

ANNUAL REPORT

ON

VACCINATION IN THE MADRAS PRESIDENCY

AND ON THE WORK OF THE

VACCINE SECTION OF THE KING INSTITUTE
OF PREVENTIVE MEDICINE, MADRAS

FOR THE YEAR

1914-15.

MADRAS:

PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS.

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1915.

D. No. 325/V.D.

OFFICE OF SANITARY COMMISSIONER,
MADRAS, 17th August 1915.

From

LIEUT.-COL. H. THOMSON, M.D., D.P.H., I.M.S.,
Acting Sanitary Commissioner for Madras,

To

THE SECRETARY TO GOVERNMENT,
LOCAL AND MUNICIPAL DEPARTMENT.

SIR,

I have the honour to forward herewith the report of the Director, King Institute, Guindy, on the working of the Vaccine Section of the Institute, and that of the Deputy Sanitary Commissioner, Madras, on the progress of vaccination in the Madras Presidency during the official year 1914-15.

2. *Vaccine Section of the King Institute, Guindy.*—The working of this section of the Institute was satisfactory. The cost of the section fell by nearly Rs. 6,000, the chief heads of expenditure showing decreases being "cost of calves including transport" and "Establishment charges". This has resulted in a reduction of the price of a case of vaccine from 4·84 pies in 1913-14 to 4·28 pies in 1914-15. The short expenditure under "cost of calves including transport" is due to the present convenient method of obtaining calves through private contractors deliverable at the Institute; under "Establishment charges," to the reversion of Assistant Director Major W. S. Patton, I.M.S., to military duty and the appointment of an Assistant Surgeon. Extra indents for vaccine during the year again show an increase. The submission of such indents should be discouraged except on occasions of sudden outbreaks of small-pox. An unusual feature of the year was the increased success rate secured during the hot months of the year (Table V printed in paragraph 8 of the Director's report). The Director is unable to find a satisfactory solution for this result. This may be due to unreliable returns received from the vaccinators.

The percentage of success districtwar show considerable variations (Table VI printed in paragraph 10 of the Director's report). Coimbatore again returned the worst results with a minimum rate of 76·59. The Deputy Sanitary Commissioner has been requested to investigate the causes of this low percentage.

3. *Vaccination Department.*—I agree generally with the Deputy Sanitary Commissioner's remarks in regard to the present staff of vaccinators. In giving effect to the new scheme, deserving vaccinators should be dealt with in the manner indicated by Government in G.O. No. 149 L., dated 23rd November 1904, paragraph 8, sub-paragraph 2. The future recruitment of vaccinators should be from amongst the men qualified according to paragraph 7 of the same Government Order.

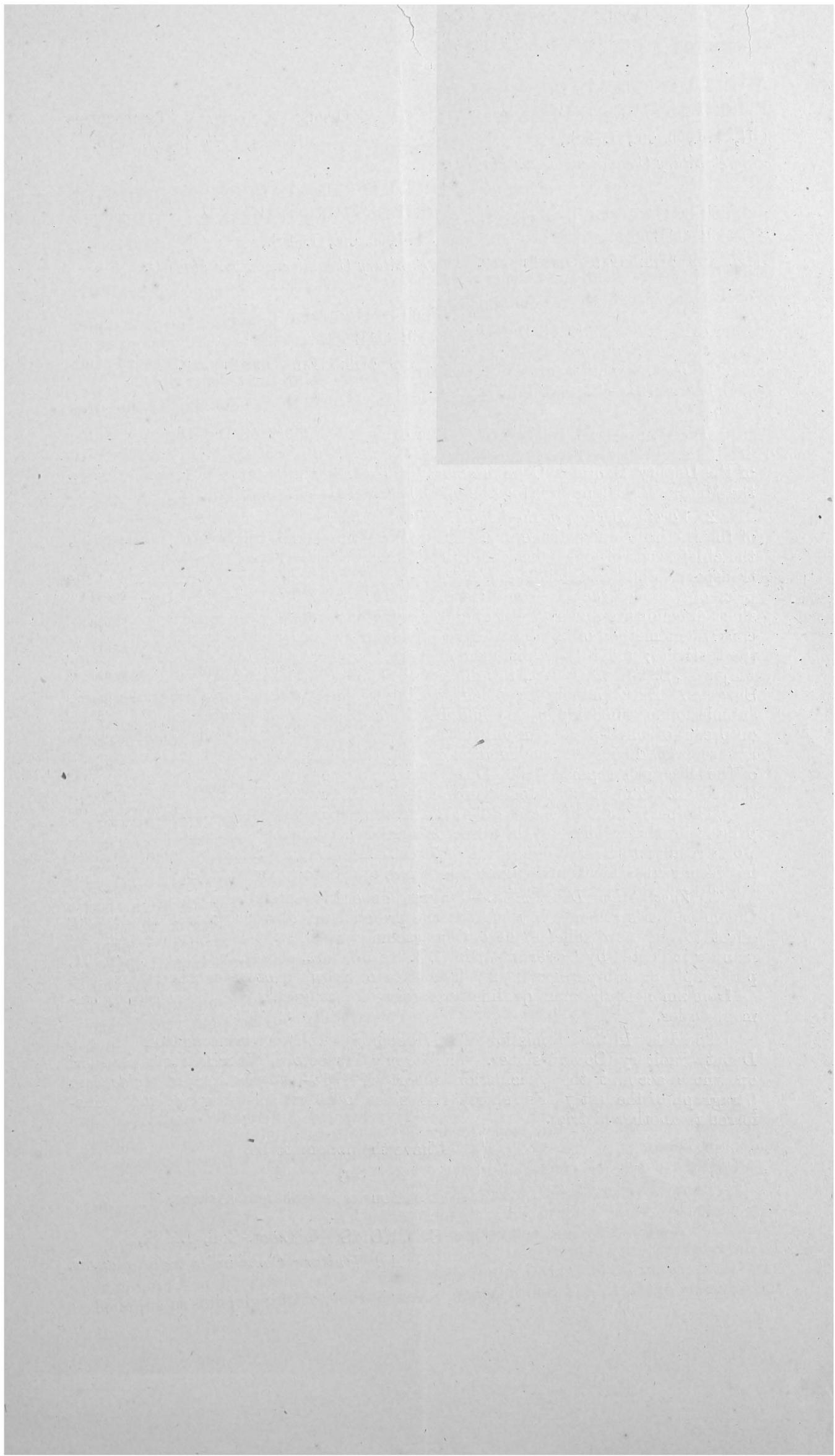
The delay in the submission of this report is explained in paragraph 5 by the Deputy Sanitary Commissioner. The Deputy Inspector of Vaccination of Ponneri on whose account the vaccination report of 1913-14 was delayed (*vide* last paragraph of the last year's report) has since been reduced in grade and transferred to another district.

I have the honour to be,

Sir,

Your most obedient servant,

H. THOMSON, Lieut.-Col., I.M.S.,
Ag. Sanitary Commissioner for Madras.



ANNEXURE I.

ANNUAL REPORT ON THE WORK OF THE VACCINE SECTION OF
THE KING INSTITUTE OF PREVENTIVE MEDICINE, GUINDY.

1914-15.

The total amount of vaccine supplied by the Institute during the year under report amounts to 1,983,417 cases. This is an increase over the previous year of 11,252 cases or 0·57 per cent. This figure of course constitutes a new record ; but as noted in last year any increase is likely to be by small increments only.

2. Table I shows the quantity of vaccine issued to various bodies for the quinquennium 1910-11 to 1914-15.

TABLE I.

Statement showing the quantity of vaccine supplied to various bodies from 1910-11 to 1914-15.

To whom supplied.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
Government officers including jails ...	58,086	46,722	41,902	47,172	20,951
Agency Tracts	27,830	25,160	27,130	23,150	25,060
Military Department	13,369	15,917	12,333	27,587	25,671
District Boards	1,522,650	1,561,366	1,560,341	1,625,926	1,649,070
Municipalities	179,034	177,185	173,255	179,330	178,980
The Superintendent of Vaccination, Secunderabad ... ... ...	...	...	...	...	19,530
The Vaccinator, Bolarum ... ...	...	...	...	...	1,480
Private Bodies	52,688	47,151	72,678	69,000	62,695
Total ...	1,853,657	1,873,501	1,887,639	1,972,165	1,983,417

The most marked feature shown by the table is the great fall in the amount supplied to "Government officers including jails." This fall amounts to no less than 56 per cent., but the total quantities involved are small ; slighter falls are shown under the headings, "Military Department," and "Private Bodies" amounting to 7 and 9 per cent., respectively. The falls under "Government officers including Jails" and "Military Department" are largely due to the fact that this year the amounts supplied to the Superintendent of Vaccination, Secunderabad, and to the Vaccinator, Bolarum, have been shown separately. In previous years these amounts were included among the cases supplied to "Government officers" and "Military Department." Had this custom been adhered to, these headings would have shown a fall of only 14·1 per cent., and 1·6 per cent., instead of a fall of 56 per cent. and 7 per cent., respectively.

The amount supplied to Municipalities remained practically stationary, a decrease of only 0·2 per cent. being recorded. Slight relative increases are shown under the headings, "Agency Tracts" and "District Boards." These amount to 8 and 1·4 per cent., respectively.

3. There was no change in the manufacture of the lymph. As usual the bulk was made up with lanoline, but a small quantity of glycerinated lymph was supplied to Madras City and to Colombo. The latter is chiefly used as seed lymph. To the great majority of muffassal Districts and Municipalities the usual fortnightly supplies were made, but three supplies per month were continued to Chingleput and to parts of North and South Arcot. As the whole of Chingleput is so supplied

and shows a rise of 1.71 per cent. in the success rate, as against a fall of 0.86 in the Presidency generally, the scheme would appear to be successful. In North and South Arcot Districts, however, it is not so. At first the change seems to have had some benefit and the figures for April and May 1914 are strikingly improved over those for 1913. The improvement, however, has not been maintained and the figure for the whole year in these circles shows a decline over that for last year, notwithstanding the fact that the figures for the whole district, compulsory and non-compulsory areas together, are slightly better than those for 1913-14.

4. The system of monthly returns sent in through the Deputy Inspectors of Vaccination is now thoroughly established, and the change from fortnightly returns sent in an unchecked manner from the vaccinators has resulted in a great improvement in the regularity with which the returns are received.

5. The extra supplies sent out to Districts and Municipalities again rose and this year amounted to 15 per cent. of the total. This is an unduly high figure and by a closer estimate of probable requirements could be reduced and some of the consequent extra expenditure on tubes packing and postage and of the additional clerical work, avoided. Attention was called to this point in G.O. No. 917 L., dated 29th July 1910, and these extra returns had fallen to 10 per cent. in the year 1912-13, after having been as high as they are in this year.

6.

TABLE II.

Statement showing the expenditure incurred during the year 1914-15 under all heads of expenditure of the Vaccine Section of the King Institute of Preventive Medicine, Guindy.

Detailed heads of account.	Amount.		
	RS.	A.	P.
Establishment charges—			
Assistant Director	10,795	15	11
Clerks and Servants	7,724	6	9
Deputy Inspectors	4,123	7	11
Famine Batta	226	8	3
Travelling allowance of officers, Deputy Inspectors of Vaccination and establishment	21	4	0
Total establishment ...	22,891	10	10
Supplies, and Services—Contingencies—			
Purchase of stores, apparatus	4,521	0	1
Cost of calves including transport	13,763	0	0
Feeding charges	1,603	7	10
Cost of boxes and receptacles for vaccine	680	12	2
Water works	371	2	6
Gas works	105	10	6
Purchase and repair of furniture	51	12	0
Hot and cold weather charges	57	8	9
Tour charges	35	2	0
Cleaning charges	83	0	0
Service postage and telegram charges	2,728	7	6
Office expenses	720	14	7
Miscellaneous	31	6	0
Telephone charges	95	8	0
Pay of menials	2,332	11	4
Total contingencies ...	27,181	7	8
Proportionate cost of stationery supplied for 1914-15 ...	140	12	9
Cost of clothing supplied for 1914-15	34	2	0
Cost of repairs to Vaccine Section buildings for 1914-15 as per statement furnished by the Executive Engineer, South Presidency Division, with his No. 1055-M., dated 15th May 1915	1,286	4	4
Excess in the cost of repairs to Vaccine Section buildings shown in 1913-14 accounts and now adjusted as per G.O. No. 71-L.; dated 18th January 1915	-176	9	9
Total cost of stationery, clothing, repairs, etc. ...	1,284	9	4
Grand total, Vaccine Section ...	51,357	11	5

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TABLE III.

Statement showing the net expenditure incurred during the year 1914-15 in the King Institute of Preventive Medicine, Guindy, Vaccine Section.

Particulars.	Amount.					
	RS.	A.	P.	RS.	A.	P.
Gross expenditure as per Table II ... ... ...	... ...	... ...	... ...	51,357	11	5
<i>Deduct—</i>						
(1) Credits under sale of calves and miscellaneous receipts remitted to Treasury ...	3,566	8	0			
(2) Cost of vaccine supplied to private bodies during the year	3,918	7	0			
	7,484	15	0	7,484	15	0
Net total expenditure ...	43,872	12	5			

TABLE IV.

Statement showing the number of cases for which vaccine was despatched to different bodies—private bodies being excluded—during the year 1914-15.

To whom supplied.		Rate per case.		Total amount debitible.	
		RS.	A.	P.	
1. Government officers including jails	20,951	* 480	1	6	
2. Agency Tracts	25,060	† 586	4	3	
3. Military Department	25,671	573	8	9	
4. District Boards	1,649,070	‡ 37,698	7	7	
5. Municipalities	178,980	§ 4,065	6	11	
6. Superintendent of Vaccination, Secunderabad [Secunderabad Local (Abkari, etc.), Fund]	19,530	4289702 pies.	436	5	6
7. Vaccinator, Bolarum (Bolarum Cantonment Fund)	1,460		32	9	11
	1,920,722		43,872	12	5

* Includes Rs. 12 0 0 for registering vaccine packets.

† " 26 6 0 "

‡ " 854 10 0 "

§ " 66 10 0 "

Rs. 959 10 0

N.B.—In calculating the cost per case of vaccine, Rs. 959-10-0 has been deducted from Rs. 43,872-12-5 as the former represents registration charges and it will be charged to the bodies concerned.

7. As will be seen from tables II, III and IV there has been a decrease of nearly Rs. 6,000 in the working costs. The main saving has been effected in the cost of calves including transport. This is due to a considerably increased yield per calf, the average yield having risen from 5.3 grams in 1913 to 7.9 grams in 1914. There has also been a reduction in establishment charges, owing to Major Patton, I.M.S., the Assistant Director, having reverted to Military duty.

Under the heading of "purchase of apparatus and stores" there is a drop of 18 per cent.

The reduced number of calves involves of course a reduction in the sale price of done animals and there was also a slight fall in the receipts from the sale of vaccine to private bodies.

The amount credited to Government under these heads shows a fall of 15.2 per cent.

The resulting fall in the price of vaccine due to the decreased nett charges amounts to 11·4 per cent., the price per case being 4·289702 pies.

8.

TABLE V.

Returns recorded in the King Institute from the whole of the Madras Presidency according to the month of the year.

Serial number.	Months.	Number successful.	Number unsuccessful.	Percentage of success.
1914.				
1	April ...	110,817	4,897	95·76
2	May ...	107,464	8,270	92·85
3	June ...	106,332	8,154	92·87
4	July ...	104,994	7,672	93·19
5	August ...	109,843	8,708	92·65
6	September ...	109,789	9,361	92·14
7	October ...	103,311	10,660	90·64
8	November ...	110,646	11,842	90·33
9	December ...	104,820	15,910	86·82
1915.				
10	January ...	106,592	15,579	87·24
11	February ...	106,145	14,588	87·91
12	March ...	103,414	14,835	87·45
Total ...		1,284,167	180,476	90·77 % successful.

Table V shows the success rate obtained monthwar. There has been a slight fall of 0·86 per cent. over the whole year. The seasonal curve is quite different from what it usually has been, and we have the unusual spectacle of fair results being shown right through the hot weather and then the results falling off in October, when they usually are beginning to improve and remaining indifferent right through the cool weather. This is quite the most remarkable curve we have had to date, and it is difficult to account for. The drop becomes marked in October which is just about the time when the old stock of vaccine stored during the hot weather became exhausted, and freshly prepared vaccine was being issued. Stored vaccine accumulated again, and calf operations were stopped in the middle of November, and stored vaccine was used till the middle of February when fresh vaccine was again resorted to. These various changes were however without effect on the quality of the results obtained, which remained persistently indifferent. In 1913-14 the worst month was June and the best February. In 1914-15 the results of these months were, respectively, 13·8 per cent. better and 8·8 per cent. worse.

9.

TABLE VI.

Returns recorded in the King Institute from the whole of the Madras Presidency, according to districts, 1914-15.

Serial number.	Districts.	Total successful.	Total unsuccessful.	Percentage of success.
1	Anantapur ...	26,701	1,596	94·35
2	Bellary ...	33,130	1,091	96·81
3	Chingleput ...	29,113	4,989	85·37
4	Chittoor ...	32,480	1,809	94·72
5	Coimbatore ...	52,699	16,102	76·59
6	Cuddapah ...	30,004	2,832	91·37
7	Ganjam ...	73,336	4,350	94·40
8	Gödävari ...	61,517	18,998	81·46
9	Guntür ...	58,255	5,304	91·65
10	Kistna ...	74,703	7,181	91·23
11	Kurnool ...	33,065	1,086	96·82
12	Madura ...	49,420	9,984	83·19
13	Malabar ...	127,909	13,982	90·14
14	Nellore ...	38,219	4,765	88·91
15	Nilgiris ...	5,484	167	96·86
16	North Arcot ...	60,078	5,993	90·92
17	Rämnäd ...	55,480	1,683	97·05
18	Salem ...	57,982	3,910	93·68
19	South Arcot ...	61,034	7,775	88·70
20	South Canara ...	36,540	3,564	91·11
21	Tanjore ...	57,550	2,573	95·72
22	Tinnevelly ...	63,468	4,568	93·28
23	Trichinopoly ...	56,926	4,268	93·02
24	Vizagapatam ...	109,074	6,906	94·04
Total ...		1,284,167	180,476	90·77

Table VI gives the results obtained districtwar. Coimbatore as usual is at the foot of the list and is again the only district which shows a success rate of under 80 per cent. Farther as the fall in its success rate is higher than that shown in any of the districts usually shown in comparison, its relative position is even worse than usual. Two districts show practically no change, less than 0·1 per cent. either way. Six districts show improvement and fifteen deterioration. Of the fifteen, nine show more than the overall fall, five less and one, the Niligris, has a fall practically identical with the general average. Rāmnād again holds pride of place, and is the only district showing a better success rate than the Niligris, though Kurnool and Bellary run it very close. Gōdāvari shows the biggest fall 3·18 per cent. and Chittoor the biggest rise 2·66 per cent.

10.

TABLE VII.

Statement showing the percentage of success obtained in certain districts selected for comparison in each of the last five years.

Serial number.	Districts.					1910-11.	1911-12.	1912-13.	1913-14.	1914-15.	Average.
1	Bellary	...	...	...	...	96·51	97·65	96·48	97·59	96·81	97·00
2	Anantapur	...	...	...	...	94·86	95·23	95·45	94·41	94·35	94·86
3	Kurnool	...	...	...	...	96·20	96·16	96·95	96·65	96·82	96·55
4	Gōdāvari	...	...	...	...	71·29	78·13	79·04	84·64	81·46	78·91
5	Coimbatore	...	...	...	...	75·54	75·74	69·59	78·92	76·59	75·27

As noted above Coimbatore's relative position both for the year and for the quinquennium is worse than ever. Compared to Bellary its position for the year is 20·22 per cent. and for the quinquennium 21·73 per cent. worse. The corresponding figures for last year were 18·67 and 21·02.

11.

TABLE VIII.

Statement showing the percentage of success obtained in the different months of the year for five years and the average for each month during that time.

Serial number.	Months.					1910-11.	1911-12.	1912-13.	1913-14.	1914-15.	Average.
1	April	...	...	...	...	88·32	84·33	86·72	87·24	95·76	88·47
2	May	...	...	...	...	84·53	83·53	80·57	86·09	92·85	85·51
3	June	...	...	...	...	81·22	88·15	82·84	81·61	92·87	85·33
4	July	...	...	...	...	85·11	89·13	88·42	87·47	98·19	88·66
5	August	...	...	...	...	90·26	90·54	87·39	90·53	92·65	90·27
6	September	...	...	...	...	92·45	89·30	84·87	92·10	92·14	90·17
7	October	...	...	...	...	85·26	89·73	88·02	93·83	90·64	89·49
8	November	...	...	...	...	86·65	92·36	91·58	96·17	90·38	91·41
9	December	...	...	...	...	87·31	93·28	91·73	93·79	86·82	90·58
10	January	...	...	...	...	87·00	98·29	93·00	95·28	87·24	91·16
11	February	...	...	...	...	91·91	88·57	91·62	96·36	87·91	91·27
12	March	...	...	...	...	93·62	89·08	88·56	95·72	87·45	90·88

Table VIII shows that the great drop during the cold weather of the year under report has already affected the quinquennial average, but the figures are rendered irregular by the autumnal variation noticed in previous years which was however absent in the year 1913-14.

12.

TABLE IX.

Statement showing the duration of storage of 'Lanoline' paste during the official year 1914-15.

Name of month.	Duration of storage each month.		
	Minimum period.	Maximum period.	
1914.			
April	6 days 	4 weeks and 2 days.
May	4 weeks and 2 days.	12 " 3 "
June	12 " 3 "	16 weeks.
July	16 weeks 	19 weeks and 2 days.
August	19 weeks and 2 days.	22 " 5 "
September	5 days 	24 " 3 "
October	3 " 	3 weeks.
November	7 weeks and 3 days.	10 weeks and 2 days.
December	10 " 2 "	13 " 2 "
1915.			
January	13 " 2 "	16 weeks.
February	4 weeks " ...	16 " "
March	4 weeks and 2 days.	22 " "

Table IX shows the maximum and minimum periods during which lanoline vaccine was stored for each month in the year. The maximum periods were much the same, but the minimum periods showed a considerable increase. On the average this increase was 16 days and the mean increase for the whole year was one week.

13.

TABLE X.

Statement showing the duration of storage of 'Glycerine' paste during the official year 1914-15.

Name of month.	Duration of storage each month.		
	Minimum period.	Maximum period.	
1914.			
April	... " 	3 days 	52 days.
May	52 " 	82 "
June	86 " 	102 "
July	11 " 	112 "
August	24 " 	52 "
September	1 day 	22 "
October	9 days 	25 "
November	15 " 	45 "
December	45 " 	76 "
1915.			
January	76 " 	99 "
February	99 " 	127 "
March	4 " 	142 "

14. Glycerine paste was also stored longer this year than last, the average minimum and maximum periods being two weeks and three weeks longer. The mean period for the whole year was two weeks longer than 1913-14.

15. A number of experiments were carried out during the year to see whether a more robust product could be devised. These took the direction of attempting to check the propagation of extraneous micro-organisms present in the vaccine, with which the deterioration of lanoline vaccine is probably concerned. Glycerine of course does this; but at Indian temperatures it is also very injurious to the vaccine. Dessication was tried, the vaccine being first incorporated with five times its weight of milk sugar. The idea was to render the dried vaccine more readily soluble as well as to dilute it. A material was got which produced good but somewhat delayed vesication on calves. It did not however show any great keeping qualities and as its manipulation was definitely more complicated than that of lanoline vaccine, this attempt was abandoned. Farther experiments are in progress.

16. In an enclosure to the Report for 1913-14 Major Patton, I.M.S., found that better results were obtained on calves if the pulp were stored in the raw state and only ground and mixed as required. An attempt was made on a large scale to see if this held good and could be applied to children. It must be remembered that the conditions could not be made exactly parallel. With calves the seed lymph was ground, mixed and used. With children the lymph was ground, mixed and issued; but the period of use would vary with the distance of destination, and the habits of the vaccinator. Every alternate batch of vaccine was stored and ground and mixed as required for issue, while the remaining half was ground, mixed, and stored till required for issue. Half the issue for each day was made up of each of these two kinds of paste. The results up to the end of March were distinctly against the new procedure. 82,828 cases done with paste made in the revised method were reported on and showed a success rate of 85·8 per cent.; whereas 88·71 per cent. out of 88,407 cases done with standard paste were reported as successful. Both these figures are disappointingly low, but returns of 170,002 cases done with stored standard lymph received contemporaneously, show a success rate of 86·18 per cent. For some reason the cold weather of 1914-15 seems to have been unfavourable to vaccinators' work. Considering the copious rains and that the calves had fair grazing right up till the end of March the lymph should have been better than usual, but, if so, the vaccinators do not appear to have been able to profit by it. The yield per calf was certainly larger than in the previous year and in a special series of calves, the results from which are given below, the average yield during the latter half of March and the whole of April was nearly as great as the maximum yield for the corresponding period of 1914.

17.

TABLE XI.

Statement showing the average yield of pulp per calf according to the month of the year 1914.

Months.	Grammes.			Average yield of lymph per calf during 1914.
	Average.	Maximum.	Minimum.	
January	3·7	14·0	2·2	7·9 grammes.
February	7·8	17·0	2·0	
March	9·4	19·2	4·0	
April	8·0	16·0	2·3	
May	No work.			
June	6·2	8·0	3·2	
July	7·9	11·5	3·2	
August	3·3	3·3	3·3	
September	6·4	18·0	2·4	
October	8·3	17·4	2·0	
November	7·2	15·5	2·0	
December	5·9	8·5	2·4	

Table XI shows the maximum and minimum yield of any calf and the average yield per calf for each of the months of the year. The maxima, with two exceptions, are all greatly in excess this year and the minima run slightly higher too.

18.

TABLE XII.

Average yield of lymph per calf according to years.

Year.	Grammes.
1904	4·9*
1905	3·5
1906	No records.
1907	3·2
1908	2·8
1909	3·7
1910	5·1
1911	5·3
1912	5·9
1913	5·3
1914	7·9

* The records are incomplete; this figure would be lower.

Table XII gives the average yield per calf for the whole year and the large increase of 2·6 grammes or nearly 50 per cent. is seen.

An attempt was also made to find out why the results got with any particular batch of seed lymph were so variable in the case of calves. Table XI shows that the yield may vary from 19 to 2 grammes, besides which there are total failures amounting to about 6 per cent. The time of ripening varies also within wide limits 72—120 or more hours, and this with the same lymph applied in exactly the same way. From a certain date every calf admitted into the Institute was classified under the following headings :—Admission number, Serial number, Sex, Size, Colouration of skin, Texture of skin, and Surface feel of skin. On vaccination and pulping, the period, quality and appearance of the lines together with the yield per calf were noted in corresponding columns. Over 500 calves were so examined. The texture of the skin being considered as probably the most important the average yield per animal was calculated in the following groups :—

Thin and soft skin—that is having little subcutaneous tissue but the actual skin of loose texture.

Thin and hard—having little subcutaneous tissue but the skin of dense firm texture.

Thick and soft—Thick and hard—having subcutaneous tissue and with the actual skin of loose and dense texture, respectively.

19.

TABLE XIII.

	Animals.	Average yield in grammes.	Failures.	Percentage of failure.
Skin thin and soft	...	169	6·98	6 3·55 per cent.
" hard	...	150	5·62	4 2·6 "
Skin thick and soft	...	186	6·06	17 9·1 "
" hard	...	20	6·82	0 0·0 "

The average yield over the whole series was 6·5 grammes. It must be admitted that these figures do not afford much support for a system of selection. Special features are the high percentage of failures in thick and soft skins, contrasting with no failures in thick and hard ones. The latter are however too few in number to compare with the others. It would almost appear as if a skin can be too soft as well as too hard. In group 2 the yield is definitely the lowest, while in group 3 the yield is also below the general average and the percentage of failure is high.

In group I with no subcutaneous tissue but a loose textured skin and in group IV with soft subcutaneous tissue but a loose textured skin the yields are approximately the same, and well above the average.

20. Further analyses were made with regard to the varying points of the animals, but in these it was endeavoured to test the virtue or the reverse of any particular point by its effect on the percentage of animals showing—

- (1) specially good vesiculation (that is selected for seed lymph). Quality good.
- (2) Total failure of vesiculation.
- (3) Yield more than three grammes above the average, *i.e.*, good quantity.
- (4) Yield more than three grammes below the average.

21. Table XIV gives these results :—

TABLE XIV.

		Specially good quality.	Failure.	Specially good quantity.	Yield small.
		PER CENT.	PER CENT.	PER CENT.	PER CENT.
Cow	...	5·4	5·0	13·0	4·2
Bull	...	7·7	7·7	3·85	0·0
Large	...	4·5	5·7	17·0	3·4
Medium	...	5·8	4·1	12·0	4·4
Small	...	10·7	18·0	7·1	0·0

TABLE XIV—*cont.*

	Specially good quality.	Failure.	Specially good quality.	Yield small.
	PER CENT.	PER CENT.	PER CENT.	PER CENT.
Skin colour.				
White	7·7	3·8	11·5	3·8
Tinted	6·2	3·6	10·8	3·6
Pale pigment ...	5·2	5·6	12·45	4·4
Dark pigment ...	3·6	9·0	18·2	3·6
Smooth	8·6	6·45	6·45	5·4
Slightly rough ...	5·1	4·36	13·3	3·6
Harsh	1·9	7·7	15·4	3·8

The number of bulls was so small, only 26, that much weight cannot be laid on the results got with them, and therefore a sex comparison cannot be made.

In the other groups however there appear to be fairly well defined relations, and for convenience of reference the various groups of figures have been bracketted in contrast to one another. A consideration of the table as a whole shows that the characters, which yield a specially good quality of lymph, are different and sometimes sharply contrasted to those which yield a good quantity.

(a) Size of animal, where good quality is concerned. Here we see that small animals are better than large, but where a large quantity is concerned the larger the animal the better.

(b) Size of animal in relation to failure. Here an exceptionally large percentage of small animals are found. Probably these were badly nourished animals, and the large number has something to do with an absence of small animals in the heading "small yield."

(c) The figures for pigmentation are very instructive. In relation to good quality and failure they are sharply contrasted and also in relation to good quality and good quantity.

(d) The same strong contrasts are shown when the surface of the skin is considered. Smooth skins give good quality but small quantity; harsh skins poor quality and large quantity.

A farther analysis of the table would probably yield other results and as time permits this will be carried out.

Where any selection on purchase is for practical reasons impossible the points elucidated may enable us to ensure a steady supply of lymph of fair quality. Fortunately the great majority of the animals brought to the Institute fall into the medium classes of the above classification, and it may be possible by grading prices to eliminate the less desirable ones altogether.

22. From April 1st to November 21st Major W. S. Patton, I.M.S., continued as Assistant Director, but on the latter date he reverted to Military duty.

Assistant Surgeon S. Ramakrishnan was appointed as Temporary Assistant to the Director on 9th December 1914 and was employed partly in the Vaccine and partly in the Bacteriological Sections.

23. The usual vaccination class was held during February and March. Twenty-one students attended and all obtained qualifying marks in the examination held at the end of the course.

24. The investigations carried out during the year have involved the staff in a lot of extra work which has been cheerfully and well done. I have great pleasure in putting on record my satisfaction with the way the staff have worked during the year.

THE KING INSTITUTE OF PREVENTIVE
MEDICINE, GUINDY,
17th June 1915.

F. MAITLAND GIBSON, M.B., B.Sc.,
Director.

and point resolution of the model, and address the question of whether the model's ability to predict the observed precipitation extremes is consistent with the physical processes simulated by the model. The paper is organized as follows. In section 2, the model and data sets used in this study are described. Section 3 presents the results of the experiments. Section 4 discusses the results and their implications. Conclusions are drawn in section 5.

REPORT ON VACCINATION IN THE MADRAS PRESIDENCY
FOR THE YEAR 1914-1915.

From Dr. K. T. MATTHEW, D.H.Y., D.P.H. (Cantab.), Inspector of Vaccination and Deputy Sanitary Commissioner for Madras, to the Sanitary Commissioner for Madras, No. 203-D., dated 23rd July 1915.

I have the honour to submit the Annual Report on Vaccination in the Madras Presidency for the year 1914-15.

2. *Staff.*—The three Deputy Sanitary Commissioners sanctioned for the Presidency have not yet been fully recruited. I was in charge of the Northern Range throughout the year, Captain M. J. Quirke, I.M.S., the other Deputy Sanitary Commissioner, on duty, was in charge of the Central and Southern Ranges till 18th September 1914 when he reverted to military duty. I was then placed in charge of all the three ranges with head-quarters at Madras and I continued to hold charge of these till the end of the year.

The subordinate vaccination staff employed in the Presidency during the past two years is shown in the following statement:—

	Deputy Inspectors.			First-class vaccinators Rs. 20-15.	Second-class vaccinators Rs. 12-10.	Third-class vaccinators Rs. 7-5.	Total number of vaccinators.
	First grade Rs. 70.	Second grade Rs. 60.	Third grade Rs. 40.				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1913-14	23	23	36	270	443	125	838
1914-15	22	23	36	268	462	130	860

NOTE.—These figures include the staffs employed in Bangalore and Secunderabad Cantonments and exclude those on duty in the King Institute, Guindy. In the latter Institute there are three Deputy Inspectors of the first grade and two of the second grade.

3. *Inspections by Deputy Sanitary Commissioners.*—During the period Captain M. J. Quirke, I.M.S., held charge of the office of Inspector of Vaccination and Deputy Sanitary Commissioner, Central and Southern Ranges, he visited the Municipalities of Conjeeveram, Vellore, Gudiyāttam, Vāniyambādi, Cuddalore, Tirupati, Kurnool, Nandyal, Māyavaram, Srīvilliputtūr, the village of Kaniāmattur in the Coimbatore district and vaccination work in the Rāmnād district. As Deputy Sanitary Commissioner, Northern Range, I inspected the Municipalities of Berhampur, Guntūr, Pārlakimēdi, Vizianagram, Tenāli, Ongole, Chicacole and Masulipatam, and many rural towns and villages in Ganjām, Vizagapatam, Gōdāvari, Kistna, Guntūr and Nellore districts. Inspection of vaccination work was also conducted at places visited in all these districts. In the Central and Southern Ranges I inspected Udumalpet in the Coimbatore district, Alangayam and Vellore in the North Arcot District, Tinnevelly and Tenkāsi in the Tinnevelly district and Tanjore and Māyavaram in the Tanjore district. Under orders of Government I accompanied Professor Geddes in connection with town-planning operations in this Presidency to the Municipalities of Vizagapatam, Cocanada, Bezzvada, Guntūr, Bellary, Salem, Bangalore, Madura, Trichinopoly, Srirangam Coimbatore and Tanjore.

4. *Vaccination.*—(i) As in previous years, the "Trial scheme of vaccination" was in force in the whole of Chingleput district and in selected areas of North Arcot, South Arcot and Madura districts. The general extension of the scheme

to the other districts was abandoned during the year. The Government have, however, ordered that steps should be taken to improve the pay and prospects of the vaccination staffs throughout the rural areas in the hope of improving the quality of their work. There can be no doubt that the greatest defect in the present system of vaccination is the vaccinator himself. Many of the vaccinators are men of very little education who have no intelligent conception of their work and are consequently incapable of performing it satisfactorily. The large majority of them are men of the social level of peons and command little respect from the public. With a salary commencing at Rs. 7 per mensem and in a few cases even at Rs. 5, men of a better standard can hardly be expected. There is little to be gained by improving the pay and prospects of the present set of vaccinators. What is required for real improvement is a new set of vaccinators who are either Certificated Sanitary Inspectors with the necessary vaccination training or selected men of sufficient general education who are specially trained for the purpose at a Central Institution. Proposals for the improvement of the vaccination staff are being received from Presidents of District Boards and considered by Government. It would be a good thing indeed if these proposals are given effect to as they are approved instead of waiting until proposals for all the districts are received and sanctioned.

(ii) The total vaccination work performed during the last two years by all agencies throughout the Presidency is shown in the following table :—

	—	1913-14.	1914-15.	
Primary vaccination	... ... ...	1,527,112	1,512,515	
Re-vaccination	... ... ...	150,584	176,407	
Total	...	1,677,696	1,688,922	

The number of cases vaccinated during 1914-15 shows an increase of 11,226 over that of the previous year. Largest increases are noticeable in the districts of Gödāvari (+ 18,384) and Vizagapatam (+ 12,498). The districts which showed a decrease were Coimbatore (- 8,387), Trichinopoly (- 6,073), Salem (- 4,320), South Canara (- 3,340), Chingleput (- 3,280) and South Arcot (- 3,001). The reasons assigned by the Deputy Inspectors of Vaccination for the decrease in the above named districts were (1) comparative freedom from small-pox during the year, (2) failure to appoint promptly suitable substitutes during absence on leave of vaccinators and (3) plague scare and prevalence of cholera.

(iii) The following table shows the total successful vaccination by all agencies and the percentage of successful cases including re-vaccination :—

Establishment.	Number of successful vaccinations.				Total of successful vaccinations.		Ratio per cent. of successful cases.				Ratio per cent. of total successful cases.	
	1913-14.		1914-15.		1913-14.	1914-15.	1913-14.		1914-15.		1913-14.	1914-15.
	Primary vaccination.	Re-vaccination.	Primary vaccination.	Re-vaccination.			Primary vaccination.	Re-vaccination.	Primary vaccination.	Re-vaccination.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Local Fund vaccinators ...	1,223,086	73,796	1,186,576	94,550	1,296,882	1,281,126	91·5	84·3	90·5	84·3	91·1	90·0
Government do. ...	17,015	1,597	17,892	891	18,612	18,783	91·2	91·5	90·5	87·0	91·2	90·3
Municipal do. ...	106,611	26,160	103,742	22,223	132,771	130,965	95·7	75·0	94·7	73·5	90·8	90·3
Cantonment do. ...	4,916	4,212	3,949	6,462	9,128	10,411	95·0	6·5	89·6	53·6	80·6	63·2
Dispensaries ...	6	10	1	15	16	16	100·0	90·9	100·0	75·0	94·1	76·2
Medical subordinates ...	114	5,363	117	4,985	5,477	5,102	85·7	69·6	92·9	65·0	69·9	65·4
Total ...	1,351,748	111,138	1,317,277	129,126	1,462,886	1,446,403	91·8	80·5	90·8	79·1	90·9	89·6

The percentage of total success both under primary and re-vaccinations during the year showed a slight decrease. The decrease was prominent under "Cantonment Vaccinators" and "Dispensaries," over whom the Deputy Inspectors of Vaccination have little control.

When compared with the previous year, the following districts show largest increases in infantile vaccination :—

Malabar (+17·9 per cent.), Nilgiris (+13·4 per cent), Bellary (+11·8 per cent.), Rāmnād (+9·8 per cent.) and Kurnool (+6·6 per cent.).

(iv) The cost of the various vaccination staffs and the average cost of each successful case are exhibited in the subjoined statement :—

Establishment.	Total expenditure.				Average cost of each successful case.			
	1913-14.		1914-15.		1913-14.		1914-15.	
	RS.	A. P.	RS.	A. P.	RS.	A. P.	RS.	A. P.
Government establishment ...	7,392	12 3	8,216	5 7	0	6 4	0	7 0
Local Fund ...	2,88,231	5 11	2,96,130	7 3	0	3 7	0	3 8
Municipal ...	39,068	13 11	40,574	3 5	0	4 8	0	4 11
Cantonments ...	2,992	12 7	3,144	14 5	0	5 3	0	4 10
Total ...	* 3,37,685	12 8	+ 3,48,035	14 8	0	3 8	0	3 10

* Exclusive of the pay and allowances of the Inspectors of Vaccination and Deputy Sanitary Commissioners, Central and Northern Ranges.

† Exclusive of the pay and allowances of the Inspectors of Vaccination and Deputy Sanitary Commissioners, Northern, Central and Southern Ranges.

Establishment charges were high under each of the above mentioned heads the consequence being that the average cost of each successful case rose from As. 3-8 in 1913-14 to As. 3-10 in the year under report. In no district did this cost exceed As. 5-9. The district which showed this rate was Chingleput. The rate was above As. 7 in the municipalities of Bimlipatam, Coonoor, Karūr, Madras and Tiruvālūr.

(v) Vaccination is compulsory in all municipalities and 149,874 operations were performed in them during the year against 152,809 in 1913-14. Madura (+3,789) and Madras (+3,675) showed the largest increases. The towns which showed marked decreases were Guntūr (-7,533), Tuticorin (-1,365), Tanjore (-1,152), Bezwada (-710), Bellary (-677), Ongole (-532) and Vellore (-470). In Guntūr the decrease was due to less number of re-vaccination cases performed in the year than in 1913-14 when owing to a severe outbreak of small-pox an unusually large number of re-vaccinations was performed. In the remaining towns the decrease is attributed to one or other of the following causes :—less prevalence of small-pox, prevalence of plague, non-entertainment of temporary vaccinators and reduction in the minimum number of cases required to be done by vaccinators.

(vi) The following table exhibits the comparative success obtained by the use of different kinds of lymph in *primary* vaccination :—

Number of cases excluding unknown.	Area.	Kind of lymph.	Whence obtained.	Percentage of success.
1,331,212	Local Fund ...	Lanoline lymph ...	Supplied by the King Institute of Preventive Medicine, Guindy.	90·5
... 87,924	Do. Municipalities ...	Glycerine „ ...	Do.	...
26,875	Do. ...	Lanoline „ ...	Do.	94·0
		Glycerine „ ...	Do.	97·9

The percentage of success from lanoline lymph was 90·5 in 1914-15 against 91·5 in 1913-14 in local fund areas and 94·0 and 95·2, respectively, in municipalities. Glycerinated lymph also showed a decreased success rate of 97·9 against 98·1 in the previous year.

(vii) A large number of deaths from small-pox was recorded during the year—the figures being 26,623 against 20,853 in 1913–14. The proportion of population protected in the districts and municipalities during the year is shown in the annexed two diagrams.

(viii) Three Deputy Inspectors of Vaccination [of Tellicherry (49·9), Malappuram (49·3) and Vizianagram (47·5)] failed to verify 50 per cent. of cases vaccinated within their ranges. Their explanations for this shortage have been obtained and accepted.

(ix) Of the 85 Deputy Inspectors of Vaccination borne on the Provincial list 78 are Qualified or Certificated Sanitary Inspectors. The remaining seven are either exempted men or those specially selected for these posts before the present rules came into force. The service registers of all Deputy Inspectors of Vaccination have been verified in the Sanitary Commissioner's office.

5. The delay in the submission of this report is due to the late receipt of the annual returns from the Deputy Inspectors of Vaccination of Ponneri and Gunupur ranges. Their returns were received on the 5th and 16th June 1915, respectively, and the consolidation of the returns appended to the annual report could be completed only after their receipt.

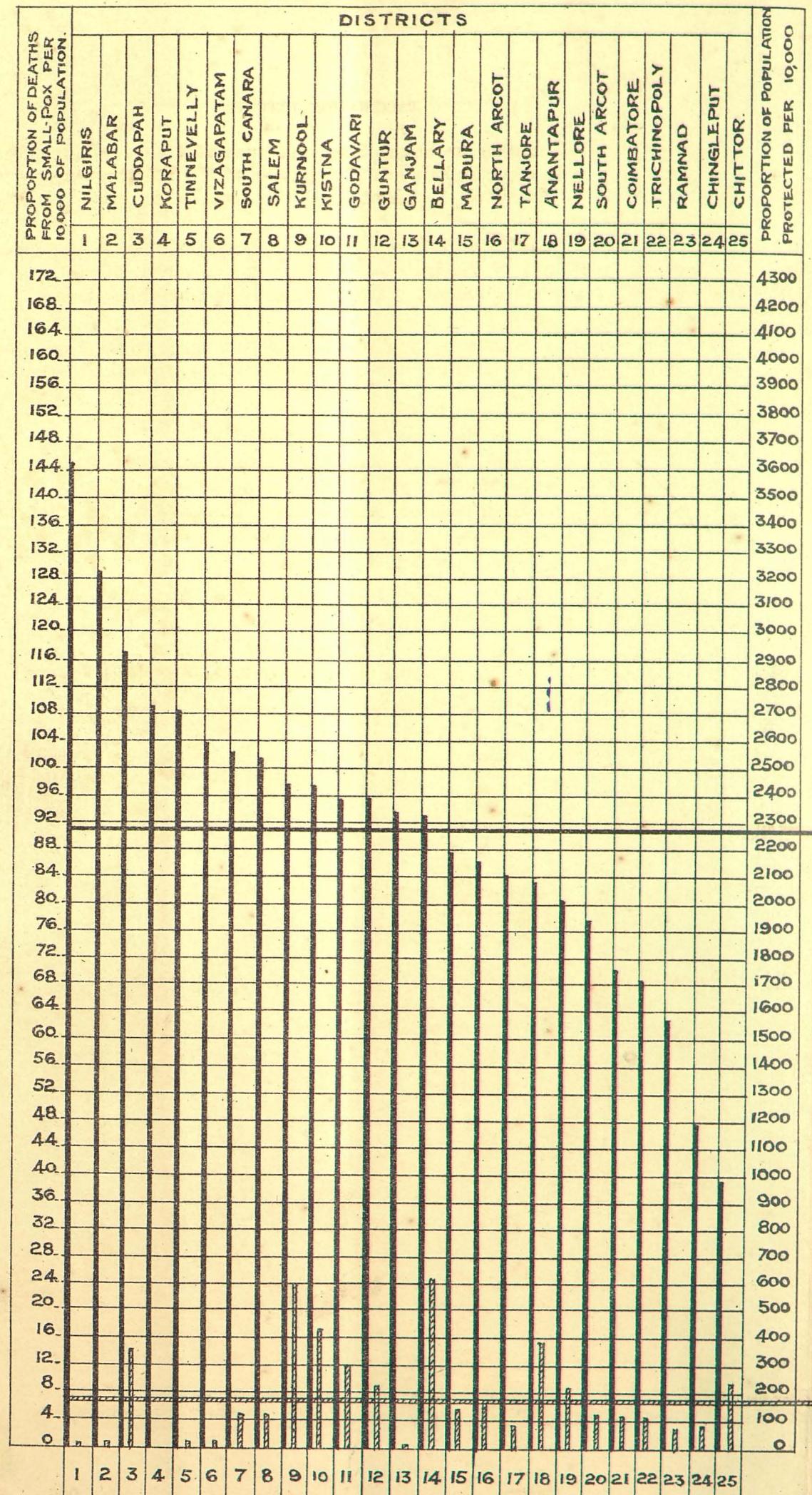
I have the honour to be,

Sir,

Your most obedient servant,

K. T. MATTHEW, D.H.Y., D.P.H. (Cantab.),

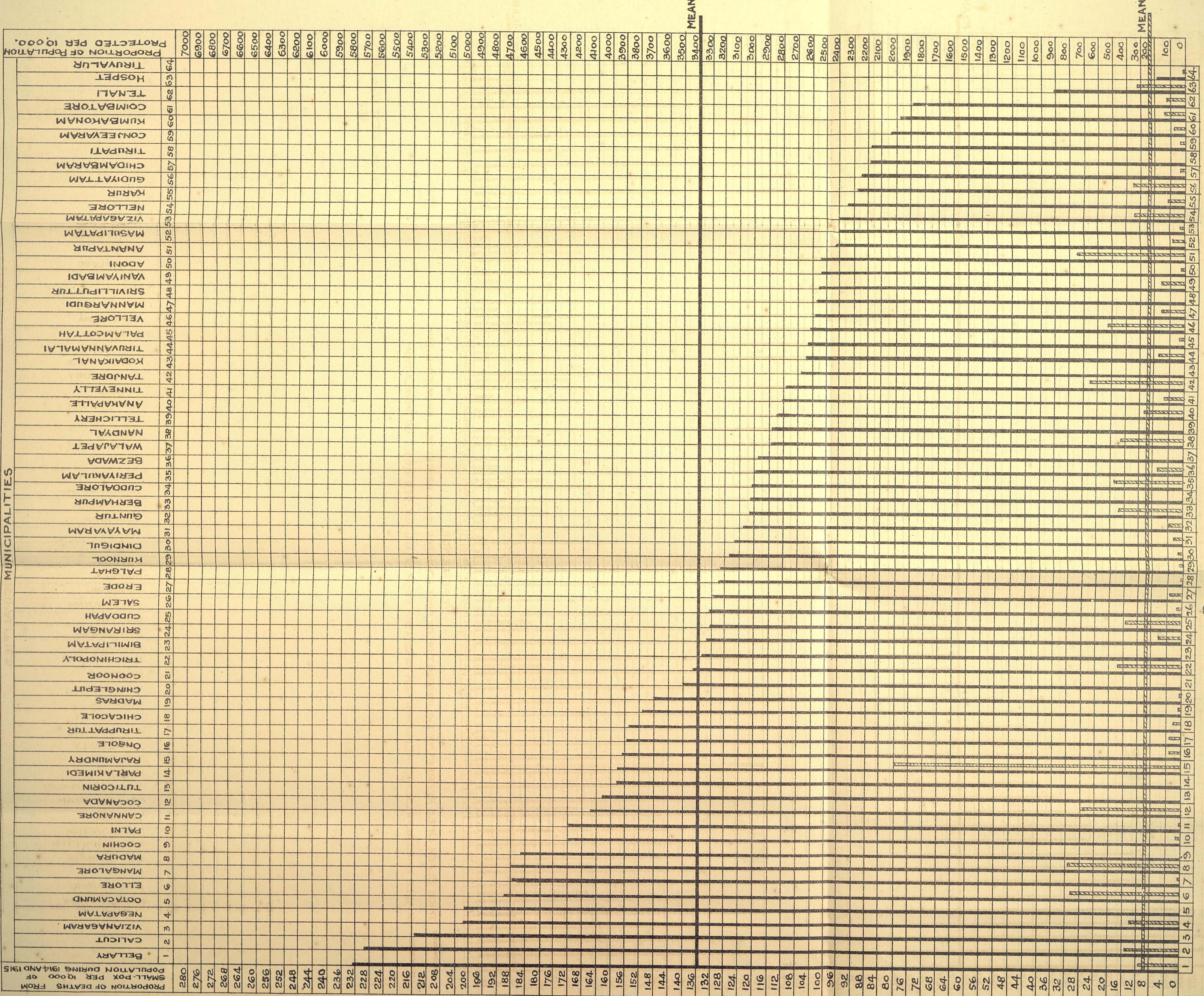
*Inspector of Vaccination and
Deputy Sanitary Commissioner, Madras.*



REFERENCE.

THICK BLACK LINES REPRESENT THE POPULATION PER 10,000 PROTECTED FROM SMALL-POX.

SHADDED LINES REPRESENT THE POPULATION OF DEATHS FROM SMALL-POX PER 10,000 POPULATION



THICK BLACK LINES REPRESENT THE PROPORTION OF POPULATION PER 10000 PROTECTED FROM SMALL-POX.
SHADED LINES REPRESENT THE PROPORTION OF DEATHS FROM SMALL-POX PER 10,000 OF POPULATION.

REFERENCE

ANNEXURE II.
VACCINATION STATEMENTS.

A—VACCINE

STATEMENT No. I showing the Particulars of Vaccination in the

Number.	Districts.	Circles.			Population of districts or circles according to the census of 1911.	Average population per square mile.	Total number of persons vaccinated.			Average number of vaccinators employed throughout the year.	Average number of persons vaccinated by each vaccinator.	Primary		
		1	2	3			4	5	6	7	8	9	10	
1 2	Anantapur. Ananta- pur.	Anantapur circle ...	444,221	135	7	6,718	6,202	12,920	1,846	12,679	7,859			
		Penukonda do. ...	510,545	119	11	7,493	6,853	14,346	1,304	14,194	7,306			
		Total of district ...	954,766	142	18	14,211	13,055	27,266	1,515	26,873	15,165			
3 4	Bellary. Bellary.	Bellary circle ...	885,164	156	10	7,888	7,626	15,514	1,551	15,884	10,309			
		Hospet do. ...			10	8,093	6,641	14,734	1,473	13,574	9,436			
		Total of district ...	* 885,164	156	20	15,981	14,267	30,248	1,512	29,408	19,745			
5 6 7	Chingleput. Chingle- put.	Chingleput circle ...	1,340,518	436	4	8,511	8,310	16,821	4,205	17,170	8,854			
		Saidapet do. ...			4	7,984	7,702	15,686	3,921	15,146	4,399			
		Ponneri do. ...			4	6,686	6,414	13,100	3,275	13,159	4,715			
8 9	Chittoor. Chittoor.	Total of district ...	1,340,518	436	12	23,181	22,426	45,607	3,801	45,475	17,968			
		Chittoor circle ...	528,016	194	10	7,737	6,553	14,290	1,429	13,389	5,764			
		Karvetnagar do. ...	694,025	234	13	11,248	10,654	21,897	1,684	20,968	8,816			
10 11 12 13	Coimba- tore.	Total of district ...	1,222,041	215	23	18,980	17,207	36,187	1,573	34,357	14,580			
		North Coimbatore circle.	489,392	165	8	7,739	7,584	15,323	1,915	15,531	5,232			
		East do. do.	554,719	383	8	10,831	10,275	21,106	2,638	20,300	7,472			
14 15 16	Cuddapah. Cuddapah.	South do. do.	367,884	211	6	6,228	6,096	12,324	2,054	11,629	5,122			
		Central do. do.	640,861	414	9	10,515	10,264	20,779	2,308	20,841	7,982			
		Total of district ...	2,052,856	266	31	35,313	34,219	69,532	2,243	68,301	25,808			
17 18 19 20 21 22	Ganjam. Ganjam.	Cuddapah circle ...	303,660	137	8	5,960	5,231	11,191	1,399	11,134	4,886			
		Proddatur do. ...	267,072	198	7	5,166	4,895	9,561	1,366	10,113	4,606			
		Sidhout do. ...	305,459	131	8	6,858	5,432	12,290	1,536	11,703	5,586			
23 24 25 26 27	Godavari. Godavari.	Total of district ...	876,191	148	23	17,984	15,058	33,042	1,437	32,950	15,078			
		Berhampur circle ...			9	7,609	6,920	14,529	1,614	13,789	7,160			
		Chicacole do. ...			8	6,891	6,125	13,016	1,627	11,604	7,615			
17 18 19 20 21 22	Ganjam. Ganjam.	Ganjam Hill Tracts ...	2,153,614	257	14	7,772	7,460	15,232	1,088	14,666	4,137			
		Aska circle ...			8	7,242	6,130	13,372	1,671	12,269	4,111			
		Parlakimedi circle ...			7	7,031	6,379	13,410	1,923	11,489	5,380			
23 24 25 26 27	Godavari. Godavari.	Purushottapur circle ...			8	7,476	6,181	13,607	1,700	13,203	6,000			
		Total of district ...	+ 2,153,614	257	54	44,021	39,145	83,166	1,540	77,020	34,400			
		Cocanada circle ...	341,838		7	9,070	8,294	17,364	2,480	15,006	4,534			
23 24 25 26 27	Godavari. Godavari.	Rajahmundry do. ...	574,472		11	15,336	13,320	28,656	2,605	26,511	4,830			
		Polavaram do. ...	130,992	249	6	3,894	3,471	7,365	1,227	6,699	1,846			
		Peddapur do. ...	427,120		10	15,266	13,616	28,882	2,588	16,762	7,250			
23 24 25 26 27		Bhadrachalam do. ...	75,910		5	2,454	2,242	4,696	939	4,830	1,378			
		Total of district ...	1,550,332	249	39	46,020	40,943	86,963	2,230	69,808	19,888			

* Excludes Sandur (18,526).

† Includes Hill Tracts.

DEPARTMENT.

Madras Presidency for the official year 1914-15.

vaccination.	Re-vaccination.			Percentage of successful cases in which the results were known.			Percentage of unknown cases to total cases.	Average number of persons successfully vaccinated during previous 5 years.	Average number of deaths from small-pox during previous 5 years.	
	Successful.	Total of all ages.	Unknown.	Successful.	Unknown.	Primary vaccination.			Number.	Ratio.
4,177 5,226	12,295 12,943	62 64	533 714	511 600	3 16	97·4 91·6	96·4 86·0	28·8 26·5	0·5 0·5	0·6 2·2
9,403	25,238	126	1,247	1,111	19	94·4	90·5	27·6	0·5 1·5	27,137 28·4
4,141 3,544	15,140 13,439	35 40	178 1,348	171 1,837	3 3	95·8 99·3	96·1 99·4	34·0	0·2 0·3	0·2 0·2
7,685	28,579	75	1,526	1508	3	97·4	99·0	34·0	0·3 0·2	28,659 32·4
3,384 3,434 2,753	12,359 10,794 7,630	2,173 2,802 540	315 122	129 206 20	37 49 81	82·4 87·4 72·6	46·4 42·0 48·8	23·2	12·7 18·5 20·1	11·7 9·1 66·4
9,571	30,783	7,622	977	355	167	81·3	43·8	23·2	16·8 17·1	36,745 27·4
5,817 10,409	11,996 19,857	344 429	1,457 1,140	845 1,185	219 123	92·0 96·7	68·3 90·0	24·3 30·3	2·6 2·0	15·0 8·5
16,226	31,853	773	2,897	2,030	342	94·8	79·5	27·7	2·2 11·8	28,840 23·6
4,816 5,786 4,152 6,709	10,463 13,594 9,516 14,923	887 1,604 606 1,235	463 1,153 71							

A—VACCINE

Statement No. I showing the Particulars of Vaccination in the

1	Number.	Circles.	Districts.	Population of districts or circles according to the census of 1911.			5	Average population per square mile.	Total number of persons vaccinated.			8	Average number of persons vaccinated by each vaccinator.	9	Total number of operations.	10	Under 1 year.
				3	4	6			7	10							
28	Guntūr.	Guntūr.	Guntūr.	Guntūr circle ...	1,625,541	283	{ 10	16,220	13,739	29,959	2,995	21,958	9,251				
29				Narasaraopet circle ...			{ 10	12,817	10,334	28,151	2,815	18,901	6,936				
30				Bāpatla do. ...			{ 11	11,713	8,861	20,574	1,870	21,322	8,114				
				Total of district ...	1,625,541	283	31	40,750	32,934	78,684	2,377	62,181	24,301				
31	Kistna.	Kistna.	Kistna.	Ellore circle ...	1,884,726	319	{ 15	14,810	14,184	28,994	1,933	29,142	10,383				
32				Masulipatam circle ...			{ 14	12,880	11,567	24,447	1,746	23,702	8,427				
33				Narasapur do. ...			{ 12	14,293	13,311	27,604	2,300	26,321	8,043				
				Total of district ...	1,884,726	319	41	41,983	39,062	81,045	1,977	79,165	26,853				
34	Kurnool.	Kurnool.	Kurnool.	Cumbum circle ...	395,841	118	13	10,029	7,245	17,274	1,328	14,515	6,766				
35				Kurnool do. ...	497,088	119	14	10,256	8,764	19,020	1,358	17,854	9,862				
				Total of district ...	* 892,929	118	27	20,285	16,009	36,294	1,344	32,369	16,628				
36	Madura.	Madura.	Madura.	Dindigul circle ...	1,738,818	354	{ 4	10,480	9,866	20,346	5,087	19,700	9,705				
37				Madura do. ...			{ 4	8,910	7,758	16,668	4,167	15,618	5,264				
38				Usilampatti do. ...			{ 4	10,469	9,801	20,270	5,067	20,473	10,191				
				Total of district ...	1,738,818	354	12	29,859	27,425	57,284	4,774	55,786	25,160				
39	Malabar.	Malabar.	Malabar.	Tellicherry circle ...	2,809,117	485	{ 11	15,988	14,046	30,034	2,730	28,782	9,795				
40				Calicut do. ...			{ 10	14,781	14,399	29,180	2,918	27,615	7,345				
41				Paighat do. ...			{ 13	26,705	25,291	51,996	3,999	51,624	18,664				
42				Malappuram do. ...			{ 11	19,846	18,117	37,963	3,451	37,545	9,262				
				Total of district ...	+ 2,809,117	485	45	77,320	71,853	149,173	3,315	145,566	45,666				
43	Nellore.	Nellore.	Nellore.	Kavali circle ...	1,294,906	162	{ 8	9,008	7,718	16,726	2,091	15,612	5,079				
44				Gudur do. ...			{ 9	8,552	7,533	16,055	1,787	14,741	6,084				
45				Kanigiri do. ...			{ 9	8,643	8,025	16,668	1,852	16,358	3,444				
				Total of district ...	1,294,906	162	26	26,203	23,276	49,479	1,903	46,711	14,557				
46	Nilgiris.	Nilgiris.	Nilgiris.	Nilgiri circle ...	89,856	89	3	2,496	2,217	4,713	1,571	4,471	1,776				
				Total of district ...	89,856	89	3	2,496	2,217	4,713	1,571	4,471	1,776				
47	North Arcot.	Vellore circle ...	Vellore		3	7,128	7,005	14,133	4,711	14,458	9,162						
48		Ranipettai do. ...	Ranipettai		3	7,108	6,716	13,824	4,008	14,273	6,053						
49		Polur do. ...	Polur		4	6,872	6,741	13,613	3,403	15,339	6,335						
50		Tiruppattur do. ...	Tiruppattur		12	11,032	10,640	21,672	1,806	21,784	7,823						
				Total of district ...	1,825,742	371	22	32,140	31,102	63,242	2,875	65,859	29,373				
51	Rāmnād.	Srivilliputtūr circle ...	Srivilliputtūr		9	9,756	8,939	18,615	2,077	18,479	8,576						
52		Paramagudi do. ...	Paramagudi		10	10,378	9,269	19,647	1,964	19,165	7,397						
53		Tiruppattur do. ...	Tiruppattur		11	9,472	8,733	18,205	1,655	18,056	6,505						
				Total of district ...	1,629,387	337	30	29,606	26,941	56,547	1,885	55,700	22,478				

* Excludes Banganapalle (39,344).

† Excludes Laccadives (10,600).

DEPARTMENT.

Madras Presidency for the official year 1914-15—continued.

vaccination.	Re-vaccination.		Percentage of successful cases in which the results were known.	Percentage of unknown cases to total cases.	Average number of persons successfully vaccinated during previous 5 years.	Average number of deaths from small-pox during previous 5 years.														
	Successful.	Unknown.					1 and under 6 years.	Total of all ages.	14	15	16	17	18	19	20	21	22	23	24	25
9,299	19,618	533	8,120	6,585	307	91·6	84·3	2·4	3·8											
9,528	17,257	310	4,574	4,139	87	92·8	92·2	1·6	1·9											
8,969	18,812	660	1,984	1,792	19	91·0	91·2	3·1	1·0											
28,096	55,687	1,503	14,678	12,516	413	91·8	87·7	42·0	2·4	2·8										
13,557	26,342	506	857	616	41	92·0	75·5	1·7	4·8											
11,113	21,197	474	1,346	1,196	33	91·3	91·0	2·0	2·5											
13,029	22,882	539	2,314	1,813	70	88·8	80·8	2·0	3·0											
37,699	70,421	1,519	4,517	3,625	144	90·7	82·9</													

A—VACCINE.

Statement No. I showing the Particulars of Vaccination in the

Number.	Circles.	Districts.	Population of districts or circles according to the census of 1911.	Total number of persons vaccinated.			Average number of vaccinators employed throughout the year.	Average number of persons vaccinated by each vaccinator.	Primary		Total number of operations.	Under 1 year.
				1	2	3			4	5	6	
54	Salem.	Salem.	500,311	262	6	8,746	8,455	17,201	2,867	17,717	7,831	
55			605,833	392	11	11,560	11,416	22,976	2,088	24,612	9,540	
56			601,833	213	8	9,861	9,929	19,790	2,473	18,822	10,593	
	Total of district		1,707,527	256	25	30,167	29,800	59,967	2,399	61,151	27,964	
						Males.	Females.	Total.				
57	South	Cuddalore.	494,072	737	4	7,493	8,123	15,616	3,904	15,155	8,470	
58		Vriddhachalam circle	481,882	393	6	7,113	6,840	13,953	2,325	14,418	6,258	
59		Tirukkoyilur do.	405,559	501	6	7,740	7,113	14,853	2,475	15,086	5,026	
60		Tindivanam do.	395,248	485	5	6,850	6,418	13,268	2,653	13,682	4,469	
61		Villupuram do.	507,906	755	4	8,564	8,570	17,184	4,283	17,257	9,985	
	Total of district		2,284,665	545	25	37,760	37,064	74,824	2,993	75,598	34,208	
62	South	Northern circle	8,833	8	8,663	15,996	1,999	14,420	4,960			
63		Central do.	6,795	8	6,477	13,272	1,659	11,675	6,279			
64		Southern do.	7,346	9	6,748	14,094	1,566	13,448	5,016			
	Total of district		* 1,142,860	285	25	22,474	20,888	43,362	1,734	39,543	16,255	
65	Tanjore.	Tanjore.	410,870	417	4	3,992	3,737	7,729	1,982	7,444	2,463	
66		Negapatam do.	536,502	791	9	8,166	7,037	15,203	1,689	13,887	5,319	
67		Pattukkottai do.	563,520	407	10	9,450	8,728	18,182	1,818	18,000	5,761	
68		Kumbakonam do.	618,122	973	7	5,638	5,386	10,974	1,567	11,047	3,922	
	Total of district		* 2,129,014	578	30	27,255	24,833	52,088	1,736	50,378	17,465	
69	Tinnevelly.	Shermadevi circle	11,371	8	10,216	21,587	2,698	21,289	11,352			
70		Srivaikuntam do.	11,763	9	10,376	22,139	2,459	21,792	11,253			
71		Koilpatti do.	10,973	8	9,894	20,867	2,608	20,607	9,381			
	Total of district		1,660,720	381	25	34,107	30,486	64,593	2,584	63,688	31,986	
72	Trichinopoly.	Trichinopoly circle	11,942	12	11,455	23,397	1,949	22,768	9,874			
73		Ariyalur do.	7,629	8	7,528	15,157	1,894	15,308	6,085			
74		Nâmakkal do.	9,938	9	9,642	19,580	2,175	19,789	7,521			
	Total of district		* 1,941,044	393	29	29,509	28,625	58,134	2,005	57,865	28,430	
75	Vizagapatam.	Gunupur circle	4,890	8	4,308	9,198	1,150	7,836	1,221			
76		Vizagapatam circle	15,666	12	16,017	31,683	2,640	26,811	9,068			
	Government vaccinators (Gudem hills)	2,454,029	...	2	602	440	1,042	521	1,025	94		
77		Vizianagram circle	21,477	13	22,322	48,799	3,881	27,565	8,985			
78		Pârvatipuram do.	13,062	13	12,734	25,796	1,984	23,313	6,968			
	Total of district		* 2,454,029	48	16	55,697	55,821	111,518	2,823	86,050	26,836	
79	Koraput.	Jeypore circle	8,689	71	9	8,549	17,238	1,915	15,815	2,249		
80		Koraput do.	5,403	77	7	5,118	10,521	1,503	9,722	1,724		
	Total of district		624,890	74	16	14,092	13,667	27,759	1,735	25,537	3,973	
	Total of circles and districts		38,771,253	291	680	767,394	708,323	1,475,717	2,170	1,391,810	550,891	

* Excludes Amindivi islands (3,955).

† Excludes Pudukkottai (411,886).

‡ Includes Hill Tracts.

DEPARTMENT.

Madras Presidency for the official year 1914-15—continued.

vaccination.	Re-vaccination.				Percentage of successful cases in which the results were known.			Percentage of unknown cases to total cases.	Average annual number of persons successfully vaccinated during previous 5 years.	Average annual number of deaths from small-pox during previous 5 years.			
	Successful.		Unknown.										
	11	12	13	14	15	16	17						
7,401 12,181 6,894	15,483 22,482 18,033	813 353 231	192 494 1,597	104 399 1,500	38 28 29	91·6 92·7 97·0	67·5 85·6 95·7	31·2 37·8 32·5	4·6 1·4 1·2	19·8 5·7 1·8	1		
26,476	55,998	1,397	2,283	2,003	95	93·7	91·5	34·0	2·3	4·2	519		
1,865 6,089 5,983	10,419 12,893 11,745	2,718 690 1,423	1,291 140 249	761 101 180	270 25 33	83·8 87·8 86·0	74·5 27·0 83·3	22·6 27·0 29·4	17·9 4·8 9·4	20·9 17·9 13·3	0·3		
24,259	60,414	7,077	2,144	1,268	451	88·2	74·9	27·0	9·4	21·0	1,259		
6,505 3,710 5,341	12,649 10,589 11,611	574 152 412	1,984 1,894 808	1,563 1,630 598	134 52 54	91·4 91·9 89·1	81·2 88·5 79·3	33·8	4·0 1·3 3·0	6·8 2·7 6·7	0·6		
15,556	34,849	1,138	4,686	3,731	240	90·7	83·9	33·8	2·9	5·1	602		
4,114 7,077 9,648 5,504	6,919 13,642 17,072 10,241	111 55 189 278	297 1,652 423 185	242 1,616 379 147	9 14 6 25	94·4 98·6 95·9 95·1	84·0 98·7 90·9 91·9	17·4 28·4 31·0 16·8	1·5 0·4 1·1 2·5	3·0 0·			

A—VACCINE

Statement No. I showing the Particulars of Vaccination in the

Number.	Districts.	Circles.			Population of districts or circles according to the census of 1911.	Average population per square mile.	Average number of vaccinators employed throughout the year.	Total number of persons vaccinated.	Primary		
		3	4	5					Males.	Females.	Total.
1	2								8	9	10
1	Military Cantonments.	Bangalore ...	100,834	7,447	2	632	201	833	413	182	91
		Secunderabad ...	103,879	5,467	4	6,822	8,902	15,724	3,931	4,251	2,583
		Total of cantonments ...	204,713	6,291	6	7,454	9,103	16,557	2,759	4,433	2,674
		Medical Subordinates ...	...	...	...	8,035	135	8,170	...	131	54
1 2 3 4 5	Municipalities.	Ādōni ...	31,645	2,281	2	755	643	1,398	699	1,318	1,142
		Anantapur ...	8,457	940	1	223	95	318	244	161	
		Anakāpalle ...	20,625	1,719	1	511	331	842	842	738	583
		Bellary ...	34,956	6,991	5	2,186	1,127	3,313	663	2,383	2,138
		Berhampur ...	31,456	5,244	1	1,043	645	1,688	1,688	1,027	849
		Bezwada ...	32,867	5,976	2	871	860	1,781	865	1,249	946
		Bimlipatam ...	9,314	179	1	177	397	574	380	197	
		Calicut ...	78,417	7,292	4	4,291	2,379	6,670	1,667	4,846	3,251
		Cannanore ...	28,957	5,791	1	1,184	585	1,769	1,769	1,359	979
		Chicacole ...	17,852	5,617	1	365	281	646	646	476	411
11 12 13 14 15	Municipalities.	Chidambaram ...	21,327	10,663	1	457	342	799	799	710	537
		Chingleput ...	11,626	9,301	1	554	245	799	799	469	416
		Cochin ...	20,023	20,023	1	1,097	509	1,606	1,606	1,081	711
		Cocanada ...	54,110	9,018	2	1,415	2,663	1,248	1,331	2,134	956
		Coimbatore ...	47,007	11,060	3	1,318	978	2,296	765	2,087	950
		Conjeeveram ...	53,864	13,466	2	1,077	937	2,014	1,007	1,886	1,412
		Coonoor ...	9,933	1,710	1	385	230	615	576	419	
		Cuddalore ...	56,574	4,254	2	1,357	1,079	2,436	1,218	2,230	1,845
		Cuddapah ...	17,807	903	1	671	278	949	949	559	455
		Dindigul ...	25,052	9,635	1	736	476	1,212	1,212	940	866
21 22 23 24 25 26	Municipalities.	Ellore ...	37,819	12,606	2	2,221	1,576	3,797	1,898	2,708	1,640
		Erode ...	16,701	16,701	1	499	413	912	840	608	
		Gudiyāttam ...	23,390	23,390	1	379	391	770	816	693	
		Guntūr ...	40,529	9,006	1	1,054	661	1,715	1,715	1,132	981
		Hospet ...	17,671	5,644	1	492	293	785	785	617	495
		Karūr ...	17,674	8,837	1	207	207	414	414	411	391
		Kodaikānal ...	2,906	528	1	59	40	99	99	68	61
		Kumbakōnam ...	64,647	14,626	3	1,100	969	2,069	690	2,049	1,396
		Kurnool ...	26,040	5,208	1	688	495	1,183	1,091	765	
		Madras ...	518,660	19,209	* 10	17,049	11,751	28,800	2,880	22,134	17,681
32 33 34 35 36	Municipalities.	Madura ...	134,130	5,086	11	6,624	5,236	11,860	1,078	10,509	5,164
		Mannārgudi ...	21,398	3,566	1	423	400	823	823	788	660
		Mangalore ...	48,412	9,380	2	1,545	1,109	2,654	1,327	2,080	1,303
		Masulipatam ...	42,123	2,113	2	1,036	668	1,704	852	1,353	917
		Māyavaram ...	27,121	9,040	1	812	515	1,327	1,046	851	
		Nandyal ...	16,230	3,607	1	507	308	815	815	726	444
		Negapatam ...	60,168	11,638	3	2,982	2,016	4,998	1,666	4,337	2,188
		Nellore ...	33,246	2,078	1	1,226	976	2,202	1,148	704	
		Ongole ...	13,286	3,321	1	550	396	946	581	380	
		Ootacamund ...	18,829	1,345	2	1,050	595	1,645	823	706	604
37 38 39 40 41	Municipalities.	Palamcottah ...	44,909	11,227	2	1,331	840	2,171	1,085	1,974	1,195
		Palghat ...	44,319	4,185	2	1,235	1,033	2,268	1,134	2,100	1,468
		Parlākimedi ...	18,370	13,812	1	518	603	1,121	814	485	
		Periyakulam ...	18,715	24,953	1	449	390	839	839	750	644
		Palni ...	13,211	7,549	1	669	328	997	997	635	508
		Rajahmundry ...	48,417	14,583	2	2,535	998	3,533	1,766	1,836	1,124

* Medical Vaccinators.

DEPARTMENT.

Madras Presidency for the official year 1914-15—continued.

vaccination.		Re-vaccination.		Percentage of successful cases in which the results were known.		Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous 5 years.		Average annual number of deaths from small-pox during previous 5 years.	
Successful.		Total number of operations.		Successful.		Unknown.		Primary vaccination.		Persons successfully vaccinated per 1,000 of population.	
11	12	13	14	15	16	17	18	19	20	21	22
50	147	...	651	442	17	80·8	69·7	5·8	...	2·6	982
369	3,802	24	11,695								

A—VACCINE

Statement No. I showing the Particulars of Vaccination in the

Number.	Districts.	Circles.		Population of districts or circles according to the census of 1911.	Average population per square mile.	Total number of persons vaccinated.	Primary			
		1	2							
1	2	3	4	5	6	7	8	9	10	
47	Salem ...	59,153	13,984	2	1,738	1,412	3,150	1,575	2,899	2,835
48	Srirangam ...	24,799	3,543	1	659	599	1,258	1,236	616	
49	Srivilliputtur ...	29,066	20,761	1	594	518	1,112	1,094	926	
50	Tanjore ...	60,341	805	2	1,487	998	2,485	1,242	1,880	1,512
51	Tellicherry ...	29,258	11,703	2	842	652	1,494	747	987	925
52	Tenali ...	18,195	6,998	1	483	377	810	810	870	555
53	Tinnevelly ...	44,805	7,469	2	1,239	1,052	2,291	1,145	1,942	1,689
54	Trichinopoly ...	123,512	14,899	3	3,753	2,523	6,276	2,092	5,340	4,304
55	Tiruppattur ...	10,470	4,188	1	300	202	502	502	445	405
56	Tirupati ...	16,701	5,010	1	363	219	582	582	424	359
57	Tiruvalur ...	21,000	...	1	214	193	407	407	411	243
58	Tiruvannamalai ...	21,244	1,931	1	506	421	927	927	896	690
59	Tuticorin ...	40,185	11,481	1	1,203	909	2,112	2,112	1,672	1,269
60	Vaniyambadi ...	20,406	5,830	1	480	401	881	881	833	588
61	Vellore ...	49,746	8,102	2	1,093	826	1,919	959	1,635	1,386
62	Vizagapatam ...	43,413	8,349	2	1,110	953	2,063	1,031	1,324	828
63	Vizianagram ...	37,550	7,510	2	2,244	1,418	3,662	1,831	2,040	1,180
64	Walajapet ...	9,962	9,962	1	281	145	426	426	321	265
	Total of Municipalities.	2,640,596	7,051	117	86,452	60,690	147,142	1,258	116,140	83,149
	Grand Total ...	*41,411,849	311	803	869,385	773,251	1,647,586	† 2,042	1,512,514	636,268

* Excludes the population of the Cantonments of Bangalore and Secunderabad.

† In finding out the average number of persons vaccinated, the total work of Note.—(1) Difference between number of operations and number of persons

(2) This statement does not include the statistics of dispensary vaccination

N.B.—In calculating the percentage of success shown in this statement and

SUMMARY OF STATEMENT NO. I.

1	Total number of persons vaccinated.	Total number of operations performed.	Percentage of successful cases in which the results were known.	Average number of persons vaccinated by each vaccinator.	Number of children successfully vaccinated per 1,000	Under one year.	One and under six years.	Ratio of successful vaccinations per 1,000 of population.	Total cost of department.	9	Average cost of each successful case.
2	3	4	5	6	7	8	9	10	11	12	13
By Special staff (statement No. I).	1,471,391	176,195	1,512,514	176,375	90·8	79·1	803	2,042	636,268	582,760	34·8
By Dispensary staff (statement No. III).	1	32	1	32	100·0	75·0	...	...	...	...	...
By other agencies, if any.	...	...	...	...	...	...	...	...	...	...	...
Total ...	1,471,392	176,227	1,512,515	176,467	90·8	79·1	803	2,042	636,268	582,760	34·8

* Exclusive of the pay and allowances of the Inspector of Vaccination and Deputy Sanitary Commissioners, Northern, Central and Southern Ranges.

DEPARTMENT.

Madras Presidency for the official year 1914-15—continued.

vaccination.	Re-vaccination.			Percentage of successful cases in which the results were known.	Persons successfully vaccinated per 1,000 of population.	Average annual number of persons successfully vaccinated during previous 5 years.	Average annual number of deaths from small-pox during previous 5 years.							
	Successful.	Total number of operations.	Unsuccessful.											
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
41	2,878	...	252	189	...	99·3	75·0	51·8	...	2,771	46·8	9	0·2	
537	1,199	19	22	17	5	98·5	100·0	49·0	1·5	22·7	1,159	46·7	28	1·1
93	1,041	1	47	32	3	95·2	72·7	36·9	0·09	6·4	1,052	36·2	..	..
269	1,834	...	660	502	20	97·6	78·4	38·7	...	3·0	2,487	41·2	83	1·4
25	966	...	516	235	41	97·9	49·5	41·0	...	7·9	1,225	41·9	34	1·2
163	745	17	34	25	1	87·3	75·4	42·3	1·9	2·9	671	36·9	7	0·4
160	1,885	5	381	325	33	97·3	93·4	49·8	0·3	8·7	1,756	39·2	27	0·6
829	5,206	59	936	637	171	98·6	88·3	47·3	1·1	18·3	6,035	48·9	115	0·9
442	...	57	52	...	99·3	91·2	47·2	...	...	...	560	53·5	14	1·3
45	406	1	158	116	28	96·0	89·2	31·3	0·2	17·7	525	31·4	1	0·06
131	380	...	5	4	...	92·5	80·0	18·3	...	...	...	...	...	...
95	822	2	70	58	4	91·9	87·9	41·4	0·2	5·7	787	37·0	20	0·9
309	1,651	2	448	270	137	98·9	86·8	47·8	0·1	30·6	2,577	64·1	32	0·8
125	721	62	75	27	27	93·5	56·2	36·7	7·4	36·0	716	35·1	8	0·4
247	1,635	...	284	106	178	100·0	100·0	35·0	...	62·7	1,896	38·1	21	0·4
259	1,121	6	833	445	118	85·0	62·2	36·1	0·5	14·2	1,390	32·0	19	0·4
337	1,692	21	1,705	1,323	78	83·8	81·3	80·3	1·0	4·6	2,704	72·0	14	0·4
24	302	5	110	64	25	95·6	75·3	36·7	1·6	22·7	416	41·8	4	0·4
22,608	108,742	1,341	33,734	22,223	3,480	94·7	78·5	50·0	1·2	10·3	181,162	60·1	1,743	0·7
582,760	1,317,276	61,968	176,375											

A.—VACCINE DEPARTMENT.

STATEMENT No. II showing the Cost of the Department in the Madras Presidency for the official year 1914-15.

A—VACCINE DEPARTMENT.

Statement No. II showing the Cost of the Department in the Madras Presidency for the official year 1914-15—continued.

Number. Districts.	Circles.	Expenditure—cont.										Paid from														
		Contingencies.					* Travelling Allowance.					Total cost.					Municipal funds.					Local funds.				
		RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	17	18	19	20	21	22	23	24	25	26	RS.	A.	P.		
1 Anantapur.	Anantapur circle	418	13	1	664	2	6	3,247	1	4	1,123	9	9	2,123	7	7	...	3,247	1	4	12,806	0	4	0		
2	Penkonda do.	375	15	0	658	1	0	3,228	10	3	1,083	5	9	2,145	4	6	...	3,228	10	3	13,563	0	3	10		
3	Total of district	794	12	1	1,822	3	6	6,475	11	7	2,206	15	6	4,268	12	1	...	6,475	11	7	26,349	0	3	11		
4 Bellary.	Bellary circle	1,016	11	9	705	14	10	4,131	2	8	972	13	6	3,158	5	2	...	4,131	2	8	15,311	0	4	0		
5	Hospet do.	381	2	10	690	13	9	3,840	13	4	1,051	7	8	2,789	5	8	...	3,840	13	4	14,776	0	4	2		
6 Chingleput.	Chingleput circle	976	12	6	635	0	4	3,794	3	9	1,356	10	0	2,487	9	9	...	3,794	3	9	12,488	0	4	10		
7	Saidapet do.	1,000	4	9	653	5	5	3,766	0	5	1,554	7	7	2,211	8	10	...	3,766	0	5	11,000	0	5	6		
8	Ponnai.	2,775	6	3	1,801	6	10	11,188	3	0	1,378	8	0	2,249	6	10	...	3,627	14	10	7,650	0	7	7		
9	Total of district	924	12	3	575	5	11	3,873	5	7	4,289	9	7	6,898	9	5	...	11,188	3	0	31,138	0	5	9		
10	North Coimbatore circle	563	7	2	619	10	0	3,549	6	8	1,088	9	0	2,460	13	8	...	3,549	6	8	10,730	0	5	8		
11	East do.	374	9	4	995	5	8	3,781	1	7	1,650	0	0	2,131	1	7	...	3,781	1	7	14,052	0	4	4		
12	South do.	385	11	7	485	10	7	2,619	1	6	1,363	9	11	1,335	7	7	...	2,639	1	6	9,392	0	4	3		
13	Central do.	418	15	0	931	10	7	3,678	14	8	1,552	3	1	2,126	11	7	...	3,678	14	8	15,103	0	3	10		
14	Total of district	1,692	21	1	3,032	4	10	13,708	8	5	5,654	6	0	8,054	2	5	...	13,708	8	5	49,877	0	4	5		

Number. Districts.	Circles.	Expenditure—cont.										Paid from														
		Contingencies.					* Travelling Allowance.					Total cost.					Municipal funds.					Local funds.				
		RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	17	18	19	20	21	22	23	24	25	26	RS.	A.	P.		
14 Cuddappah.	Cuddappah circle	661	8	9	865	15	8	3,855	18	5	1,311	5	3	2,544	8	2	...	3,855	13	5	9,578	0	6	5		
15	Proddatur do.	635	13	8	526	3	2	2,692	2	3	1,908	8	8	1,783	9	7	...	3,092	2	3	9,893	0	5	0		
16	Sidhout do.	731	12	6	548	14	3	3,563	12	9	1,167	11	11	2,402	10	10	...	3,563	12	9	11,640	0	4	10		
17	Total of district	1,929	2	11	1,931	1	3	10,117	12	5	3,387	9	10	6,730	2	7	...	10,117	12	5	31,111	0	5	2		
18	Berhampur circle	492	11	6	594	10	0	3,068	3	6	1,222	8	3	1,835	11	3	...	3,058	3	6	13,161	0	3	9		
19	Chiacole circle	306	8	0	459	3	6	2,996	15	11	1,195	10	6	1,801	5	5	...	2,996	15	11	11,841	0	4	0		
20	Ganjam Hill tracts	1,297	10	1	660	1	0	4,639	1	8	4,639	1	8	1,777	15	9	...	4,639	1	8	14,688	0	5	0		
21	Aska circle	326	6	0	712	9	3	2,787	13	1	1,909	13	4	1,787	13	1	...	12,033	0	3	9	0	3	9		
22	Parikhamedu circle	377	12	0	693	3	7	3,089	3	2	1,180	7	2	1,608	12	0	...	3,089	3	2	12,055	0	4	1		
23	Purushottamapuri do.	305	0	0	633	11	5	2,992	15	7	1,026	0	8	1,966	14	11	...	2,992	15	7	12,250	0	3	10		
24	Total of district	3,105	15	6	3,653	6	9	19,564	4	11	10,573	9	7	8,930	11	4	...	19,564	4	11	76,028	0	4	1		
25	Gocanada circle	640	0	0	779	1	3	3,618	13	10	1,056	13	7	2,562	0	3	...	3,618	13	10	14,047	0	4	1		
26	Rajahmundry do.	833	6	5	983	14	10	4,171	8	0	1,005	5	10	3,166	2	9	...	4,171	8	0	21,034	0	3	2		
27	Polavaram do.	912	4	2	332	11	9	3,189	7	6	1,288	12	9	1,900	10	9	...	3,189	7	6	57,14	0	8	11		
28	Bhadrahalam do.	909	10	7	1,182	8	6	4,452	7	9	990	12														

A—VACCINE DEPARTMENT.

Statement No. II showing the Cost of the Department in the Madras Presidency for the official year 1914-15—continued.

Number—cont.	Districts—cont.	Circles—cont.	Expenditure.						Peons, etc.								
			Deputy Inspectors.			Vaccinators.			Peons, etc.			Pay.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
40	Tellicherry circle.	...	...	...	...	...	1	...	871	8	2	9	...	1,725	4	1
41	Calicut do.	...	...	...	...	...	1	...	480	0	4	7	...	1,908	8	1
42	Palgmat do.	...	...	...	...	...	1	...	720	0	3	9	...	2,275	10	1
43	Malappuram do.	...	...	...	...	...	1	...	480	0	3	8	...	1,749	0	1
44	Kavalai circle	...	...	...	...	...	1	...	773	0	1	2	...	7,658	8	5
45	Gudur do.	...	...	...	...	...	1	...	840	0	6	2	7*	1,712	13	1
46	Kanigiri do.	...	...	...	...	...	1	...	480	0	1	4	3	2,184	4	0
47	Nilgiris.	...	...	...	...	...	1	...	2,093	0	6	8	13	5,447	9	1
48	Vellore circle	...	...	...	...	...	1	...	660	0	3	...	...	1,168	3	1
49	Ranipettai do.	...	...	...	...	...	1	...	660	0	0	3	...	1,168	8	3
50	Polur do.	...	...	...	...	...	1	...	480	0	0	3	...	681	12	5
51	Tiruppattur do.	...	...	...	...	...	1	...	480	0	1	2	1	731	10	6
52	Srivilliputtur circle	...	...	...	...	...	1	...	2,520	0	0	11	10	2,243	13	5
53	Paramagudi do.	...	...	...	...	...	1	...	840	0	0	3	1	4,525	4	4
54	Tiruppattur	...	...	...	...	...	1	...	720	0	0	3	1	1,118	1	4
	Total of district	...	...	...	...	...	1	...	720	0	0	3	13	2,069	14	7
	Salem circle	...	...	...	...	...	1	...	720	0	0	3	1	1,690	9	11
55	Salem	...	...	...	...	...	1	...	840	0	0	3	4	1,114	1	9
56	Sankari do.	...	...	...	...	...	1	...	634	13	5	1	11	1,664	5	9
57	Hosur	...	...	...	...	...	1	...	480	0	0	3	7	1,538	4	10
	Total of district	...	...	...	...	...	1	...	1,954	13	5	7	22	4,316	12	4
58	Cuddalore circle	...	...	...	...	...	1	...	720	0	0	3	4	1,147	15	7
59	Vridhahachalam do.	...	...	...	...	...	1	...	720	0	0	3	3	803	2	11
60	Tirukkoyilur do.	...	...	...	...	...	1	...	570	0	0	2	3	1,824	15	5
61	Villupuram do.	...	...	...	...	...	1	...	840	0	0	2	4	1,369	5	8
62	Tindivanam do.	...	...	...	...	...	1	...	512	2	1	3	1	821	2	5
	Total of district	1	...	894	2	10	8	15	2	4,966	10	0
63	Northern circle	...	...	...	...	...	1	...	894	2	10	3	2	2,118	14	8
64	Central do.	...	...	...	...	...	1	...	720	0	0	1	6	1,864	10	1
65	Southern do.	1	...	480	0	0	1	6	2	2,074	9	7
	Total of district	1	...	2,094	2	10	5	10	10	6,058	2	4
66	Tanjore circle	1	...	885	0	0	2	4	1	6,13	15	7
67	Negapatam do.	1	...	710	0	0	3	3	1	1,173	4	4
68	Paitunkottai do.	1	...	604	5	0	2	8	1	1,294	15	1
69	Kumbakonam do.	1	...	480	0	0	2	10	1	616	3	8
	Total of district	1	...	2,929	5	0	9	28	1	3,718	6	8
70	Sermadevi circle	1	...	680	0	0	4	12	3	1,484	4	6
71	Servaitkuntam do.	1	...	840	0	0	3	5	1	1,581	1	6
72	Koilpatti do.	1	...	200	0	0	1	4	3	1,288	2	9
	Total of district	1	...	2,420	0	0	8	12	5	4,363	8	9
73	Trichinopoly circle	...	...	...	...	...	1	...	840	0	0	3	2	2,382	13	8
74	Aviyalur do.	1	...	580	0	0	4	2	1	1,952	12	6
75	Nāmakkal do.	1	...	480	0	0	4	5	1	1,766	14	0
	Total of district	1	...	1,900	0	0	11	18	5	5,992	8	2
76	Gunupur circle	1	...	660	0	0	1	7	1	1,072	4	1
77	Vizagapatam circle	...	...	...	...	...	1	...	694	13	3	5	2	1,716	11	1
	Government vaccinators (Grudem Hills)	...	...	...	...	...	1	...	520	0	0	4	2	250	13	11
78	Vizianagram circle	...	...	...	...	...	1	...	481	0	0	4	1	1,811	15	4
79	Pārvatipuram do.	1	...	3	2,355	13	3	16	2	1,883	9	10
	Total of district	1	...	1,177	10	8	1	18	5	2,911	8	7
80	Jeypore circle	1	...	900	0	0	1	6	2	1,264	10	3
81	Koraput do.	1	...	2,077	10	8	2	12	3	1,403	13	0
	Total of district	1	...	2,077	10	8	2	12	3	2,668	7	3
	Grand total of districts	...	2	12,601	6	1	21	23	54,590	8	8	204	396	123	1,21,920	5	0

* Includes two pupil Vaccinators.

A—VACCINE DEPARTMENT.

Statement No. II showing the Cost of the Department in the Madras Presidency for the official year 1914-15—continued.

Number.	Districts.	Expenditure—cont.												Paid from													
		Circles.				* Outgoings all allowances.				Imperial funds.				Provincial funds.				Local funds.				Municipal funds.					
		17	18	19	20	21	22	23	24	21	22	23	24	21	22	23	24	21	22	23	24	21	22	23	24		
40	Tellicherry circle	1,074	9	1,356	12	1	5,130	2	1	1,825	11	11	3,304	6	2	5,130	2	1	25,976	0	3	2	25,976	0	3	2	
41	Calicut do.	1,257	4	9	1,759	13	8	5,506	9	9	1,804	6	2	4,202	3	7	5,506	9	9	24,989	0	3	6	24,989	0	3	6
42	Palghat do.	1,347	6	3	2,066	3	1	6,511	4	2	1,557	9	2	4,953	11	0	6,511	4	2	44,311	0	2	4	44,311	0	2	4
43	Malappuram circle	1,176	11	9	1,447	4	11	4,955	1	3	1,225	10	9	3,729	6	6	4,955	1	3	34,410	0	2	4	34,410	0	2	4
44	Kavali	***	***	***	***	***	***	***	***	***	***	***	***	5,913	6	0	16,189	11	8	***	22,103	1	3	129,686	0	2	9
45	Gudur	***	***	***	***	***	***	***	***	***	***	***	***	1,261	1	6	2,280	11	11	***	3,491	13	5	15,084	0	3	8
46	Kanigiri	***	***	***	***	***	***	***	***	***	***	***	***	1,476	9	6	3,047	15	5	***	4,524	8	11	14,510	0	5	0
47	Nilgiris circle	***	***	***	***	***	***	***	***	***	***	***	***	886	5	0	2,388	6	0	***	3,274	5	0	14,166	0	3	8
48	Vellore circle	939	10	9	498	16	6	2,700	6	8	1,315	11	11	1,384	10	9	1,315	11	11	***	2,700	6	8	12,639	0	3	5
49	Rānipētai	811	8	6	459	7	10	2,942	2	10	1,503	11	6	1,438	7	4	1,503	11	6	***	2,942	2	10	11,611	0	4	0
50	Polar	803	9	3	532	13	0	2,783	6	3	1,110	0	1	1,664	6	2	1,110	0	1	***	2,783	6	3	11,711	0	3	10
51	Tiruppattur	691	9	7	687	4	5	4,442	11	5	1,555	6	0	2,887	5	5	1,555	6	0	***	4,442	11	5	19,641	0	3	7
52	Srivilliputtur circle	711	4	7	636	14	11	3,411	4	10	5,493	13	6	7,374	13	8	5,493	13	6	***	12,868	11	2	55,602	0	3	4
53	Paramangudi	913	14	6	637	15	11	3,898	5	0	1,445	11	5	1,965	9	5	1,445	11	5	***	3,411	4	10	17,600	0	3	1
54	Tiruppattur	761	8	10	845	11	4	4,114	6	1	1,239	7	6	2,563	2	6	1,239	7	6	***	3,898	5	0	19,065	0	3	3
55	Salem circle	894	0	0	648	0	4	3,484	8	7	2,168	3	6	1,316	5	1	2,168	3	6	***	3,484	8	7	4,601	0	12	1
56	Sankari	***	***	***	617	2	3	799	1	8	3,379	4	7	1,239	15	5	1,239	15	5	***	3,379	4	7	15,587	0	3	5
57	Hostur	510	9	6	888	14	3	3,466	4	7	1,018	10	4	2,911	4	5	1,018	10	4	***	3,466	4	7	22,881	0	2	9
58	Cuddalore circle	994	11	10	664	0	5	3,625	11	10	1,488	5	9	2,137	6	1	1,488	5	9	***	3,625	11	10	11,180	0	5	2
59	Vridhāchalam do.	710	11	2	453	7	10	2,779	18	11	1,257	12	10	1,541	1	1	1,257	12	10	***	2,798	13	11	12,994	0	3	5
60	Tirukkoyilūr	591	5	0	535	8	10	2,631	5	3	1,042	9	9	1,588	11	6	1,042	9	9	***	2,631	5	3	11,925	0	3	6
61	Thindivanam	897	0	9	548	13	7	3,754	4	0	1,470	2	1	2,284	1	1	1,470	2	1	***	3,754	4	0	14,005	0	4	3
62	Villupuram	480	0	1	660	1	9	2,573	6	4	917	9	5	1,655	12	11	917	9	5	***	2,573	6	4	11,578	0	3	7
63	Northern circle	824	4	0	463	0	0	4,402	6	4	1,431	13	6	2,970	8	10	1,431	13	6	***	3,625	11	10	11,180	0	5	2
64	Central	834	3	8	368	9	4	3,889	7	1	1,242	15	10	2,646	7	3	1,242	15	10	***	4,402	6	4	14,152	0	5	0
65	Southern	1,153	12	8	653	6	10	4,363	13	1	1,349	2	6	3,014	10	7	1,349	2	6	***	3,889	7	1	12,219	0	5	1
66	Tanjore circle	274	15	0	325	7	1	2,160	10	0	1,237	9	4	923	6	8	1,237	9	4	***	2,160	11	0	7,161	0	4	10
67	Negapatam	213	11	3	667	10	10	2,858	3	3	1,073	1	0	1,785	3	2	1,073	1	0	***	2,858	3	3	15,258	0	3	0
68	Pattnakkottai	283	4	0	707	2	1	2,391	2	2	1,054	13	8	1,936	5	2	1,054	13	8	***	2,991	2	2	17,451	0	2	9
69	Kumbakonam	226	2	0	586	12	5	2,081	2	9	876	10	2	1,204	8	7	876	10	2	***	2,081	2	9	10,388	0	3	2
70	Semmadevi circle	988	0	3	2,287	0	5	10,091	2	2	4,242	0	7	5,849	1	7	5,849	1	7	***	10,891	2	2	50,258	0	3	4
71	Srivaikuntam do.	278	3	0	63																						

A.—VACCINE DEPARTMENT.

Statement No. II showing the Cost of the Department in the Madras Presidency for the official year 1914-15—continued.

Number.	Municipalities.	Expenditure—cont.												Paid from						Number of all successful re-vaccination and cessful case.	Average cost of each suc-				
		Contingencies.				Traveling allowances.				Total cost.				Provincial funds.			Local funds.								
		17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	
1	Adoni	...	...	...	...	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.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
2	Anantapur	...	...	...	...	...	98 2	1	401 7	5	...	...	...	...	...	...	401 7	5	401 7	5	1,393	0 5 0	...	...
3	Anakapalle	19 13	7	94 13	7	94 13	7	94 13	7	223 13	8	223 13	8	221 0 6 10
4	Bellary	...	...	...	...	...	36 8	0	223 13	8	...	...	...	...	...	...	720 11	0	720 11	0	733 0 4 8	...	...	...
5	Berhampur	...	...	...	...	...	96 11	3	720 11	0	...	...	...	...	...	...	302 0	0	302 0	0	3,048 0 3 9	...	...	...
6	Bezwada	...	...	...	...	...	42 0	0	302 0	0	...	...	...	...	...	...	302 0	0	302 0	0	1,562 0 2 4	...	...	...
7	Bimlipatam	...	...	...	...	...	64 11	0	422 13	0	...	...	...	...	...	...	422 13	0	422 13	0	1,645 0 4 1	...	...	...
8	Calicut	...	...	...	...	...	20 9	6	256 5	1	...	...	...	...	...	...	256 5	1	256 5	1	497 0 8 3	...	...	...
9	Cannanore	...	...	...	...	...	348 3	6	927 10	3	...	...	...	...	...	...	927 10	3	927 10	3	6,500 0 2 3	...	...	...
10	Chiacole	...	...	...	...	...	102 14	0	342 14	0	...	...	...	...	...	...	342 14	0	342 14	0	1,615 0 3 5	...	...	...
11	Chidambaram	...	...	...	...	...	26 13	0	266 13	0	...	...	...	...	...	...	266 13	0	266 13	0	1,634 0 6 9	...	...	...
12	Chingleput	...	...	...	...	...	47 9	7	269 12	11	...	...	...	...	...	...	269 12	11	269 12	11	740 0 5 3	...	...	...
13	Cochin	...	...	...	...	...	63 6	0	208 0	0	...	...	...	...	...	...	208 0	0	208 0	0	618 0 5 7	...	...	...
14	Coenabada	...	...	...	...	...	37 8	7	265 8	7	...	...	...	...	...	...	265 8	7	265 8	7	1,208 0 2 9	...	...	...
15	Comabatore	...	...	...	...	...	156 9	2	206 1 2	...	...	...	...	...	...	...	606 1 2	...	606 1 2	...	1,808 0 5 5	...	...	...
16	Conjeeveram	...	...	...	...	...	100 7	7	687 2	3	...	...	...	...	...	...	687 2	3	687 2	3	1,799 0 6 1	...	...	...
17	Erode	...	...	...	...	...	140 5	5	469 14	2	...	...	...	...	...	...	469 14	2	469 14	2	1,705 0 4 5	...	...	...
18	Gudalur	...	...	...	...	...	22 14	0	262 14	0	...	...	...	...	...	...	262 14	0	262 14	0	575 0 3 6	...	...	...
19	Gudiyattam	...	...	...	...	...	169 13	9	579 13	9	...	...	...	...	...	...	579 13	9	579 13	9	2,388 0 3 10	...	...	...
20	Dindigul	...	...	...	...	...	53 14	8	299 14	8	...	...	...	...	...	...	209 14	8	209 14	8	809 0 4 2	...	...	...
21	Ellore	...	...	...	...	...	29 0	9	214 0	9	...	...	...	...	...	...	214 0	9	214 0	9	1,164 0 2 11	...	...	...
22	Erode	...	...	...	...	...	88 8	9	465 3	7	...	...	...	...	...	...	465 3	7	465 3	7	3,257 0 2 3	...	...	...
23	Gudiyattam	...	...	...	...	...	50 11	9	277 11	9	...	...	...	...	...	...	277 11	9	277 11	9	822 0 5 5	...	...	...
24	Guntur	...	...	...	...	...	* 31 4	10	* 162 13	1	...	...	...	...	...	...	162 13	1	162 13	1	803 0 3 3	...	...	...
25	Hosur	...	...	...	...	...	167 4	9	+ 477 12	8	...	...	...	...	...	...	477 12	8	477 12	8	1,529 0 4 11	...	...	...
26	Kardur	...	...	...	...	...	47 10	1	144 12	2	...	...	...	...	...	...	144 12	2	144 12	2	765 0 3 0	...	...	...
27	Kodaikanal	...	...	...	...	...	88 9	3	302 1	3	...	...	...	...	...	...	302 1	3	302 1	3	408 0 11 10	...	...	...
28	Kumbakonam	...	...	...	...	...	49 6	0	628 6	2	...	...	...	...	...	...	628 6	2	628 6	2	1,953 0 3 6	...	...	...
29	Kurnool	...	...	...	...	...	27 13	11	297 13	11	...	...	...	...	...	...	297 13	11	297 13	11	1,078 0 4 5	...	...	...
30	Madras	...	...	...	...	...	9 8	6	8,867 10	9	15,456 8	4	...	...	...	...	15,456 8	4	15,456 8	4	28,938 0 10 4	...	...	...
31	Madura	...	...	...	...	...	825 0	11	1,810 6	7	...	...	...	...	...	...	1,810 6	7	1,810 6	7	11,533 0 2 6	...	...	...
32	Mannargudi	...	...	...	...	...	42 12	11	186 12	11	...	...	...	...	...	...	186 12	11	186 12	11	795 0 3 9	...	...	...
33	Mangalore	...	...	...	...	...	126 4	9	648 4	9	...	...	...	...	...	...	848 4	9	848 4	9	2,602 0 5 3	...	...	...
34	Masulipatam	...	...	...	...	...	15 5	7	470 13	0	...	...	...	...	...	...	470 13	0	440 13	0	1,604 0 4 8	...	...	...
35	Mayavaram	...	...	...	...	...	83 14	11	321 14	11	...	...	...	...	...	...	321 14	11	321 14	11	1,268 0 4 0	...	...	...
36	Nandyal	...	...	...	...	...	24 2	0	184 2	0	...	...	...	...	...	...	184 2	0	184 2	0	739 0 4 0	...	...	...
37	Negapatam	...	...	...	...	...	313 4	5	860 12	7	...	...	...	...	...	...	860 12	7	860 12	7	4,443 0 3 1	...	...	...
38	Nellore	...	...	...	...	...	106 7	6	405 13</															

B—DISPENSARY VACCINATION.

STATEMENT No. III showing Dispensary Vaccination in the Madras Presidency for the official year 1914-1915.

Districts.	1	Number of dispensaries in each district to which a vaccinator is attached.	2	Primary vaccination.												Percentage of successful cases in which the results were known.	Percentage of unknown cases to total operations.
				3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
				Total number of persons vaccinated.	Average number of persons vaccinated by each vaccinator.	Total number of operations.	Under one year.	Over one and under six years.	Total of all ages.	Unknown.	Total number of operations.	Successful.	Unknown.	Primary vaccination.	Re-vaccination.		
Anantapur
Bellary
Chingleput
Chittoor
Coimbatore
Cuddapah
Ganjam
Gödävari
Guntur
Kistna
Kurnool
Madras
Madura
Malabar
Nellore
Nilgiris
North Arcot
Rämnäd
Salem
South Arcot
South Canara
Tanjore
Tinnevelly
Trichinopoly
Vizagapatam
Korput
Total ..	33	1	33	1	1	1	1	1	1	100·0	75·0	32	15	12	100·0	75·0	37·5

Difference between number of operations and number of persons vaccinated equals nil.

STATEMENT No. IV showing the number of persons primarily vaccinated and the number of those persons who were successfully vaccinated in the Madras Presidency in each of the undermentioned years.

* As per G.O. No. 1158 L, Mis., dated 4th September 1911.

STATEMENT No. V showing Particulars of Vaccination verified by Inspecting Officers during 1914-15.

Districts.	Total number of persons vaccinated.	Total number inspected		Percentage of inspection to total number vaccinated.				Percentage of cases found successful to total number inspected.			
		By District Medical and Sanitary Officers and Civil Surgeons.	By Deputy Inspectors of Vaccination.	By Sanitary Assistants to District Medical and Sanitary Officers.		By District Medical and Sanitary Officers and Civil Surgeons.		By Sanitary Assistants to District Medical and Sanitary Officers.		By Sanitary Assistants to District Medical and Sanitary Officers.	
				Primary Vaccination.	Re-vaccination.	Primary Vaccination.	Re-vaccination.	Primary Vaccination.	Re-vaccination.	Primary Vaccination.	Re-vaccination.
Aranantapur	26,238	1,346	432	41	14,957	513	...	1,6	3,0	57,0	38,1
Bellary	32,967	4,157	8	1,361	24,219	433	...	0,02	32,7	73,5	10,4
Chingleputt	46,985	1,435	868	76	37,259	780	...	1,8	5,3	79,3	54,4
Chittoor	33,714	3,055	322	...	22,278	1,154	...	1,0	...	66,1	37,8
Coinbatore	69,630	5,512	125	1,454	43,851	1,730	...	0,2	26,4	82,5	28,1
Cuddapah	31,531	2,161	853	125	23,995	4,99	...	2,7	5,8	75,4	23,1
Ganjam	78,381	9,076	1,095	839	60,382	5,383	...	1,4	9,2	77,0	59,4
Gödavari	51,069	22,123	482	221	51,515	7,883	1,291	0,7	1,0	72,5	35,4
Guntur	44,155	15,753	29	...	44,155	11,182	2,877	0,04	...	71,9	47
Kistna	81,817	6,460	13	...	58,714	450	2,365	0,01	...	71,8	7,0
Kurnool	33,428	4,864	1,017	172	25,028	1,618	...	3,0	3,5	74,9	23,2
Madras	22,013	6,787	...	...	...	...	...	...	...	97,7	69,8
Madura	66,512	6,027	40	49,457	2,431	...	0,2	0,7	79,2	62,5	...
Malabar	1,55,312	8,521	2,485	1,366	79,166	1,837	...	1,6	16,0	51,0	21,6
Nellore	44,989	6,692	719	110	31,812	2,392	...	1,6	1,6	70,7	35,7
Nilgiris, The	5,750	1,223	1,167	816	3,827	196	...	21,0	66,7	68,6	16,0
North Arcot	67,131	1,536	4	54,513	2,327	...	1,2	1,2	41,9	3,5	...
Rāmmad	56,358	1,301	425	88	40,299	228	...	0,8	6,8	71,5	17,5
Salem	60,582	3,489	2,282	933	44,472	1,427	...	3,8	26,7	73,4	40,9
South Arcot	75,607	2,452	1,932	139	64,855	1,622	1,509	2,6	5,7	69,0	24,6
South Canara	40,844	5,264	2,586	507	27,054	3,236	...	6,3	6,6	66,2	61,5
Tanjore	59,928	4,778	970	36,615	1,950	14	...	7,6	20,3	39,7	3,3
Tinnevelly	67,468	3,849	1,633	339	40,572	1,240	...	2,4	8,8	60,1	32,2
Trichinopoly	64,125	2,161	8,092	574	47,140	943	...	4,8	26,6	78,5	43,6
Vizagapatam	87,774	31,432	82	...	47,907	13,444	...	0,09	54,7	42,8	...
Korput	25,261	2,498	684	19	18,325	1,997	...	2,7	0,8	72,5	79,9
Total	..	1,467,110	163,952	27,812	10,194	991,267	65,203	12,319	415	1,8	62

* Information not available.

† Excludes cases performed in cantonments.

‡ Verification work done till 24th September 1914 after which date the post of Sanitary Assistant was abolished.

§ Information could not be furnished as the post of Deputy Inspector of Vaccination has been abolished.

STATEMENT No. VI showing the Number of Vaccinations performed in Municipal Towns on children under one year of age (G.O. Mis. No. 1534 L., dated 6th December 1909.)

Municipalities.	1	2	3	4	5
Ādōni ...	1,611	253	664	1st Dec. 1886.	
Anantapur ...	262	42	93	1st Jan. 1886.	
Anakāpalle ...	753	131	477	1st Nov. 1891.	
Bellary ...	1,827	483	789	1st Jan. 1891.	
Berhampur ...	1,057	242	514	15th April 1891.	
Bezwada ...	1,242	362	649	1st May 1892.	
Bimlipatam ...	317	34	146	1st Jan. 1894.	
Calicut ...	3,512	504	2,207	1st Oct. 1891.	
Cannanore ...	1,232	222	740	1st June 1891.	
Chicacole ...	623	119	319	1st Dec. 1890.	
Chidambaram ...	696	167	358	1st July 1887.	
Chingleput ...	525	121	416	1st April 1897.	
Cochin ...	729	179	711	1st Jan. 1894.	
Cocanada ...	1,988	343	947	1st June 1890.	
Coimbatore ...	1,936	544	671	1st Jan. 1889.	
Conjeeveram ...	2,414	644	1,165	1st Jan. 1891.	
Coonoor ...	328	42	96	1st April 1887.	
Cuddalore ...	2,107	668	1,148	1st Aug. 1896	
Cuddapah ...	592	131	283	15th July 1888.	
Dindigul ...	1,285	322	776	16th July 1886.	
Ellore ...	2,152	612	1,320	1st June 1888.	
Erode ...	711	112	402	1st April 1891.	
Gudiyāttam ...	806	107	498	1st June 1889.	
Guntūr ...	1,545	513	720	1st Jan. 1914.	
Hospet ...	494	62	281	1st April 1892.	
Karūr ...	647	91	242	1st Sept. 1900.	
Kodaikānal ...	124	32	44	1st April 1889.	
Kumbakōnam ...	1,905	472	937	1st Aug. 1889.	
Kurnool ...	1,128	256	547	1st July 1891.	
Madura ...	4,578	1,243	2,898	1st Jan. 1880.	
Mannārgudi ...	752	148	409	1st Dec. 1890.	
Mangalore ...	1,848	309	1,219	1st Sept. 1891.	
Masulipatam ...	1,473	338	784	1st May 1888.	
Māyavaram ...	931	230	469	1st Oct. 1886.	
Nandyal ...	660	134	353	1st Jan. 1900.	
Negapatam ...	1,787	311	2,188	1st July 1886.	
Nellore ...	1,146	228	380	1st Aug. 1886.	
Ongole ...	543	120	300	1st Dec. 1885.	
Ootacamund ...	759	137	409	1st July 1887.	
Palamcottah ...	1,641	444	820	1st May 1886.	
Palghat ...	2,027	488	1,237	1st Jan. 1883.	
Parlākimedi ...	778	151	482	1st Dec. 1890.	
Periyakulam ...	960	195	488	1st Feb. 1891.	
Palni ...	659	140	426	1st Dec. 1891.	
Rajahmundry ...	1,613	500	802	1st Jan. 1886.	
Salem ...	3,289	650	2,477	1st May 1891.	
Srirangam ...	815	254	332	1st July 1888.	
Srivilliputtūr ...	1,300	245	854	1st Jan. 1896.	
Tanjore ...	2,258	483	1,447	1st July 1893.	
Tenali ...	715	173	314	1st April 1910.	
Tellicherry ...	1,257	243	840	15th Jan. 1892.	
Tinnevelly ...	1,930	599	1,026	1st July 1886.	
Trichinopoly ...	3,898	883	2,622	1st Aug. 1890.	
Tiruppattūr ...	459	127	209	1st April 1891.	
Tirupati ...	447	71	275	1st Mar. 1890.	
Tiruvalur ...	230	45	81	...	
Tiruvannāmalai ...	875	143	661	15th Dec. 1897.	
Tuticorin ...	1,551	428	915	1st May 1892.	
Vāniyambādi ...	738	109	427	1st May 1889.	
Vellore ...	2,224	401	1,276	1st Jan. 1897.	
Vizagapatam ...	1,370	286	640	1st Aug. 1890.	
Vizianagram ...	1,238	302	702	1st Jan. 1891.	
Walajapet ...	439	93	193	20th June 1892.	
Total ...	81,836	18,465	47,115		

STATEMENT No. VII showing Inspection Work done by the Deputy Inspectors during the year 1914-15.

District.	Circle.	Number of inspecting officers.		Number of villages visited.		Number of cases verified.						Proportion per cent. of inspection to total number vaccinated.								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Anantapur.	Anantapur Pemulonda	1	326	13,212	236	...	7,760	7,760	7,060	91.0	...	58.7	51.7
Bellary.	Bellary Hospital	1	507	14,908	250	...	7,710	7,710	5,666	73.5	...	72.3	87.7
Chingleput.	Chingleput Saidapet	1	313	16,012	214	11,569	11,539	9,541	82.5
Chittoor.	Chittoor Karvetnagar	...	...	1	...	...	...	...	826	17,485	238	...	14,581	14,581	12,267	84.1	...	83.4	...
Coimbatore.	North Coimbatore South do. East do. Central do.	...	...	1	...	1	...	...	1,288	15,686	219	13,196	...	13,196	11,468	86.9	84.2	77.3	...
Cuddapah.	Cuddapah Proddatur Sidhout	...	...	1	...	1	...	...	289	14,846	224	...	11,268	11,268	9,429	83.7	...	75.9	54.2
Ganjam.	Berhampur Chiacole Ganjam Hill Tracts Aska Parlikamedi Purushottampr	1	...	1	221	12,342	197	8,232	...	12,344	12,164	11,314	93.0	...	77.2	...
Kurnool.	Cocanada Rajahmundry Polavaram Peddappa Bhadrachalam	...	...	1	...	1	...	...	986	10,581	230	...	7,578	7,578	5,408	71.4	65.9	...	73.2
Madras.	Dindigul Madura Usilampatti Malapparam	...	...	1	...	1	...	...	241	12,639	238	...	9,174	9,174	7,742	7,742	6,124	79.1	...
Nilgiris.	Tellicherry Calicut Paithan Malapparam	...	...	1	...	1	...	...	880	14,553	292	...	11,512	12,884	12,384	11,143	90.0	...	84.9
Nellore.	Kurnool Cumbum Kurnool	...	...	1	...	1	...	...	701	13,162	224	...	10,492	11,512	10,732	93.2	...	87.9	...
North Arcot.	Kavali Gudar Kanigiri The Nilgiris	1	...	1	482	13,463	254	11,540	...	10,149	10,149	9,083	89.5	...	56.0	...
Ramnad.	Vellore Ranipettai Tirupattur	...	...	1	...	1	...	...	479	17,689	206	...	11,418	11,418	11,566	92.5	...	75.3	...
Salem.	Salem (Central) Sankeri Hosur	...	...	1	...	1	...	...	577	19,388	278	...	13,698	11,719	9,837	83.9	...	82.9	...
South Arcot.	Guddalore Vridhahalam Tirukkoyilur Tindivanam Villupparem	1	...	1	446	16,583	281	14,998	...	12,943	11,719	10,982	80.2	...	66.3	...
South Canara.	Northern Circle Central do. Southern do.	1	...	1	479	16,653	285	10,208	...	10,208	12,635	11,361	87.6	...	70.8	...

District.	Circle.	Number of inspecting officers.		Number of villages visited.		Number of cases verified.						Proportion per cent. of inspection to total number vaccinated.								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Guntur.	Narasaraopet Bapatla	...	...	1	...	1	...	...	277	23,475	252	...	19,512	19,512	15,816	81.0	...	83.1	...	
Kistna.	Eloore Masulipatam Narasapur	...	...	1	...	1	...	...	342	29,999	286	20,200	23,456	23,456	20,599	87.7	...	79.0	...	
Kurnool.	Cumbum Kurnool	...	...	1	...	1	...	...	251	25,046	257	242	15,478	15,478	17,111	84.7	80.6	78.2	...	
Madras.	Dindigul Madura Usilampatti	...	...	1	...	1	...	...	482	17,594	263	12,943	...	13,698	11,719	11,019	85.1	...	77.0	...
Nilgiris.	Tellicherry Calicut Paithan Malapparam	...	...	1	...	1	...	...	479	19,388	278	...	13,698	13,698	10,982	80.2	...	76.2	...	
Nellore.	Kavali Gudar Kanigiri The Nilgiris	...	...	1	...	1	...	...	577	16,583	281	14,998	...	18,145	17,554	14,998	83.8	...	62.1	...
North Arcot.	Vellore Ranipettai Tirupattur	...	...	1	...	1	...	...	446	16,107	249	20,709	13,270	13,270	18,773	85.8	...	55.9	...	
Ramnad.	Gudalore Vridhahalam Tirukkoyilur Tindivanam Villupparem	...	...	1	...	1	...	...	479	17,218	264	242	...	29,087	29,087	24,842	85.4	...	49.3	...
Salem.	Salem (Central) Sankeri Hosur	...	...	1	...	1	...	...	577	20,773	228	17,909	...	18,773	18,773	16,704	86.7	...	85.3	...
South Arcot.	Guddalore Vridhahalam Tirukkoyilur Tindivanam Villupparem	...	...	1	...	1	...	...	446	17,529	285	10,208	...	12,635	12,635	10,058	88.5	...	69.3	...
South Canara.	Northern Circle Central do. Southern do.	...	...	1	...	1	...	...	479	16,653	281	14,998	...	18,145	18,145	15,586	70.8	...	79.7	...

* Old cases were also inspected.

† Information could not be furnished as the post of Deputy Inspector of Vaccination has been abolished.

Statement No. VII showing Inspection Work done by the Deputy Inspectors during the year 1914-15—continued.

District.	Circle.	Number of inspecting officers.		Number of villages visited.		Number of cases verified.		Total number of cases reported by Deputy Inspectors in respect of all sorts.		Total number of cases reported by Deputy Inspectors in respect of cases in-pected by Deputy Inspectors.		Percentage of successful cases reported by Deputy Inspectors.		Percentage of successful cases reported as re-ported by Deputy Inspectors.		Proportion per cent. of inspection to total number vaccinated.				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Tanjore	Tanjore ...	...	1	1	...	284	...	289	...	7,741	211	8,387	...	9,409	...	8,387	6,949	82.9	108.3*
	Negapatam ...	...	...	1	...	...	1	...	...	15,539	238	...	...	11,854	11,482	8,697	92.4	...	...
	Pattukkottai ...	...	...	...	...	...	1	...	...	18,423	258	...	...	82,61	8,261	6,629	96.9	80.2	...
	Kumbakonam ...	...	...	...	...	...	...	...	...	11,232	250	...	...	...	...	...	...	...	...
Tirunelveli	Sernadevi ...	...	1	1	...	...	1	...	263	...	22,178	235	...	14,015	...	14,016	13,064	93.2	...
	Srivilliputth ...	...	1	1	...	...	1	...	900	...	22,848	251	...	15,422	...	13,038	84.5	67.5	...
	Kolipatti ...	...	...	1	1	...	1	...	276	...	21,160	268	...	12,375	...	10,907	88.0	...	58.5
Trichinopoly	Trichinopoly ...	...	1	1	...	...	1	...	1,046	...	...	23,397	215	15,851	...	15,851	14,515	91.6	67.7
	Ariyalur ...	...	...	1	...	...	1	...	...	15,552	223	...	...	15,605	15,605	12,804	82.2	...	...
	Namakkal ...	...	...	1	...	...	1	...	...	761	19,912	238	...	...	16,627	14,936	89.8	...	...
Vizagapatam	Gumupur	1	1	...	1	1	1	214	9,198	194	4,607	4,607	4,246	92.2	...
	Vizagapatam	1	1	...	1	1	1	302	33,689	339	18,649	18,649	15,484	83.0	55.4
	Vizianagram	1	...	1	1	1	372	44,832	205	21,308	21,308	16,521	77.5	...
	Parvathipuram	1	...	1	1	1	26,255	229	16,787	16,787	13,625	81.1	...
Koraput	Jeyapore ...	...	1	1	...	1	1	1	...	796	...	17,508	245	...	12,004	...	9,825	81.8	...
	Koraput	1	1	...	1	1	1	...	1,048	...	10,527	226	...	8,318	...	8,318	7,103	85.4	...
	Total ...	21	23	36	12,008	12,583	14,485	1,514,066	19,443	306,401	314,887	435,182	435,182	435,182	435,182	906,470	906,470	85.8	77.1	61.8
																			71.7	

* Old cases were also inspected.

all

Government of Madras.

LOCAL AND MUNICIPAL DEPARTMENT.

Recd.

} 1915.

Enclosures

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G.O. No. 1248 L., 6th September 1915.

Vaccination.

Reviewing the report on the working of the -- Department in the Madras Presidency during the year 1914-15.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper:—

Letter—from the Sanitary Commissioner for Madras.
To—the Secretary to Government, Local and Municipal Department.
Dated—the 17th August 1915.
No.—325-V.

ABSTRACT.—Submitting report on the working of the Vaccination Department in the Madras Presidency for the official year 1914–15.

Order—No. 1248 L., dated 6th September 1915.

The report on vaccination, which was due with the Government on the 1st July, was received on the 20th August. This delay is explained as due to the late receipt of returns from two deputy inspectors of vaccination, one of whom has been punished for default.

2. The chief features of the year were—

- (i) a slight increase of 0·6 per cent. in the total number of cases vaccinated ;
- (ii) a rise of 27·1 per cent. under the head of re-vaccination in local fund areas, including the agency tracts and a fall of 15·8 per cent. in municipalities ;
- (iii) a decline from 91·8 to 90·8 in the percentage of success under primary vaccinations and from 80·5 to 79·1 under re-vaccinations ;
- (iv) a fall from 33·9 to 33·5 in local fund areas including agency tracts and a fall from 50·7 to 50 in municipal areas in the proportion of successful operations per mille of the population ;
- (v) a further increase of 3·7 per cent. in the number of successful operations on children under one year of age ;
- (vi) a rise from As. 3–8 to As. 3–10 in the average cost of each successful case ; and
- (vii) an increase in the registered mortality from small-pox.

3. An unusual feature of the year was the increased rate of success secured during the hot months of the year. The Sanitary Commissioner suggests that this may be due to unreliable returns from the vaccinators. The Sanitary Commissioner will doubtless impress upon deputy inspectors of vaccination the necessity for checking the work of vaccinators more closely. The result of the experiments which are said to be in progress with a view to secure a more durable vaccine will be awaited. In paragraph 4 (1) of his report on vaccination the Inspector of Vaccination points out that the efficiency of vaccination and the consequent decrease in small-pox depend largely on improvement in the pay and prospects of vaccinators and therefore suggests that proposals for the improvement of the vaccination staff may be approved and given effect to as proposals are received from each district board, without waiting until proposals from all districts are received and sanctioned. The Government, however, are unable to accept this suggestion, as the scheme depends very largely on the

number of deputy inspectors of vaccination required for the efficient control of the work and as this establishment forms one cadre for the whole Presidency. The Government hope to be in a position to issue general orders in regard to the whole Presidency in the course of the current year.

(True Extract.)

J. P. BEDFORD,
Acting Secretary to Government.

To the Sanitary Commissioner.
,, the Sanitary Engineer.
,, the Surgeon-General.
,, the Public Department.
,, the Judicial Department.
,, the Revenue Department.
,, the Assistant Quartermaster-General, 9th (Secunderabad) Division (with C.L.).
,, the Director of Public Instruction.
,, the Accountant-General.
,, the President, Corporation of Madras.
,, all Collectors.
,, all Presidents of District Boards.
,, all Chairmen of Municipal Councils.

Editors' Table.