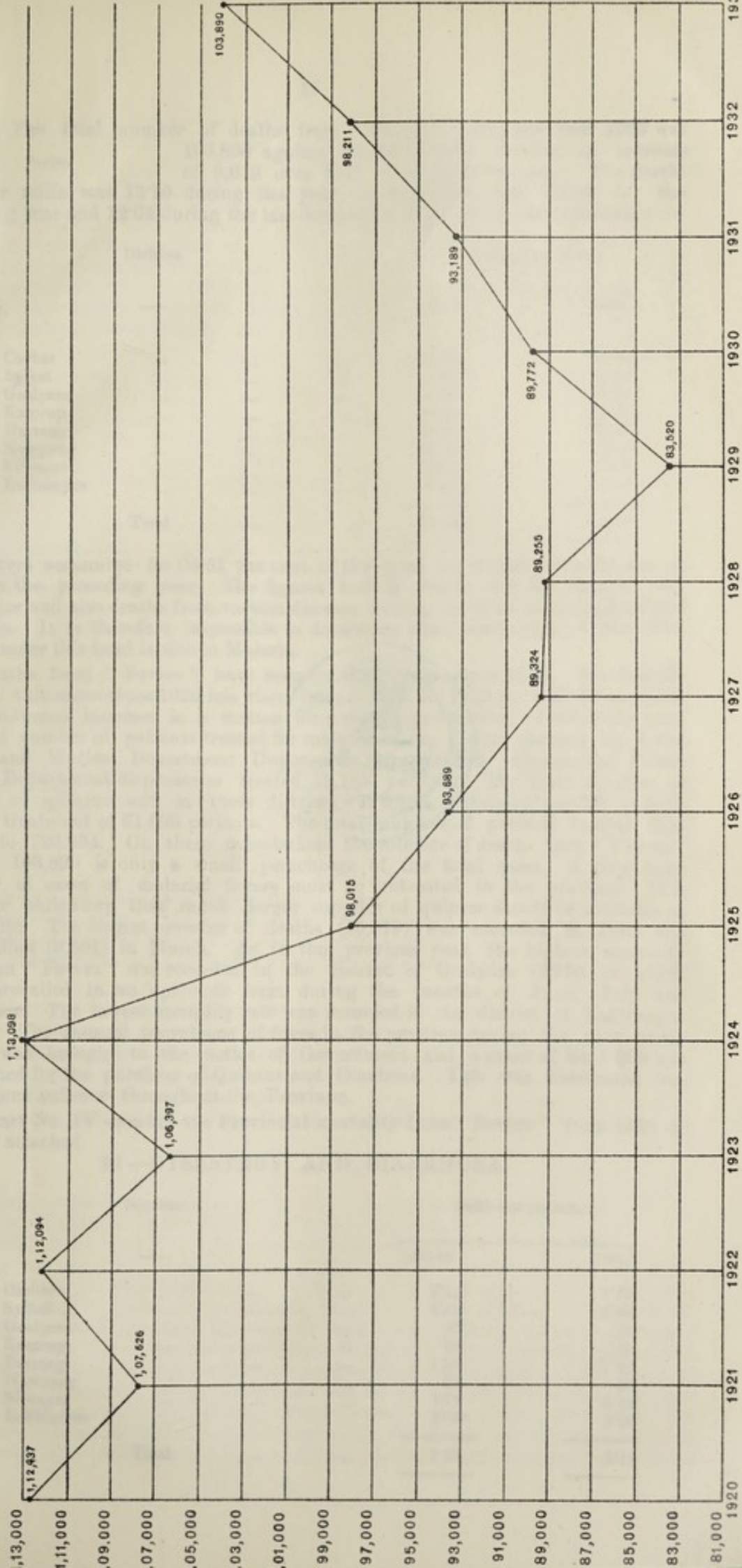
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How 1815 to 1915

CHWBL NO III

CHART NO. IV  
Total number of deaths due to fevers





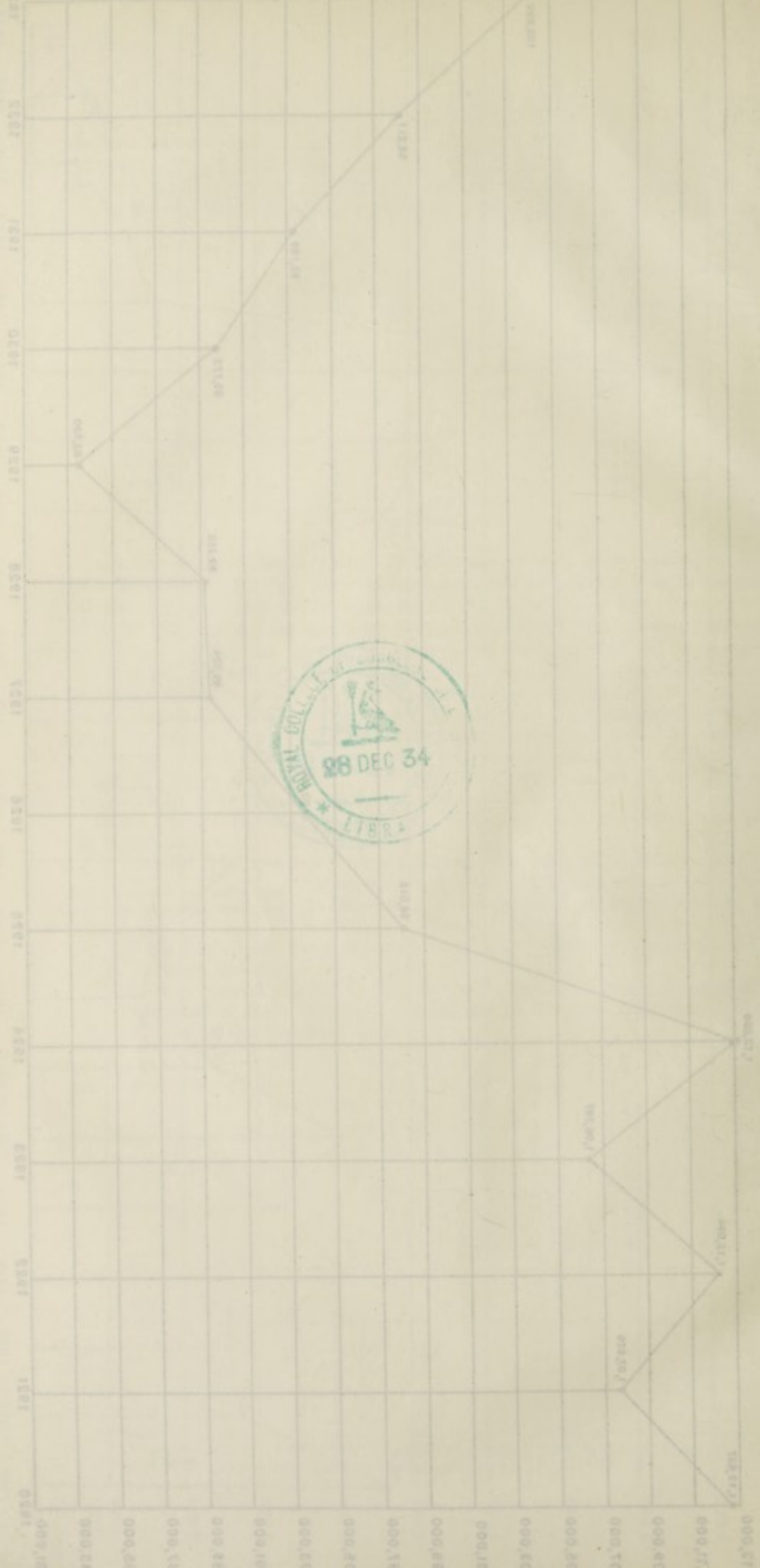


CHART VI ON TRADE  
 1850-1897

25. The total number of deaths from "Fever" during the year 1933 was 103,890 against 98,211 in 1932, showing an increase of 5,679 over that of the preceding year. The death-rate per mille was 13.10 during the year, as compared with 12.39 in the preceding year and 12.04 during the last decennium as shown in the table below:—

Districts.	Death-rate per mille.	
	1923-32.	1933.
Cachar	10.53	11.46
Sylhet	12.31	13.40
Goalpara	20.56	22.56
Kamrup	10.55	11.32
Darrang	12.58	13.47
Nowgong	10.65	9.74
Sibsagar	8.82	10.58
Lakhimpur	8.56	9.67
<b>Total</b>	<b>12.04</b>	<b>13.10</b>

Fever accounted for 64.51 per cent. of the total provincial mortality against 65.33 in the preceding year. The figures include deaths due to Malaria and *Kala azar* and also deaths from various diseases having fever as their predominant symptom. It is therefore impossible to determine what percentage of the total deaths under this head is due to Malaria.

Deaths from "Fever" have been on the increase since 1929. The mortality from this cause since 1929 has risen from 83,520 in 1929 to 103,890 in 1933. This continued increase is a matter for serious consideration. During the year, the total number of patients treated for malaria in the plains districts by Local Board and Medical Department Dispensaries was 626,199, whereas the Public Health Department dispensaries treated 39,135 patients. The total number of parcels of quinine sold in these districts was 6,160 containing enough quinine for the treatment of 61,600 patients. The total number of patients treated thus comes to 726,934. On these calculations the number of deaths from "Fever" namely 103,890 is only a small percentage of the total cases. A very large number of cases of malarial fever must go untreated in the province. It is therefore obligatory that much larger supplies of quinine should be available to the public. The largest number of deaths (10,879) was recorded in June and the smallest (6,301) in March. As in the previous year, the highest mortality rate from "Fever" was recorded in the district of Goalpara (22.56) in which fever prevailed in an epidemic form during the months of June, July and December. The lowest mortality rate was recorded in the district of Lakhimpur (9.67). The unusual prevalence of fever in the province during the year under report was brought to the notice of Government and a grant of Rs 5,000 was sanctioned for the purchase of Quinine and Cinchona. This was distributed free to indigent sufferers throughout the Province.

Chart No. IV showing the Provincial mortality from "Fever" from 1920 to 1933 is attached.

#### 26.—DYSENTERY AND DIARRHOEA.

Districts.	Death-rate per mille.	
	1923-32.	1933.
Cachar	2.14	1.73
Sylhet	1.21	1.00
Goalpara	.27	.17
Kamrup	.61	.40
Darrang	1.54	1.60
Nowgong	.52	.57
Sibsagar	1.79	2.12
Lakhimpur	1.85	2.52
<b>Total</b>	<b>1.20</b>	<b>1.17</b>

The total number of deaths registered under this head was 9,267 during 1933 against 8,241 in 1932. The death-rate per mille of population was 1.17 during the year 1933, as compared with 1.04 in the preceding year. The decennial average was 1.20. The highest number of deaths (1,055) was recorded in October, while the lowest (413) in February. As in the previous year, the highest mortality rate was reported from Lakhimpur district (2.52) followed by Sibsagar (2.12). The lowest rate was returned from the Goalpara district (.17). The number of deaths registered under head "Dysentery and Diarrhoea" during the year 1933 was larger by 1,626 than that of the previous year. Bacteriophage has been largely used in the Nowgong district since December 1929. The effect of bacteriophage on dysentery and diarrhoea in this district is not very striking as the figures of mortality given below would indicate.

1929	...	...	...	...	...	203
1930	...	...	...	...	...	277
1931	...	...	...	...	...	316
1932	...	...	...	...	...	248
1933	...	...	...	...	...	322

The mortality from "Dysentery and Diarrhoea" instead of diminishing is on the increase.

27. The total mortality from these diseases during the year under report was 5,444 as compared with 5,358 in the preceding year, yielding death-rates of .69 and .68 respectively. The quinquennial average was .72. The highest mortality (576) was recorded in December and the lowest (365) in July. As in the last year, the highest mortality rate (2.01) was recorded in the Lakhimpur district, followed by Cachar (1.49) and Sibsagar (1.08). The lowest rate (.14) was returned from the Goalpara district.

28. The mortality from this disease is included under "Respiratory Diseases." Under instructions from the Public Health Commissioner with the Government of India the mortality from this disease, will, in future, be shown under "Fever."

The total number of deaths from sporadic cases of Influenza during the year was 73 against 61 in 1932. Mild outbreaks were reported from the districts of Cachar and Sibsagar. The other districts were free from this disease during the year under report. An Epidemic Unit Sub-Assistant Surgeon was deputed to deal with the outbreak of Influenza in the Sibsagar district. There was no epidemic of Influenza anywhere in the Province during the year.

29. During the year under review 2,102 deaths from "Injuries" and 34,596 deaths from "Other Causes" were returned, as compared with 1,849 and 31,060 deaths respectively in the preceding year. The corresponding ratios were .27 and 4.36 in 1933 and .23 and 3.91 respectively in 1932.

Sporadic cases of this disease occurred in certain of the towns in the plains districts of the Province.

The total number of deaths from this disease reported from 9 towns was 48, viz., Gauhati (16), Dibrugarh (11), Sylhet (7), Nowgong (4), Silchar (3), Dhubri (3), Jorhat (2), Habiganj (1), Tezpur (1). Preventive T. A. B., inoculations were administered to contacts and other measures taken to check the spread of the disease.

Beri Beri.

30. Nil.

31. The existence of this disease in the Province has, as the result of extensive surveys undertaken by the Public Health Department, been clearly demonstrated. It is very widely distributed and large numbers of cases have been found in the lowlying hills and the adjacent plains as widely separated from one another as the Garo Hills on the one side to the Hailakandi subdivision in the Cachar District on the other. During the year under report no less than 714 cases of the disease were treated in Kamrup with most satisfactory results. In the Kamrup District, where the existence of the disease was first observed, two Public Health Department dispensaries, namely, Digaru and Hahim with their respective out-centres, were actively engaged throughout the year in the detection and treatment of cases. Similar activity also was undertaken at the Boko local board dispensary in the Kamrup district. In this district the disease is widely distributed amongst Rabhas, Kacharis, Garos and Khasis who inhabit the

submontane areas. The presence of the disease has been demonstrated in the Loharghat, Rani and Nagerbera areas and every endeavour is being made to extend treatment as funds permit. During the year three Assistant Surgeons were trained in the diagnosis and treatment of the disease at the Digaru Public Health Department dispensary.

In the Goalpara district, as the result of extensive surveys during the previous year, numerous cases were detected and treatment was begun in the early part of the year under report. A centre was opened at Agia where 167 cases have been treated. Surveys have revealed many more cases and it is expected that a new centre will be opened at Dudnai. It is hoped that the Goalpara Local Board will co-operate fully in this respect.

In the Nowgong district a large number of cases have been detected as the result of careful and detailed survey and a campaign against this disease was started during the course of the year under report. A treatment centre was opened in April 1933 at Dharamtul, an outcentre of the Morigaon Public Health Dispensary. This area was found to be heavily infected and additional centres have been opened at Nellie, Amsoi and Morigaon. A total of 334 cases have been brought under treatment in this district during the year. Surveys in the Chapanalla area have also revealed a large number of cases. Many cases have been detected in the Hailakandi and North Cachar Subdivisions of the Cachar District and it is proposed to offer facilities shortly in these Subdivisions for the treatment of these cases. A total of 260 cases of this disease were treated in the Medical Department dispensaries during the year. It is the policy of the Public Health Department to treat Yaws, whenever possible, along with *kala azar*, leprosy and malaria, through the agency of the Public Health Department dispensaries.

32. A total of 3,603 cases of Minor Eye Complaints have been treated by the Public Health Department dispensaries during the course of the year.

33. During the year, the number of Sub-Assistant Surgeons was raised from 85 to 88. The following table shows the number of deaths from *kala azar* from 1923 to 1933:—

Districts.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
1	2	3	4	5	6	7	8	9	10	11	12
Cachar ... ..	4	2	3	9	12	2	3	2	4	4	2
Sylhet ... ..	841	1,874	2,169	1,320	798	482	429	274	246	296	146
Goalpara ... ..	442	369	453	297	226	166	135	112	121	122	92
Kamrup ... ..	976	1,152	1,120	714	475	241	186	162	160	152	129
Darrang ... ..	289	448	478	474	318	258	241	185	222	155	167
Nowgong ... ..	1,291	1,479	1,445	839	528	260	178	132	129	132	110
Sibsagar ... ..	289	295	260	170	143	86	87	58	71	78	64
Lakhimpur ... ..	13	13	8	1	5	5	1	2	...	2	4
Khasi and Jaintia Hills ... ..	...	...	8	4	3	4	...	...	...	...	...
Naga Hills ... ..	...	...	1	...	...	...	1	1	...	1	1
Lushai Hills ... ..	...	...	...	1	...	1	...	...	...	1	...
Garo Hills ... ..	54	69	435	346	250	154	149	84	64	43	24
Sadiya Frontier Tract ... ..	2	4	3	1	1	1	1	...	...	1	..
Manipur State ... ..	...	...	2	...	...	...	...	1	...	...	...
<b>Total</b> ... ..	<b>4,131</b>	<b>5,565</b>	<b>6,265</b>	<b>4,176</b>	<b>2,859</b>	<b>1,660</b>	<b>1,405</b>	<b>953</b>	<b>1,017</b>	<b>987</b>	<b>740</b>

The number of *kala azar* cases treated from 1923 to 1933 are shown in the undermentioned table :—

Districts.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
1	2	3	4	5	6	7	8	9	10	11	12
Cachar ... ..	352	253	442	339	3,359	394	470	378	370	381	422
Sylhet ... ..	9,275	16,516	10,934	16,355	10,527	8,988	9,162	6,758	5,812	4,719	4,210
Goalpara ... ..	4,176	5,016	6,093	5,671	3,426	2,316	2,319	1,439	992	1,089	1,159
Kamrup ... ..	4,018	5,780	8,758	7,391	6,445	3,577	2,595	1,814	1,699	2,061	2,223
Darrang ... ..	2,416	3,286	5,262	4,414	4,053	2,228	1,399	1,196	947	668	757
Nowgong ... ..	1,847	13,623	13,895	9,586	5,008	2,614	2,333	1,440	1,057	1,075	1,063
Sibsagar ... ..	2,143	2,029	3,255	2,658	1,521	1,555	2,387	1,495	1,693	1,249	1,251
Lakhimpur ... ..	68	81	99	20	19	28	23	23	3	12	13
Khasi and Jaintia Hills ... ..	120	274	213	198	120	6	...	...	...	...	1
Naga Hills ... ..	4	3	4	2	1	5	9	21	5	16	13
Lushai Hills ... ..	...	...	...	...	...	...	...	...	4	2	1
Garohills ... ..	589	965	1,052	2,812	1,828	1,600	2,956	1,905	582	605	580
Sadiya Frontier Tract... ..	...	...	8	4	3	8	3	2	3	1	2
Manipur State ... ..	...	22	85	31	26	165	35	63	58	53	26
Total ... ..	33,071	48,779	60,940	49,355	33,415	23,576	23,894	16,430	12,592	11,958	12,659

The number of deaths from *kala azar* during the year 1933 was less by 238 than that of the preceding year. The number of patients treated was larger by 692 over 1932. This small increase is shared by the districts of Cachar, Goalpara, Kamrup, Darrang, Nowgong and Garo Hills. Whether this small increase is due to more thorough surveys or to a periodic cycle remains yet to be seen. There is, however, no reason to be alarmed at this small increase. A similar state of affairs was noticeable in 1929 over the previous year. The attention of Civil Surgeons concerned has already been drawn to this and they have been asked to be on the alert and to report promptly any possible recrudescence of the disease, so that immediate action may be taken to deal with the situation. The method of diagnosis and treatment of *kala azar* continued to be the same as in previous years. Urea-Stibamine was our mainstay in the treatment of *kala azar*. The treatment of *kala azar* with Neo-stibosan, which was extended to indoor patients and to such out-door patients as voluntarily accepted it, was stopped during the later part of the year. Its administration is now restricted to urban areas only, where hospital conditions exist. As usual, special attention was paid in all districts to intensive and detailed surveys in order to detect fresh cases. Villages within a certain radius of dispensaries, in *kala azar* infected districts, are surveyed by the Medical Officers in charge. Public Health Department Sub-Assistant Surgeons are specially deputed to survey other areas where a recrudescence of the disease is suspected or where Public Health dispensaries do not exist. The benefit to the province, as the result of this sustained campaign against the disease, has been incalculable. It has to be borne in mind that, when no specific remedy was known for this disease, that 98 persons at least out of every 100 were doomed to certain death within a comparatively short space of time. Since 1923, when reliable figures for the disease first became available to the end of the year under report, no less than 328,591 persons have been brought under treatment. It is no exaggeration to say that approximately 3.25 lacs of valuable lives have been saved to the Province. Other accruing advantages to the Province must also be apparent.

A Sub-Assistant Surgeon was deputed to survey Killarbak area in Sonai thana in the Cachar district. As a result, a large number of *kala azar*, leprosy, and yaws cases have been detected. The nearest dispensary is 20 miles off and it is impossible for patients to attend there. The opening of a dispensary in this locality must, of necessity, be delayed till after the monsoon period, when it will be possible for all the patients to attend for treatment.

In Sylhet, this disease was on the decline during the year. The Public Health Department Dispensary at Kathair was closed, but on a subsequent survey of villages many cases of *kala azar*, Leprosy and Yaws were detected and the dispensary had to be reopened.

The whole district of Goalpara, especially the Goalpara subdivision, was thoroughly surveyed and the cases detected were brought under treatment. The Public Health Department Dispensary at Kharmauza was closed during the year.

In Kamrup, thorough surveys were undertaken for the detection of fresh cases. No Public Health Department Dispensary was opened or closed during the year. As a result of a *kala azar* survey in the Azara area a good number of cases were detected. Three new Local Board Dispensaries, namely at Khetri, Kamarkuchi and Tambulpur were opened and two of these commenced treatment of *kala azar* during the year 1933.

In Darrang, the survey of the Khairabari and Paschimpatta areas was completed and dispensary at Khairabari was opened.

In Nowgong, in addition to the existing Public Health Department Dispensaries, the Railway Hospital, Lumding, and Local Board Dispensaries continued to treat *kala azar* cases during the year under report.

In Sibsagar, *kala azar* survey was carried out during the year and the cases detected were given facilities for treatment.

In the Garo Hills district, *kala azar* is still very prevalent. Periodical survey is done by Sub-Assistant Surgeons of six dispensaries in their own areas. In addition, two special Sub-Assistant Surgeons constantly visit the interior villages to detect cases of *kala azar*. Many cases come of their own accord for treatment. The number of persons voluntarily seeking treatment was greater in 1933. In Tura hospital alone the number of cases in 1933 was 164 which is almost equal to the total of the three preceding years.

The following Assistant Surgeons and Sub-Assistant Surgeons deserve special mention for good work done during the year :—

#### ASSISTANT SURGEONS.

1. Rai Sahib Dr. N. K. Ghosh, M.B.
2. Dr. P. K. Das, M.B.

#### SUB-ASSISTANT SURGEONS.

1. Dr. Binode Behari Biswas
2. „ Mahananda Chakravarty
3. „ Rajendra Chandra Singh
4. „ Abdur Rashid
5. „ James Suni
6. „ Munawar Khan
7. „ Rajendra Kumar Gogoi
8. „ Azizur Rahman
9. „ Azizur Rahman Borbora
10. „ Muhammad Ali.

#### EPIDEMIC UNIT.

#### SUB-ASSISTANT SURGEONS.

1. Dr. Muhammad Habibur Rahman of Gauhati Epidemic Unit.
2. „ Abdul Haque
3. „ Abdus Shahid Chaudhury
4. „ Banerwar Das.

34. During the year under report, 45 Public Health Department dispensaries, against 39 in 1932, were engaged in the treatment of leprosy *viz.*, 21 in Sylhet, 8 in Nowgong, 6 in Darrang, 4 in Kamrup, 4 in Sibsagar and 2 in Goalpara. Sub-Assistant Surgeons of the Public Health Department undertake leprosy surveys in conjunction with *kala azar* surveys. Lepers are induced to attend dispensaries for treatment. A total of 2,089 lepers came under treatment in the Public Health Department dispensaries alone during the year 1933, *viz.*, in Sylhet (581), Nowgong (463), Darrang (640), Kamrup (348), Sibsagar (31) and Goalpara (26). Local Board Dispensaries and

Hospitals and Dispensaries under the Medical Department treated 2,050 lepers during the year. The results of treatment up to date are most encouraging. Treatment is becoming increasingly popular and the number of patients is rapidly increasing. It is very desirable that many more Public Health Department Dispensaries should be equipped for treatment of lepers and this is being done as funds permit. The expansion of activities must of necessity entail increased expenditure.

A contribution of Rs. 1,000 from the Assam Leprosy Relief Committee for the purchase of medicines and equipment for the treatment of lepers in the Public Health Department dispensaries was received during the year.

## CHAPTER IV.

### EPIDEMIOLOGY.

35. The number of deaths from cholera during the last ten years was as follows:—

1923	...	...	...	...	...	...	3,728
1924	...	...	...	...	...	...	19,182
1925	...	...	...	...	...	...	6,233
1926	...	...	...	...	...	...	10,275
1927	...	...	...	...	...	...	15,392
1928	...	...	...	...	...	...	6,915
1929	...	...	...	...	...	...	7,765
1930	...	...	...	...	...	...	6,332
1931	...	...	...	...	...	...	5,528
1932	...	...	...	...	...	...	4,971
1933	...	...	...	...	...	...	5,508

The higher mortality from cholera during the year under report was due to the severe outbreak of cholera in epidemic form in the districts of Cachar and Sylhet. In the Assam Valley districts only sporadic cases of cholera occurred throughout the year. The total deaths from cholera in the Assam Valley districts numbered 363 against 3,460 in 1932. In the Surma Valley districts, sporadic cases also occurred till the middle of September. There were 14 small outbreaks of cholera in the Cachar district prior to the 17th September 1933, these were controlled by inoculation of contacts and neighbours, disinfection of water supplies and propaganda. On the 17th September 1933, three cases of cholera were reported in the Cachar district and the usual measures such as inoculating and disinfection of water-supplies were undertaken. Everything pointed to this being another sporadic outbreak. The epidemic however started to gather way, at first slowly, but soon the number of villages affected rapidly increased. Immediate steps were taken to isolate the first cases, disinfect water-supplies and to inoculate contacts. It was soon evident that disinfection of water-supplies was useless. This measure was therefore abandoned and attention was concentrated on inoculation and the treatment of cases. It is probable that the source of infection in each case was different and travelled up stream as well as down stream. All the available resources of the Public Health and Medical Departments were concentrated in combating this epidemic in the Cachar district. The number of deaths rose to 1,092. Infection proceeded down stream and rapidly became broadcast in the Sylhet district. Fortunately the epidemic in the Sylhet district started after it was quelled in the Cachar district. It was therefore possible to transfer practically the entire personnel engaged in cholera duty in the Cachar district to the Sylhet district. Vigorous measures were taken in this district also to combat the disease. The deaths in the Sylhet district numbered 4,053 against 1,447 in 1932.

## CHAPTER V.

### FAIRS AND FESTIVALS.

36. No fairs or festivals of any size are held in this Province and no case of infectious disease was reported.

In the district of Cachar two Fairs, Sidheswar and Bhuban Hill melas, respectively were held as usual during the year. The former, with a gathering of approximately 8,000 people, lasted for a fortnight and the latter, with a gathering of about 4,000 people, lasted for three days. Both the melas were visited by the

Assistant Director of Public Health, Surma Valley and Hill Division with a Public Health Department Sub-Assistant Surgeon and two Disinfectant Carriers. Sanitary arrangements made in both the mela areas were satisfactory.

The Darranga mela, an annual affair, was held during the year in the Kamrup district. A Sub-Assistant Surgeon of the Gauhati Epidemic Unit was deputed to this mela. The Civil Surgeon, Kamrup, also visited the place.

There was also a large gathering at the Kamakhya Hill on the occasion of the Hindu Festival "Ambubasi" in the same district. A doctor was deputed to look after sanitary arrangements and there was no sickness.

About 10,000 people gathered at Dhubri in the Goalpara district on the occasion of the Brahmputra Snan (Bathing festival) on the "Astomi day". Suitable sanitary arrangements were made by the Dhubri municipality. An Epidemic Unit Sub-Assistant Surgeon and the Urban Health Officer were deputed to look after sanitary arrangements and to render medical aid. Temporary latrines were provided and arrangements were made for the supply of pipe water from the town. In the same district another mela was held at Bagribari in December organised by the Local Zemindar. This mela lasted for about a month. The Civil Surgeon and the Assistant Surgeon, Public Health Department visited the mela and insisted on the Zemindar making proper sanitary arrangements. There was no epidemic.

The "Parasuram Kunda" pilgrimage in the Sadiya Frontier Tract was held on the 12th January 1933. A Sub-Assistant Surgeon from Dening was deputed to this pilgrimage to look after the sanitary arrangements.

## CHAPTER VI.

### URBAN SANITATION.

(Including notified areas.)

#### MUNICIPAL WATER SUPPLIES.

37. There were 17 Municipal Boards and 9 Town Committees in the Province as in the previous year. Their total income was Rs. 12,05,055 in 1933, as against Rs. 13,48,554 in the preceding year.

A sum of Rs. 5,35,925 or 44.47 of the total income was spent on sanitary works, original and recurring, as compared with Rs. 5,45,568 or 40.46, respectively in 1932.

The percentage of expenditure on Public Health in each of the municipalities and towns in 1933, as compared with that in 1932, was as follows :—

	1933.	1932.
1. Silechar Municipal Board ... ..	56.90	53.00
2. Jorhat ditto ... ..	56.74	50.69
3. Gauhati ditto ... ..	55.61	34.79
4. Habiganj ditto ... ..	51.55	51.69
5. Tezpur ditto ... ..	51.55	47.90
6. Hailakandi Town Committee... ..	49.31	27.50
7. Dhubri Municipal Board ... ..	48.43	46.38
8. Sylhet ditto ... ..	47.14	43.56
9. Doom Dooma Town Committee ... ..	45.59	30.66
10. Shillong Municipal Board ... ..	44.85	39.69
11. Haflong Town Committee ... ..	44.44	38.54
12. Nazira ditto ... ..	42.68	54.10
13. Mangaldai ditto ... ..	37.51	31.49
14. Dibrugarh Municipal Board ... ..	37.37	41.67
15. Gauripur Town Committee ... ..	37.13	62.82
16. Tinsukia ditto ... ..	36.26	42.95
17. Polasbari ditto ... ..	35.82	32.32
18. Karimganj Municipal Board ... ..	34.89	34.05
19. Goalpara ditto ... ..	34.34	35.12
20. Maulvibazar ditto ... ..	33.24	27.87
21. Nowgong ditto ... ..	32.31	39.07
22. Sunamganj ditto ... ..	31.63	28.93
23. Sibsagar ditto ... ..	31.32	26.80
24. Golaghat ditto ... ..	27.84	39.38
25. Barpeta ditto ... ..	26.97	28.83
26. North Lakhimpur Town Committee ... ..	26.41	15.35



The following statement shows the expenditure for Public Health purposes during the year 1933, as compared with that of 1932 :—

Heads of expenditure.	Total expenditure.		Difference.	
	1933.	1932.	Increase.	Decrease.
1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
1. Conservancy including establishment, road watering, latrine, etc.	2,89,746	3,01,729	...	11,983
2. Drainage	34,785	32,268	2,517	...
3. Water-supply	1,42,022	1,51,902	...	9,880
4. Disposal of dead	724	634	90	...
5. Markets and slaughter houses	26,079	21,560	4,519	...
6. Vaccination	4,893	4,767	126	...
7. Pay of Health Officers and Sanitary Inspectors	10,890	3,604	7,286	...
8. Epidemic charges including upkeep of contagious and Infectious Diseases Hospitals.	6,123	7,231	...	1,108
9. Other sanitary works	20,663	21,873	...	1,210
Total	5,35,925	5,45,568	...	9,643

The increase of Rs. 7,286 under the head "Pay of Health Officers and Sanitary Inspectors" was mainly due to increase in Habiganj, Barpeta, Goalpara and Shillong. The only other heads under which larger expenditure was incurred were "Drainage" "Markets" and "Slaughter houses". The increase under the head "Drainage" was due to an increase in expenditure incurred by the Dibrugarh and Shillong Municipal Boards and that under the head "Markets and Slaughter houses" was due to an increase incurred by the Dhubri, Jorhat, Sibsagar and Dibrugarh Municipal Boards and also by the Hailakandi Town Committee.

The fall in the expenditure under the other heads was due to the decrease in the income of certain Municipal Boards and Town Committees.

As usual the Director of Public Health and the Assistant Directors of Public Health inspected Municipalities and Small Towns and offered advice on Public Health matters. As pointed out in their inspection notes, much still remains to be done in every direction in the matter of improving health conditions.

Some Municipal Boards and Town Committees spent larger amounts under important heads such as "Conservancy and Water-supply" than those in the preceding year.

The following Urban Health Officers did good work during the year :—

- (1) Dr. Jatindra Mohan Roy.
- (2) „ Khurshed Ali.
- (3) „ Monoranjan Chakravarty.

The Public Works Department incurred a total expenditure of Rs. 5,531 on the maintenance of water-supplies, drainage and town improvement in 1933, as compared with Rs. 7,999 in 1932.

#### CHAPTER VII. RURAL SANITATION.

38. The total expenditure incurred during the year by the 19 Local Boards on Public Health measures under report was Rs. 1,74,557 against Rs. 1,74,011 in the preceding year. Expenditure was incurred under the following heads :—

	1933. Rs.	1932. Rs.
1. Conservancy including establishment, road watering, latrine, etc.	...	366
2. Drainage	129	114
3. Water-supply	94,584	78,850
4. Disposal of dead	...	...
5. Markets and Slaughter houses	8,604	8,201
6. Vaccination	43,909	40,335
7. Pay of Health Officers and Sanitary Inspectors.	...	...
8. Epidemic charges including upkeep of contagious and infectious diseases hospitals.	23,207	19,447
9. Other sanitary works	4,124	26,698

The expenditure of individual Boards was as follows :—

	1933.	1932.
	Rs.	Rs.
Dhubri ...	58,098	43,811
Gaubati ...	16,887	14,942
Goalpara ...	12,240	7,145
Dibrugarh ...	11,646	13,052
Mangaldai ...	8,920	9,316
Sunamganj ...	8,771	7,609
Tezpur ...	7,843	7,405
Nowgong... ..	6,593	9,775
Karimganj ...	5,930	5,837
Habiganj ...	5,863	24,222
Jorhat ...	4,938	5,759
Sibsagar ...	4,848	5,486
Silchar ...	4,595	4,340
Sylhet ...	4,588	4,128
Maulvibazar ...	3,943	3,894
Golaghat ...	3,688	2,007
Barpeta ...	3,283	3,440
Hailakandi ...	927	766
North Lakhimpur ...	971	1,077

As pointed out in the report for the previous year, about 97 per cent. of the population of Assam is rural. Consequently the health and prosperity of these areas is a matter of vital importance. The prevention of soil pollution and the provision of adequate and safe water supplies for villages are questions on which the attention of all Local Boards must be concentrated. Unless this is done no material reduction in the incidence of water borne diseases can be expected. Malaria, the largest scourge of the Province, is on the increase. The expert advice of the Assam Medical Research Society is at all times at the disposal of Local Bodies. Up-to-date anti-malarial measures can be undertaken, if desired, everywhere in the province according to the financial condition of Local Bodies and in this respect they can receive material assistance from Government through the agency of the Provincial Advisory Malaria Committee. It is hoped that local bodies will make much far greater use of the Society in the future.

The very definite success in dealing with small-pox in the Province in recent years should be an encouragement to Local Boards to spend more money on other Public Health Schemes. It is gratifying to note that the expenditure on improving water-supplies in rural areas during the year was Rs. 94,584 as against Rs 78,850 in 1932. Expert advice and supervision are very necessary in this respect if the maximum gain on outlay is required. Arrangements for the prevention and treatment of diseases in rural areas are very inadequate and leave much to be desired. Government is obliged to spend large sums of money annually for the treatment of cholera, *Kala azar*, yaws, leprosy, malaria and minor eye complaints through the agency of the Public Health Department Dispensaries and Epidemic Units.

## CHAPTER VIII.

39. Malarial fever is by far the largest scourge of the Province. It is prevalent throughout and almost constantly in epidemic form. During the year 665,334 cases of malaria were treated in all Hospitals and Dispensaries in the plains districts. Separate figures of mortality from malaria are not available. It has been noted in paragraph 25 that deaths from "Fever" in 1933 amounted to 103,890 against 98,211 in 1932. A huge percentage of deaths under "Fever" is directly attributable to malarial fevers. As a general preventive and curative measure against malaria, quinine was sold below cost price at 0-4-6 per treatment. At this price the sales were disappointing. To make quinine more easily available at a cheaper price, Government have sanctioned the sale at 0-3-9 per treatment of Quinine Re-inforced Cinchona Febrifuge. This is an equally effective drug. It is also hoped to aid the sales and make quinine more easily accessible to the public by appointing more Sale Agents. This is under the consideration of Government.

The Government of Assam, as in the previous year, gave a grant of Rs.25,000 to the Assam Medical Research Society for research purposes. Its activities are at present chiefly confined to malarial research. These activities are summarised in the following note supplied by the Research Officer:—

'Malaria surveys and treatment schemes were undertaken in 28 different areas in the Province. The Malaria Research Officer visited 19 of these areas during the year and submitted reports on the undertakings. A total of 150,099 mosquito specimens were collected of which 122,426 were larvae and 27,673 adults. Of the adult specimens 8,663 of 26 anopheline species were dissected to determine infectivity, of these 51 glands and 52 guts in three species were found infected. A *Minimus*, previously reported upon as being the principle vector in Assam, gave the highest infectivity rate, being 11.3 per cent of 890 specimens dissected. The infectivity rate of this vector varied in different parts of the province, being 12.4 per cent. in Lakhimpur 5 per cent. in Darrang, 2.4 per cent. in Kamrup and in the hill area, 6.1 in the Khasi and Jaintia Hills. In a small survey undertaken at the request of the Assam-Bengal Railway at Pahartoli the high infectivity rate of 16.7 per cent. was recorded.

Infections of *A. Maculatus*, which has only been recorded once before in India, were recorded from catches in Shillong, where 6 out of 2,111 dissections were positive with an infectivity rate of 0.3 per cent.

Of 1,019 dissections of *A. Philippinensis*, one was found positive in Gauhati and one in Hailakandi with an infectivity rate of 0.2 per cent. Examinations of blood films numbered 33,540 of which 6,724 or 20.2 per cent. were found positive for malarial parasites. These examinations were done in connection with survey and treatment schemes in various places to determine the parasite index. At the same time 34,859 spleens were examined, 6,782 or 19.5 per cent. being found enlarged.

Two senior training classes were held during 1933. In the first class seven Sub-Assistant Surgeons of the Public Health Department and two Laboratory Assistants underwent training. In the second class two Sub-Assistant Surgeons of the Medical Department and three Licentiates of Medical Faculties underwent training. Newly employed collectors were also trained.

Research on a cheaper method of malarial control by the use of rice bran, as a dilluent for Paris green, was so far successful. Research in this connection continues.

Researches on the life history of *A. Maculatus* and *A. Minimus* were carried out and reports submitted. A study of the areas of prevalence of black water fever in Assam was undertaken and reports submitted.

Field experiments on the value of Plasmoquine in reducing malaria were carried out. The results are still indecisive, as often, the vector mosquito incidence is so high, with high infectivity, as to make the reduction of gametocyte carriers of doubtful significance, due to constant reinfection. More experimental work in the field is required under conditions where controls may be established.'

A lump provision of Rs 26,000 was also made by Government for the purpose of carrying out anti-malaria measures in the province. The Provincial Advisory Malaria Committee held three meetings in the year to consider the relative merits of each scheme and to allot funds. Anti-malarial measures were carried out in the following areas:—

- Cachar*—Haflong, Moibang-Dittokcherra and Hailakandi.
  - Sylhet*—Sylhet town and Jaintiapur.
  - Goalpara*—Dhubri, Kochugaon, Abhoyapuri Gossaingaon-Haltugaon.
  - Kamrup*—Gauhati.
  - Darrang*—Tezpur and Mangaldai.
  - Nowgong*—Nowgong.
  - Sibsagar*—Jorhat, Sibsaagar and Golaghat.
  - Lakhimpur*—North Lakhimpur and Doom Dooma.
  - Naga Hills*—Kohima and Dimapur.
  - Khasi and Jaintia Hills*—Shillong and Nongpoh.
- The results are very encouraging.

Anti-malarial operations were also undertaken in the undermentioned areas with funds provided by the Government of India :—

(1) *Pasighat*.—The station area was kept clean of scrub jungle where mosquitoes were likely to harbour. In order to locate their breeding places, a close search was made for Anopheline larvae during the year. In addition to the Moralali and the Dehang river, the Sibakaran stream and the paddy fields were also found to be breeding places. About a dozen varieties of anopheline mosquitoes have been identified of which *A. Maculatus* and *A. Minimus* are the principal carrier species.

Anti-malarial work on a small scale was carried out at Sadiya by the Political Officer. These measures are being continued.

(2) *Charduar*.—In this area, 326 gallons of malarial were sprayed over stagnant pools and low lying places; jungles were cut down and drains were cleaned in order to drain off water from low lying places. These measures effected a satisfactory improvement in the health of the station.

(3) *Lokra*.—Spraying operations with malarial were undertaken of the river Mansiri for a distance of a mile and other water collecting places were treated with crude Kerosine oil. Marshy areas and pools were treated with Paris Green. A thorough preliminary survey of the area is necessary before extensive anti-larval measures are justified.

#### SALE OF QUININE.

40. The following statement shows the amount of quinine sold, district by district, during the year 1933, as compared with the amount sold in 1932 :—

Districts.	Treatment parcels sold in— 1933.	Difference.		
		1932.	Increase.	Decrease.
1	2	3	4	5
Caabar	571	326	245	...
Sylhet	2,094	1,484	610	...
Goalpara	434	431	3	...
Kamrup	1,215	906	309	...
Darrang	451	349	102	...
Nowgong	288	108	180	..
Sibsagar	91	759	142	...
Lakhimpur	206	276	...	70
Khasi and Jaintia Hills	640	434	206	...
Naga Hills	76	108	...	32
Lushai Hills	1,616	1,116	430	...
Garo Hills	49	49	...	...
Sadiya Frontier Tract	59	65	...	6
Manipur	48	50	...	2
Total	8,648	6,531	2,227	110

The total number of parcels of quinine sold during the year was 8,648, against 6,531 in the preceding year, showing an increase of 2,117 parcels. The increase is mainly due to the increase in the incidence of malaria and also to the withdrawal of restrictions on the sale of quinine. As in the previous year, the drug was sold below cost price, *i.e.*, at four annas and six pies per treatment. After the close of the year, Government approved and sanctioned the sale of Quinine Re-inforced Cinchona Febrifuge, containing one part of quinine to three parts of cinchona. Each treatment consists of 20 grains of Quinine Sulphate and 60 grains of Cinchona Febrifuge, made up into 20 tablets, each tablet containing 4 grains of Quinine Re-inforced Cinchona Febrifuge. This new and recommended quinine product is equally efficacious in preventing and curing attacks of malaria. It will be sold through the agency of Post Offices and various other Agents at 0-3-9 per treatment. This has been done with the object of placing an equally potent drug at a cheaper cost within the means of every person. It is hoped that the public will take full advantage of the arrangement. The manufacture of the drug is in hand and it will be available for sale by the middle of July 1934. An endeavour is being made to increase the number of agents whereby it is hoped that the sale of this

product will be vastly increased. As in the previous year, owing to the prevalence of malaria with unusual virulence, the following quantities of Quinine and Cinchona Febrifuge were obtained for free distribution to indigent malaria patients in the badly infected areas of the undernoted seven plains districts:—

Districts.	Quinine Sulph.		Cinchona.	
	Lbs.	Oz.	Lbs.	Oz.
Cachar	3	8	32	12
Sylhet	48	4	66	8
Goolpara	19	0	7	0
Kamrup	8	0	75	0
Nowgong	13	0	64	0
Sibsagar	5	7	3	5
Darrang	25	15	37	0
Total	123	2	285	9

A statement showing, separately, quantities in lbs. of (a) Quinine and (b) secondary alkaloids of Cinchona distributed free or at reduced price by the Public Health and Medical Departments during each of the years 1931, 1932 and 1933 is also appended below:—

1	Public Health Department.			Medical Department.			
	1931.	1932.	1933.	1931.	1932.	1933.	
	2	3	4	5	6	7	
	Lbs. oz. dr. gr.	Lbs. oz. dr. gr.	Lbs. oz. dr. gr.	Lbs. oz. dr. gr.	Lbs. oz. dr. gr.	Lbs. oz. dr. gr.	
(a) Quantities of quinine (in pounds).	Distributed free.	21 10 6 0	62 75 7 5½ 0	127 80 2 2½ 0	2,535 50 1½ 5 0	925 10½ 3¼ 0	945 12 6 2 0
	Distributed at reduced price.	292 6 5½ 0	292 15 8 0	367 6 5½ 0	1,462 5 0 0	1,663 8 0 0	2,330 0 0 0
(b) Quantities of Alkaloids of Cinchona (in pounds).	Distributed free.	12 25 2 0 0	162 1 5 4½ 0	290 65 7 6½ 0	2,350 75 14 1 0	1,040 53 15 7 0	2,583 53 1 7 0
	Distributed at reduced price.	...	...	...	...	...	10 0 0 0

## CHAPTER IX.

### MATERNITY AND CHILD-WELFARE.

41. A total of 246,118 children were born during the year. There is admittedly an appalling dearth of fully trained midwives in the Province and consequently an extremely small proportion of cases can have received skilled attention during and after confinement. It is to be deplored that the untrained village Dhai still reigns supreme in village "Lying-In-Rooms". They are a menace to the community. A departmental circular addressed to Chairmen of all Local and Municipal Boards was issued last year pointing out these dangers. Statistics of the infant mortality and deaths from Childbirth and the Anæmias of pregnancy, Sepsis and Hæmorrhage mentioned in paragraph 13 must convince all thinking men of all communities in the Province of the gravity of the situation. There are indications that a sound beginning is being made in regard to Maternity and Child-Welfare work in all districts and in certain subdivisional headquarters. The object is to establish working centres throughout the Province. The Lady Kerr Child-Welfare centre in Shillong continued its work during the year. The centre is run under the auspices of the Lady Chelmsford—All India League for Maternity and Child-Welfare, Assam Branch. The Civil Surgeon, Khasi and Jaintia Hills, supervises the work as Honorary Secretary. A total of 1,592 persons were attended to during 1933, as against 1,248 in the preceding year. These figures include anti-natal cases, post-natal cases, etc.

In Cachar, a Health, Maternity and Child-Welfare exhibition was held at Borkhola during April 1933. It was proposed to hold a similar exhibition in Silchar during the winter of 1933. This could not be done on account of the widespread epidemic of cholera in the district. The town of Sylhet also showed some interest in these problems.

The Child-Welfare Association, Sibsagar have promised a contribution towards the construction of a Baby Clinic in the grounds of the Sadr Hospital, Jorhat. A Baby Show was also held at Tarajan near Jorhat in the month of March 1933.

In Lakhimpur the Red Cross Association, Dibrugarh, is endeavouring to collect funds for a permanent house for this work. At Doom Dooma a nurse has been appointed to start the Maternity and Child-Welfare work. North Lakhimpur is also displaying some interest in Child-Welfare work.

A total of 40,231 infants died during 1933, giving a rate of 163.46. The establishment of Maternity and Child-Welfare centres throughout the Province together with a big band of fully trained midwives is our only hope of reducing this colossal loss of infant life.

## CHAPTER X.

### SCHOOL HYGIENE AND MEDICAL INSPECTION OF SCHOOL CHILDREN.

42. As in the previous year, the Assistant Director of Public Health, Surma Valley and Hill Division, devoted attention to the hygienic conditions of schools. During the course of his tours he inspected certain schools and delivered lectures to the pupils and teachers on health subjects. His remarks on the general sanitary condition of schools were transmitted to the Director of Public Instruction for information and necessary action. The Assistant Director of Public Health, Assam Valley Division, did not visit any school during the year, as he was fully occupied with the duties of officiating Director of Public Health. Periodical medical inspections of selected institutions were carried out and recommendations made for the improvement of the health of boys and girls and general sanitation of the schools and hostels attached thereto by the Medical Officers in charge.

The Inspector General of Civil Hospitals has taken steps to ensure that in future the inspection of schools and scholars is more carefully and systematically carried out by the Medical Officers of his Department.

## CHAPTER XI.

### HEALTH PROPAGANDA.

43. Owing to financial stringency, no Public Health Propaganda, with the aid of Magic Lanterns, was undertaken in the Province during the year under report. In certain districts, leaflets on leprosy and Tuberculosis were freely distributed.

Active propaganda work was undertaken in the Cachar and Sylhet districts during the severe epidemic of cholera which swept this districts towards the later part of the year under review.

Diseases which take a heavy toll of human life are all preventable. Education, in matters concerning healthy living and the ways and means of avoiding diseases, is essentially necessary. The aim should be, not only to teach individuals the principle of healthy living but also to make them realize that their well being is intimately bound up with that of the community. The present state of health education is so deplorably primitive in the Province that this will take years of patient work to instil these principles. The stoppage of Public Health propaganda in the Province was a most retrograde step and the amount of harm done thereby has been incalculable.

### INDIAN RED CROSS SOCIETY.

44. Very substantial progress was made in the Province during the year. Full records will be found in the Honorary Secretary's Report for 1933. As in the previous year, six district branches continued to function. The outstanding feature of the Society's activities during the year was the establishment of a hospital for women and children in Assam. Credit for the inception of the Scheme is due to Mr. B. N. Rau, C.I.E., I.C.S., the then Honorary Secretary.

### KING GEORGE THANKSGIVING (ANTI-TUBERCULOSIS) FUND.

A Sub-Committee of the Assam Branch, Indian Red Cross Society for dealing with Tuberculosis in Assam was constituted in 1932. The Director of Public Health is the Secretary of this Sub-Committee. A sum of Rs. 1,000 was received

from the Organising Secretary, Indian Red Cross Society (King George Thanksgiving Fund) and a sum of Rs. 1,000 from the Assam Red Cross Society for propaganda work. A sum of Rs. 1,318 was spent in the printing and distributing of Tuberculosis Charts and Pamphlets. Pamphlets and charts in Assamese and Bengali were distributed for instructional purposes to the Middle English and High Schools through the Director of Public Instruction and the Assistant and Sub-Assistant Surgeons of the Public Health Department. These pamphlets and charts have also been translated into Khasi for distribution. In addition to the pamphlets and charts referred to above some English leaflets and charts were also distributed for propaganda and instructional purposes.

A Sub-Committee of the Nowgong District Branch of the Indian Red Cross Society was formed during the year under review to deal with propaganda against Tuberculosis.

## CHAPTER XII.

### PUBLIC HEALTH ADMINISTRATION.

45. The financial condition of Government, during the year under report was unfortunately not such as to allow of any expansion of the Department.

Budget grants for the Department.

The budget allotments for the years 1932-33 and 1933-34 for the Public Health Department amounted to Rs. 6,29,800 and Rs. 6,10,600 respectively whilst those for the heads administered by the Director of Public Health amounted to Rs. 5,37,608 and Rs. 5,16,194 respectively. During the year 1933-34, a supplementary grant of Rs. 55,100 was sanctioned by Government.

The receipts of the Department for the years 1932-33 and 1933-34 amounted to Rs. 69,402 and Rs. 1,01,696 respectively.

The strength of the Public Health Department during the year was as follows:—

1. Director of Public Health	...	...	1
2. Assistant Directors of Public Health	...	...	2
3. Urban Health Officers	...	...	11 (Two posts vacant)
4. Assistant Surgeons	...	...	7 (One permanent and 6 temporary.)
5. Sub-Assistant Surgeons	...	...	104 (One permanent and 103 temporary).
6. Vaccination Inspecting Staff	...	...	39 (Twenty-nine permanent and 10 temporary).
7. Clerks	...	...	25 (Fifteen permanent and 10 temporary).
8. Biochemist	...	...	1
9. Compounders	...	...	5 (Temporary).
10. Literate packers	...	...	2
11. Loaders	...	...	2
12. Disinfectant Carriers	...	...	30
13. Sample taker	...	...	1
14. Laboratory Assistant and Media Maker	...	...	15 (Four temporary).
15. Vaccinators appointed by Government in Hill districts.	...	...	37
"    by Local Boards	...	...	354
"    by Municipalities	...	...	25
16. Servants	...	...	126

The Shillong Municipal Board appoints a fully qualified Health Officer. The salary of this Officer is met partly by a contribution from Government. The time has come when the larger Municipalities of the Province should appoint fully qualified Medical Officers of Health.

## CHAPTER XIII.

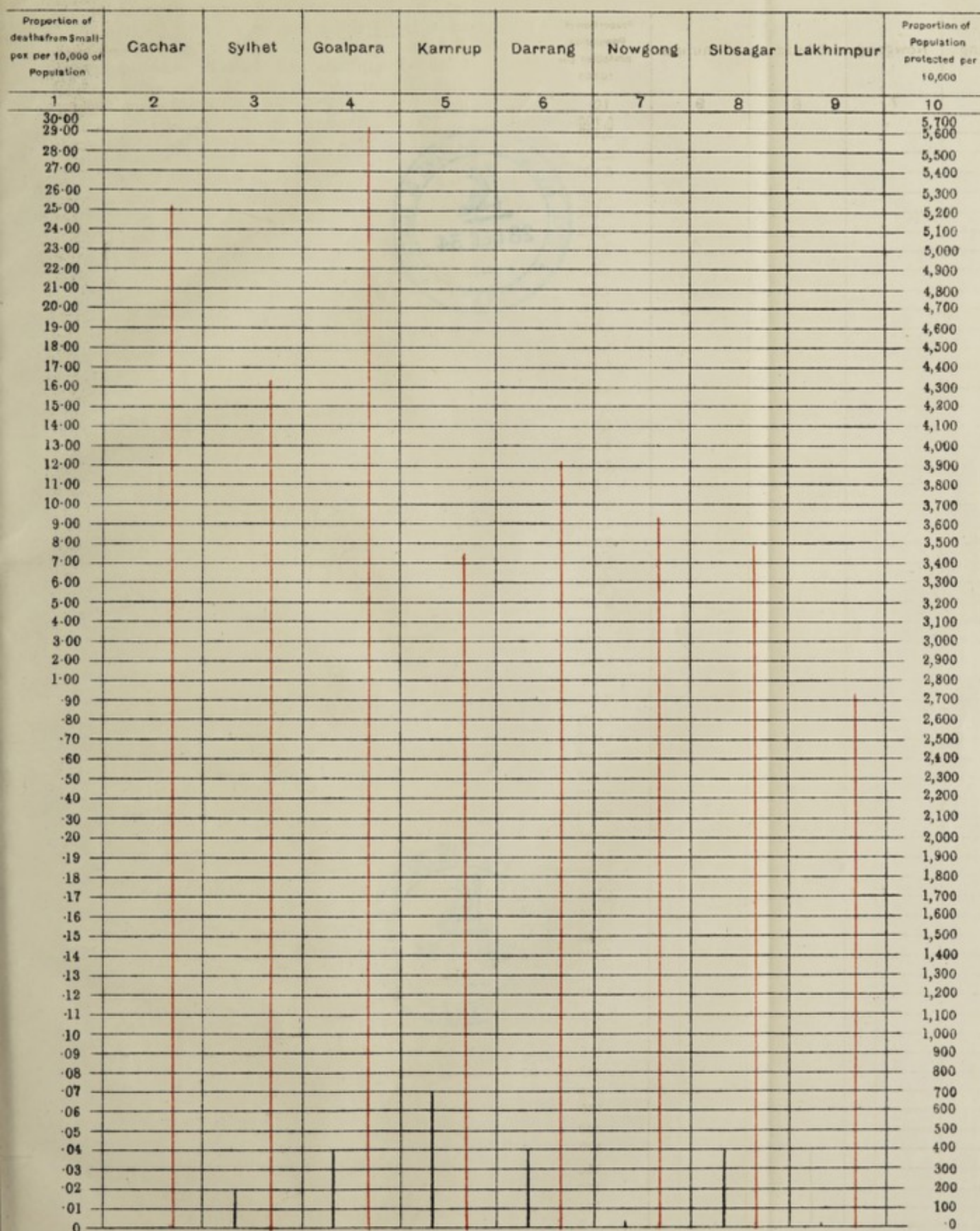
### VACCINATION.

This chapter and all statistical tables connected therewith refer to the period from April 1st 1933 to March 31st 1934.

46. Vaccination was carried on as usual throughout the Province amongst a population of 9,247,857.

Introductory.

with the proportion of the Population protected against the disease by Vaccination during the seven years 1927-28 to 1933-34



NOTE Black lines indicate death rate from Small-pox

Red lines indicate the proportion protected by Vaccination





47. Vaccination was performed by 435 Departmental Vaccinators amongst the general population and by Tea Garden Medical Officers amongst the labour force of Tea Estates. Railway employees were vaccinated by the Railway Medical officers and in Jails by Sub-Assistant Surgeons in Medical charge.

The total number of vaccinators employed during the year was 435, as compared with 429 in the preceding year. The average number of persons vaccinated by each vaccinator was 1,502 during the year under report, as compared with 1,489 in the preceding year.

48. The total number of operations performed during the year by all agencies was 706,460 of which 402,375 were primary operations and 304,085 were revaccinations, as compared with 685,829 in the preceding year, of which 369,975 were primary and 315,854 revaccinations. This shows an increase of 20,631 operations in total operations and an increase of 32,400 in primary and a decrease of 11,769 in revaccinations. Variations in the district returns are criticised in paragraph 55.

The total number of operations performed by the different agencies during the year under report and in the previous year is shown below :—

	1933-34.	1932-33.
Number of operations by Departmental Vaccinators ...	653,163	638,606
Ditto by the Staff of Dispensaries ...	6,779	6,815
Ditto by Tea Garden Agencies ...	37,503	31,224
Ditto by Jail, Asylum, Police and Emigration Hospital Agencies.	6,287	5,970
Ditto by Railway Agencies ...	2,728	3,214

49. The number of operations performed by Departmental Vaccinators during the year was 653,163 as compared with 638,606 in the preceding year. The increase is due to the increase in the number of Vaccinators.

50. A total of 234 deaths from Small-pox occurred in the Province including the Hill districts during the year 1933-34 as shown below :—

Cachar ...	Nil.
Sylhet ...	52
Khasi and Jaintia Hills ...	Nil.
Naga Hills ...	Nil.
Lushai Hills ...	Nil.
Goalpara ...	33
Kamrup ...	73
Darrang ...	23
Nowgong ...	1
Sibsagar ...	34
Lakhimpur ...	6
Garo Hills ...	12
Manipur State ...	Nil.
Sadiya ...	Nil.
Balipara ...	Nil.
<b>Total</b> ...	<b>234</b>

The ratio of deaths from Small-pox during the year 1933-34 was .03 per mille of population, as compared with .06 in the preceding year. The death rate reported from small-pox was highest in the district of Kamrup (.07) against (.17) in the preceding year. The death-rate reported from Goalpara was (.04) against (.30) in the preceding year. The attached chart illustrates the death-rates from Small-pox in each district side by side with the proportion of population protected against the disease by vaccination during the seven years from 1927-28 to 1933-34.

51. Vaccination in rural areas in Assam is not compulsory, but every encouragement is given to the people to get themselves vaccinated. Considerable opposition to free vaccination is met with in certain localities. To overcome this hostile attitude, regulations under the Epidemic Diseases Act, 1897 (III of 1897) are resorted to and these areas

are declared to be infected. During the year under report the Goalpara district, one mauza in the Darrang district and some villages in the Kamrup district were declared as Small-pox infected areas.

52. A total of 6,779 vaccination operations were performed by the dispensary staff of which 2,161 were primary and 4,618 revaccinations, as compared with 6,815 operations in 1932-33 with 2,139 primary and 4,676 revaccinations.

53. The percentage of successful operations performed by all establishments combined was 91.80 for primary vaccination and 61.26 for revaccination, as compared with 94.84 and 62.41 respectively in 1932-33. The successful percentage in primary vaccinations and revaccinations in the case of vaccinators was 91.71 and 62.27 respectively as against 94.93 and 63.08 respectively in 1932-33; in the case of Dispensary staff, 90.95 and 68.56 respectively against 83.58 and 48.05 respectively in 1932-33 and in the case of the Tea Garden agencies 93.20 and 46.62 against 94.95 and 70.48 respectively, 1932-33. Complaints as regards potency of the lymph supplied, were received from the Naga Hills, Darrang and a Tea Garden but the same batch of lymph supplied to other districts having given good results it is believed that the lymph lost its potency due to long storage in districts.

54. All Vaccinations were performed as in previous years with glycerinated calf lymph manufactured in the Provincial Vaccine Depot at Shillong.

55. The table below shows the increase and decrease in vaccination operations performed in individual districts, as compared with those of the preceding year :—

	1933-34.	1932-33.	Increase.	Decrease.
	Total.	Total.		
Cachar ... ..	46,544	40,572	5,972	...
Sylhet ... ..	158,631	165,495	...	6,864
Khasi and Jaintia Hills ... ..	17,793	22,937	...	5,144
Naga Hills ... ..	9,039	8,880	159	...
Lushai Hills ... ..	12,307	10,809	1,498	...
Goalpara ... ..	157,992	169,700	...	11,708
Kamrup ... ..	63,989	56,754	7,235	...
Darrang ... ..	46,954	43,337	3,617	...
Nowgong ... ..	35,816	33,400	2,416	...
Sibsagar ... ..	57,647	52,052	5,595	...
Lakhimpur ... ..	39,999	33,698	6,301	...
Garo Hills ... ..	30,370	20,010	10,360	...
Manipur State ... ..	24,598	22,646	1,952	...
Sadiya ... ..	4,197	4,999	...	802
Balipara ... ..	584	540	44	...
Total ... ..	706,460	685,829	20,631	...

The increase in the Garo Hills district is the highest (10,360). Normally a vaccinator is expected to perform 250 vaccination operations in a month in the vaccination season. In the Garo Hills district it is much in excess of this. No vaccination operations were performed by dispensary staffs in the districts of Cachar and Kamrup. Decrease in vaccination operations in the district of Sylhet is due to outbreak of widespread cholera in the beginning of the vaccination season and the abolition of Village Authorities—established at Jogannathpur, Gaurarang and Mallikpur in the Sunamganj subdivision.

56. The Subordinate Inspecting Staff was the same as in previous years and consisted of 9 Inspectors, 20 permanent and 10 temporary Sub-Inspectors of Vaccination and 2 Sub-Inspectors of Vaccination were entertained by the Manipur State.

57. Civil Surgeons, Assistant Directors of Public Health and Assistant Surgeons inspected 5.42 per cent. of the primary and 2.62 of the revaccinations performed during the year, as compared with 6.66 and 3.79 respectively in the preceding year. The Subordinate Inspecting Staff inspected 45.42 per cent. of the primary and 31.08 of the revaccinations during the year, as compared with 47.03 and 30.51 respectively in 1932-33. The percentage of primary operations inspected in the district of Garo Hills (16.86) and Balipara Frontier Tract (5.91) were small.

58. In towns where vaccination is compulsory 6,419 infants were born, of these 804 died. A total of 5,615 were therefore available for vaccination during the year. Out of this 3,015 or 53.69 per cent. were successfully vaccinated, as compared with 49.50 per cent. of the previous year. In Goalpara town, 99 per cent. of the available infants were vaccinated. The other towns the percentage of children vaccinated was—Maulvibazar (90 per cent.), in Nowgong and Hailakandi (77 per cent.) in Gauhati (74 per cent.), in Sylhet (72 per cent.), in Mangaldai (70 per cent.), in Barpeta (66 per cent.), in Dibrugarh (61 per cent.), in Jorhat (57 per cent.), in Dhubri (56 per cent.), in Shillong (45 per cent.), in Gauripur (43 per cent.), in Habiganj and Tezpur (38 per cent.), in Karimganj (31 per cent.), in Tinsukia (28 per cent.), in Silchar (18 per cent.), in Golaghat (17 per cent.), in Sunamganj (15 per cent.), in Nazira (10 per cent.), in Sibsagar (9 per cent.) and in Doom Dooma (8 per cent.).

In rural compulsory areas under Village Authorities in Sylhet, Nowgong and Sibsagar districts 2,071, 3,156 and 1,430 operations were performed, as compared with 3,682, 3,026 and 930 respectively in the previous year.

59. The total number of capillary tubes loaded during the year was 916,744 as compared with 992,112 in 1932-33. The number of calves purchased and inoculated during the year under report was 553 excluding one from the previous year. Lymph was taken from 485 calves, 69 calves were rejected, 37 on account of illness and 24 on account of failure of operations, 7 on account of unsatisfactory vesicles, while one died, as compared with 41, 37, 5 and nil in the preceding year. The average number of tubes per calf was 1,890, as compared with 1,801 in 1932-33. The total cost of working the Vaccine Depôt was Rs. 18,664 of which Rs. 7,053 was on establishment, Rs. 3,291 on purchase of calves, Rs. 42 on feed of calves, Rs. 4,897 on purchase of capillary tubes and instruments and Rs. 3,381 on miscellaneous expenditure, as compared with Rs. 16,637-9-0 in the preceding year.

The lymph was, as usual, supplied free to Civil Surgeons, Inspectors and Sub-Inspectors of Vaccination, Local and Municipal Boards. Tea Gardens, Railways, Manipur State and Medical Officers of military units were supplied with lymph at the rate of one anna per tube.

The subordinate charge of the depôt was held by Sub-Assistant Surgeon Dr. Monmohan Sarker from 1st April to 14th July 1933 and by Rai Sahib Dr. Aswini Kumar Purkayastha for the remaining period. Both Officers were most efficient in the performance of their duties.

60. The total expenditure, including the charges of the Vaccine Depôt, on vaccination in Assam during the year under report was Rs. 1,09,548-1-6, as compared with Rs. 1,06,877-5-0 in the preceding year. The increase of Rs. 2,670-12-6 was due mainly to the increase in travelling allowance expenses and pay of establishment.

Of the total expenditure of Rs. 1,09,548-1-6 during the year, Rs. 1,648-9-6 was paid from Imperial revenue, Rs. 55,090-6-0 from Provincial Funds, Rs. 43,255-1-0 from Local Funds, Rs. 5,234-1-0 from Municipal Funds and Rs. 4,320 by the Manipur State. The average cost of each successful vaccination during the year was annas three and pies nine, as compared with annas three and pies eight in 1932-33.

61. Primary vaccinations and revaccinations performed by tea garden medical officers numbered 27,828 and 9,675, respectively, by Medical Officers in-charge of Jail Hospitals, Mental Hospitals, Police Hospitals and Infectious Diseases Hospitals, 241 and 6,046, respectively, by Railway Medical Officers 719 and 2,009 respectively. Their successful percentages were 93.20 and 46.62, 84.44 and 42.54, 89.10 and 42.68 respectively.

The following Inspectors and Sub-Inspectors of Vaccination did good work during the year :—

#### INSPECTORS OF VACCINATION.

1. Maulavi Wazuddin Ahmed.
2. Srijut Mohesh Chandra Das.
3. Babu Sirish Chandra Roy Chaudhury.

#### SUB-INSPECTORS OF VACCINATION.

1. Jingga D. Morak.
2. Srijut Someswar Saikia.
3. Babu Basanta Kumar Das.

### CHAPTER XIV.

#### OTHER PUBLIC HEALTH SERVICES.

62. The principal industry of the Province is the cultivation and manufacture of tea. Sanitary conditions on Tea Estates on the whole are generally satisfactory. Special regulations, under the Emigrant Labour Act, 1932, exist in regard to supervision of sanitary conditions on Tea Estates.

The Indian Factories Act controls sanitation in Factories and also in regard to Offensive Trades. Oil and Rice Mills, etc., are rapidly increasing in the Province. It is advisable that these industries be permitted only outside the towns as then the community will be saved from any noise and nuisance they may cause.

63. The Civil Surgeon, Lakhimpur inspected the sanitary condition of the mine at Digboi, owned by the Assam Oil Company. He was satisfied with the arrangements existing there. The Medical Officer of the Company attends to the health and welfare of the employees. The other three *ex-officio* Inspectors of Mines, namely, the Assistant Directors of Public Health and the Civil Surgeon, Naga Hills, undertook no inspections of mines.

64. The table below shows the work done in the Public Health Laboratory in 1933, as compared with that of the preceding year.

	1933.		1932.	
	Number examined.	Number found adulterated.	Number examined.	Number found adulterated.
Chemical analysis of water ...	108	...	105	24
Ditto milk ...	274	98	263	98
Ditto Ghée ...	78	43	118	56
Ditto Butter ...	1	...	...	...
Ditto Mustard oil ...	81	41	117	57
Ditto Other food stuffs ...	14	...	25	7
Ditto Rice ...	14	...	...	...
<b>MISCELLANEOUS CHEMICAL ANALYSIS.</b>				
Bacteriological examination of water ...	554	...	555	67
Ditto of Vaccine lymph ...	400	...	251	...
Miscellaneous microscopic examination of blood films, etc.	1	...	...	...
Antiseptics and larvicides ...	...	...	...	...
<b>Total</b> ...	<b>1,525</b>	<b>182</b>	<b>1,434</b>	<b>309</b>

The number of samples analysed during the year under the review was 1,525 against 1,434 in the preceding year. The increase in the number of samples in 1933 was due to the increase in the number of samples of vaccine lymph manufactured in the Shillong Vaccine Depot. As usual, bacteriological and chemical examinations of filtered waters of all the water works and of jails were

carried out systematically throughout the year. Shillong water maintained its high standard of purity. The number of samples of foodstuffs analysed during the year fell disappointingly short of that for the previous year. It was anticipated that with the passing of the Pure Food Act and with the knowledge that food adulteration is admittedly on the increase, a much larger number of samples would be submitted for analysis. This, however, did not prove to be the case. It is very necessary in the interest of Public Health that samples of foodstuffs be analysed systematically. The importance of this has been explained to all concerned and also that the small expenditure involved is more than amply repaid by the benefit which must accrue to the public. It is now hoped that local bodies will take greater advantage of the facilities afforded by the Public Health Laboratory in this respect. It is only in this manner possible to ensure that pure articles of food reach the general public.

Due to an outbreak of epidemic dropsy in Shillong in the early part of the year, waters were collected from the houses of sufferers and analysed for presence of any pathogenic organism. Rice, alleged to have been purchased by the patients from shops, was also analysed. The results were negative in both instances. As in the previous year, the Laboratory prepared bleach solution of 1.28 per cent. available chlorine for disinfecting purposes and .4 per cent. neutral eusol for washing and dressing purposes. As usual the Laboratory worked as the Provincial Depot for the supply and despatch of urea-stibamine and spare part of syringes to *kala azar* dispensaries.

Dr. Surendra Chandra Datta held charge of Laboratory throughout the whole year, with success.

Port Health Administration.

65. Nil.

Sanitary works.

66. (Civil) This is dealt with in Chapter VI under heading "Urban Sanitation".

67. There was no meeting of the Public Health Board during the year under report. The Health Board (Epidemics) functioned as in the previous year.

Public Health Board.

## CHAPTER XV.

### GENERAL REMARKS.

68. Research is entrusted to the Assam Medical Research Society. The Society is in receipt of an annual contribution of Rs. 25,000 from the Government of Assam, and the Director of Public Health, Assam, is an *ex-officio* member of the Governing Body. The activities of the Society have up to the present been confined to Malaria, Cholera and Dysentery. The work on Anaemias of pregnancy and Epidemic Pneumonias had to be discontinued for want of funds. As in the last year, the survey of 28 malarious areas was undertaken, during the year 1933. Experiments with cholera and dysentery Bacteriophage in the Nowgong district and Habiganj subdivision was continued during the year 1933.

Research work.

A note by the Research Officer, Assam Medical Research Society on the Bacteriophage Distribution in Nowgong and Habiganj is reproduced below :—

"The distribution of Bacteriophage to the Nowgong district and to Habiganj subdivision of the Sylhet district was continued during the year. One Epidemic Unit was utilised in each of these areas. Each village was visited three to four times and 430,880 doses of combined dysentery—cholera bacteriophage was distributed for use of all dysentery, diarrhoea and suspected cholera cases.

Nowgong, in which district the village distribution of bacteriophage was started in December 1929, has remained free from epidemic of cholera for four full years, having had 53, 44, 27 and 22 deaths in 1930, 1931, 1932 and 1933 respectively; a total of 146 deaths. The four yearly average of deaths from 1906 to 1929, prior to the use of bacteriophage was 3,995 deaths. No anti-cholera inoculations were done during the year. The population of this district were not at the same risk in 1933 as they were in 1932 when cholera was present on three sides but the disease was imported in 3 known instances without becoming epidemic.

In Habiganj, where distribution was started in July 1932 and completed by June 1933, there were 211 deaths from cholera during the year, the lowest cholera mortality for any year, except 1917 (when there were 132 deaths) since the records

of the department began in 1906. Of the 211 deaths during the year, 176 occurred between February and June before the completion of bacteriophage distribution to all areas. From September to December a severe epidemic was present in the Sunamganj, South Sylhet, North Sylhet and Karimganj subdivisions of Sylhet in which 3,226 deaths occurred, the largest number of deaths being in Sunamganj adjacent to Habiganj. During this period 35 deaths occurred in Habiganj, most of which were on the banks of the river separating Sunamganj from Habiganj. Anti-cholera inoculations were not carried out in Habiganj. In the interior of the subdivision several individual cases of known cholera occurred but the disease did not become epidemic."

Leper Asylums and Colonies.

69. The subjoined table shows the details of patients treated in the four existing Leper Institutions in the Province :—

1	2	3	4	5	6	7	8
—	Remaining from previous year.	Admissions during the year.	Total.	Discharged cured or relieved.	Discharged otherwise.	Died.	Remaining at the end of the year.
Sylhet Leper asylum ...	73	28	101	12	10	9	70
Kohima Leper Hospital ...	29	3	32	1	6	4	21
Leper Ward, Dhubri ...	12	13	25	3	13	...	9
Leper Colony, Tura ...	52	200	252	1	162	5	84

Treatment is available in out-patient clinics at all Sadr and Subdivisional head quarters Hospitals and at many of the outlying Public Health Department and local board dispensaries. It is hoped that the Gauhati Leper Asylum opened by the Gauhati Municipal Board and the Jorhat Leprosy Colony started by the American Baptist Foreign Missionary Society will render valuable service in the treatment of Lepers.

Two Assistant Surgeons of the Public Health Department received training at Calcutta in the technique of leprosy treatment and many Sub-Assistant Surgeons received similar training in the Province under previously trained Medical Officers.

Famine.

70. No remarks.

Public Health Acts.

71. No Public Health Act was passed during the year.

Public Health Essays.

72. Nil.

**Bacteriophage.**—The Pasteur Institute and Medical Research Institute, Shillong, issued 707,164 doses of bacteriophage during the year under report. The demand for bacteriophage in the treatment of bacillary dysentery in tea gardens is steadily increasing.

The distribution of bacteriophage in the prevention of cholera in the Nowgong district and in the Habiganj subdivision of the Sylhet district was continued by the Research Officer, Assam Medical Research Society, during the year. The statistics of mortality from cholera and dysentery in these two areas during the last five years are shown below :—

—	1929.		1930.		1931.		1932.		1933.	
	Cholera.	Dysentery and Diarrhoea.	Cholera.	Dysentery and Diarrhoea.	Cholera.	Dysentery and Diarrhoea.	Cholera.	Dysentery and Diarrhoea.	Cholera.	Dysentery and Diarrhoea.
Nowgong ...	376	203	53	277	44	316	27	259	22	322
Habiganj ...	575	570	1,307	665	694	564	403	511	211	725

In addition, the Pasteur Institute and Medical Research Institute made a free issue of 430,880 doses of combined dysentery—cholera bacteriophage in the Nowgong district and the Habiganj subdivision of the Sylhet district. Bacteriophage was also distributed free in the Hailakandi subdivision of the Cachar district during the severe cholera epidemic that prevailed in the Cachar and Sylhet districts towards the end of the year under report.

*Neo-stibosan*.—This preparation was given a trial in the intensive treatment of *kala azar*. In rural areas the results were not encouraging. Its administration was therefore restricted to urban areas only where hospital conditions exist.

*Plasmoquine and Atebrin*.—These drugs were tried experimentally in the treatment and prevention of malaria both by the Public Health Department and the Assam Medical Research Society. The results so far have not been encouraging.

73. I held charge of the Department from the beginning of the year to the 25th March, when I proceeded on furlough. My Senior

Personal proceedings. Assistant Director of Public Health—Dr. P. Gupta, M.B., D.T., M. & H., F.R.F.P.S., D.P.H.,—held charge as officiating Director of Public Health, during my absence from the 26th March to the 25th November. On my return from leave I again held charge of the Department from the 26th November to the end of the year. During the months of January and February I carried out routine inspections of the Municipalities of Jorhat, Golaghat, Doom Dooma and Tezpur. During these months, I also inspected *kala azar*, leprosy and yaws operations in the mofussil and also vaccination work in the districts of Nowgong, Sibsagar, Lakhimpur, Kamrup and Darrang. In November, on returning from leave, I attended the Indian Research Fund Association meeting in Calcutta. In December I carried out *kala azar*, leprosy, and yaws inspections in the Kamrup and Nowgong districts and also inspected vaccination work in these districts.

Dr. P. Gupta inspected the Municipalities of Dhubri, Dibrugarh, Tinsukia Silchar and Sylhet during the course of the year and in addition inspected *kala azar*, leprosy and yaws operations in the mofussil in the districts of Kamrup, Goalpara and Nowgong during the months of January and February. During the months of April to November, he officiated as Director of Public Health as well as Assistant Director of Public Health, Assam Valley Division. During these months he was fully employed in the administration of the Department and in addition was able to carry out anti-malaria inspections at Kachugaon, Gossaingaon, Haltugaon, Abhoyapuri, Dimapur, Kohima and Imphal. In the months of April and October, he conducted examinations at the Berry-White Medical School at Dibrugarh. In October, November and December he was fully employed in the epidemic of cholera in the Cachar and Sylhet districts. His work during this epidemic was of a very high standard and for this he received the special thanks of Government. As the officiating Director of Public Health, he acquitted himself most successfully in all respects.

Dr. S. H. Paul, L.R.C.P., M.R.C.S., D.P.H., D.T.M., held the post of Assistant Director of Public Health, Surma Valley and Hill Division, during the entire year. During the course of the year, he inspected the Municipalities of Shillong, Habiganj, Maulvi Bazar, Karimganj and Sunamganj and in addition inspected *kala azar* and leprosy operations and also vaccination work in the Surma Valley districts. He also inspected the sanitary conditions of schools in this Valley from time to time during the course of his tours. Throughout the course of the year, he was also engaged in a malarial survey of Sylhet town and in addition inspected the anti-malaria work being undertaken at Haflong and Jaintiapur. In February, he organised and supervised the sanitary arrangements of Bhuban Hill Fair in the Cachar district. In May he inspected the Vaccine Depot, Shillong. From the month of June to September he supervised the distribution of bacteriophage in the Habiganj subdivision in addition to his other duties. During the months of October to December, he was fully employed in the severe cholera epidemic in Cachar and Sylhet districts. He rendered most valuable assistance during the course of this epidemic for which he received the special thanks of Government.



74. In conclusion, I have to thank my entire Office Staff for the very able manner in which they have carried out their duties. In particular, I have to thank my Personal Assistant—  
 Office. Babu Chandra Nath Haldar—who rendered loyal and excellent service throughout to Government during a period of 28 years. During the earlier part of the year it was necessary for me to send him on long leave on medical grounds. I now regret to report that it has been necessary to invalid him out of the service. His valuable co-operation and assistance coupled with his ripe experience will be much missed in the office. In his successor—Babu Iswar Chandra Das—who was my Head Assistant, I have a very competent and zealous successor, who, I feel convinced, will acquit himself equally well.

T. D. MURISON,  
 Lieut.-Colonel, I.M.S.,

Director of Public Health, Assam.

...the Department from the beginning of the year to the 25th March when I proceeded on furlough. My Assistant Director of Public Health—Mr. K. G. G. ... held charge as acting Director of Public Health during my absence from the 25th March to the 25th November. On my return from leave I again held charge of the Department from the 25th November to the end of the year. During the months of January and February I carried out routine inspections of the Municipalities of Jorhat, Goalpara, Dibrugarh and Tezpur. During these months I also inspected work in the district of Sivasagar. In the months of March and April I attended the Indian Veterinary Association meeting in Calcutta. In December I carried out water, sewer, septic, and gas inspections in the Kamrup and Nagaon districts and also inspected vaccination work in these districts. ... the Municipalities of Jorhat, Dibrugarh, Tezpur, Sivasagar and Sylhet during the course of the year and in addition inspected water, sewer, septic and gas operations in the Municipalities of Kamrup, Goalpara and Nagaon during the months of January and February. During the months of April to December he acted as Director of Public Health as well as Assistant Director of Public Health, Assam Valley Division. During these months he was fully employed in the administrative work of the Department and in addition was able to carry out such matters in positions at Kachar and Assam. In the months of April and October he visited Dibrugarh, Tezpur and Jorhat. In the months of April and October he conducted examinations at the Dibrugarh Medical School at Dibrugarh. In October, November and December he was busy engaged in the epidemic of cholera in the Goalpara and Sylhet districts. His work during this epidemic was of a very high standard and for this he received the special thanks of Government. As the acting Director of Public Health, he received much appreciation in all respects. ... held the post of Assistant Director of Public Health, Assam Valley and Hill Division during the entire year. During the course of the year he inspected the Municipalities of Shillong, Jorhat and Mangalghat, Kamrup and Sivasagar and in addition inspected water, sewer and septic operations and also vaccination work in the Assam Valley Division. He also inspected the sanitary conditions of schools in this Valley from time to time during the course of the year. Throughout the course of the year he was also engaged in a meteorological survey of Sylhet town and in addition inspected the water mains work being undertaken at Hailong and Jorhat. In February he organised and supervised the sanitary arrangements at Hailong Hill Fall in the Goalpara district. In May he inspected the Vaccine Depot, Shillong, from the month of June to September he supervised the distribution of bacteriophage in the Mangalghat subdivision in addition to his other duties. During the course of October to December he was fully employed in the water, sewer, septic, gas, in Goalpara and Sylhet districts. He rendered most valuable assistance during the course of this epidemic for which he received the special thanks of Government.

IMPERIAL STATEMENT No. I.—Statement showing the

No.	District	Population according to the Census of 1911			Number of males registered		
		Males	Females	Total	Males	Females	Total
<b>BURMA VALLEY.</b>							
1	Cadiz	28,788	24,478	53,266	27,281	25,985	53,266
2	Pyaw	1,87,842	1,51,907	3,39,749	3,17,067	22,682	3,39,749
Total		1,80,630	1,76,385	3,57,015	3,44,348	12,667	3,57,015
<b>ARAB VALLEY.</b>							
3	Gadiz	40,373	41,373	81,746	78,748	3,000	81,746
4	Kamrup	51,332	49,741	1,01,073	1,01,073	0	1,01,073
5	Dumung	317,100	307,514	624,614	603,817	20,797	624,614
6	Nowrang	208,000	200,000	408,000	408,000	0	408,000
7	Shangri	106,000	107,000	213,000	213,000	0	213,000
8	Lashung	100,000	101,000	201,000	201,000	0	201,000
Total		1,172,805	1,167,628	2,340,433	2,312,528	27,905	2,340,433
Total for the Province		2,979,435	2,933,013	5,912,448	5,756,876	155,572	5,912,448

STATEMENTS

VITAL STATISTICS

No.	District	Population (Census of 1911)			Number of deaths registered		
		Males	Females	Total	Males	Females	Total
<b>BURMA VALLEY.</b>							
1	Cadiz	28,788	24,478	53,266	474	430	904
2	Pyaw	1,87,842	1,51,907	3,39,749	1,000	800	1,800
Total		1,80,630	1,76,385	3,57,015	1,474	1,230	2,704
<b>ARAB VALLEY.</b>							
3	Gadiz	40,373	41,373	81,746	300	250	550
4	Kamrup	51,332	49,741	1,01,073	200	150	350
5	Dumung	317,100	307,514	624,614	1,500	1,200	2,700
6	Nowrang	208,000	200,000	408,000	1,000	800	1,800
7	Shangri	106,000	107,000	213,000	500	400	900
8	Lashung	100,000	101,000	201,000	400	300	700
Total		1,172,805	1,167,628	2,340,433	5,100	4,000	9,100
Total for the Province		2,979,435	2,933,013	5,912,448	6,574	5,230	11,804

## IMPERIAL STATEMENT No. I.—Statement showing the births

No.	Districts.			Population according to the Census of 1931.			Number of births registered.		
				Male.	Female.	Total.	Male.	Female.	Total.
1	2			3	4	5	6	7	8
<b>SURMA VALLEY.</b>									
1	Cachar	...	...	284,738	254,073	538,811	9,381	9,012	18,393
2	Sylhet	...	...	1,407,645	1,316,697	2,724,342	51,704	48,399	100,103
	Total			1,692,383	1,570,770	3,263,153	61,085	57,411	118,496
<b>ASSAM VALLEY.</b>									
3	Goalpara	...	...	470,273	412,475	882,748	14,602	13,850	28,452
4	Kamrup	...	...	513,345	463,401	976,746	11,671	10,641	22,312
5	Darrang	...	...	317,103	267,714	584,817	8,583	8,208	16,791
6	Nowgong	...	...	298,585	263,996	562,581	5,756	5,363	11,119
7	Sibsagar	...	...	496,288	437,038	933,326	13,796	13,058	26,854
8	Lakhimpur	...	...	399,108	325,474	724,582	11,389	10,705	22,094
	Total			2,494,702	2,170,098	4,664,800	65,797	61,825	127,622
	Total for the province			4,187,085	3,740,868	7,927,953	126,882	119,236	246,118

## IMPERIAL STATEMENT No. II.—Statement showing the births and deaths

No.	Districts.		Area, in square miles.	Average population per square mile.	Population (Census of 1931).			Births.		Number of deaths registered.		
					Male.	Female.	Total.	Total number.	Births per 1,000 of population.	Male.	Female.	Total.
1	2		3	4	5	6	7	8	9	10	11	12
<b>SURMA VALLEY.</b>												
1	Cachar	...	1,972	273	284,738	254,073	538,811	18,393	34.14	6,183	6,005	12,188
2	Sylhet	...	5,478	497	1,407,645	1,316,697	2,724,342	100,103	36.74	33,900	30,899	64,799
	Total		7,450	438	1,692,383	1,570,770	3,263,153	118,496	36.31	40,083	36,904	76,987
<b>ASSAM VALLEY.</b>												
3	Goalpara	...	3,985	222	470,273	412,475	882,748	28,452	32.23	11,658	9,199	20,857
4	Kamrup	...	3,844	254	513,345	463,401	976,746	22,312	22.84	7,187	6,448	13,635
5	Darrang	...	2,842	206	317,103	267,714	584,817	16,791	28.71	6,030	5,591	11,611
6	Nowgong	...	3,896	144	298,585	263,996	562,581	11,119	19.76	3,601	3,198	6,799
7	Sibsagar	...	5,151	182	496,288	437,038	933,326	26,854	28.77	8,558	8,146	16,704
8	Lakhimpur	...	4,234	171	399,108	325,474	724,582	22,094	39.49	7,357	7,104	14,461
	Total		23,932	195	2,494,702	2,170,098	4,664,800	127,622	27.35	44,381	39,686	84,067
	Total for the province		31,382	253	4,187,085	3,740,868	7,927,953	246,118	31.04	84,464	76,590	161,054

registered in the districts of Assam during the year 1933.

Ratio of births per 1,000 of population.			Number of males born to every 100 females born.	Excess of births over deaths per 1,000 of population.	Excess of deaths over births per 1,000 of population.	Mean ratio of births per 1,000 during the previous five years.		
Male.	Female.	Total.				Male.	Female.	Total.
9	10	11	12	13	14	15	16	17
17.41	16.73	34.14	104	11.52	...	16.31	15.35	31.66
18.98	17.76	36.74	107	12.95	...	16.82	15.66	32.48
18.72	17.59	36.31	106	12.72	...	16.74	15.61	32.35
16.54	15.69	32.23	105	8.60	...	15.99	14.05	30.04
11.95	10.89	22.84	110	8.88	...	11.35	10.70	22.05
14.68	14.03	28.71	105	8.86	...	13.21	12.56	25.77
10.23	9.53	19.76	107	7.67	...	11.41	10.62	22.03
14.78	13.99	28.77	106	10.87	...	13.16	12.31	25.47
15.72	14.77	30.49	106	10.53	...	12.17	11.75	23.92
14.10	13.25	27.35	106	9.33	...	12.96	12.21	25.17
16.00	15.04	31.04	106	10.73	...	14.51	13.61	28.12

registered in the districts of Assam during the year 1933.

Number of deaths of males to every 100 deaths of females.	Deaths per 1,000 of population from—											Mean ratio of deaths per 1,000 during the previous five years.		
	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and Diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	All causes.			Male.	Female.	Total.
									Male.	Female.	Total.			
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
103	2.03	...	...	11.46	1.73	1.49	.29	5.63	21.71	23.63	22.62	20.07	21.96	20.96
110	1.49	.02	...	13.40	1.00	.41	.33	7.15	24.08	23.47	25.79	21.69	20.80	21.26
109	1.58	.01	...	13.03	1.12	.59	.32	6.89	23.68	23.49	23.59	21.42	20.99	21.21
127	.03	.08	...	22.56	.17	.14	.18	.46	24.79	22.30	23.63	23.20	21.97	22.62
111	.09	.07	...	11.32	.40	.29	.22	1.57	14.00	13.91	13.96	13.29	13.49	13.39
108	.19	.04	...	13.47	1.60	.78	.26	3.51	18.98	20.88	19.85	17.84	19.95	18.81
113	.04	.002	...	9.74	.57	.35	.15	1.23	12.06	12.11	12.09	13.24	13.77	13.49
105	.06	.03	...	10.38	2.12	1.08	.22	3.81	17.24	18.64	17.90	15.45	16.50	15.94
104	.09	.01	...	9.67	2.52	2.01	.34	5.31	18.43	21.83	19.96	16.10	18.10	17.00
111	.08	.04	...	13.12	1.20	.76	.22	2.59	17.79	18.29	18.02	16.61	17.23	16.99
110	.69	.03	...	13.10	1.17	.69	.27	4.36	20.17	20.47	20.31	18.55	18.81	18.67

## IMPERIAL STATEMENT No. III.—Deaths registered in the

No.	A.—Rural circles.				January.	February.	March.	April.	May.
1	2				3	4	5	6	7
1	Cachar	...	...	...	1,023	731	831	745	925
2	Sylhet	...	...	...	5,952	5,044	4,166	4,263	4,404
3	Goalpara	...	...	...	1,995	1,470	1,316	1,723	1,770
4	Kamrup	...	...	...	908	701	791	1,112	1,294
5	Darrang	...	...	...	889	705	514	939	884
6	Nowgong	...	...	...	617	470	413	701	414
7	Sibsagar	...	...	...	1,169	826	905	876	1,219
8	Lakhimpur	...	...	...	932	753	852	984	918
Total for rural circles					13,485	10,700	9,788	11,343	11,828
Ratio per mille of population					1.71	1.50	1.24	1.49	1.51

No.	B.—Towns.				January.	February.	March.	April.	May.
1	2				3	4	5	6	7
<b>SURMA VALLEY.</b>									
1	Silehar	...	...	...	9	8	11	10	10
2	Hailakandi	...	...	...	6	5	1	1	1
3	Hailong	...	...	...	3	...	1	2	6
4	Sylhet	...	...	...	34	19	23	19	25
5	Karimganj	...	...	...	11	2	12	5	4
6	Maulvibazar	...	...	...	7	7	4	6	6
7	Habiganj	...	...	...	12	6	12	11	12
8	Sunamganj	...	...	...	11	5	9	6	11
Total					93	52	73	60	75
<b>ASSAM VALLEY.</b>									
9	Dhubri	...	...	...	22	13	11	19	8
10	Goalpara	...	...	...	3	2	3	8	5
11	Gauripur	...	...	...	6	5	4	9	12
12	Gauhati	...	...	...	40	23	39	29	31
13	Barpeta	...	...	...	15	19	23	32	47
14	Palasbari	...	...	...	2	2	6	6	2
15	Tezpur	...	...	...	18	9	17	18	15
16	Mangaldai	...	...	...	1	2	2	4	6
17	Nowgong	...	...	...	16	6	17	14	32
18	Jorhat	...	...	...	12	11	17	6	14
19	Sibsagar	...	...	...	3	5	1	6	7
20	Golaghat	...	...	...	...	24	3	4	5
21	Nazira	...	...	...	3	6	3	1	3
22	Dibrugarh	...	...	...	18	26	16	26	29
23	North Lakhimpur	...	...	...	3	1	2	...	2
24	Doom Dooma	...	...	...	...	...	...	...	1
25	Tinsukia	...	...	...	5	3	3	4	4
Total					167	157	166	186	223
Total for the towns					260	209	239	246	298
Ratio per mille for towns					1.31	1.17	1.20	1.28	1.50
Total for the province					13,745	10,909	10,027	11,589	12,126
Ratio per mille for the province					1.70	1.49	1.27	1.48	1.50

Ratios have been calculated

This table included municipalities and small towns, in which

## districts (rural circles) and towns of Assam during each month of the year 1933.

June.	July.	August.	September.	October.	November.	December.	Total deaths during the year.
8	9	10	11	12	13	14	15
1,047	935	867	895	1,521	1,522	921	11,968
4,931	5,158	4,085	4,330	5,354	7,856	8,541	64,084
1,949	2,001	1,638	1,394	1,485	1,703	2,068	20,507
1,822	1,272	795	783	1,122	1,066	1,152	12,818
1,236	1,022	897	1,026	1,219	959	1,105	11,395
706	818	416	608	522	435	528	6,608
1,651	1,727	1,644	1,520	1,773	1,551	1,578	16,339
1,317	1,191	1,198	1,518	1,638	1,473	1,348	14,022
14,459	14,124	11,540	12,024	14,634	16,570	17,241	1,57,736
1·90	1·79	1·46	1·58	1·86	2·17	2·19	20·40

June.	July.	August.	September.	October.	November.	December.	Total deaths during the year.
8	9	10	11	12	13	14	15
14	19	12	8	21	16	12	150
5	6	4	1	5	2	5	42
1	2	2	...	1	10	5	33
17	19	29	16	37	43	33	314
12	8	7	10	13	10	6	100
2	6	3	4	2	3	7	57
11	10	8	8	9	15	14	138
6	11	3	6	10	12	16	106
68	81	68	53	108	111	98	940
11	15	14	8	18	16	15	170
13	9	3	8	15	10	6	85
5	6	6	3	8	21	10	95
41	41	43	36	24	43	23	413
43	26	26	21	48	22	18	340
2	3	10	5	9	6	11	64
25	11	19	9	15	13	13	182
7	2	1	3	3	...	3	34
11	17	12	8	11	22	25	191
9	12	19	8	14	26	21	169
3	9	7	5	10	8	2	66
1	5	13	6	5	10	11	87
2	6	2	7	4	3	3	43
34	27	28	33	41	38	20	334
6	3	5	3	5	7	3	40
2	8	2	2	3	1	1	20
4	2	3	2	6	5	4	45
219	202	213	166	239	251	189	2,378
287	283	281	219	347	362	287	3,318
1·49	1·48	1·42	1·14	1·75	1·88	1·44	17·06
14,746	14,407	11,821	12,243	14,981	16,932	17,528	161,054
1·89	1·78	1·46	1·56	1·85	2·16	2·17	20·31

with reference to number of days in each month.

Registration of vital statistics is compulsory.

## IMPERIAL STATEMENT No. IV.—Deaths registered according to

No.	A.—Rural circles.	Under 1 year.															1 and under 5 years.		
		Not exceeding 1 month.						Over 1 month and not exceeding 6 months.			Over 6 months and not exceeding 12 months.			Total.			Male.	Female.	
		Male.		Female.		Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.				
		Under one week.	Over one week.	Under one week.	Over one week.														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Cachar ...	309	393	702	301	292	593	1,295	369	333	702	263	261	524	1,334	1,187	2,521	789	790
2	Sylhet ...	2,944	3,084	6,028	2,215	2,359	4,574	10,602	2,604	2,192	4,796	1,777	915	1,892	9,609	7,681	17,290	3,954	3,824
3	Goalpara ...	918	445	1,363	659	432	1,111	2,474	1,148	909	2,057	424	352	776	2,935	2,372	5,307	1,731	1,564
4	Kamrup ...	136	658	794	112	541	653	1,447	585	552	1,137	292	275	567	1,671	1,480	3,151	1,237	1,285
5	Darrang ...	189	356	536	142	329	471	1,007	648	591	1,239	283	271	554	1,467	1,333	2,800	938	923
6	Nowgong ...	181	192	373	123	172	295	668	313	301	614	166	175	341	852	771	1,623	557	488
7	Sibsagar ...	309	567	876	245	484	729	1,605	699	565	1,264	365	348	713	1,940	1,642	3,582	1,494	1,474
8	Lakhimpur ...	368	442	810	292	300	682	1,492	415	400	815	454	437	891	1,679	1,519	3,198	1,069	1,002
	Total for rural circles.	5,345	6,137	11,482	4,089	5,019	9,108	20,590	6,781	5,843	12,624	3,224	3,034	6,258	21,487	17,935	39,422	11,789	11,330
	Ratio per mille	...	...	...	...	...	...	...	...	...	...	...	...	...	173.66	154.59	164.42	...	...
	<b>B.—TOWNS.</b>																		
	<i>Surma Valley.</i>																		
1	Silchar ...	1	1	2	4	1	5	7	3	4	7	...	4	4	5	13	18	9	5
2	Hailakandi ...	3	...	3	...	1	1	4	...	2	2	2	3	5	5	6	11	3	...
3	Hailong ...	3	1	4	...	1	1	5	...	...	...	...	...	...	4	1	5	...	3
4	Sylhet ...	22	7	29	17	6	23	52	13	17	30	9	8	17	51	48	99	21	25
5	Karimganj ...	1	13	14	...	4	4	18	5	4	9	2	3	5	21	11	32	6	4
6	Manvibazar ...	1	3	4	1	3	4	8	1	1	2	1	2	3	6	7	13	1	5
7	Habiganj ...	15	6	21	6	4	10	31	6	8	14	7	7	14	34	25	59	7	8
8	Sunamganj ...	6	5	11	2	1	3	14	12	3	15	5	2	7	28	8	36	8	6
	<i>Assam Valley.</i>																		
1	Dhubri ...	9	2	11	11	3	14	25	7	3	10	2	1	3	20	18	38	6	5
2	Goalpara ...	...	4	4	1	2	3	7	5	4	9	2	...	2	11	7	18	6	5
3	Ganripur ...	7	2	9	4	2	6	15	4	2	6	3	3	6	16	11	27	8	10
4	Ganhati ...	...	15	15	...	20	20	35	11	11	22	10	8	18	36	39	75	16	19
5	Barpeta ...	3	23	26	6	12	18	44	15	15	30	6	4	10	47	37	84	26	42
6	Palasbari ...	...	6	6	...	8	8	14	2	2	4	2	1	3	10	11	21	6	4
7	Tozpur ...	7	1	8	2	1	3	11	7	3	10	2	4	6	17	10	27	14	5
8	Mangaldai ...	...	1	1	...	...	...	1	1	3	4	...	2	2	2	5	7	1	1
9	Newgong ...	9	3	12	1	5	6	18	11	5	16	...	4	4	23	15	38	5	12
10	Jorhat ...	10	2	12	5	2	7	19	5	6	11	1	3	4	18	16	34	8	8
11	Sibsagar ...	3	...	3	5	2	7	10	2	1	3	...	2	2	5	10	15	7	4
12	Golaghat ...	...	5	5	...	2	2	7	6	2	8	2	1	3	13	5	18	3	2
13	Naxira ...	3	...	3	5	3	8	11	3	1	4	1	...	1	7	9	16	1	3
14	Dibrugarh ...	13	3	16	7	4	11	27	6	6	12	7	3	10	29	20	49	10	11
15	North Lakhimpur ...	...	4	4	...	3	3	7	...	1	1	...	1	1	4	5	9	7	1
16	Doom Dooma ...	...	...	...	...	...	...	...	...	1	1	1	...	1	1	1	2	1	...
17	Tinsukia ...	...	1	1	1	...	1	2	1	3	4	1	1	2	3	5	8	8	3
	Total for towns	116	198	224	78	90	168	392	126	103	234	66	67	133	416	343	759	188	192
	Ratio per mille	...	...	...	...	...	...	...	...	...	...	...	...	...	132.06	118.48	125.56	...	...
	Total for the province.	5,461	6,245	11,706	4,167	5,169	9,276	20,963	6,907	5,951	12,858	3,290	3,101	6,391	21,903	18,328	40,231	11,977	11,442
	Ratio per mille of population.	...	...	...	...	...	...	...	...	...	...	...	...	...	172.62	153.71	163.46	55.44	73.19

\* To be calculated on births.

This table includes municipality and small towns

## age in the districts (rural circles) and towns of Assam during the year 1933.

5 and under 10 years.		10 and under 15 years.		15 and under 20 years.		20 and under 30 years.		30 and under 40 years.		40 and under 50 years.		50 and under 60 years.		60 and upwards.		Total (all ages).	
Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
457	422	203	202	239	357	508	952	551	584	517	345	490	344	903	699	6,051	5,912
2,016	1,847	1,009	821	1,266	1,887	2,725	4,295	2,841	2,602	2,899	1,913	2,679	1,904	4,617	3,695	33,525	30,559
1,080	796	490	400	406	484	935	1,057	979	743	1,008	498	777	453	1,119	650	11,460	9,047
761	625	298	226	240	329	413	583	534	444	477	342	473	379	626	395	6,730	6,088
413	374	197	178	226	331	428	727	561	537	591	402	535	325	504	385	5,880	5,515
322	260	166	130	146	202	269	367	260	294	289	208	277	216	341	193	3,479	3,129
705	630	349	282	318	436	514	1,065	695	828	706	546	758	494	888	635	8,367	7,972
472	442	257	242	255	444	572	1,077	811	834	748	548	689	434	530	396	7,082	6,940
6,226	5,396	3,029	2,481	3,096	4,502	6,364	10,063	7,232	6,956	7,145	4,802	6,678	4,549	9,528	7,078	82,574	75,162
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	4	5	3	2	4	10	15	16	7	15	3	9	3	15	4	89	61
2	1	...	1	...	1	1	...	4	5	3	1	1	1	4	3	23	19
...	...	...	...	...	4	3	3	5	2	5	...	1	...	2	...	20	13
1	6	4	6	5	10	13	26	9	10	7	5	6	8	30	23	147	167
2	2	3	...	2	2	5	9	7	4	7	2	5	2	1	4	59	41
2	3	2	...	4	5	2	4	2	...	2	1	3	1	5	2	29	28
...	2	3	5	2	8	7	8	5	2	6	1	1	4	5	5	70	68
1	1	1	1	3	1	5	8	8	2	7	3	4	2	5	4	70	36
5	4	2	7	2	4	19	7	16	6	9	6	9	...	15	10	103	67
1	1	2	2	2	5	1	8	6	2	6	...	5	3	5	7	45	40
3	1	1	...	1	2	7	4	5	1	3	2	1	2	5	12	50	45
6	9	5	2	10	7	37	35	50	26	36	13	15	17	21	14	232	181
15	17	9	...	5	7	13	9	17	7	16	8	14	13	25	13	187	153
3	2	1	1	...	1	...	1	4	1	4	1	3	2	7	2	38	26
2	2	2	4	4	10	22	9	19	10	16	4	14	3	9	6	119	63
1	1	1	2	1	1	4	1	5	...	2	2	3	...	1	...	21	13
4	7	5	4	7	7	15	3	20	4	14	4	17	5	12	8	122	69
2	5	1	1	4	7	13	16	16	10	14	4	5	8	7	6	88	81
1	2	1	2	2	1	4	4	1	1	4	5	1	1	4	6	30	36
4	3	3	1	1	3	8	9	12	5	2	6	6	...	...	1	52	35
3	1	1	2	1	1	1	2	...	1	...	2	2	...	5	1	21	22
6	8	2	1	11	12	39	21	49	20	31	7	14	6	18	19	209	125
1	3	2	...	1	...	1	1	2	...	3	1	2	1	4	1	27	13
...	1	...	...	1	1	...	2	5	1	2	1	1	2	...	...	11	9
3	2	1	1	...	1	3	1	2	1	4	2	2	...	2	1	28	17
71	88	57	46	71	105	233	306	285	128	218	84	144	84	207	152	1,890	1,428
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6,297	5,484	3,086	2,527	3,167	4,607	6,597	10,269	7,577	7,084	7,363	4,866	6,522	4,633	9,735	7,230	84,464	76,621
15-87	19-70	4-03	5-36	4-26	6-40	19-10	26-05	15-61	16-58	13-00	9-57	12-60	8-33	73-72	54-32	20-17	20-47



## IMPERIAL STATEMENT No. V.—Deaths registered according

No.	Districts.	Population according								
		Christians.			Hindus.			Muhammadans.		
		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1	2	3	4	5	6	7	8	9	10	11
<b>SURMA VALLEY.</b>										
1	Cachar ... ..	1,462	1,224	2,686	176,990	157,686	334,676	103,474	92,417	195,891
2	Sylhet... ..	1,650	1,335	2,985	575,661	537,765	1,113,426	828,123	775,682	1,603,805
	Total ... ..	3,112	2,559	5,671	752,651	695,451	1,448,102	931,597	868,099	1,799,696
<b>ASSAM VALLEY.</b>										
3	Goalpara ... ..	9,796	8,740	18,536	208,376	177,530	385,906	205,386	182,323	387,709
4	Kamrup ... ..	3,034	2,549	5,583	370,688	339,307	709,995	128,785	111,637	240,422
5	Darrang ... ..	8,453	7,263	15,716	246,546	209,110	455,656	37,529	29,974	67,503
6	Nowgong ... ..	2,615	2,428	5,043	172,664	153,052	325,716	95,597	82,165	177,762
7	Sibsagar ... ..	7,152	6,079	13,231	445,670	395,378	841,048	24,916	18,991	43,907
8	Lakhimpur ... ..	8,856	6,508	14,864	360,774	300,946	661,720	17,541	8,408	25,949
	Total ... ..	39,406	33,567	72,973	1,804,718	1,575,323	3,380,041	509,754	433,498	943,252
	Total for the Province ... ..	42,518	36,136	78,654	2,557,369	2,270,774	4,828,143	1,441,351	1,301,597	2,742,948

## IMPERIAL STATEMENT No. V.—Deaths registered according

No.	Districts.	Number of deaths registered—concl'd.								
		Buddhists.			Other classes.			Total.		
		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
		30	31	32	33	34	35	36	37	38
<b>SURMA VALLEY.</b>										
1	Cachar ... ..	...	...	...	219	209	428	6,183	6,005	12,188
2	Sylhet... ..	...	...	...	128	110	248	33,900	30,899	64,799
	Total ... ..	...	...	...	347	319	676	40,083	36,904	76,987
<b>ASSAM VALLEY.</b>										
3	Goalpara ... ..	13	3	16	2,396	1,758	4,154	11,658	9,199	20,857
4	Kamrup ... ..	1	5	6	552	511	1,063	7,187	6,448	13,635
5	Darrang ... ..	13	13	26	1,082	1,011	2,093	6,020	5,391	11,611
6	Nowgong ... ..	6	5	11	579	487	1,066	3,601	3,198	6,799
7	Sibsagar ... ..	41	53	94	1,272	1,110	2,382	8,558	8,146	16,704
8	Lakhimpur ... ..	26	18	44	836	849	1,685	7,357	7,104	14,461
	Total ... ..	100	97	197	6,717	5,756	12,473	41,381	39,636	84,067
	Total for the Province ... ..	100	97	197	7,074	6,075	13,149	84,464	76,590	1,61,054

to class in the districts of Assam during the year 1933.

to the Census of 1931.									Number of deaths registered.								
Buddhists.			Other classes.			Total.			Christians.			Hindus.			Muhammadans.		
Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
42	19	61	2,770	2,717	5,487	284,738	254,073	538,811	9	3	12	3,565	3,530	7,095	2,390	2,263	4,653
28	12	40	2,183	1,903	4,086	1,407,645	1,316,697	2,724,342	6	6	12	12,979	11,812	24,831	20,777	18,931	39,708
70	31	101	4,953	4,620	9,573	1,692,383	1,570,770	3,263,153	15	9	24	16,544	15,382	31,926	23,167	21,194	44,361
306	276	582	46,469	43,006	90,015	470,273	412,475	882,748	128	142	270	4,299	3,406	7,705	4,822	3,860	8,682
569	221	790	10,269	9,687	19,956	513,345	463,401	976,746	23	26	49	5,450	4,844	10,294	1,161	1,062	2,223
805	381	1,186	23,770	20,986	44,756	317,103	267,714	584,817	161	208	369	4,208	3,845	8,053	536	514	1,050
29	4	33	27,680	23,347	54,027	298,585	263,996	562,581	17	29	46	2,203	1,996	4,199	796	681	1,477
1,454	1,159	2,613	17,096	15,431	32,527	496,288	437,038	933,326	112	80	192	6,854	6,609	13,463	279	294	573
3,182	2,463	5,645	9,255	7,149	16,404	399,108	325,474	724,582	145	145	290	6,162	5,932	12,114	188	140	328
6,345	4,594	10,949	134,579	123,306	257,685	2,494,702	2,170,098	4,664,800	606	620	1,226	29,176	26,652	55,828	7,782	6,551	14,333
6,415	4,535	10,950	139,332	127,926	267,258	4,187,683	3,740,868	7,927,953	621	619	1,260	45,720	42,034	87,754	30,949	27,745	58,694

to class in the districts of Assam during the year 1933—concl'd.

Ratio of deaths per 1,000 of population.

Christians.			Hindus.			Muhammadans.			Buddhists.			Other classes.			Total.		
Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
6.16	2.43	4.45	20.14	22.39	21.20	23.10	24.49	23.75	...	...	...	79.06	76.93	78.01	21.71	23.63	22.62
3.64	4.49	4.02	22.55	22.04	22.30	25.09	24.41	24.76	...	...	...	63.92	57.80	60.69	24.08	23.47	23.79
4.62	3.50	4.22	21.98	22.12	22.05	24.86	24.41	24.64	...	...	...	72.08	69.05	70.62	23.68	23.49	23.59
13.07	16.25	14.57	20.63	19.19	19.97	23.48	21.17	22.39	42.48	10.67	27.49	51.63	41.00	46.48	24.79	22.30	23.63
7.38	10.20	8.78	14.70	14.28	14.50	9.02	9.51	9.25	1.76	22.62	7.59	53.75	52.75	53.27	14.00	13.91	13.96
21.41	28.64	24.75	17.07	18.39	17.67	14.28	17.15	15.55	...	...	...	45.52	48.17	46.76	18.98	20.68	19.65
6.50	11.94	9.12	12.76	13.04	12.89	8.33	8.29	8.31	...	...	...	21.13	18.67	19.93	12.06	12.11	12.09
15.66	13.16	14.51	15.38	16.72	16.01	11.20	15.48	13.05	28.19	45.73	35.97	74.40	71.93	73.23	17.24	18.64	17.90
17.35	22.28	19.51	17.08	19.78	18.31	10.72	16.65	12.64	8.17	7.31	7.79	90.33	118.76	102.72	18.43	21.83	19.96
15.38	18.77	16.94	16.17	16.92	16.52	15.27	15.11	15.20	15.76	21.54	18.16	49.99	46.68	48.40	17.79	16.29	18.02
14.61	17.68	16.02	17.84	18.51	18.18	21.47	21.32	21.40	15.29	21.39	18.00	50.77	47.49	49.20	20.17	20.47	20.31

## IMPERIAL STATEMENT No. VI.—Deaths registered from different

1	2	3	4			5	6	7	8	9	10	
No.	Districts and towns.	Population according to the Census of 1931.	Births.			Birth-rate.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and Diarrhoea.	Respiratory diseases.
			Male.	Female.	Total.							
<b>DISTRICTS EXCLUDING TOWNS.</b>												
<b>SURMA VALLEY.</b>												
1	Cachar ... ..	522,616	9,312	8,827	18,039	34.52	1,075	...	...	6,125	903	769
2	Sylhet ... ..	2,679,999	50,958	47,731	98,689	36.82	4,040	43	...	36,335	2,676	1,067
	<b>Total ... ..</b>	<b>3,202,615</b>	<b>60,170</b>	<b>56,558</b>	<b>116,728</b>	<b>36.45</b>	<b>5,115</b>	<b>43</b>	<b>...</b>	<b>42,460</b>	<b>3,579</b>	<b>1,836</b>
<b>ASSAM VALLEY.</b>												
3	Goalpara ... ..	861,306	14,259	13,552	27,811	32.29	27	65	...	19,797	119	94
4	Kamrup ... ..	937,718	10,819	9,844	20,663	22.04	85	66	...	10,748	303	172
5	Darrang ... ..	572,853	8,414	8,073	16,487	28.78	109	20	...	7,831	906	423
6	Nowgong ... ..	552,168	5,559	5,199	10,758	19.49	22	1	...	5,441	301	154
7	Sibangar ... ..	910,151	13,433	12,701	26,134	28.71	53	31	...	9,735	1,948	974
8	Lakhimpur ... ..	696,668	11,078	10,414	21,492	30.85	66	8	...	6,898	1,774	1,579
	<b>Total ... ..</b>	<b>4,530,864</b>	<b>63,562</b>	<b>59,783</b>	<b>123,345</b>	<b>27.23</b>	<b>362</b>	<b>191</b>	<b>...</b>	<b>60,450</b>	<b>5,351</b>	<b>3,196</b>
	<b>Total of districts excluding towns.</b>	<b>7,733,479</b>	<b>123,732</b>	<b>116,341</b>	<b>240,073</b>	<b>31.03</b>	<b>5,477</b>	<b>234</b>	<b>...</b>	<b>102,910</b>	<b>8,939</b>	<b>5,032</b>
<b>TOWNS.</b>												
<b>SURMA VALLEY.</b>												
1	Silchar ... ..	13,069	122	139	261	19.97	15	...	...	34	21	23
2	Hailakandi ... ..	2,062	31	31	62	30.06	2	...	...	12	3	2
3	Hafong ... ..	1,124	16	15	31	27.53	...	...	...	5	3	10
4	Sylhet ... ..	21,435	336	308	644	30.04	10	...	...	46	29	27
5	Karimganj ... ..	5,691	108	89	188	33.03	1	...	...	29	9	10
6	Maulvi Bazar ... ..	4,314	47	52	99	22.94	2	...	...	23	...	1
7	Habiganj ... ..	7,577	139	138	277	36.56	...	...	...	26	10	6
8	Sunamganj ... ..	5,336	116	96	206	38.68	...	...	...	35	7	2
	<b>Total ... ..</b>	<b>60,538</b>	<b>915</b>	<b>833</b>	<b>1,768</b>	<b>29.22</b>	<b>30</b>	<b>...</b>	<b>...</b>	<b>210</b>	<b>82</b>	<b>81</b>

causes in the districts and towns of the province of Assam during the year 1933.

		11					12	13	14								15	
		Injuries.					All other causes.	Total.	Ratio of deaths per 1,000 of population.								No.	
Suicide.		Wounds and accidents.	Rabies.	Snakes and wild animals.	Total.	Cholera.			Small-pox.	Plague.	Fever.	Dysentery and Diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	From all causes.		
Male.	Female.															For the year.		Mean of previous five years.
8	...	124	2	10	144	2,947	11,963	2.06	...	...	11.73	1.73	1.47	.28	5.64	22.89	21.27	1
47	27	740	7	44	865	19,058	64,084	1.51	.02	...	13.55	1.00	.40	.32	7.11	23.91	21.36	2
55	27	864	9	54	1,009	22,005	76,047	1.80	.01	...	13.26	1.12	.57	.32	6.87	23.75	21.34	3
23	7	77	3	38	148	257	20,507	.03	.06	...	22.98	.14	.11	.17	.30	23.81	22.75	3
27	34	83	13	38	195	1,349	12,818	.09	.07	...	11.46	.32	.18	.21	1.33	13.67	13.20	4
13	13	70	3	42	141	1,965	11,395	.19	.03	...	13.67	1.58	.74	.25	3.43	19.89	18.72	5
6	9	29	3	17	74	615	6,608	.04	.002	...	9.85	.54	.28	.13	1.11	11.97	13.41	6
28	14	118	7	28	195	3,403	16,339	.06	.03	...	10.70	2.14	1.07	.21	3.74	17.95	15.96	7
38	22	118	8	34	220	3,677	14,022	.09	.01	...	9.90	2.55	1.98	.31	5.28	20.13	17.01	8
135	99	505	37	197	973	11,166	81,689	.08	.04	...	13.34	1.18	.70	.21	2.46	18.02	16.88	9
190	126	1,369	46	251	1,982	33,171	157,736	.71	.03	...	13.31	1.15	.65	.26	4.29	20.40	18.73	10
...	...	6	...	...	6	51	150	1.15	...	...	2.60	1.61	1.76	.46	3.90	11.48	10.94	1
...	...	1	...	...	1	22	42	.99	...	...	5.99	1.50	.99	.50	10.99	20.98	16.48	2
1	...	2	...	...	3	12	33	...	...	...	4.45	2.67	8.88	2.67	10.67	29.36	2.67	3
...	...	4	...	...	4	198	314	.47	...	...	2.15	1.35	1.26	.19	9.24	14.65	13.90	4
...	...	5	1	...	6	45	100	.18	...	...	5.10	1.58	1.76	1.05	7.91	17.57	14.94	5
...	...	...	...	...	...	31	57	.46	...	...	5.33	...	.23	...	7.20	13.21	13.44	6
...	1	11	1	...	13	83	138	...	...	...	3.43	1.32	.79	1.72	10.95	18.21	17.82	7
2	...	8	...	...	10	52	106	...	...	...	6.57	1.31	.38	1.88	9.76	19.90	19.71	8
3	1	37	2	...	43	494	940	.50	...	...	3.47	1.35	1.34	.71	8.16	15.53	14.22	9

## IMPERIAL STATEMENT No. VI.—Deaths registered from different causes

1	2	3	4			5	6	7	8	9	10	
No.	Districts and towns.	Population according to the Census of 1901.	Births.			Birth-rate.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.
			Male.	Female.	Total.							
<b>TOWNS—contd.</b>												
<b>ASSAM VALLEY.</b>												
9	Dhubri	9,475	171	143	314	33.28	...	1	...	35	14	23
10	Goalpara	6,415	87	76	163	25.41	...	...	...	40	7	4
11	Gauripur	5,592	85	79	164	29.33	...	8	...	46	9	3
12	Gauhati	21,797	319	335	654	30.00	1	...	...	105	45	71
13	Barpeta	13,777	445	387	832	60.39	...	1	...	188	34	28
14	Palaabari	3,454	88	75	163	47.19	...	...	...	20	5	13
15	Tezpur	10,268	145	114	259	25.22	...	1	...	33	27	32
16	Mangaldai	1,695	24	21	45	26.53	...	...	...	16	3	4
17	Nowgong	10,413	197	164	361	34.67	...	...	...	41	21	43
18	Jorhat	8,334	139	138	277	33.24	...	...	...	44	24	16
19	Sibsagar	6,669	87	110	197	29.54	...	...	...	50	5	5
20	Golaghat	4,688	79	52	131	27.94	...	1	...	16	3	8
21	Nazira	3,484	58	57	115	33.01	...	...	...	25	2	3
22	Dibrugarh	18,734	221	203	424	22.63	...	1	...	53	48	67
23	North Lakhimpur	2,129	31	33	64	30.19	...	...	...	15	6	5
24	Doom Dooma	1,900	10	16	26	13.68	...	...	...	16	1	2
25	Tinsukia	5,160	49	39	88	17.05	...	...	...	27	1	4
	Total	133,936	2,235	2,042	4,277	31.93	1	13	...	779	255	331
	Total for the towns	194,474	3,150	2,895	6,045	31.08	31	13	...	980	337	412
	Total for the Province	7,927,913	1,26,832	1,19,236	2,46,118	31.04	5,508	247	...	1,03,890	9,267	5,444

This table includes municipalities and small towns in which

*Supplementary (optional) Statement*

Towns.	1		2		3		4		5		6	
	Malaria.		Enteric fever.		Measles.		Relapsing fever.		Eala axor.		Other fevers.	
	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.
Silchar	27	...	3	...	...	...	...	...	1	...	3	...
Sylhet	1	...	7	...	...	...	...	...	...	...	38	...
Habiganj	16	...	1	...	...	...	...	...	1	...	8	...
Karimganj	18	...	...	...	1	...	...	...	2	...	8	...
Gauhati	19	...	16	...	...	...	...	...	8	...	62	...
Barpeta	19	...	...	...	...	...	...	...	...	...	169	...
Dhubri	5	...	3	...	...	...	...	...	3	...	24	...
Goalpara	33	...	...	...	...	...	...	...	7	...	...	...
Tezpur	17	...	1	...	2	...	...	...	4	...	9	...
Nowgong	34	...	4	...	...	...	...	...	3	...	...	...
Jorhat	2	...	2	...	2	...	...	...	3	...	35	...
Dibrugarh	7	...	11	...	...	...	...	...	...	...	35	...
Shillong	18	...	10	...	...	...	...	...	...	...	21	...

This table includes municipalities and small towns in which

on the districts and towns of the province of Assam during the year 1933--concluded.

11		12		13		14										15					
Injuries.						Ratio of deaths per 1,000 of population.															
Suicide.		Wounds and accidents.	Rabies.	Snakes and wild animals.	Total.	All other causes.	Total.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	From all causes.		Number.			
Male.	Female.															For the year.	Mean of previous five years.				
...	...	5	...	...	5	92	170	...	11	...	3.71	1.48	2.44	.53	9.75	18.02	17.27	9			
1	...	2	...	...	2	31	85	...	...	...	6.23	1.09	.62	.47	4.83	13.25	15.74	10			
...	...	...	...	...	...	29	95	...	1.43	...	8.23	1.61	.54	...	5.19	16.99	19.31	11			
...	...	16	...	...	16	175	413	.05	...	...	4.82	2.06	3.26	.73	8.03	18.95	15.32	12			
...	...	1	...	...	1	88	240	...	.07	...	13.65	2.47	2.03	.07	6.39	24.63	23.07	13			
...	...	1	1	...	2	24	64	...	...	...	5.79	1.45	3.76	.58	6.95	18.33	16.50	14			
1	1	6	...	...	8	81	182	...	.09	...	3.21	2.63	3.12	.78	7.89	17.72	23.86	15			
...	...	2	...	...	2	9	34	...	...	...	9.43	1.77	2.36	1.18	5.31	20.05	17.69	16			
...	1	7	1	...	9	77	191	...	...	...	3.94	2.02	4.13	.86	7.39	18.34	17.96	17			
...	...	2	...	...	2	83	169	...	...	...	5.28	2.88	1.92	.24	9.96	20.27	14.52	18			
...	...	...	...	...	...	6	66	...	...	...	7.59	.75	.75	...	.90	9.90	13.95	19			
...	...	2	...	...	2	57	87	...	.21	...	3.41	.64	1.70	.43	12.16	18.56	17.06	20			
...	...	3	...	...	3	10	43	...	...	...	7.18	.57	.86	.86	2.87	12.34	17.80	21			
...	...	19	4	...	23	142	334	...	.05	...	2.83	2.56	3.58	1.23	7.57	17.83	18.63	22			
...	...	...	...	...	...	14	40	...	...	...	7.08	2.83	2.36	...	6.60	18.87	21.70	23			
...	...	...	...	...	...	1	20	...	...	...	8.42	.58	1.05	...	.53	10.53	16.32	24			
...	...	1	...	...	1	12	45	...	...	...	5.23	.19	.78	.19	2.33	8.72	8.83	25			
2	2	67	2	4	77	931	2,378	.007	.09	...	5.75	1.91	2.47	.57	6.95	17.75	17.59				
5	3	104	4	4	129	1,425	3,818	.16	.66	...	5.04	1.73	2.12	.62	7.32	17.06	16.54				
195	129	1,473	50	255	2,102	24,596	1,61,054	.69	.93	...	13.10	1.17	.69	.27	4.36	20.31	18.67				

registration of vital statistics is compulsory.

VI(a) for the year 1933.

7		8		9		10		11		12		Deaths under one year.			Infant mortality rate.
Dysentery.		Diarrhoea.		Pneumonia.		Phthisis.		Other respiratory diseases.		Deaths from child-birth.					
Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.		Male.	Female.	Total.		
11	...	10	...	9	...	2	...	12	...	7	5	13	18	68.97	
23	...	6	...	15	...	1	...	11	...	15	51	48	99	153.73	
7	...	3	...	2	...	3	...	1	...	6	34	25	59	213.00	
5	...	4	...	5	...	1	...	4	...	4	21	11	32	170.21	
30	...	15	...	48	...	16	...	7	...	20	36	39	75	114.68	
26	...	8	...	12	...	2	...	14	...	7	47	37	84	100.96	
10	...	4	...	3	...	9	...	11	...	6	20	18	38	121.02	
7	...	...	...	4	...	...	...	...	...	...	11	7	18	110.43	
22	...	5	...	8	...	13	...	11	...	6	17	10	27	104.25	
18	...	3	...	34	...	3	...	6	...	1	23	15	38	105.26	
20	...	4	...	6	...	7	...	3	...	2	18	16	34	122.74	
37	...	11	...	19	...	21	...	27	...	11	29	20	49	115.57	
22	...	3	...	42	...	12	...	34	...	3	19	19	38	71.43	

registration of vital statistics is compulsory.

## IMPERIAL STATEMENT No. VII.—Deaths registered from Cholera in the

Number.	Districts.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.
		Number in each district.	Number from which deaths from cholera were reported.	Number in each district.	Number from which deaths from cholera were reported.					
1	2	3	4	5	6	7	8	9	10	11
<b>SURMA VALLEY.</b>										
1	Cachar ...	13	12	1,607	356	...	...	1	1	5
2	Sylhet ...	40	37	11,717	1,451	1	31	41	111	238
	Total ...	53	49	13,324	1,807	1	31	42	112	243
<b>ASSAM VALLEY.</b>										
3	Goalpara ...	18	7	3,188	29	...	1	4	8	5
4	Kamrup ...	16	11	2,738	8	6	5	3	11	9
5	Darrang ...	14	8	1,978	42	15	13	3	3	6
6	Nowgong ...	12	6	2,323	8	...	...	3	...	...
7	Sibsagar ...	17	7	2,284	6	4	...	4	5	3
8	Lakhimpur ...	17	3	2,408	3	2	1	4	6	2
	Total ...	94	42	15,009	96	27	20	21	33	25
	Total for the Province	147	91	28,333	1,903	28	51	63	145	268

## IMPERIAL STATEMENT No. VIII.—Deaths registered from

Number.	Districts.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.	June.	July.
		Number in each district.	Number from which deaths from small-pox were reported.	Number in each district.	Number from which deaths from small-pox were reported.							
1	2	3	4	5	6	7	8	9	10	11	12	13
<b>SURMA VALLEY.</b>												
1	Cachar ...	13	...	1,607	...	...	...	...	...	...	...	...
2	Sylhet ...	40	9	11,717	57	1	1	4	...	2	8	6
	Total ...	53	9	13,324	57	1	1	4	...	2	8	6
<b>ASSAM VALLEY.</b>												
3	Goalpara ...	18	10	3,188	49	16	19	6	6	11	3	3
4	Kamrup ...	16	12	2,738	20	5	...	6	9	18	6	6
5	Darrang ...	14	9	1,978	13	3	1	2	2	3	4	4
6	Nowgong ...	12	1	2,323	1	...	...	...	...	...	...	...
7	Sibsagar ...	17	9	2,284	4	...	3	1	2	2	9	4
8	Lakhimpur ...	17	4	2,408	3	2	...	1	1	2	...	...
	Total ...	94	45	15,009	89	26	23	16	20	36	22	17
	Total for the Province	147	54	28,333	146	27	24	20	20	38	30	23

*districts of Assam during each month of the year 1933.*

June.	July.	August.	September.	October.	November.	December.	Total.			Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
6	13	7	22	527	473	37	537	555	1,092	1.89	2.18	2.03	.34	1
120	24	5	95	394	1,502	1,491	2,145	1,908	4,053	1.52	1.45	1.40	1.19	2
126	37	12	117	921	1,975	1,578	2,682	2,463	5,145	1.58	1.57	1.58	1.05	3
...	...	...	1	2	5	1	16	11	27	.03	.02	.03	1.21	4
14	8	7	4	14	2	3	60	26	86	.12	.06	.09	1.16	5
43	7	2	3	11	3	...	71	33	109	.22	.14	.19	.55	6
8	1	1	3	4	...	2	11	11	22	.03	.05	.04	.27	7
10	5	7	7	3	5	...	30	23	53	.06	.05	.06	.17	8
...	11	6	20	9	2	3	33	33	66	.03	.11	.09	.06	...
75	32	23	38	43	17	9	221	142	363	.09	.07	.08	.62	...
201	69	35	155	964	1,992	1,537	2,903	2,605	5,508	.69	.70	.69	.79	...

*Small-pox in the districts of Assam during each month of the year 1933.*

August.	September.	October.	November.	December.	Total.			Number of deaths among children.		Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
					Male.	Female.	Total.	Under 1 year.	One to 10 years.	Male.	Female.	Total.		
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
...	...	...	...	...	...	...	...	...	...	...	...	...	.41	1
8	6	...	2	5	24	19	43	...	...	.02	.01	.02	.51	2
8	6	...	2	5	24	19	43	...	...	.01	.01	.01	.49	...
6	...	3	1	...	46	28	74	11	9	.10	.07	.08	.54	3
3	9	3	2	...	31	36	67	8	12	.06	.08	.07	.22	4
...	1	...	...	1	9	12	21	...	1	.03	.04	.04	.07	5
1	...	...	...	...	1	...	1	...	...	.003	...	.002	.01	6
3	2	...	5	1	19	13	32	5	7	.04	.03	.03	.05	7
1	1	1	...	...	6	3	9	...	2	.02	.01	.01	.15	8
14	13	7	8	2	112	92	204	24	31	.04	.04	.04	.19	...
22	19	7	10	7	136	111	247	24	31	.03	.02	.03	.32	...



## IMPERIAL STATEMENT No. IX.—Deaths registered from Fevers

Number.	Districts.				Circles of Registration.		Villages.		January.	February.	March.	April.	May.
					Number in each district.	Number from which deaths from fevers were reported.	Number in each district.	Number from which deaths from fevers were reported.					
1	2	3	4	5	6	7	8	9	10	11			
<b>SURMA VALLEY.</b>													
1	Cachar	...	...	13	13	1,697	513	547	397	440	424	542	
2	Sylhet	...	...	40	40	11,717	11,717	3,104	2,639	2,357	2,527	2,649	
	Total			53	53	13,324	12,230	3,651	3,036	2,797	2,951	3,191	
<b>ASSAM VALLEY.</b>													
3	Goalpara	...	...	18	17	3,188	3,166	1,948	1,419	1,274	1,067	1,716	
4	Kamrup	...	...	16	15	2,738	704	767	600	670	984	1,162	
5	Darrang	...	...	14	13	1,978	1,402	596	519	381	713	635	
6	Nowgong	...	...	12	11	2,323	84	522	382	360	571	338	
7	Sibsagar	...	...	17	17	2,284	613	670	477	458	480	767	
8	Lakhimpur	...	...	17	17	2,498	1,447	469	360	361	474	446	
	Total			94	90	15,009	7,416	4,972	3,757	3,504	4,889	5,066	
	Total for the Province			147	143	28,333	19,646	8,623	6,793	6,301	7,840	8,257	

## IMPERIAL STATEMENT No. X.—Deaths registered from

Number.	Districts.				Circles of Registration.		Villages.		January.	February.	March.	April.	May.
					Number in each district.	Number from which deaths from dysentery and diarrhoea were reported.	Number in each district.	Number from which deaths from dysentery and diarrhoea were reported.					
1	2	3	4	5	6	7	8	9	10	11			
<b>SURMA VALLEY.</b>													
1	Cachar	...	...	13	12	1,697	138	69	38	69	78	105	
2	Sylhet	...	...	40	38	11,717	1,661	227	158	151	185	219	
	Total			53	50	13,324	1,799	296	196	220	263	324	
<b>ASSAM VALLEY.</b>													
3	Goalpara	...	...	18	15	3,188	73	9	9	10	22	12	
4	Kamrup	...	...	16	15	2,738	63	25	13	26	22	41	
5	Darrang	...	...	14	13	1,978	255	71	45	13	73	88	
6	Nowgong	...	...	12	11	2,323	27	14	13	13	49	39	
7	Sibsagar	...	...	17	17	2,284	135	109	73	85	125	162	
8	Lakhimpur	...	...	17	16	2,498	189	74	64	82	150	130	
	Total			94	87	15,009	742	302	217	269	441	467	
	Total for the Province			147	137	28,333	2,541	598	413	489	704	791	

*in the districts of Assam during each month of the year 1933.*

June.	July.	August.	September.	October.	November.	December.	Total.			Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
756	619	537	506	456	509	443	3,223	2,953	6,176	11.32	11.62	11.46	10.69	1
3,370	3,729	2,888	2,645	3,653	3,668	3,865	19,242	17,252	36,494	13.67	13.10	13.40	11.14	2
4,126	4,348	3,425	3,151	3,509	4,177	4,308	21,465	20,205	42,670	13.27	12.86	13.08	11.07	
1,898	1,949	1,583	1,350	1,433	1,609	2,019	11,115	8,803	19,918	23.63	21.34	22.56	19.46	3
1,688	1,111	661	586	921	863	1,048	5,836	5,225	11,061	11.37	11.27	11.32	9.39	4
885	723	606	625	773	666	758	4,147	3,733	7,880	13.08	13.94	13.47	12.31	5
624	699	343	471	410	340	422	2,879	2,603	5,482	9.64	9.86	9.74	10.62	6
1,001	1,172	1,026	920	1,064	879	936	5,122	4,748	9,870	10.32	10.86	10.58	9.26	7
657	591	553	774	835	790	699	3,715	3,294	7,009	9.31	10.12	9.67	9.11	8
6,753	6,245	4,772	4,726	5,436	5,198	5,902	32,514	28,406	61,220	13.15	13.09	13.12	11.72	
10,879	10,593	8,197	7,877	8,945	9,375	10,910	55,279	48,611	1,03,890	13.20	12.99	13.10	11.45	

*Dysentery and Diarrhoea in the districts of Assam during each month of the year 1933.*

June.	July.	August.	September.	October.	November.	December.	Total.			Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
63	72	68	79	142	81	66	457	473	930	1.60	1.86	1.73	2.06	1
193	194	107	216	269	359	460	1,446	1,285	2,731	1.63	.98	1.00	1.68	2
256	266	175	295	404	440	526	1,903	1,758	3,661	1.12	1.12	1.12	1.24	
23	20	8	1	13	11	6	89	60	149	.19	.15	.17	.29	3
42	55	34	35	37	43	14	223	164	387	.43	.35	.40	.57	4
112	103	86	83	84	80	63	527	409	936	1.66	1.53	1.60	1.47	5
42	25	21	23	32	21	30	178	144	322	.59	.55	.57	.46	6
216	201	230	186	235	218	142	1,084	898	1,982	2.18	2.05	2.13	1.94	7
200	207	189	234	250	158	102	965	895	1,860	2.34	2.75	2.52	1.76	8
640	611	568	552	651	531	357	3,036	2,570	5,606	1.22	1.18	1.20	1.07	
896	877	743	847	1,055	971	883	4,939	4,328	9,267	1.18	1.16	1.17	1.14	

## IMPERIAL STATEMENT No. XI.—Deaths registered from

Number.	Districts.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.
		Number in each district.	Number from which deaths from respiratory diseases were reported.	Number in each district.	Number from which deaths from respiratory diseases were reported.					
1	2	3	4	5	6	7	8	9	10	11
<b>SURMA VALLEY.</b>										
1	Cachar ... ..	13	13	1,607	122	84	80	78	61	72
2	Sylhet ... ..	40	37	11,717	444	133	126	85	104	94
	Total ... ..	53	50	13,324	566	217	206	163	165	166
<b>ASSAM VALLEY.</b>										
3	Goalpara ... ..	18	13	3,188	41	12	8	9	9	9
4	Kamrup ... ..	16	14	2,738	24	36	25	38	36	26
5	Darrang ... ..	14	13	1,978	86	30	21	18	33	29
6	Nowgong ... ..	12	8	2,323	18	22	15	15	43	15
7	Sibsagar ... ..	17	15	2,284	52	82	54	72	72	73
8	Lakhimpur ... ..	17	15	2,498	66	114	119	132	121	106
	Total ... ..	94	78	15,009	287	296	242	284	314	258
	Total for the Province ...	147	128	28,333	853	513	448	447	479	424

## IMPERIAL STATEMENT No. XII.—Deaths registered from plague

Number.	Districts.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.
		Number in each district.	Number from which deaths from plague were reported.	Number in each district.	Number from which deaths from plague were reported.					
1	2	3	4	5	6	7	8	9	10	11
<b>SURMA VALLEY.</b>										
1	Cachar ... ..	13	...	1,607	...	...	...	...	...	...
2	Sylhet ... ..	40	...	11,717	...	...	...	...	...	...
	Total ... ..	53	...	13,324	...	...	...	...	...	...
<b>ASSAM VALLEY.</b>										
3	Goalpara ... ..	18	...	3,188	...	...	...	...	...	...
4	Kamrup ... ..	16	...	2,738	...	...	...	...	...	...
5	Darrang ... ..	14	...	1,978	...	...	...	...	...	...
6	Nowgong ... ..	12	...	2,323	...	...	...	...	...	...
7	Sibsagar ... ..	17	...	2,284	...	...	...	...	...	...
8	Lakhimpur ... ..	17	...	2,498	...	...	...	...	...	...
	Total ... ..	94	...	15,009	...	...	...	...	...	...
	Total for the Province ...	147	...	28,333	...	...	...	...	...	...



## APPENDIX II.

## PROVINCIAL.

Statement showing details of registration in compulsory areas.

Compulsory registration area.	Population according to the Census of 1901.	Estimated birth at 288 per 1,000 married women between the ages of 15 and 40.	Number of births registered during the year.	Estimated birth-rate per mille.	Registered birth-rate per mille.	Number of deaths registered during the year.		Death-rate per mille.		Number of prosecutions under Act IV (B.C.) of 1879.	Number of convictions.
						Including deaths in hospitals.	Excluding deaths in hospitals.	Including deaths in hospitals.	Excluding deaths in hospitals.		
1	2	3	4	5	6	7	8	9	10	11	12
Silchar ... ..	13,069		261		19.97	150	107	11.48	8.19	...	...
Hailakandi ... ..	2,002		62		30.96	42	32	20.98	15.98	...	...
Hafong ... ..	1,124		31		27.58	33	22	29.36	19.57	...	...
Sylhet ... ..	21,435		644		30.04	314	283	14.65	13.20	6	6
Karimganj ... ..	5,691		188		33.03	100	83	17.57	14.58	11	10
Maulvi Bazar ... ..	4,314		99		22.94	57	50	13.21	11.59	6	6
Habiganj ... ..	7,577		277		36.56	138	118	18.21	15.57	14	12
Sunamganj ... ..	5,326		206		38.68	106	90	19.90	16.90	2	2
Dhubri ... ..	9,435		314		33.28	170	128	18.02	13.57	15	13
Goalpara ... ..	6,415	Not available.	163	Not available.	25.41	85	62	13.25	9.66	4	3
Gauripur ... ..	5,532		164		29.33	95	95	16.99	16.99	11	10
Gauhati ... ..	21,797		654		30.00	413	310	18.95	14.22	57	50
Barpeta ... ..	13,777		832		60.39	340	330	24.68	23.95	9	7
Palasbari ... ..	3,454		163		47.19	64	64	18.53	18.53	18	17
Tezpur ... ..	10,268		259		25.22	182	140	17.72	13.63	29	29
Mangaldai ... ..	1,696		45		26.53	34	19	20.05	11.20	13	7
Nowgong ... ..	10,413		361		34.67	191	144	18.34	13.83	21	20
Sibsagar ... ..	6,669		197		29.54	66	44	9.90	6.60	12	6
Nazira ... ..	3,484		115		33.01	43	43	12.34	12.34	12	9
Jorhat ... ..	8,334		277		33.24	169	127	20.27	15.24	37	31
Golaghat ... ..	4,668		131		27.94	87	59	18.56	12.59	24	20
Dibrugarh ... ..	12,181		424		22.63	334	192	17.83	10.25	9	8
Doom Dooma ... ..	1,900		26		13.68	20	20	10.53	10.53	2	2
North Lakhimpur ... ..	2,120		64		30.19	40	27	18.87	12.74	6	5
Tinsukia ... ..	5,100		88		17.05	45	45	8.72	8.72	4	2
Total ... ..	194,474		6,045		31.08	3,318	2,634	17.06	13.54	322	275

Statement No. 1—Showing particulars of Vaccination

District	No. of persons vaccinated	No. of persons vaccinated by Government	No. of persons vaccinated by private agencies	No. of persons vaccinated by voluntary agencies	No. of persons vaccinated by other agencies	Total number of persons vaccinated	Total number of persons vaccinated	
							By Government	By private agencies
1	1,476	1,476	0	0	0	1,476	1,476	0
2	7,752	7,752	0	0	0	7,752	7,752	0
3	1,522	1,522	0	0	0	1,522	1,522	0
4	275	275	0	0	0	275	275	0
5	1,412	1,412	0	0	0	1,412	1,412	0
<b>Total of Districts 1 to 5</b>	<b>12,437</b>	<b>12,437</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12,437</b>	<b>12,437</b>	<b>0</b>
6	1,476	1,476	0	0	0	1,476	1,476	0
7	4,210	4,210	0	0	0	4,210	4,210	0
8	2,752	2,752	0	0	0	2,752	2,752	0
9	1,522	1,522	0	0	0	1,522	1,522	0
10	275	275	0	0	0	275	275	0
11	1,412	1,412	0	0	0	1,412	1,412	0
12	1,476	1,476	0	0	0	1,476	1,476	0
<b>Total of Districts 6 to 12</b>	<b>12,437</b>	<b>12,437</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12,437</b>	<b>12,437</b>	<b>0</b>
13	1,476	1,476	0	0	0	1,476	1,476	0
14	4,210	4,210	0	0	0	4,210	4,210	0
15	2,752	2,752	0	0	0	2,752	2,752	0
<b>Total of Districts 13 to 15</b>	<b>8,438</b>	<b>8,438</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8,438</b>	<b>8,438</b>	<b>0</b>
<b>Total of Districts 1 to 15</b>	<b>20,875</b>	<b>20,875</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20,875</b>	<b>20,875</b>	<b>0</b>

STATEMENTS.  
VACCINATION.

District	No. of persons vaccinated	No. of persons vaccinated by Government	No. of persons vaccinated by private agencies	No. of persons vaccinated by voluntary agencies	No. of persons vaccinated by other agencies	Total number of persons vaccinated	Total number of persons vaccinated	
							By Government	By private agencies
1	1,476	1,476	0	0	0	1,476	1,476	0
2	7,752	7,752	0	0	0	7,752	7,752	0
3	1,522	1,522	0	0	0	1,522	1,522	0
4	275	275	0	0	0	275	275	0
5	1,412	1,412	0	0	0	1,412	1,412	0
<b>Total of Districts 1 to 5</b>	<b>12,437</b>	<b>12,437</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12,437</b>	<b>12,437</b>	<b>0</b>
6	1,476	1,476	0	0	0	1,476	1,476	0
7	4,210	4,210	0	0	0	4,210	4,210	0
8	2,752	2,752	0	0	0	2,752	2,752	0
9	1,522	1,522	0	0	0	1,522	1,522	0
10	275	275	0	0	0	275	275	0
11	1,412	1,412	0	0	0	1,412	1,412	0
12	1,476	1,476	0	0	0	1,476	1,476	0
<b>Total of Districts 6 to 12</b>	<b>12,437</b>	<b>12,437</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12,437</b>	<b>12,437</b>	<b>0</b>
13	1,476	1,476	0	0	0	1,476	1,476	0
14	4,210	4,210	0	0	0	4,210	4,210	0
15	2,752	2,752	0	0	0	2,752	2,752	0
<b>Total of Districts 13 to 15</b>	<b>8,438</b>	<b>8,438</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8,438</b>	<b>8,438</b>	<b>0</b>
<b>Total of Districts 1 to 15</b>	<b>20,875</b>	<b>20,875</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20,875</b>	<b>20,875</b>	<b>0</b>

## Statement No. I.—Showing particulars of Vaccinations in

No.	District.	Population of district according to the census of 1931.	Average population per square mile.	Average number of vaccinators employed throughout the season.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	Primary	
									Total.	Under one year.
1	2	3	4	5	6			7	8	9
<b>SURMA VALLEY AND HILL DIVISION.</b>										
					Male.	Female.	Total.			
1	Cachar	570,531	148	31	21,903	14,864	36,767	1,186	18,204	1,670
2	Sylhet	2,724,342	497	102	82,008	66,426	148,434	1,455	95,847	7,796
3	Khasi and Jaintia Hills	289,926	47	9	8,476	9,240	17,716	1,668	9,619	1,553
4	Naga Hills	178,844	42	6	4,621	3,957	8,578	1,430	6,865	634
5	Lushai Hills	124,404	15	8	6,947	4,601	11,548	1,413	6,393	426
	Total of Surma Valley and Hill Division	3,888,047	140	156	123,956	99,088	323,043	1,430	136,928	12,078
<b>ASSAM VALLEY DIVISION.</b>										
6	Goalpara	882,748	222	59	90,427	66,601	157,028	2,661	46,529	3,878
7	Kamrup	976,746	254	48	33,989	27,651	61,640	1,281	43,822	4,370
8	Darrang	584,817	206	35	24,569	19,113	43,682	1,242	28,802	3,049
9	Nowgong	562,581	144	27	19,563	13,452	33,015	1,223	27,150	7,340
10	Sibsagar	933,326	182	46	26,590	20,198	46,788	1,017	35,100	3,008
11	Lakhimpur	724,582	171	36	18,109	14,350	32,459	902	25,765	4,309
12	Garo Hills	190,911	61	7	14,605	13,178	27,783	3,969	8,174	5,016
	Total of Assam Valley Division	4,855,711	179	258	227,652	174,543	402,195	1,559	216,342	30,970
13	Manipur State	445,606	52	17	13,736	9,523	23,259	1,368	16,104	8,935
14	Sadiya Frontier Tract	53,345	17	3	2,659	1,442	4,101	1,307	2,579	192
15	Balipara Frontier Tract	5,148	9	1	342	223	565	565	473	30
	Total Vaccine Department	9,247,557	137	435	368,344	284,819	653,163	1,502	371,426	52,205
	Total Dispensaries	...	...	...	...	...	6,779	...	2,161	534
	Total tea-gardens by garden agencies	...	...	...	19,568	17,935	37,503	...	27,828	13,898
	Total Jails, Mental hospital, Police hospitals and Infectious Diseases hospitals.	...	...	...	6,208	79	6,287	...	241	2
	Total Railways	...	...	...	2,310	418	2,728	...	719	122
	Grand total	9,247,857	137	435	396,430	303,251	706,460	1,502	402,375	66,761

Sum

1	Total number of persons vaccinated.		Total number of operations performed.	
	Primary.	Re-vaccination.	Primary.	Re-vaccination.
2	3	4	5	6
By special staff (Statement I)	371,426	281,737	371,426	281,737
By dispensary staff (Statement III)	2,161	4,618	2,161	4,618
By other agencies—Tea-gardens, Railways, Jail hospitals, Police hospitals, Mental hospital and Infectious Diseases hospitals.	28,788	17,730	28,788	17,730
Total	402,375	304,085	402,375	304,085

## DEPARTMENT.

the Province of Assam during the year 1933-34.

vaccination.			Re-vaccination.			Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.	Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous five years.		Average annual number of death from small-pox during previous five years.	
Successful.							Primary.		Re-vaccination.	Primary.	Re-vaccination.	Number.	Ratio per 1,000.	Number.
Over age and under six years.	Total of all ages.	Unknown.	Total.	Successful.	Unknown.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Number.	Ratio per 1,000.	Number.	Ratio per 1,000.	
10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
11,739	15,779	649	18,563	7,043	1,717	89.88	41.81	40.00	3.57	9.25	31,907	55.93	38	.07
65,502	86,730	3,111	52,587	24,520	9,044	93.52	56.31	40.84	3.25	17.20	142,425	52.28	119	.04
6,326	9,603	3	8,097	4,011	556	99.86	53.19	49.96	.03	6.87	16,976	58.56	2	.007
4,375	5,009	413	1,713	1,057	54	77.63	63.71	33.92	6.02	3.15	5,562	31.10	...	...
3,385	4,901	747	5,155	2,423	1,042	86.80	58.91	58.87	11.68	20.21	7,558	60.75	...	...
91,837	122,022	4,923	86,115	39,054	12,413	92.43	52.99	41.43	3.59	14.41	204,427	52.58	159	.04
22,558	35,428	7,233	110,499	58,981	25,285	90.16	69.22	106.95	15.55	22.88	66,038	74.80	143	.16
29,246	38,544	2,353	17,818	7,934	4,786	92.94	60.88	47.58	5.37	26.86	47,179	48.30	157	.16
20,590	23,639	1,068	14,680	7,281	2,210	85.23	68.38	52.87	3.71	15.05	28,101	48.05	37	.06
14,917	25,034	7	5,865	3,812	26	92.45	65.29	51.38	.03	.44	28,042	49.85	1	.003
23,456	30,627	1,595	11,688	4,566	1,853	91.41	46.43	37.71	4.54	15.85	36,709	39.33	41	.04
17,058	23,675	597	6,694	4,381	556	94.07	71.37	38.72	2.32	8.31	22,046	30.43	85	.12
2,008	7,146	197	19,609	13,048	1,033	89.58	70.24	105.78	2.41	5.27	17,658	92.49	10	.05
129,838	184,153	13,060	186,853	100,003	35,749	91.03	66.18	68.62	6.06	19.13	245,773	60.62	474	.10
5,284	14,219	1,076	7,155	5,191	772	94.62	81.33	43.56	6.68	10.79	24,647	55.31	31	.07
932	1,937	413	1,522	525	205	89.43	39.86	46.15	16.01	13.47	4,436	83.16	...	...
472	432	21	92	65	8	95.58	77.38	96.54	4.44	8.70	354	68.76	...	...
227,778	322,763	19,483	281,737	144,838	49,147	91.71	62.27	50.56	5.25	17.44	479,637	51.86	664	.07
1,903	1,759	227	4,618	2,309	1,250	90.95	68.56	...	10.50	27.07	5,385	...	...	...
11,269	25,808	137	9,675	4,352	339	93.20	46.62	...	.49	3.50	31,809	...	...	...
27	190	16	6,046	2,249	759	84.44	42.54	...	6.64	12.55	2,054	...	...	...
285	621	22	2,009	571	671	89.10	42.68	...	3.06	33.40	936	...	...	...
240,352	351,141	19,885	304,085	154,319	52,166	91.80	61.26	54.66	4.94	17.15	519,821	56.21	664	.07

mary.

Percentage of successful cases in which results were known.		Average number of persons vaccinated by each vaccinator.		Number of children successfully vaccinated.		Ratio of successful vaccination per 1,000 of population.	Total cost of Department.	Average cost of each successful case.
Primary.	Re-vaccination.	Vaccinators employed.	Persons vaccinated by each vaccinator.	Under one year.	One and under six years.			
6	7	8	9	10	11	12	13	14
91.71	62.27	435	1,502	52,205	227,778	50.56	Rs. a. p. 1,09,548 1 6	Rs. a. p. 0 3 9
90.95	68.56	...	...	534	1,003	...	...	...
93.03	44.93	...	...	14,022	11,571	...	...	...
91.80	61.26	435	1,502	66,761	240,352	54.66	1,09,548 1 6	0 3 9





in the Province of Assam during the year 1933-34.

ditare.				Paid from—						Number of all successful vaccinations and re-vaccinations.	Average cost of each successful case.
Travelling allowance.	Contingencies.		Total cost.	Imperial Fund.	Provincial Fund.	Local Fund.	Municipalities.	Native States.	Total.		
16	17	18	19	20	21	22	23	24	25	26	27
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1,006 4 0	...	215 11 0	6,814 14 0	...	3,567 4 0	2,884 7 0	303 3 0	...	6,814 14 0	22,822	0 4 9
2,383 12 9	...	783 13 3	18,206 12 9	...	6,739 7 3	10,446 1 0	1,081 4 6	...	18,206 12 9	111,250	0 2 8
982 14 0	...	30 12 0	4,154 10 0	...	3,914 10 0	...	240 0 0	...	4,254 10 0	13,614	0 4 11
430 0 0	...	39 15 0	2,172 3 0	...	2,172 3 0	...	...	...	2,172 3 0	6,066	0 5 9
466 0 0	...	40 0 0	2,180 0 0	...	2,180 0 0	...	...	...	2,180 0 0	7,224	0 4 9
891 8 0	...	682 14 0	11,678 10 0	...	2,882 5 9	8,341 0 0	455 4 3	...	11,678 10 0	94,409	0 2 0
1,261 11 0	...	283 15 3	9,201 1 3	...	3,278 11 0	5,188 1 9	734 4 6	...	9,201 1 3	46,478	0 3 2
1,234 15 0	...	303 2 9	7,446 4 9	...	2,676 11 0	4,469 7 9	360 2 0	...	7,446 4 9	30,829	0 3 10
727 11 0	...	118 10 6	5,685 6 6	...	1,785 0 0	3,699 10 6	290 12 0	...	5,685 6 6	28,906	0 3 2
712 3 0	...	313 14 9	9,126 1 9	...	2,967 11 9	5,124 15 0	1,035 7 0	...	9,126 1 9	35,193	0 4 2
470 11 0	...	2 8 0	6,185 4 9	...	2,258 3 0	3,251 6 0	645 11 9	...	6,185 4 9	28,056	0 3 6
499 14 0	...	25 13 9	2,004 8 9	...	2,004 8 9	...	...	...	2,004 8 9	20,194	0 1 7
921 8 0	1,583 0 0	10 5 0	4,320 0 0	...	...	...	...	4,320 0 0	4,320 0 0	19,410	0 3 7
320 8 0	...	2 0 0	1,479 11 0	1,479 11 0	...	...	...	...	1,479 11 0	2,462	0 9 7
48 19 0	...	6 11 6	168 14 6	168 14 6	...	...	...	...	168 14 6	497	0 5 5
12,497 0 9	1,583 0 0	2,800 2 9	90,544 7 0	1,648 9 6	36,426 11 6	43,255 1 0	5,234 1 0	4,320 0 0	90,894 7 0	467,691	0 3 1
...	...	11,610 11 6	18,663 10 6	...	18,663 10 6	...	...	...	18,663 10 6	...	...
12,497 0 9	1,583 0 0	14,470 14 3	1,00,548 1 6	1,648 9 6	55,090 6 0	43,255 1 0	5,234 1 0	4,320 0 0	1,00,548 1 6	467,691	0 3 9

in each of the districts

District	16	17	18	19	20	21	22	23	24	25	26	27
Assam	1,006 4 0	...	215 11 0	6,814 14 0	...	3,567 4 0	2,884 7 0	303 3 0	...	6,814 14 0	22,822	0 4 9
...	...	...	...	...	...	...	...	...	...	...	...	...
Total	12,497 0 9	1,583 0 0	14,470 14 3	1,00,548 1 6	1,648 9 6	55,090 6 0	43,255 1 0	5,234 1 0	4,320 0 0	1,00,548 1 6	467,691	0 3 9

Statement No. III.—Showing Dispensary Vaccination

Districts.	Number of dispensaries in each district to which a vaccinator is attached.	Average number of vaccinators attached to dispensaries during the year.	Total number of persons vaccinated.	Average number of persons vaccinated by each vaccinator.	Primary vaccination.				
					Total.	Successful.		Un-known.	
						Under one year.	Over one and under six years.		Total of all ages.
1	2	3	4	5	6	7	8	9	10
Cachar ...	...	...	...	...	...	...	...	...	...
Sylhet ...	...	...	572	...	239	9	178	212	14
Khasi and Jaintia Hills ...	...	...	77	...	39	19	17	86	3
Naga Hills ...	...	...	461	...	154	26	95	121	1
Lushai „ ...	...	...	759	...	382	70	86	330	18
Goalpara ...	...	...	686	...	50	7	28	46	3
Kamrup ...	...	...	...	...	...	...	...	...	...
Darrang ...	...	...	24	...	17	1	13	14	...
Nowgong ...	...	...	22	...	15	3	8	14	...
Sibsagar ...	...	...	27	...	1	...	...	1	...
Lakhimpur ...	...	...	110	...	36	7	27	86	...
Garohills ...	...	...	2,587	...	313	54	101	161	113
Manipur State ...	...	...	1,339	...	806	304	379	633	75
Sadiya Frontier Tract ...	...	...	96	...	91	33	56	89	...
Balipara Frontier Tract ...	...	...	19	...	18	1	15	16	...
Total ...	...	...	6,779	...	2,161	534	1,003	1,759	227

Comparative Statement No. IV.—Showing the number of persons primarily vaccinated in each of the under

Vaccinating Agents.	Persons							
	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.
	Year ending							
	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.	1931-32.
1	2	3	4	5	6	7	8	9
Government ...	18,858	17,945	29,979	27,812	34,589	27,786	65,524	69,339
Dispensaries ...	1,457	1,250	2,353	1,987	2,212	1,801	5,980	6,171
Municipal ...	4,991	4,726	4,881	4,624	5,009	4,787	5,881	5,443
Local Funds ...	262,227	248,759	268,846	256,726	301,565	286,393	312,404	291,569
Licensed vaccinators ...	...	...	...	...	...	...	...	...
Apprentices ...	2,952	2,877	733	700	900	885	1,092	1,059
Native States ...	16,325	11,961	18,089	15,370	16,972	14,655	18,304	15,995
Total ...	306,810	287,518	324,881	307,219	361,247	336,407	409,185	378,579

## VACCINATION.

*in the Province of Assam during the year 1933-34.*

Re-vaccination.			Percentage of successful cases in which the results were known.		Percentage of unknown cases to total cases.	
Total.	Successful.	Unknown.	Primary.	Re-vaccination.	Primary.	Re-vaccination.
11	12	13	14	15	16	17
...	...	...	...	...	...	...
383	143	43	94.22	49.31	5.85	12.91
38	4	15	100.00	17.39	7.69	39.47
807	245	19	79.09	85.07	.65	6.19
377	332	27	90.66	94.86	4.71	7.16
636	347	74	97.87	61.74	6.00	11.63
...	...	...	...	...	...	...
7	1	...	82.35	14.29	...	...
7	2	...	93.33	23.57	...	...
26	20	...	100.00	76.92	...	...
74	26	2	100.00	36.11	...	2.70
2,274	987	1,029	80.50	79.28	36.10	45.25
533	200	41	93.43	40.65	9.31	7.69
5	1	...	97.80	20.00	...	...
1	1	...	88.89	100.00	...	...
4,618	2,309	1,250	90.95	68.56	10.50	27.07

*and the number of those who were successfully vaccinated in the Province of Assam mentioned official years.*

primarily vaccinated.

Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.
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31st March—

1924-25.		1929-30.		1930-31.		1931-32.		1932-33.		1933-34.	
10	11	12	13	14	15	16	17	18	19	20	21
50,560	44,570	36,803	32,086	38,520	33,353	41,320	37,769	35,322	31,076	37,101	30,405
5,682	4,503	2,851	2,231	2,539	2,217	2,753	2,108	2,139	1,629	2,161	1,759
7,231	6,744	4,935	4,645	4,752	4,521	5,900	5,542	5,846	5,582	5,603	5,336
2 88,661	270,257	260,658	238,776	250,393	230,321	250,148	221,525	284,814	257,327	311,975	272,296
...	...	...	...	...	...	...	...	...	...	...	...
713	657	1,132	962	1,145	1,078	600	555	446	406	643	507
19,366	14,258	18,240	16,171	17,403	15,203	17,551	15,484	15,530	14,782	16,104	14,219
372,193	340,989	324,619	294,871	314,752	286,693	318,272	282,983	344,097	310,802	373,587	324,522

Statement No. V.—Showing particulars of Vaccination verified by Inspecting Officers for the year 1933-34.

District.	Total number of persons vaccinated.		Total number inspected.				Percentage of inspection to total number vaccinated.				Percentage of successful cases to total number inspected.				Percentage of successes reported by vaccinators.	
			By Assistant Directors of Public Health or Civil Surgeons.		By Native Superintendents or other Inspecting Officers.		By Assistant Directors of Public Health or Civil Surgeons.		By Native Superintendents or other Inspecting Officers.		By Assistant Directors of Public Health or Civil Surgeons.		By Native Superintendents or other Inspecting Officers.			
	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Cachar	18,204	18,563	2,030	1,186	7,908	4,888	11.15	6.29	43.44	26.33	91.37	32.79	81.53	29.61	80.88	41.91
Sylhet	56,086	52,990	4,915	2,008	45,713	22,358	5.12	3.79	47.58	43.34	95.13	46.21	53.60	35.49	93.52	56.31
Khasi and Jaintia Hills	9,658	8,135	55	19	4,736	3,958	.87	.23	49.04	40.00	100.00	52.63	90.83	75.26	99.86	55.9
Naga Hills	7,919	3,600	95	—	2,061	519	1.55	—	25.36	25.69	93.68	—	72.05	61.27	7.03	63.71
Lushai „	6,775	5,532	184	56	1,925	1,391	2.72	1.01	28.41	25.14	53.98	11.96	74.68	43.51	86.50	58.91
Goalpara	46,579	111,135	443	933	14,188	29,650	.98	.83	30.46	.26	74.49	31.61	77.67	45.74	69.16	69.12
Kamrup	43,822	17,818	2,566	365	21,344	6,490	5.86	3.66	48.71	.36	95.18	80.18	86.86	49.50	92.94	69.88
Darrang	28,819	14,687	2,063	665	11,248	3,849	7.16	4.51	39.03	26.21	82.55	44.68	77.74	42.13	80.23	58.38
Nowgong	27,165	5,872	3,140	1,019	22,509	4,180	11.62	17.35	52.98	71.19	97.68	66.63	93.49	61.24	92.45	65.29
Sibsagar	36,101	11,714	1,890	161	8,448	1,493	5.38	1.37	24.07	12.75	93.53	46.86	86.71	36.48	91.41	46.43
Lakhimpur	26,891	6,765	1,395	300	19,733	3,462	5.02	4.43	76.48	51.16	96.14	60.00	87.13	64.36	94.07	71.57
Garo Hills	8,487	21,883	386	625	1,431	3,659	4.55	2.86	16.58	16.68	83.66	51.84	82.46	42.33	83.38	70.24
Manipur State	16,910	7,688	1,021	15	7,408	1,466	6.04	.17	44.34	19.07	92.26	53.84	90.70	65.48	94.62	81.33
Sadiya Frontier Tract	2,670	1,627	119	153	899	956	4.48	10.62	33.67	61.29	94.12	39.67	79.79	30.77	89.43	39.86
Balipara Frontier Tract	491	93	59	8	29	5	12.02	5.60	5.91	5.38	64.74	50.00	89.65	60.00	10.28	77.38
Total	373,587	286,354	20,261	7,511	169,679	89,013	6.42	2.62	45.42	31.08	88.77	46.65	85.27	50.81	91.71	62.27

Statement No. VI.—Showing the number of vaccinations performed in Municipal towns on children under one year of age during the year 1933-34.

Districts.	Towns.	Number of births during the year.	Number of deaths amongst children under one year during the year.	Number of successful vaccinations on children under one year during the year ending 31st March 1934.	Date of extension of Vaccination Act to town.
1	2	3	4	5	6
Cachar	Silechar	257	23	42	21st January 1892.
	Hailakandi	63	7	43	10th November 1922.
Sylhet	Sylhet	604	106	358	1st October 1882.
	Habiganj	276	62	82	11th December 1913.
	Sunamganj	202	27	26	28th June 1915.
	Karimganj	200	28	53	27th July 1915.
Khasi & Jaintia Hills	Maulvi Bazar	92	11	73	16th April 1916.
	Shillong	584	47	243	21st June 1895.
Total of Surma Valley and Hill Division.		2,278	311	920	
Goalpara	Dhubri	296	41	144	13th February 1891.
	Goalpara	166	15	150	12th November 1890.
	Gauripur	179	33	63	15th September 1922.
Kamrup	Gaubhati	670	90	431	August 1882.
	Barpeta	847	89	501	29th October 1915.
Darrang	Tezpur	284	34	96	22nd May 1907.
	Mangaldai	36	6	21	12th October 1906.
Nowgong	Nowgong	354	39	241	7th April 1897.
Sibsagar	Sibsagar	215	19	18	21st January 1892.
	Jorhat	255	27	131	12th April 1892.
	Golaghat	140	20	20	24th March 1892.
	Nazira	106	17	9	1st December 1916.
Lakhimpur	Dibrugarh	439	52	235	September 1883.
	Doom Dooma	29	4	2	21st October 1918.
	Tinsukia	125	8	33	31st August 1922.
Total of Assam Valley Division.		4,141	493	2,095	
Total for the Province.		6,419	804	3,015	

Statement No. VII.—Showing, side by side the ratio (per 1,000 of population) of deaths

District.	1924-25.		1925-26.		1926-27.		1927-28.	
	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.
1	2	3	4	5	6	7	8	9
Cachar ... ..	·01	19,613	·05	21,904	·01	24,769	·15	41,331
Sylhet ... ..	·02	122,817	·06	139,006	·16	156,196	1·37	253,654
Khasi and Jaintia Hills ... ..	...	11,145	·004	13,547	·05	19,188	·28	63,020
Naga Hills ... ..	...	5,142	·006	4,859	...	8,740	·006	8,845
Lushai Hills ... ..	...	4,316	...	5,329	...	6,712	...	9,588
Goalpara ... ..	·19	27,680	·30	31,517	·57	42,533	1·68	65,943
Kamrup ... ..	·96	41,750	·69	39,986	1·32	48,991	·67	49,939
Darrang ... ..	·56	17,558	·22	20,353	·36	21,387	·10	25,860
Nowgong ... ..	·15	18,006	·02	20,389	·01	23,095	·005	26,443
Sibsagar ... ..	·26	23,748	2·09	40,821	3·40	61,006	·57	50,473
Lakhimpur ... ..	·02	16,576	·14	22,346	·38	24,436	·53	26,400
Garo Hills ... ..	...	7,832	·02	8,106	·50	23,994	·41	41,017
Manipur State ... ..	...	13,356	...	16,800	...	15,598	...	34,317
Sadiya Frontier Tract ... ..	·02	1,133	·09	1,353	·05	2,197	...	3,757
Balipara Frontier Tract ... ..	...	...	...	...	...	...	...	...
Total ... ..	·22	330,672	·45	385,816	·65	478,842	·79	700,587

from small-pox and the number of successful vaccinations during the ten years ending 1933-34.

1929-29.		1929-30.		1930-31.		1931-32.		1932-33.		1933-34.	
Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.	Ratio of deaths from small-pox.	Number of successful vaccinations.
10	11	12	13	14	15	16	17	18	19	20	21
1·61	65,942	·32	30,687	·04	19,418	...	19,255	...	24,418	...	22,822
1·79	219,845	·15	145,407	·04	129,243	·01	108,508	·004	116,176	·02	111,605
·06	29,559	·03	13,574	...	12,967	·003	14,098	...	15,222	...	13,654
...	5,374	...	5,845	...	5,325	...	6,044	...	6,758	...	6,432
...	10,632	...	11,771	...	5,037	...	4,914	...	7,499	...	7,986
1·20	49,433	·26	55,246	·61	51,704	·29	65,171	·30	110,298	·04	94,802
·37	49,392	·21	49,553	·29	49,825	·17	46,086	·17	41,043	·07	46,478
·10	26,664	·08	26,726	·15	35,005	·04	24,716	·05	28,454	·04	30,935
·06	26,871	·01	27,908	...	28,873	...	28,507	...	28,051	·002	28,922
·06	37,525	·02	39,509	·03	41,950	·07	34,567	·06	30,493	·04	35,214
·15	20,639	·26	21,346	·27	25,601	·11	18,877	·03	24,440	·008	28,118
·35	22,531	·06	21,541	·13	18,997	·15	14,948	·03	13,978	·06	21,342
...	41,077	...	30,444	...	19,284	...	18,726	...	20,313	...	20,293
...	4,793	...	4,385	·02	6,777	...	4,123	·09	2,878	...	2,552
...	...	...	...	...	...	...	291	...	478	...	514
·86	610,277	·14	483,942	·14	450,006	·07	408,831	·06	470,499	·03	471,669



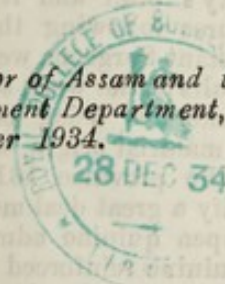


# GOVERNMENT OF ASSAM.

## The Governor and the Minister of Local Self-Government.

### Resolution on the Annual Public Health Report of the Province of Assam for the year 1933.

*Extract from the proceedings of the Governor of Assam and the Minister of Local Self-Government in the Local Self-Government Department, Public Health Branch, No. 4046 L.S.-G., dated the 5th November 1934.*



READ—

The Public Health Report for the year 1933.

#### RESOLUTION.

THE climatic condition of the province was on the whole normal during the year under report. Health conditions were however not entirely satisfactory, and there was a rise in the recorded provincial death rate from 18·96 in 1932 to 20·31 in 1933, not fully compensated by an increase in the birth rate from 30·06 to 31·04. So far as *kala azar* was concerned, the improvement of recent years was maintained, deaths falling from 987 to 749. The numbers under treatment actually rose from 11,958 in the previous year to 12,650, but this may be due to the vigour with which surveys were carried out. Attention has been focussed on the danger that a periodic cycle of increased incidence of this disease may set in, and it is not likely that the beginnings of such a trend could pass unnoticed. There were, however, increases of mortality under certain heads which pointed as forcibly as ever to the clamant needs of the province in sanitation. Sporadic cases of typhoid in the towns illustrated the defective character of municipal water supply, drainage and food control as shrewdly as increase of deaths from cholera, dysentery and fevers showed the sorry conditions in which forces largely natural compel the rural dweller to live.

2. As in the past many figures in the Report have to be read with some caution owing to the defective character of registration in rural, and it is to be feared in some urban areas. The possibility of improving present arrangements was canvassed during the year, but as the Director notes this is not possible without incurring large expenditure for the substitution of a more educated reporting staff. A Bill to replace the Bengal Births and Deaths Registration Act is now before the Council, but save in regularizing the vital statistics on tea gardens it is not likely that this will effect any real improvement in the position.

3. The death rate among children again rose substantially during this year. The Director describes the admirable efforts made by the Red Cross Association and its affiliated bodies to tackle this problem: these have awakened a great deal of public interest, which with steady pressure should be continually broadening in basis and in time have a pronounced effect upon the causes of infant mortality. Here, as in some other cases, efforts to ameliorate may by encouraging better reporting have contributed to the apparent rise in the figures.

4. The increase of deaths from cholera (from 4,971 to 5,508) was the result of a serious epidemic that started in Cachar and spread down the Surma Valley. This was met by a campaign in which record issues both of cholera vaccine (451,854 cc.) and bacteriophage (707,164 doses) were made, and which has been the subject of several most instructive and interesting reports. The campaign was rapidly effective, and paid high tribute to the earnestness of the Public Health Department and to the organizing capacity of the Civil Surgeons and the medical authorities in general. The scientific material gathered, together with the progress of experiments in Nowgong and Habiganj, was of much advantage in estimating for local and practical as well as for epidemiological purposes, the respective spheres of cholera vaccine and bacteriophage. As a further result the possibility of preparing measures in advance to meet such epidemics can now be, and is being, carefully studied.

5. Deaths from dysentery also rose, from 8,241 in 1932 to 9,267 in 1933. The Director pertinently points out that the increase is also found in Nowgong, where combined cholera and dysentery bacteriophage had been extensively administered for a period of four years. It appears important to study carefully how far this is due to the phage or its system of distribution being inoperative, and how far to other causes such as improvement in reporting as a result of the experiment.

6. Efforts to reduce the incidence of malaria continued by means of a special allotment. Numerous surveys were carried out through the Assam Medical Research Society's Staff and it is now intended to extend these surveys, and the practical measures following thereon, given the co-operation of the local bodies. Three Sub-Assistant Surgeons were added to the departmental staff for malarial duty. The results of the work so far appear generally encouraging and new knowledge of the factors is being constantly gained. "Fever," in a large proportion undoubtedly of malarial origin, were accountable for no less than 103,890 out of the total deaths in the province, 161,054. This fact justifies the expenditure incurred and would justify a great deal more. A further step taken during the year was the decision to cheapen quinine administration by distributing a new product of equal effectiveness, quinine reinforced Cinchona Febrifuge, which can be sold at annas 3 pies 9 for treatment, and to increase the number of selling agents. The popular demand for quinine was illustrated by an increase in the quinine sulphate treatments sold by these agents from 6,531 to 8,648. A malaria training class was established at the Pasteur Institute.

7. The incidence of small-pox fell, while there were 20,631 more vaccinations than in the previous year. The policy of applying compulsory measures in selected areas when there is a definite threat of outbreaks seems to have proved effective. To enforce compulsory vaccination in rural areas irrespective of the immediate risks of small-pox, as has been sometimes demanded, would require more direct action than is possible under the Epidemic Diseases Act, and would postulate a more complete organization, as well as a higher degree of popular education, than at present exist. The Director alludes to the need to increase the inspecting staff: this however is a question of funds which is bound up with the many other needs of the Department. A report received from the Director of the Pasteur Institute on the Vaccine Depot showed that it is urgently desirable to improve the conditions in which vaccine is manufactured, if it is not possible to remove the Depot to a better site than the present unsatisfactory location by the Gauhati road. Measures to effect the necessary improvement have been initiated, since removal would at present be too costly.

8. The recently enlarged activities of the department were responsible for the treatment of 2,089 cases of leprosy, 714 of yaws, and 3,603 minor eye complaints at the Public Health dispensaries. These results are satisfactory. There were 45 dispensaries equipped to deal with leprosy at the end of the year, and the number is being increased as funds permit. The progress of leprosy work however brings more and more to light the need for colonies and special institutions to provide for early cases.

9. The Governor and the Minister of Local Self-Government have read the Report with much interest and are able to congratulate the Department on a year's work that reflects much credit on their labours. They thank the Director for his interesting report.

ORDER.—Ordered that the Resolution be published in the *Assam Gazette* for general information.

By order of the Government of Assam,

SHILLONG :

H. G. DENNEHY,

The 5th November 1934. }

Secretary, Transferred Departments.

