

## **Annual statistical returns and short notes on vaccination in Bihar and Orissa.**

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ANNUAL STATISTICAL RETURNS  
AND  
SHORT NOTES ON VACCINATION  
IN  
BIHAR AND ORISSA

FOR THE YEAR

**1917-1918**

BY

W. C. ROSS, MAJOR, D.P.H., I.M.S.,  
*Sanitary Commissioner, Bihar & Orissa.*



PATNA

PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRINTING, BIHAR AND ORISSA  
1918

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# ANNUAL VACCINATION REPORT BIHAR AND ORISSA for the year 1917-18.

**1. Staff.**—Major W. C. Ross, I.M.S., was in charge of the Department throughout the year under report.

The circles of the Deputy Sanitary Commissioners were rearranged at the beginning of the year with headquarters at Muzaffarpur, Patna, and Namkum (Ranchi). The office of the Deputy Sanitary Commissioner, North Bihar Circle, was held by Dr. B. P. Mazumdar throughout the year, and Dr. T. Sebastian remained in charge of the Chota Nagpur and Orissa Circle, and in supervising charge of the Vaccine Depot during the year. Dr. R. C. Roy held charge of the South Bihar Circle from 1st to 30th April, and Dr. S. Maitra was in charge for the remainder of the year.

The inspecting staff consisted of 20 District Inspectors of Vaccination and 66 Sub-Inspectors of Vaccination (including 3 deputed for duty at the Vaccine Depot) in addition to the 2 Sub-Assistant Surgeons combining vaccination inspection with other duties in Angul. During the year one additional appointment to the cadre was sanctioned in order to provide a Sub-Inspector for the new Khondmal Subdivision in Angul, to replace the Sub-Assistant Surgeon who had previously done the work in addition to his other duties.

The total numbers of vaccinators employed in the Province during the year were 1,049 licensed and 202 paid, against 1,086 licensed and 207 paid in the previous year.

In Municipalities and in the districts of Puri, Angul, Sambalpur, and part of Singhbhum, vaccination was done by paid vaccinators; but otherwise the work throughout the Province was carried out under the licensing system except for the employment of paid vaccinators for short periods to deal with outbreaks of small-pox.

**2. Operations performed.**—The total number of operations performed during the year amounted to 1,097,676 as compared with 1,090,434 last year. The increase amounts to 7,242 which is in my opinion satisfactory in consideration of the wide prevalence of plague, cholera, fever, and other diseases during the year, which was an unusually unhealthy one.

Of the total number of operations, 1,034,031 were performed by the Vaccination Department as compared with 1,072,081 last year: 1,055,374 operations were primary and the remaining 28,657 were revaccinations as against 1,039,575 primary and 32,506 revaccinations last year.

There was an increase of 15,799 in the primary operations and a decrease of 3,849 in the revaccinations during the year. Of the total operations performed (1,084,031), 1,061,531 equal to 97.92 per cent. were successful as compared with 1,042,865 equal to 97.27 per cent. last year. The number of operations performed in municipalities fell by 1,053 as compared with last year's returns. The ratios of success in municipalities were 96.23 for primary and 69.12 for revaccination as compared with 98.98 for primary and 61.11 for revaccination in rural areas.

**3. Vaccination in Districts.**—During the year under report, vaccination has been successfully carried out in the Patna Division, from all the districts of which an increase is reported in the number of operations performed, viz., Gaya

(6,259), Patna (364), and Shahabad (267). In view of the disastrous floods, the serious epidemics of cholera and plague, and the disturbances caused by riots in this division during the year, these results are very satisfactory.

In the two districts of Saran and Champaran the number of operations was slightly increased, but small decreases were recorded in the districts of Muzaffarpur and Darbhanga. As a whole, the work in the Tirhut Division is in a satisfactory state.

The Bhagalpur Division shows an increase of 6,659 operations this year, as compared with the large decrease reported last year. The Santal Parganas show an increase of 9,520 and Monghyr of 1,120 whilst Bhagalpur and Purnea districts return decreases of 3,462 and 519 respectively.

The Orissa Division on the other hand shows a very large decrease and the Cuttack district again heads the list with another large drop of 10,922 in the number of operations performed. The district of Angul also returns a decrease of 4,043 whilst the other districts, viz., Balasore, Puri and Sambalpur show increases of 2,681, 5,527 and 2,809 respectively.

The Chota Nagpur Division returns show small increases in the districts of Ranchi, Manbhum, Palamau and Singhbhum and a decrease in the district of Hazaribagh. The decrease in Hazaribagh was due to the wide-spread prevalence of cholera and to the difficulty of getting the staff started to work before December.

**4. Vaccination in towns and compulsory areas.**—During the year under report the Vaccination Acts were extended to certain mauzas in thanas Ghatsila and Sakchi in Singhbhum. Statement VII shows that during the year 20,786 children, under one year of age, out of an available number of 30,083 or 69·09 per cent., were successfully vaccinated.

The towns of Bhagalpur (again) and Darbhanga (again) show the smallest proportion of work done and the towns of Patna, Chapra, Monghyr, Balasore and Daltonganj have also given unsatisfactory returns.

**5. Work done in the Native States under the supervision of the Political Agent.**—Vaccination work in the Orissa Feudatory States has steadily developed during recent years under the direction and encouragement of the Political Agent.

The following tabulated statement shows the results for the last twelve years :—

| Year.   |     |     |     |     | Total number of vaccinations. | Total number of revaccinations. |
|---------|-----|-----|-----|-----|-------------------------------|---------------------------------|
| 1       |     |     |     |     | 2                             | 3                               |
| 1906-07 | ... | ... | ... | ... | 165,967                       | 43,498                          |
| 1907-08 | ... | ... | ... | ... | 187,150                       | 69,685                          |
| 1908-09 | ... | ... | ... | ... | 226,042                       | 97,078                          |
| 1909-10 | ... | ... | ... | ... | 269,728                       | 142,911                         |
| 1910-11 | ... | ... | ... | ... | 310,962                       | 163,162                         |
| 1911-12 | ... | ... | ... | ... | 341,701                       | 179,688                         |
| 1912-13 | ... | ... | ... | ... | 387,190                       | 215,438                         |
| 1913-14 | ... | ... | ... | ... | 430,720                       | 261,225                         |
| 1914-15 | ... | ... | ... | ... | 413,562                       | 260,707                         |
| 1915-16 | ... | ... | ... | ... | 454,699                       | 281,913                         |
| 1916-17 | ... | ... | ... | ... | 504,948                       | 311,670                         |
| 1917-18 | ... | ... | ... | ... | 526,410                       | 330,938                         |

The figures above quoted speak for themselves and are a very satisfactory record of the work done to stamp out and prevent small-pox in these States. Both vaccination and to a large extent revaccination are practically compulsory in the majority of these States; and both the record and the results of the work are eminently satisfactory.

**6. Protection of Infants.**—During last year out of 1,119,606 the estimated number of children under one year available for vaccination 492,705, equal to 446 per thousand, were successfully vaccinated as compared with 492,588 or 468 per thousand in the previous year. The protection of infants in municipalities is separately shown in statement VII and works out at a ratio of 690 per thousand of the surviving infant population.

These figures are very unsatisfactory as they show that more than half the total number of operations are performed on children over one year of age. Whilst the ratio of protected children under one year of age has fallen to below 500 per thousand, the total number of operations performed is still in excess of the total number of infants available as it always has been. In previous years the excess has been very marked, and as there has been a constant excess it must be inferred that the returns are to that extent on the average fictitious.

Civil Surgeons and Deputy Sanitary Commissioners are unanimous in attributing the opposition to vaccination to be concerned more with the age of the child than with the operation itself, and, in view of the strong popular prejudice which exists against vaccination of infants at an early age, I consider that it is desirable that the Vaccination Act should be amended so as to raise the age for compulsory vaccination to one year instead of six months.

**7. Incidence and mortality of small-pox.**—During the last ten years the total number of deaths from small-pox in the districts of this province has been 98,155 from which it may be inferred that over 600,000 cases of the disease occurred in that period.

During the first quinquennium the number of deaths was 53,772 and during the second 44,383. In the last quinquennium the mortality was as follows:—4,347, 8,979, 14,628, 9,742 and 6,687.

The provincial ratios of the mortality from small-pox per 1,000 of population during the last five years have been '11, '22, '42, '28, and '19 respectively.

**8. Prevention of small-pox.**—The constant and considerable mortality noted in the preceding paragraph is in my opinion a complete demonstration both of the insufficiency and of the inefficiency of the existing arrangements for vaccination.

It is well known—in fact it is an admitted axiom—that thorough vaccination can and does stamp out small-pox altogether and in the light of that knowledge, and in face of the above facts, there is great necessity for a more definite vaccination policy.

The inefficiency of the Department is being severely dealt with and action has been taken against a large number of officers. The departmental rules and regulations are being strictly enforced and the staff generally has been warned against laziness, neglect of duty and breach of rules. The results of two years' work in this direction are now beginning to make themselves apparent.

At the same time I do not consider that small-pox can be effectively dealt with and stamped out unless vaccination is made compulsory throughout the Province, and I would recommend that the Vaccination Act should be modified so as to extend the age, within which vaccination is required, to one year, and should be generally enforced; that vaccination should be free; and that the vaccination staff in all the districts should be put on one consolidated provincial cadre for purposes of administration and work.

**9. Inspection of work.**—During the year under report the three Deputy Sanitary Commissioners inspected 155,456 primary vaccinations as against

210,920 in the previous year. The decrease in the number of operations inspected is due to the more detailed and systematic manner in which the work is now inspected and checked, by comparing inspecting officers' diaries and reports and examining vaccinators' registers in the villages and verifying a number of the entries. The inspecting work done during the year by the Deputy Sanitary Commissioners has been very comprehensive, and they have submitted valuable reports on the efficiency of the staff and the arrangements in twenty of the twenty-one districts in the province. Action has been taken on these reports in each case.

The Civil Surgeons of the province have inspected during the year 65,694 primary and 6,385 revaccination operations against 67,096 primary operations and 6,263 revaccinations last year. It should be noted that the methods of inspection of Civil Surgeons and Deputy Sanitary Commissioners are different. Civil Surgeons inspect the new work which has just been done and the numbers returned by them are therefore smaller, whereas Deputy Sanitary Commissioners inspect all the children under ten years of age, and look at old work as well as new work, and also look for unvaccinated children and children who are marked with small-pox, and they also examine vaccinators' registers and other records in the villages where they can be verified and checked.

**10. The officers of the Inspecting staff.**—The officers of the Inspecting staff have not yet attained to a very satisfactory standard of efficiency. A few of them are energetic and capable, and these men have been rapidly promoted and put in the most responsible positions. The majority, however, are careless and negligent and do not attempt to carry out their duties honestly and efficiently. The standing rules of the Department and recent orders have been enforced with considerable stringency in order to imbue the staff with some sense of discipline. As that object does not appear to have been sufficiently attained, the process at present continues, and a large number of inspecting officers have been punished during the last year under report. At the end of the last three working seasons a list of the punishments and promotions has been circulated for general information amongst the members of the staff.

I am glad to be able to report that there has been in my opinion a definite improvement in the discipline and energy of the staff, but it has been somewhat slow and there is still much room for further improvement.

**11. Supply of vaccine.**—The Vaccine Depot at Namkum supplied the province with vaccine throughout the year. A large reserve supply has been accumulated, and the necessary stores and supplies for manufacture and dispatching are in ample stock.

The vaccine supply of the province is now assured and the depot could without much difficulty, supply any other province with any quantity of vaccine up to 2,000,000 doses on an emergency.

The following tabulated statement shows the number of doses manufactured, the number of doses issued, the number of doses lost in storage and manufacture, and the number of doses in reserve, for four years :—

| Year.   | No. of doses manufactured. | No. of doses issued. | No. of doses lost in storage and manufacture. | No. of doses in reserve. |
|---------|----------------------------|----------------------|-----------------------------------------------|--------------------------|
| 1       | 2                          | 3                    | 4                                             | 5                        |
| 1914-15 | 771,696                    | 541,259              | ...                                           | 230,437                  |
| 1915-16 | 3,127,290                  | 1,798,293            | ...                                           | 1,559,488                |
| 1916-17 | 2,842,710                  | 2,017,730            | 679,294                                       | 1,705,174                |
| 1917-18 | 3,778,318                  | 2,250,072            | 190,306                                       | 3,133,114                |

The number of calves required has been greatly reduced by improvements in the technique of operating and by the better feeding of calves, and the working costs have therefore been considerably reduced.

The following tabulated statement shows the numbers of calves purchased or hired, the numbers of doses manufactured, the average numbers of doses yielded per calf, the total gross cost and the total revenue and the average net cost per dose for four years :—

| Year.   | No. of calves purchased or hired. | No. of doses manufactured. | Average No. of doses yielded per calf. | Total gross cost. | Total revenue. | Average net cost per dose. |
|---------|-----------------------------------|----------------------------|----------------------------------------|-------------------|----------------|----------------------------|
| 1       | 2                                 | 3                          | 4                                      | 5                 | 6              | 7                          |
|         |                                   |                            |                                        | Rs.               | Rs.            | Pies.                      |
| 1914-15 | 507                               | 771,696                    | 1522.08                                | 19,367            | ...            | 4.8                        |
| 1915-16 | 1,267                             | 3,127,290                  | 2468.26                                | 34,537            | 4,637          | 1.5                        |
| 1916-17 | 1,129                             | 2,842,710                  | 2517.90                                | 24,936            | 13,518         | 1.4                        |
| 1917-18 | 836                               | 3,778,318                  | 4254.46                                | 22,133            | 16,610         | .28                        |

The working cost of the Department for the year amounted to Rs. 22,183-0-11 against Rs. 34,936-14-6 in previous year.

There was thus a large saving in spite of the greatly increased cost of glycerine, lanoline, kerosine, and packing materials owing to the war.

An epidemic of foot-and-mouth disease again stopped the work of the depôt temporarily last year, but the output of vaccine has been ample. The chief loss from such epidemics arises from the loss of calves and of vaccine in the making, as the sick calves have to be discarded.

This loss, together with the loss of calves from accidents and other causes greatly diminishes the apparent output per calf, which has really been greatly increased by improved feeding and technique, and is actually about 5,000 doses per calf kept and used.

The system of direct fortnightly issues to vaccinators has been continued. The cost to the Depôt is greater, as the number of postal packages is larger; but the results are good. There is no loss of time or of the freshness of the vaccine, and there is really an ultimate saving owing to the packages being posted only once, instead of issuing to Civil Surgeons, and being re-posted by them.

**12. Experimental work.**—Further experimental work was carried out at the Depôt during the year with some very interesting results. Last year it was demonstrated that glycerine vaccine was the most stable preparation for withstanding the vicissitudes of high temperature and travelling. This year we have compared the stability of vaccines which were respectively slightly acid, slightly alkaline and neutral and also of vaccines which were prepared with distilled water, boiled water and normal saline solution, and we have found that neutral vaccine is the most stable and that distilled water is a much better diluent than either boiled water or normal saline solution.

Another series of experiments has demonstrated that glycerine vaccine, which is neutral in reaction to begin with, becomes acid slowly in cold store and rapidly becomes acid when exposed to room temperature. As we have already proved that acid vaccines are not stable, the result of this experiment supplies us with the explanation why vaccine deteriorates rapidly after issue, and becomes inert in from ten to twenty days according to temperature. It is really a question of acidity which is presumably produced by the living virus in the vaccine.

Another experiment showed that the bacterial content of the vaccine as shewn by plate cultures diminished much more rapidly when the vaccine was kept at room temperature than when it was kept in cold storage. This is also presumably due to the more rapid production of acid at the higher temperature which, while it reduces the number of extraneous organism

also makes the vaccine rapidly inert: this experiment demonstrates the necessity for the prolonged storage of vaccine at a low temperature before it is issued or used.

Another experiment proved that exposure to bright sun light causes rapid deterioration of the vaccine, and justifies the change of packing from capillary glass tubes to collapsible metal tubes for that reason as well as for the greater convenience.

The feeding experiments, which were carried out during the year, definitely proved that a 50 % increase in the calf's ration produced nearly a 50 % increase in the vaccine production, but a further increase gave bad results owing to the indigestion and diarrhoea caused by over-feeding. The rations have therefore been standardized at the 50% increase with very satisfactory results.

Further experiments were also carried out in the manufacture and packing of the vaccine with a view to getting a better product which would keep better and would be easier to pack and handle. Some improvements have already been introduced but final results have not yet been obtained in this direction.

**13. Cost of the Department.**—The total cost of the Vaccination Department (not including the Vaccine Depot) during the year as detailed in Statement II was Rs. 1,12,216 or Rs. 2, 552 in excess of the previous year.

The cost per successful operation was 0-1-8 against 0-1-8 in the previous year.

The increase was due to the introduction of free vaccination in Angul, which increased the cost of the work in that district alone by Rs. 2,802 which more than accounts for the total increase of cost in the province.

**14. General.**—In general better results have been obtained during the year under report: the discipline and work of the staff have been somewhat more satisfactory, except in Orissa, and the number of operations performed has slightly increased in spite of the adverse factors of the prolonged rains, the lateness of the Puja holidays, and the prevalence of cholera and fevers, which combined to prevent the work being properly begun until well into November, and the riots and the prevalence of plague in Bihar which seriously affected the work throughout the season. I think it unlikely that so many adverse factors can operate again next year, and I, therefore, anticipate a considerable improvement in the returns next year.

In order to avoid any risk of interference with the work owing to short supplies of vaccine, I propose to still further increase the quantity of vaccine issued in the coming year; and I hope for greater co-operation and energy on the part of the inspecting staff, and better results in the quality and quantity of work done.

In conclusion, I desire to bring to the notice of Government the large amount of useful work done by the three Deputy Sanitary Commissioners during the year in inspecting vaccination work and reporting on the efficiency of the staff and work in almost all the districts of the Province.

W. C. ROSS, MAJOR, D.P.H., I.M.S.,  
Sanitary Commissioner.

## STATEMENTS.

## Statement No. I.—Showing particulars of Vaccination in the

| Number.                      | District.       | Population of district according to the census of 1911.    | Average population per square mile. | Average number of vaccinators employed throughout the season. | Total number of persons vaccinated. |                  |                   | Average number of persons vaccinated by each vaccinator. | Total.            |
|------------------------------|-----------------|------------------------------------------------------------|-------------------------------------|---------------------------------------------------------------|-------------------------------------|------------------|-------------------|----------------------------------------------------------|-------------------|
|                              |                 |                                                            |                                     |                                                               | Male.                               | Female.          | Total.            |                                                          |                   |
| 1                            | 2               | 3                                                          | 4                                   | 5                                                             | 6                                   |                  |                   | 7                                                        | 8                 |
| Patna Division.              |                 |                                                            |                                     |                                                               |                                     |                  |                   |                                                          |                   |
| 1                            | Patna           | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 1,009,631                           | 777 { 15<br>61                                                | 6,191<br>29,054                     | 5,537<br>27,859  | 11,728<br>56,913  | 781<br>933                                               | 11,637<br>66,910  |
| 2                            | Gaya            | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 2,161,010                           | 458 { 8<br>88                                                 | 2,104<br>29,137                     | 1,592<br>29,016  | 3,696<br>58,253   | 462<br>662                                               | 3,106<br>58,247   |
| 3                            | Shahabad        | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 1,865,690                           | 426 { 17<br>76                                                | 5,296<br>23,443                     | 3,157<br>20,202  | 8,423<br>43,645   | 495<br>574                                               | 6,795<br>43,641   |
| Total of Patna Division      |                 | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 5,036,301                           | 506 { 40<br>225                                               | 13,561<br>81,734                    | 10,296<br>77,077 | 23,847<br>158,811 | 596<br>705                                               | 21,538<br>158,798 |
| Tirhut Division.             |                 |                                                            |                                     |                                                               |                                     |                  |                   |                                                          |                   |
| 4                            | Saran           | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 2,289,778                           | 853 { 5<br>87                                                 | 1,135<br>39,944                     | 1,138<br>36,645  | 2,273<br>76,589   | 454<br>880                                               | 2,269<br>76,589   |
| 5                            | Champaran       | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 1,908,385                           | 540 { 4<br>71                                                 | 1,020<br>25,475                     | 977<br>24,110    | 1,997<br>49,585   | 499<br>696                                               | 1,993<br>49,553   |
| 6                            | Manikpur        | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 2,845,514                           | 937 { 12<br>75                                                | 2,558<br>41,588                     | 2,416<br>39,721  | 4,974<br>81,309   | 414<br>1,094                                             | 4,702<br>81,293   |
| 7                            | Darbhanga       | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 2,929,682                           | 875 { 7<br>88                                                 | 1,035<br>46,890                     | 971<br>44,404    | 2,008<br>91,264   | 286<br>1,037                                             | 1,969<br>91,221   |
| Total of Tirhut Division     |                 | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 9,973,359                           | 791 { 28<br>321                                               | 5,748<br>153,867                    | 5,502<br>144,889 | 11,250<br>298,747 | 401<br>930                                               | 10,933<br>298,656 |
| Bhagalpur Division.          |                 |                                                            |                                     |                                                               |                                     |                  |                   |                                                          |                   |
| 8                            | Monghyr         | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 2,131,381                           | 543 { 7<br>30                                                 | 1,066<br>33,313                     | 1,454<br>32,107  | 3,180<br>65,420   | 447<br>2,180                                             | 2,924<br>65,417   |
| 9                            | Bhagalpur       | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 2,129,318                           | 506 { 12<br>63                                                | 1,559<br>32,288                     | 1,299<br>31,102  | 2,819<br>63,390   | 235<br>1,606                                             | 2,581<br>63,371   |
| 10                           | Purnea          | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 1,969,637                           | 398 { 11<br>52                                                | 4,534<br>25,007                     | 2,753<br>21,232  | 7,287<br>46,239   | 602<br>889                                               | 1,931<br>42,907   |
| 11                           | Santal Parganas | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 2,832,781                           | 344 { 6<br>64                                                 | 895<br>26,268                       | 898<br>26,995    | 1,673<br>53,263   | 279<br>693                                               | 1,568<br>54,581   |
| Total of Bhagalpur Division. |                 | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 8,143,117                           | 437 { 36<br>209                                               | 8,624<br>118,876                    | 6,286<br>111,436 | 14,900<br>239,312 | 414<br>1,193                                             | 9,094<br>239,676  |
| Orissa Division.             |                 |                                                            |                                     |                                                               |                                     |                  |                   |                                                          |                   |
| 12                           | Cuttack         | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 2,109,139                           | 577 { 11<br>69                                                | 3,689<br>31,212                     | 2,751<br>28,491  | 6,440<br>59,703   | 585<br>895                                               | 4,160<br>57,048   |
| 13                           | Balasore        | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 1,065,508                           | 506 { 4<br>37                                                 | 744<br>13,097                       | 545<br>12,456    | 1,289<br>25,553   | 322<br>680                                               | 1,013<br>21,910   |
| 14                           | Angul           | By paid Vaccinators ...                                    | 199,405                             | 118 { 12                                                      | 4,478                               | 3,635            | 8,113             | 670                                                      | 5,766             |
| 15                           | Puri            | By paid Vaccinators ...                                    | 1,023,493                           | 499 { 29                                                      | 19,535                              | 16,875           | 36,410            | 1,255                                                    | 31,878            |
| 16                           | Sambalpur       | By paid Vaccinators ...                                    | 744,193                             | 194 { 13                                                      | 12,867                              | 12,415           | 25,222            | 1,940                                                    | 24,719            |
| Total of Orissa Division     |                 | { By paid Vaccinators ...<br>By licensed Vaccinators ... } | 5,131,707                           | 373 { 69<br>106                                               | 41,253<br>44,309                    | 36,221<br>40,947 | 77,474<br>85,256  | 1,079<br>804                                             | 71,536<br>78,958  |

## districts of Bihar and Orissa during the year 1917-18.

| Primary Vaccination. |                               |                    |          | Re-vaccination. |             |          | Percentage of successful cases in which the results were known. |                 | Persons successfully vaccinated per 1,000 of population. | Percentage of unknown cases to total cases. |                 | Average annual number of persons successfully vaccinated during previous five years. |                                | Average annual number of deaths from small-pox during previous five years. |                                |     |
|----------------------|-------------------------------|--------------------|----------|-----------------|-------------|----------|-----------------------------------------------------------------|-----------------|----------------------------------------------------------|---------------------------------------------|-----------------|--------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------|--------------------------------|-----|
| Successful           |                               |                    |          | Total.          | Successful. | Unknown. | Primary.                                                        | Re-vaccination. |                                                          | Primary.                                    | Re-vaccination. | Number.                                                                              | Ratio per 1,000 of population. | Number.                                                                    | Ratio per 1,000 of population. |     |
| Under one year.      | One year and under six years. | Total of all ages. | Unknown. |                 |             |          |                                                                 |                 |                                                          |                                             |                 |                                                                                      |                                |                                                                            |                                |     |
| 9                    | 10                            | 11                 | 12       | 13              | 14          | 15       | 16                                                              | 17              | 18                                                       | 19                                          | 20              | 21                                                                                   | 22                             | 23                                                                         | 24                             |     |
| 5,807                | 5,124                         | 11,111             | 235      | 91              | 28          | 1        | 97.44                                                           | 42.22           | 42.57                                                    | 2.11                                        | 1.09            | 58,244                                                                               | 30.12                          | 503                                                                        | .35                            |     |
| 25,047               | 30,515                        | 56,436             | 183      | 3               | 3           | ...      | 99.48                                                           | 100             |                                                          | .33                                         | ...             |                                                                                      |                                |                                                                            |                                |     |
| 1,717                | 1,334                         | 3,058              | 21       | 590             | 538         | 25       | 99.44                                                           | 95.22           |                                                          | .67                                         | 4.22            |                                                                                      |                                |                                                                            |                                |     |
| 22,394               | 34,912                        | 57,577             | 166      | 6               | ...         | ...      | 99.54                                                           | ...             | 28.80                                                    | .18                                         | ...             | 65,330                                                                               | 30.23                          | 621                                                                        | .28                            |     |
| 4,180                | 2,315                         | 6,673              | 15       | 1,628           | 1,545       | 6        | 98.42                                                           | 95.25           |                                                          | .22                                         | .36             |                                                                                      |                                |                                                                            |                                |     |
| 17,779               | 22,485                        | 43,416             | 16       | 4               | ...         | 4        | 99.52                                                           | ...             |                                                          | .03                                         | 100             |                                                                                      |                                |                                                                            |                                |     |
| 11,704               | 8,673                         | 20,832             | 271      | 2,309           | 2,121       | 32       | 98.04                                                           | 93.14           | 32.49                                                    | 1.26                                        | 1.38            | 178,637                                                                              | 31.69                          | 1,621                                                                      | .28                            |     |
| 65,220               | 67,912                        | 137,729            | 304      | 13              | 3           | 4        | 99.51                                                           | 33.33           |                                                          | .19                                         | 30.76           |                                                                                      |                                |                                                                            |                                |     |
| 1,235                | 861                           | 2,096              | 60       | 4               | 2           | ...      | 95.14                                                           | 59.00           |                                                          | 33.91                                       | 2.98            | ...                                                                                  | 86,214                         | 37.65                                                                      | 292                            | .12 |
| 30,821               | 44,285                        | 75,106             | 965      | ...             | ...         | ...      | 99.31                                                           | ...             | 1.26                                                     |                                             | ...             |                                                                                      |                                |                                                                            |                                |     |
| 1,087                | 909                           | 1,970              | 6        | 4               | ...         | 2        | 99.14                                                           | ...             | .30                                                      |                                             | .50             |                                                                                      |                                |                                                                            |                                |     |
| 22,327               | 26,740                        | 49,431             | 34       | 32              | 26          | 1        | 99.82                                                           | 83.87           | 26.55                                                    | .03                                         | 3.12            | 57,390                                                                               | 29.32                          | 182                                                                        | .09                            |     |
| 2,484                | 2,033                         | 4,553              | 44       | 272             | 136         | 37       | 97.74                                                           | 67.87           |                                                          | .93                                         | 13.80           |                                                                                      |                                |                                                                            |                                |     |
| 29,760               | 50,870                        | 80,878             | 24       | 16              | 6           | ...      | 99.51                                                           | 37.50           |                                                          | 30.19                                       | .03             | ...                                                                                  | 90,977                         | 31.97                                                                      | 341                            | .11 |
| 1,101                | 839                           | 1,942              | 5        | 37              | 12          | ...      | 98.90                                                           | 32.43           | 31.81                                                    |                                             | .25             | ...                                                                                  |                                |                                                                            |                                |     |
| 46,267               | 44,692                        | 90,974             | 17       | 43              | 20          | ...      | 99.74                                                           | 46.51           |                                                          |                                             | .01             | ...                                                                                  |                                |                                                                            |                                |     |
| 5,307                | 4,632                         | 10,561             | 121      | 317             | 150         | 39       | 97.67                                                           | 53.95           | 20.04                                                    | 1.10                                        | 12.30           | 320,809                                                                              | 32.65                          | 1,429                                                                      | .14                            |     |
| 129,195              | 168,487                       | 295,589            | 1,040    | 91              | 53          | 1        | 99.58                                                           | 57.77           |                                                          | .34                                         | 1.09            |                                                                                      |                                |                                                                            |                                |     |
| 1,412                | 1,415                         | 2,861              | 27       | 205             | 92          | ...      | 99.13                                                           | 44.00           | 22.05                                                    | .92                                         | ...             | 78,385                                                                               | 36.75                          | 754                                                                        | .35                            |     |
| 18,234               | 47,007                        | 65,406             | 5        | 3               | 2           | ...      | 98.76                                                           | 66.66           |                                                          | .007                                        | ...             |                                                                                      |                                |                                                                            |                                |     |
| 1,311                | 1,136                         | 2,530              | 32       | 238             | 163         | 6        | 99.35                                                           | 70.25           |                                                          | 31.86                                       | 1.23            | 2.62                                                                                 | 75,134                         | 33.90                                                                      | 726                            | .33 |
| 30,325               | 32,894                        | 63,926             | 9        | 19              | 12          | ...      | 99.94                                                           | 63.16           | .61                                                      |                                             | ...             |                                                                                      |                                |                                                                            |                                |     |
| 1,075                | 790                           | 1,861              | 2        | 5,350           | 2,531       | 250      | 97.06                                                           | 49.06           | 24.87                                                    |                                             | .10             | 4.06                                                                                 | 56,187                         | 28.64                                                                      | 573                            | .28 |
| 25,064               | 17,368                        | 42,728             | 21       | 3,302           | 2,347       | 261      | 99.63                                                           | 76.42           |                                                          | .04                                         | 7.83            |                                                                                      |                                |                                                                            |                                |     |
| 798                  | 703                           | 1,521              | 27       | 1.5             | 36          | 19       | 97.70                                                           | 41.86           |                                                          | 30.12                                       | 17.21           | 18.09                                                                                | 56,718                         | 36.12                                                                      | 561                            | .29 |
| 32,679               | 21,829                        | 54,674             | 101      | 382             | 267         | 18       | 99.83                                                           | 69.99           | .18                                                      |                                             | 4.71            |                                                                                      |                                |                                                                            |                                |     |
| 4,696                | 4,036                         | 8,796              | 58       | 5,503           | 2,822       | 275      | 98.65                                                           | 59.12           | 29.80                                                    |                                             | .97             | 4.65                                                                                 | 263,424                        | 32.34                                                                      | 2,606                          | .32 |
| 106,162              | 119,188                       | 226,134            | 136      | 3,758           | 2,658       | 279      | 99.96                                                           | 76.01           |                                                          | .06                                         | 7.45            |                                                                                      |                                |                                                                            |                                |     |
| 1,320                | 2,236                         | 3,620              | 237      | 2,250           | 984         | 294      | 97.86                                                           | 58.56           | 20.47                                                    | 6.17                                        | 26.05           | 109,680                                                                              | 52.30                          | 619                                                                        | .29                            |     |
| 24,186               | 29,626                        | 55,960             | 641      | 2,655           | 1,080       | 602      | 99.20                                                           | 62.58           |                                                          | 1.12                                        | 22.63           |                                                                                      |                                |                                                                            |                                |     |
| 318                  | 584                           | 973                | 19       | 276             | 179         | 49       | 97.83                                                           | 78.55           |                                                          | 24.44                                       | 1.86            | 17.75                                                                                | 50,279                         | 47.63                                                                      | 457                            | .43 |
| 4,561                | 15,781                        | 21,679             | 130      | 2,643           | 2,686       | 589      | 99.53                                                           | 87.95           | .59                                                      |                                             | 10.16           |                                                                                      |                                |                                                                            |                                |     |
| 2,865                | 2,121                         | 5,123              | 162      | 2,347           | 1,824       | 137      | 91.57                                                           | 82.53           | 24.88                                                    |                                             | 2.80            | 5.83                                                                                 | 8,299                          | 41.61                                                                      | 7                              | .53 |
| 10,541               | 21,016                        | 34,150             | 1,409    | 532             | 374         | 43       | 99.08                                                           | 70.48           | 32.64                                                    | 3.02                                        | 8.08            | 40,310                                                                               | 39.28                          | 196                                                                        | .19                            |     |
| 15,796               | 7,055                         | 22,881             | 1,138    | 503             | 177         | 237      | 97.03                                                           | 66.54           | 31.26                                                    | 4.60                                        | 47.11           | 24,223                                                                               | 32.48                          | 285                                                                        | .39                            |     |
| 30,822               | 33,612                        | 66,966             | 2,965    | 5,938           | 2,638       | 1,060    | 97.67                                                           | 72.52           | 29.79                                                    | 4.15                                        | 17.85           | 232,600                                                                              | 45.26                          | 1,574                                                                      | .30                            |     |
| 28,747               | 45,607                        | 77,639             | 771      | 6,208           | 3,766       | 1,190    | 99.29                                                           | 73.72           |                                                          | .67                                         | 18.89           |                                                                                      |                                |                                                                            |                                |     |

| Number.                         | District.      | Population of district according to the census of 1911.                 | Average population per square mile. | Average number of vaccinators employed throughout the season. | Total number of persons vaccinated. |                              |                                 | Average number of persons vaccinated by each vaccinator. | Total.                          |
|---------------------------------|----------------|-------------------------------------------------------------------------|-------------------------------------|---------------------------------------------------------------|-------------------------------------|------------------------------|---------------------------------|----------------------------------------------------------|---------------------------------|
|                                 |                |                                                                         |                                     |                                                               | Male.                               | Female.                      | Total.                          |                                                          |                                 |
| 1                               | 2              | 3                                                                       | 4                                   | 5                                                             | 6                                   |                              |                                 | 7                                                        | 8                               |
| Chota Nagpur Division.          |                |                                                                         |                                     |                                                               |                                     |                              |                                 |                                                          |                                 |
| 17                              | Hazaribagh ... | { By paid Vaccinators ...<br>By licensed Vaccinators ... }              | 1,288,000                           | 183 { 4<br>43                                                 | 528<br>19,403                       | 573<br>18,014                | 1,101<br>37,417                 | 275<br>870                                               | 1,000<br>37,417                 |
| 18                              | Ranchi ...     | { By paid Vaccinators ...<br>By licensed Vaccinators ... }              | 1,287,073                           | 194 { 3<br>50                                                 | 900<br>23,545                       | 872<br>21,501                | 1,871<br>45,136                 | 557<br>902                                               | 1,638<br>44,432                 |
| 19                              | Palamu ...     | { By paid Vaccinators ...<br>By licensed Vaccinators ... }              | 687,710                             | 130 { 3<br>27                                                 | 1,416<br>12,986                     | 990<br>11,830                | 2,406<br>24,825                 | 802<br>919                                               | 792<br>24,723                   |
| 20                              | Manbhum ...    | { By paid Vaccinators ...<br>By licensed Vaccinators ... }              | 1,547,576                           | 373 { 11<br>48                                                | 3,630<br>24,418                     | 3,033<br>21,386              | 6,663<br>45,804                 | 606<br>954                                               | 6,392<br>45,447                 |
| 21                              | Singbhum ...   | { By paid Vaccinators ...<br>By licensed Vaccinators ... }              | 694,394                             | 178 { 4<br>20                                                 | 720<br>8,687                        | 530<br>8,065                 | 1,250<br>16,052                 | 312<br>847                                               | 742<br>16,542                   |
| Total of Chota Nagpur Division. |                | { By paid Vaccinators ...<br>By licensed Vaccinators ... }              | 5,605,362                           | 206 { 25<br>188                                               | 7,293<br>89,219                     | 5,908<br>80,805              | 13,291<br>170,134               | 531<br>904                                               | 10,814<br>168,561               |
| Total of Vaccine Department.    |                | { By paid Vaccinators ...<br>By licensed Vaccinators ...<br>Total ... } | 34,480,840                          | 414 { 198<br>1,049<br>1,247                                   | 76,479<br>488,025<br>564,504        | 64,202<br>455,235<br>519,527 | 140,771<br>943,260<br>1,084,031 | 711<br>899<br>989                                        | 223,826<br>931,549<br>1,055,374 |
| Total Dispensary Department     |                | ...                                                                     | ...                                 | 1                                                             | 100                                 | 81                           | 181                             | 181                                                      | 181                             |
| Total Railways                  |                | ...                                                                     | ...                                 | ...                                                           | 940                                 | 521                          | 1,467                           | ...                                                      | 1,190                           |
| Total Cooly Department          |                | ...                                                                     | ...                                 | 1                                                             | 595                                 | 473                          | 1,068                           | (a) 1,038                                                | 405                             |
| Total Jails and Cantonments     |                | ...                                                                     | ...                                 | 2                                                             | 10,421                              | 538                          | 10,959                          | (b) 275                                                  | 1,671                           |
| Grand Total                     |                | ...                                                                     | ...                                 | 1,251                                                         | 576,536                             | 521,140                      | 1,097,676                       | 877                                                      | 1,659,072                       |

(a) Balasore only.  
(b) Cantonment only.

| Primary Vaccination. |                               |                    |          | Re-vaccination. |             |          | Percentage of successful cases in which the results were known. |                 | Persons successfully vaccinated per 1,000 of population. | Percentage of unknown cases to total cases. |                 | Average annual number of persons successfully vaccinated during previous five years. |                 | Average annual number of deaths from small-pox during previous five years. |                 |
|----------------------|-------------------------------|--------------------|----------|-----------------|-------------|----------|-----------------------------------------------------------------|-----------------|----------------------------------------------------------|---------------------------------------------|-----------------|--------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------|-----------------|
| Successful.          |                               |                    |          | Total.          | Successful. | Unknown. | Primary.                                                        | Re-vaccination. |                                                          | Primary.                                    | Re-vaccination. | Number.                                                                              | Rate per 1,000. | Number.                                                                    | Rate per 1,000. |
| Under one year.      | Over one and under six years. | Total of all ages. | Unknown. |                 |             |          |                                                                 |                 |                                                          |                                             |                 |                                                                                      |                 |                                                                            |                 |
| 9                    | 10                            | 11                 | 12       | 13              | 14          | 15       | 16                                                              | 17              | 18                                                       | 19                                          | 20              | 21                                                                                   | 22              | 23                                                                         | 24              |
| 480                  | 586                           | 1,066              | 4        | 35              | 11          | 10       | 99.81                                                           | 44.00           | 30.85                                                    | .37                                         | 28.57           | 42,829                                                                               | 33.23           | 203                                                                        | .15             |
| 24,925               | 12,330                        | 37,414             | 2        | ...             | ...         | ...      | 99.99                                                           | ...             |                                                          | .005                                        | ...             |                                                                                      |                 |                                                                            |                 |
| 1,377                | 408                           | 1,832              | ...      | 39              | 36          | 3        | 100*                                                            | 100*            | 33.95                                                    | ...                                         | 7.59            | 47,017                                                                               | 33.89           | 62                                                                         | .04             |
| 35,043               | 9,232                         | 44,430             | 1        | 704             | 386         | 183      | 99.99                                                           | 74.07           |                                                          | .002                                        | 25.99           |                                                                                      |                 |                                                                            |                 |
| 199                  | 398                           | 725                | 59       | 1,614           | 1,341       | 68       | 98.90                                                           | 96.74           | 37.29                                                    | 7.45                                        | 4.21            | 25,166                                                                               | 38.05           | 72                                                                         | .10             |
| 17,446               | 6,948                         | 24,633             | 76       | 102             | 71          | 30       | 99.94                                                           | 98.61           |                                                          | .30                                         | 29.41           |                                                                                      |                 |                                                                            |                 |
| 1,75                 | 3,966                         | 5,900              | 310      | 281             | 148         | 57       | 97.16                                                           | 65.07           | 33.78                                                    | 4.65                                        | 20.28           | 50,902                                                                               | 38.68           | 412                                                                        | .23             |
| 25,342               | 19,902                        | 45,426             | 10       | 357             | 205         | 12       | 99.97                                                           | 59.42           |                                                          | .02                                         | 3.36            |                                                                                      |                 |                                                                            |                 |
| 325                  | 367                           | 702                | 6        | 508             | 299         | 24       | 95.28                                                           | 61.77           | 25.73                                                    | .80                                         | 4.72            | 21,325                                                                               | 30.71           | 108                                                                        | .15             |
| 10,492               | 5,859                         | 16,487             | 33       | 410             | 289         | 2        | 99.86                                                           | 70.83           |                                                          | .19                                         | .48             |                                                                                      |                 |                                                                            |                 |
| 4,074                | 5,753                         | 10,219             | 379      | 2,477           | 1,835       | 162      | 92.18                                                           | 79.26           | 32.80                                                    | 3.59                                        | 6.54            | 197,198                                                                              | 35.18           | 857                                                                        | .16             |
| 113,248              | 54,279                        | 168,390            | 122      | 1,573           | 951         | 227      | 99.97                                                           | 70.65           |                                                          | .07                                         | 14.43           |                                                                                      |                 |                                                                            |                 |
| 57,103               | 56,076                        | 117,384            | 3,844    | 16,946          | 10,465      | 1,568    | 97.83                                                           | 68.05           | 31.04                                                    | 3.09                                        | 9.25            | 1,201,758                                                                            | 34.84           | 8,087                                                                      | .23             |
| 442,602              | 473,364                       | 926,281            | 2,373    | 11,711          | 7,400       | 1,701    | 99.68                                                           | 73.92           |                                                          | .25                                         | 15.37           |                                                                                      |                 |                                                                            |                 |
| 499,705              | 520,340                       | 1,043,665          | 6,217    | 28,657          | 17,836      | 3,299    | 99.47                                                           | 70.37           | ...                                                      | .58                                         | 11.82           | ...                                                                                  | ...             | ...                                                                        | ...             |
| 171                  | 6                             | 177                | 2        | ...             | ...         | ...      | 98.88                                                           | ...             |                                                          | 1.10                                        | ...             |                                                                                      |                 |                                                                            |                 |
| 1,014                | 24                            | 1,038              | 19       | 277             | 184         | 10       | 88.64                                                           | 68.91           | ...                                                      | 1.59                                        | 3.61            | ...                                                                                  | ...             | ...                                                                        | ...             |
| 60                   | 28                            | 160                | 296      | 682             | 13          | 560      | 100*                                                            | 59.09           | ...                                                      | 64.91                                       | 90.22           | ...                                                                                  | ...             | ...                                                                        | ...             |
| 346                  | 317                           | 1,486              | 131      | 9,088           | 6,105       | 762      | 85.40                                                           | 74.40           | ...                                                      | 7.00                                        | 8.38            | ...                                                                                  | ...             | ...                                                                        | ...             |
| 501,290              | 529,715                       | 1,046,536          | 6,655    | 28,604          | 24,358      | 4,001    | 99.44                                                           | 71.34           | ...                                                      | .62                                         | 12.15           | ...                                                                                  | ...             | ...                                                                        | ...             |

## Summary.

|                                               | 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. |                        | Ratio of successful vaccinations per 1,000 of population. | Total cost of Department. | Average cost of each successful case. |
|-----------------------------------------------|-------------------------------------|-----------------|---------------------------------------|-----------------|-----------------------------------------------------------------|-----------------|----------------------------------------------------------|----------------------------------------|---------------------------------------------|------------------------|-----------------------------------------------------------|---------------------------|---------------------------------------|
|                                               | Primary.                            | Re-vaccination. | Primary.                              | Re-vaccination. | Primary.                                                        | Re-vaccination. | Vaccinators employed.                                    | Persons vaccinated by each vaccinator. | Under 1 year.                               | One and under 6 years. |                                                           |                           |                                       |
| 1                                             | 2                                   | 3               | 4                                     | 5               | 6                                                               | 7               | 8                                                        | 9                                      | 10                                          | 11                     | 12                                                        | 13                        | 14                                    |
|                                               |                                     |                 |                                       |                 |                                                                 |                 |                                                          |                                        |                                             |                        |                                                           |                           | Rs. a. p.                             |
| BY SPECIAL STAFF.                             |                                     |                 |                                       |                 |                                                                 |                 |                                                          |                                        |                                             |                        |                                                           |                           | Rs. a. p.                             |
| Statement (I) ...                             | 10,55,374                           | 28,667          | 1,058,374                             | 28,667          | 99.47                                                           | 70.37           | 1,247                                                    | 869                                    | 409,705                                     | 529,340                |                                                           |                           |                                       |
| BY DISPENSARY STAFF.                          |                                     |                 |                                       |                 |                                                                 |                 |                                                          |                                        |                                             |                        |                                                           |                           |                                       |
| Statement III ...                             | 181                                 | ...             | 181                                   | ...             | 99.88                                                           | ...             | * 1                                                      | 181                                    | 171                                         | 6                      | 31.04                                                     | 1,12,216 4 1              | 0 1 8                                 |
| BY OTHER AGENCIES.                            |                                     |                 |                                       |                 |                                                                 |                 |                                                          |                                        |                                             |                        |                                                           |                           |                                       |
| Railways, Cooly Depot, Jails and Cantonments. | 8,517                               | 9,947           | 8,517                                 | 9,947           | 87.39                                                           | 74.14           | † 3                                                      | 1,403                                  | 1,420                                       | 369                    |                                                           |                           |                                       |
| Total ...                                     | 1,659,072                           | 38,604          | 1,659,072                             | 38,604          | 99.44                                                           | 71.34           | 1,251                                                    | 877                                    | 5,01,296                                    | 529,715                | 31.04                                                     | 1,12,216 4 1              | 0 1 8                                 |

\* Darbhanga only.

† Cooly Department and Cantonment only.

| STATEMENT II. |     |
|---------------|-----|
| 1             | 2   |
| 3             | 4   |
| 5             | 6   |
| 7             | 8   |
| 9             | 10  |
| 11            | 12  |
| 13            | 14  |
| 15            | 16  |
| 17            | 18  |
| 19            | 20  |
| 21            | 22  |
| 23            | 24  |
| 25            | 26  |
| 27            | 28  |
| 29            | 30  |
| 31            | 32  |
| 33            | 34  |
| 35            | 36  |
| 37            | 38  |
| 39            | 40  |
| 41            | 42  |
| 43            | 44  |
| 45            | 46  |
| 47            | 48  |
| 49            | 50  |
| 51            | 52  |
| 53            | 54  |
| 55            | 56  |
| 57            | 58  |
| 59            | 60  |
| 61            | 62  |
| 63            | 64  |
| 65            | 66  |
| 67            | 68  |
| 69            | 70  |
| 71            | 72  |
| 73            | 74  |
| 75            | 76  |
| 77            | 78  |
| 79            | 80  |
| 81            | 82  |
| 83            | 84  |
| 85            | 86  |
| 87            | 88  |
| 89            | 90  |
| 91            | 92  |
| 93            | 94  |
| 95            | 96  |
| 97            | 98  |
| 99            | 100 |

## Statement No. II.—Showing the cost of vaccination in the

| No.                                                                          | Circle and district. | European supervising officer. | Expen. |                             |             |                   |             |                       |         |         |            |             |          |
|------------------------------------------------------------------------------|----------------------|-------------------------------|--------|-----------------------------|-------------|-------------------|-------------|-----------------------|---------|---------|------------|-------------|----------|
|                                                                              |                      |                               | Pay.   | Native supervising officer. | Pay.        | Paid vaccinators. | Pay.        | Licensed vaccinators. | Pay.    | Clerks. | Pay.       | Peons, etc. | Pay.     |
| 1                                                                            | 2                    | 3                             | 4      | 5                           | 6           | 7                 | 8           | 9                     | 10      | 11      | 12         | 13          | 14       |
| PATNA DIVISION.                                                              |                      |                               |        |                             |             |                   |             |                       |         |         |            |             |          |
| 1                                                                            | Patna                |                               |        | 5                           | 1,770 2 7   | 16                | 1,325 1 11  | 61                    |         |         |            | 1           | 30 0 0   |
| 2                                                                            | Gaya                 |                               |        | 5                           | 1,511 3 2   | 8                 | 662 13 0    | 88                    |         |         |            | 2           | 144 0 0  |
| 3                                                                            | Shahabad             |                               |        | 5                           | 2,777 15 4  | 17                | 1,126 11 7  | 76                    |         |         |            |             |          |
| Total of Patna Division                                                      |                      |                               |        | 15                          | 6,359 5 1   | 41                | 3,141 10 6  | 225                   |         |         |            | 3           | 190 0 0  |
| TIRHUT DIVISION.                                                             |                      |                               |        |                             |             |                   |             |                       |         |         |            |             |          |
| 4                                                                            | Saran                |                               |        | 4                           | 1,430 0 0   | 5                 | 660 0 0     | 57                    | 180 0 0 |         |            |             |          |
| 5                                                                            | Champaran            |                               |        | 3                           | 1,162 14 9  | 4                 | 388 0 0     | 71                    | 90 8 0  |         |            |             |          |
| 6                                                                            | Munaffarpur          |                               |        | 4                           | 2,165 12 11 | 12                | 800 5 7     | 75                    | 30 0 0  |         |            |             |          |
| 7                                                                            | Darbhanga            |                               |        | 4                           | 1,463 5 4   | 8                 | 580 0 0     | 88                    |         | 1       | 60 0 0     |             |          |
| Total of Tirhut Division                                                     |                      |                               |        | 15                          | 6,222 1 0   | 29                | 2,437 5 7   | 321                   | 300 8 0 | 1       | 60 0 0     |             |          |
| BHAGALPUR DIVISION.                                                          |                      |                               |        |                             |             |                   |             |                       |         |         |            |             |          |
| 8                                                                            | Monghyr              |                               |        | 4                           | 1,480 13 7  | 7                 | 548 2 2     | 30                    |         |         |            | 2           | 108 0 0  |
| 9                                                                            | Bhagalpur            |                               |        | 5                           | 2,455 10 4  | 19                | 1,173 13 4  | 63                    |         |         |            |             |          |
| 10                                                                           | Purnea               |                               |        | 4                           | 1,447 2 11  | 11                | 1,343 13 9  | 52                    |         |         |            |             |          |
| 11                                                                           | Santal Parganas      |                               |        | 7                           | 2,400 0 0   | 6                 | 701 0 0     | 64                    |         |         |            |             |          |
| Total of Bhagalpur Division...                                               |                      |                               |        | 20                          | 7,783 10 10 | 36                | 3,766 13 3  | 209                   |         |         |            | 2           | 108 0 0  |
| ORISSA DIVISION.                                                             |                      |                               |        |                             |             |                   |             |                       |         |         |            |             |          |
| 12                                                                           | Cuttack              |                               |        | 4                           | 1,365 13 6  | 11                | 1,227 11 11 | 69                    |         |         |            |             |          |
| 13                                                                           | Balasore             |                               |        | 3                           | 1,570 6 5   | 5                 | 482 4 0     | 37                    | 20 0 0  |         |            |             |          |
| 14                                                                           | Angul                |                               |        | 3                           | 2,058 1 0   | 12                | 1,650 7 6   |                       |         |         |            |             |          |
| 15                                                                           | Puri                 |                               |        | 3                           | 1,294 1 9   | 19                | 3,651 9 1   |                       |         |         |            |             |          |
| 16                                                                           | Sambalpur            |                               |        | 3                           | 1,080 0 0   | 13                | 1,725 3 6   |                       |         |         |            | 2           | 50 0 0   |
| Total of Orissa Division                                                     |                      |                               |        | 16                          | 7,878 6 8   | 70                | 8,737 4 0   | 305                   | 20 0 0  |         |            | 2           | 50 0 0   |
| CHOTA NAGPUR DIVISION.                                                       |                      |                               |        |                             |             |                   |             |                       |         |         |            |             |          |
| 17                                                                           | Hazaribagh           |                               |        | 6                           | 1,335 0 3   | 4                 | 277 14 5    | 43                    |         |         |            |             |          |
| 18                                                                           | Ranchi               |                               |        | 5                           | 1,910 0 0   | 4                 | 564 0 0     | 50                    |         |         |            |             |          |
| 19                                                                           | Palamanu             |                               |        | 3                           | 1,201 1 9   | 3                 | 291 13 4    | 27                    | 96 0 0  |         |            |             |          |
| 20                                                                           | Manbhum              |                               |        | 3                           | 1,311 4 0   | 11                | 1,188 1 4   | 48                    |         |         |            |             |          |
| 21                                                                           | Singbhum             |                               |        | 3                           | 1,245 0 0   | 4                 | 282 0 0     | 20                    |         |         |            |             |          |
| Total of Chota Nagpur Division                                               |                      |                               |        | 20                          | 6,902 6 0   | 26                | 2,503 13 1  | 189                   | 96 0 0  |         |            |             |          |
| Total of Vaccine Circle                                                      |                      |                               |        | 56                          | 35,145 13 7 | 202               | 26,677 0 5  | 1,049                 | 416 8 0 | 1       | 60 0 0     | 7           | 328 0 0  |
| ESTABLISHMENT OF THE DEPUTY<br>SANITARY COMMISSIONER, NORTH<br>BIHAR CIRCLE. |                      |                               |        | 1                           | 5,074 5 2   |                   |             |                       |         | 2       | 946 10 7   | 2           | 104 0 7  |
| Ditto SOUTH BIHAR CIRCLE                                                     |                      |                               |        | 1                           | 4,830 0 0   |                   |             |                       |         | 2       | 960 0 0    | 2           | 251 13 9 |
| Ditto CHOTA NAGPUR AND<br>ORISSA CIRCLE.                                     |                      |                               |        | 1                           | 6,431 15 0  |                   |             |                       |         | 2       | 892 4 10   | 2           | 203 14 9 |
| Total                                                                        |                      |                               |        | 3                           | 16,336 4 2  |                   |             |                       |         | 6       | 2,798 15 5 | 7           | 610 13 1 |
| Total of province                                                            |                      |                               |        | 59                          | 51,452 1 9  | 202               | 26,677 0 5  | 1,049                 | 416 8 0 | 7       | 2,858 15 5 | 14          | 957 13 1 |

## Province of Bihar and Orissa during the year 1917-18.

| diture                          |                       |                |            |              | Paid from      |                  |             |                 |                |              |           | Number of all successful vac-<br>inations and re-vaccinations. | Average cost of each successful<br>case. |
|---------------------------------|-----------------------|----------------|------------|--------------|----------------|------------------|-------------|-----------------|----------------|--------------|-----------|----------------------------------------------------------------|------------------------------------------|
| Total pay of establab-<br>ment. | Travelling allowance. | Contingencies. |            | Total cost.  | Imperial Fund. | Provincial Fund. | Local Fund. | Municipalities. | Native States. | Total.       |           |                                                                |                                          |
| 13                              | 14                    | 15             | 16         | 17           | 18             | 19               | 20          | 21              | 22             | 23           | 24        | 25                                                             |                                          |
| 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.                                                      |                                          |
| 3,158 4 0                       | 1,241 15 11           | ...            | 206 5 6    | 4,606 9 11   | ...            | 3,149 13 6       | 480 0 0     | 976 12 5        | ...            | 4,606 9 11   | 68,529    | 0 1 0                                                          |                                          |
| 2,618 0 2                       | 1,324 13 8            | ...            | 135 11 9   | 4,078 9 7    | ...            | 3,280 0 10       | 341 11 0    | 456 13 9        | ...            | 4,078 9 7    | 62,246    | 0 1 0                                                          |                                          |
| 3,904 10 11                     | 649 11 6              | ...            | 127 16 0   | 4,682 5 5    | ...            | 3,533 2 10       | 480 0 0     | 609 2 7         | ...            | 4,682 5 5    | 51,858    | 0 1 5                                                          |                                          |
| 9,680 15 7                      | 3,216 9 1             | ...            | 470 0 3    | 13,367 8 11  | ...            | 9,963 1 2        | 1,301 11 0  | 21,02 12 9      | ...            | 13,367 8 11  | 182,633   | 0 1 2                                                          |                                          |
| 2,270 0 0                       | 1,378 7 7             | ...            | 220 2 0    | 3,868 9 7    | ...            | 2,088 7 7        | 180 0 0     | 780 2 0         | ...            | 3,868 9 7    | 777,21    | 0 0 9                                                          |                                          |
| 1,641 6 9                       | 1,080 0 7             | ...            | 102 3 6    | 2,823 10 10  | ...            | 2,423 7 4        | 163 12 6    | 296 7 0         | ...            | 2,823 10 10  | 51,755    | 0 0 10                                                         |                                          |
| 3,005 2 6                       | 400 2 0               | ...            | 171 15 0   | 3,577 3 6    | ...            | 2,704 11 11      | 151 5 7     | 721 2 0         | ...            | 3,577 3 6    | 85,808    | 0 0 7                                                          |                                          |
| 2,103 5 4                       | 1,142 0 8             | ...            | 100 0 0    | 3,345 6 0    | ...            | 2,695 6 0        | 160 0 0     | 490 0 0         | ...            | 3,345 6 0    | 93,206    | 0 0 6                                                          |                                          |
| 9,019 14 7                      | 4,000 10 10           | ...            | 594 4 6    | 13,614 13 11 | ...            | 10,732 0 10      | 595 2 1     | 2,287 11 0      | ...            | 13,614 13 11 | 308,580   | 0 0 8                                                          |                                          |
| 2,136 15 9                      | 1,196 13 10           | ...            | 197 0 9    | 3,530 14 4   | ...            | 2,749 10 5       | 142 2 0     | 639 1 11        | ...            | 3,530 14 4   | 68,361    | 0 0 9                                                          |                                          |
| 3,629 7 8                       | 527 10 6              | ...            | 216 15 10  | 4,374 2 0    | ...            | 3,109 4 10       | 581 15 4    | 682 13 10       | ...            | 4,374 2 0    | 68,106    | 0 1 0                                                          |                                          |
| 2,791 0 8                       | 1,221 15 3            | ...            | 60 0 0     | 40,72 15 11  | ...            | 2,729 2 2        | 616 0 0     | 728 13 9        | ...            | 4,072 15 11  | 49,490    | 0 1 3                                                          |                                          |
| 3,101 0 0                       | 2,297 8 0             | ...            | 122 15 10  | 5,521 7 10   | ...            | 4,787 11 10      | 270 0 0     | 463 12 0        | ...            | 5,521 7 10   | 56,728    | 0 1 6                                                          |                                          |
| 11,058 8 1                      | 5,243 15 7            | ...            | 597 0 5    | 17,499 8 1   | ...            | 13,375 13 3      | 1,699 1 4   | 2,514 9 6       | ...            | 17,499 8 1   | 242,745   | 0 1 1                                                          |                                          |
| 2,593 9 5                       | 1,064 0 11            | ...            | 151 8 3    | 3,809 2 7    | ...            | 2,524 14 5       | 599 14 10   | 684 5 4         | ...            | 3,809 2 7    | 62,177    | 0 0 11                                                         |                                          |
| 2,072 10 5                      | 226 2 0               | ...            | 60 0 0     | 2,358 12 5   | ...            | 1,676 8 5        | 242 4 0     | 240 0 0         | ...            | 2,358 12 5   | 25,800    | 0 1 5                                                          |                                          |
| 4,308 8 6                       | 985 4 6               | ...            | 30 0 0     | 5,323 13 0   | ...            | 5,323 13 0       | ...         | ...             | ...            | 5,323 13 0   | 6,956     | 0 12 2                                                         |                                          |
| 4,855 10 10                     | 1,096 12 5            | ...            | 70 0 0     | 6,022 7 3    | ...            | 2,370 14 2       | 3,495 9 1   | 156 0 0         | ...            | 6,022 7 3    | 34,639    | 0 2 9                                                          |                                          |
| 2,855 3 6                       | 730 4 0               | ...            | 34 14 6    | 3,620 16 0   | ...            | 1,845 1 0        | 1,499 3 6   | 276 1 6         | ...            | 3,620 6 0    | 23,345    | 0 2 8                                                          |                                          |
| 16,685 10 8                     | 4,102 7 10            | ...            | 346 6 9    | 21,34 9 3    | ...            | 13,941 3 0       | 5,833 15 5  | 1,356 6 10      | ...            | 21,134 9 3   | 152,917   | 0 2 2                                                          |                                          |
| 1,612 14 8                      | 927 3 10              | ...            | 107 8 3    | 2,647 10 9   | ...            | 2,367 1 1        | 30 0 0      | 259 9 8         | ...            | 2,647 10 9   | 39,761    | 0 1 0                                                          |                                          |
| 2,474 0 0                       | 1,284 4 0             | ...            | 85 0 0     | 3,843 4 0    | ...            | 3,279 4 0        | ...         | 564 0 0         | ...            | 3,843 4 0    | 47,094    | 0 1 3                                                          |                                          |
| 1,579 1 1                       | 930 0 7               | ...            | 80 0 0     | 2,589 1 8    | ...            | 2,211 2 4        | 158 3 4     | 219 12 0        | ...            | 2,589 1 8    | 26,398    | 0 1 7                                                          |                                          |
| 2,309 5 4                       | 663 11 11             | ...            | 71 0 0     | 3,134 1 3    | ...            | 1,932 12 5       | 1,017 6 10  | 183 14 0        | ...            | 3,134 1 3    | 62,280    | 0 0 11                                                         |                                          |
| 1,527 0 0                       | 1,017 9 2             | ...            | 61 14 0    | 3,206 7 2    | ...            | 2,912 9 2        | 84 0 0      | 206 14 0        | ...            | 3,206 7 2    | 17,872    | 0 2 10                                                         |                                          |
| 9,592 5 1                       | 5,422 13 6            | ...            | 495 6 3    | 15,420 8 10  | ...            | 12,702 13 0      | 1,280 10 2  | 1,438 1 8       | ...            | 15,420 8 10  | 183,009   | 0 1 4                                                          |                                          |
| 5,6637 6 0                      | 21,983 8 10           | ...            | 2,413 2 2  | 81,037 1 0   | ...            | 69,714 15 3      | 10,632 8 0  | 9,089 9 9       | ...            | 81,037 1 0   | 10,70,784 | 0 1 2                                                          |                                          |
| 6,185 0 4                       | 3,251 3 1             | ...            | 740 1 8    | 10,176 5 1   | ...            | 10,176 5 1       | ...         | ...             | ...            | 10,176 5 1   | ...       | ...                                                            |                                          |
| 6,051 13 9                      | 3,501 9 0             | ...            | 598 0 0    | 10,141 6 9   | ...            | 10,141 6 9       | ...         | ...             | ...            | 10,141 6 9   | ...       | ...                                                            |                                          |
| 7,528 2 7                       | 3,163 11 2            | ...            | 169 9 6    | 10,891 7 3   | ...            | 10,891 7 3       | ...         | ...             | ...            | 10,891 7 3   | ...       | ...                                                            |                                          |
| 19,755 0 8                      | 9,916 7 3             | ...            | 1,507 11 2 | 31,179 3 1   | ...            | 31,179 3 1       | ...         | ...             | ...            | 31,179 3 1   | ...       | ...                                                            |                                          |
| 76,302 6 8                      | 81,903 0 1            | ...            | 3,920 13 4 | 1,12,216 4 1 | ...            | 91,891 2 4       | 10,632 8 0  | 9,689 9 9       | ...            | 1,12,216 4 1 | 1,070,784 | 0 1 8                                                          |                                          |

## B—DISPENSARY VACCINATION.

Statement No. III.—Showing Dispensary Vaccination in the Province of Bihar and Orissa during the year 1917-18.

| District.       | Number of dispensaries in each district to which a vaccinator is attached. | Average number of vaccinators attached to dispensaries during the year. | Total number of persons vaccinated. | Average number of persons vaccinated by each vaccinator. | Primary vaccination. |                 |                               |                    |          | Re-vaccination. |             |          | Percentage of successful cases in which the results were known. |                 | Percentage of unknown cases to total cases. |                 |
|-----------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------|----------------------|-----------------|-------------------------------|--------------------|----------|-----------------|-------------|----------|-----------------------------------------------------------------|-----------------|---------------------------------------------|-----------------|
|                 |                                                                            |                                                                         |                                     |                                                          | Total.               | Successful.     |                               |                    | Unknown. | Total.          | Successful. | Unknown. | Primary.                                                        | Re-vaccination. | Primary.                                    | Re-vaccination. |
|                 |                                                                            |                                                                         |                                     |                                                          |                      | Under one year. | Over one and under six years. | Total of all ages. |          |                 |             |          |                                                                 |                 |                                             |                 |
| 1               | 2                                                                          | 3                                                                       | 4                                   | 5                                                        | 6                    | 7               | 8                             | 9                  | 10       | 11              | 12          | 13       | 14                                                              | 15              | 16                                          | 17              |
| Patna           | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Gaya            | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Shahabad        | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Saran           | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Champaran       | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Muzaffarpur     | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Darbhanga       | ...                                                                        | 1                                                                       | 1                                   | 161                                                      | 161                  | 161             | 171                           | 6                  | 177      | 2               | ...         | ...      | 98.88                                                           | ...             | 1.10                                        | ...             |
| Monghyr         | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Bhagalpur       | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Purnea          | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Santal Parganas | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Cuttack         | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Balasore        | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Angul           | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Puri            | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Sambalpur       | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Hazaribagh      | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Ranchi          | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Palaman         | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Manbhum         | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Singhbhum       | ...                                                                        | ...                                                                     | ...                                 | ...                                                      | ...                  | ...             | ...                           | ...                | ...      | ...             | ...         | ...      | ...                                                             | ...             | ...                                         | ...             |
| Total           | ...                                                                        | 1                                                                       | 1                                   | 161                                                      | 161                  | 161             | 171                           | 6                  | 177      | 2               | ...         | ...      | 98.88                                                           | ...             | 1.10                                        | ...             |

COMPARATIVE STATEMENT No. IV.

Comparative Statement No. IV.—Showing the number of persons primarily vaccinated, and the number of those pe

| Establishment.       |     |     | Persons primarily vaccinated |                                 |               |                                 |               |                                 |               |                                 |
|----------------------|-----|-----|------------------------------|---------------------------------|---------------|---------------------------------|---------------|---------------------------------|---------------|---------------------------------|
|                      |     |     | 1908-09                      |                                 | 1909-10       |                                 | 1910-11       |                                 | 1911-12       |                                 |
|                      |     |     | Total Number.                | Number successfully vaccinated. | Total Number. | Number successfully vaccinated. | Total Number. | Number successfully vaccinated. | Total Number. | Number successfully vaccinated. |
| 1                    |     |     | 2                            | 3                               | 4             | 5                               | 6             | 7                               | 8             | 9                               |
| Government           | ... | ... | ...                          | ...                             | ...           | ...                             | ...           | ...                             | ...           | ...                             |
| Municipal            | ... | ... | 48,330                       | 44,769                          | 46,047        | 43,550                          | 46,553        | 44,671                          | 46,769        | 44,879                          |
| Local Fund           | ... | ... | 96,959                       | 97,104                          | 92,291        | 91,182                          | 97,068        | 95,561                          | 96,381        | 95,057                          |
| Dispensaries         | ... | ... | 689                          | 591                             | 586           | 472                             | 516           | 415                             | 384           | 303                             |
| Licensed Vaccinators | ... | ... | 1,005,512                    | 994,418                         | 1,053,044     | 1,052,100                       | 1,118,587     | 1,109,896                       | 1,135,713     | 1,128,318                       |
| Total                | ... | ... | 1,151,490                    | 1,136,882                       | 1,191,968     | 1,187,304                       | 1,262,724     | 1,248,543                       | 1,279,247     | 1,268,497                       |

COMPARATIVE STATEMENT No. IV.



## Statement No. V.—Showing particulars of vaccination

| District.           | Total number of persons vaccinated. |                 | Total number inspected—                             |                 |                 |                 |                                                      |                 |                 |                 | Percentage of                  |                 |
|---------------------|-------------------------------------|-----------------|-----------------------------------------------------|-----------------|-----------------|-----------------|------------------------------------------------------|-----------------|-----------------|-----------------|--------------------------------|-----------------|
|                     |                                     |                 | By Deputy Sanitary Commissioners or Civil Surgeons. |                 |                 |                 | Native Superintendents or other Inspecting Officers. |                 |                 |                 | By Deputy Sanitary Civil       |                 |
|                     |                                     |                 | Deputy Sanitary Commissioners.                      |                 | Civil Surgeons. |                 | District Inspectors.                                 |                 | Sub-Inspectors. |                 | Deputy Sanitary Commissioners. |                 |
|                     | Primary.                            | Re-vaccination. | Primary.                                            | Re-vaccination. | Primary.        | Re-vaccination. | Primary.                                             | Re-vaccination. | Primary.        | Re-vaccination. | Primary.                       | Re-vaccination. |
| 1                   | 2                                   | 3               | 4                                                   | 5               | 6               | 7               | 8                                                    | 9               | 10              | 11              | 12                             | 13              |
| Patna ...           | 69,173                              | 694             | 10,426                                              | ...             | 762             | 511             | 24,518                                               | ...             | 29,210          | ...             | 15'08                          | ...             |
| Gaya ...            | 61,353                              | 1,534           | 19,868                                              | ...             | 1,037           | 429             | 14,500                                               | 10              | 27,142          | 412             | 32'38                          | ...             |
| Shahabad ...        | 50,639                              | 2,057           | 7,194                                               | ...             | 4,217           | 1,395           | 8,575                                                | ...             | 18,239          | 1,175           | 14'20                          | ...             |
| Saran ...           | 79,008                              | 636             | 4,683                                               | ...             | 7,807           | 632             | 18,180                                               | ...             | 33,024          | ...             | 5'92                           | ...             |
| Champaran ...       | 51,641                              | 706             | 4,158                                               | ...             | 5,398           | 600             | 6,809                                                | ...             | 13,754          | ...             | 8'05                           | ...             |
| Muzaffarpur ...     | 85,965                              | 1,002           | 6,634                                               | ...             | 10,604          | 714             | 2,388                                                | ...             | 18,996          | 19              | 7'48                           | ...             |
| Darbhanga ...       | 93,380                              | 271             | 10,276                                              | ...             | 4,104           | 200             | 22,552                                               | 8               | 41,669          | ...             | 11'00                          | ...             |
| Monghyr ...         | 68,341                              | 209             | 6,207                                               | ...             | 3,786           | ...             | 14,898                                               | 96              | 17,655          | 15              | 9'08                           | ...             |
| Bhagalpur ...       | 66,041                              | 2,479           | 6,909                                               | ...             | 8,195           | ...             | 18,471                                               | 78              | 36,657          | 30              | 10'46                          | ...             |
| Purnea ...          | 44,838                              | 8,688           | 386                                                 | ...             | 476             | ...             | 4,994                                                | 2,617           | 11,139          | 2,830           | '86                            | ...             |
| Santal Parganas ... | 56,427                              | 626             | 7,412                                               | ...             | 2,558           | 112             | 5,123                                                | ...             | 19,562          | 296             | 8'34                           | ...             |
| Cuttack ...         | 61,415                              | 5,252           | 6,506                                               | ...             | 2,660           | 103             | 8,781                                                | 174             | 20,296          | ...             | 10'59                          | ...             |
| Balasore ...        | 23,219                              | 4,781           | 4,326                                               | ...             | 1,785           | 311             | 5,950                                                | 227             | 7,633           | 632             | 15'02                          | ...             |
| Angul ...           | 5,766                               | 347             | 5,009                                               | ...             | 453             | ...             | 2,327                                                | 198             | 1,929           | 321             | 66'87                          | ...             |
| Puri ...            | 35,992                              | 567             | 4,600                                               | ...             | 446             | 34              | 10,828                                               | ...             | 12,699          | 63              | 12'78                          | ...             |
| Sambalpur ...       | 24,729                              | 673             | 2,333                                               | ...             | 3,378           | 319             | 10,216                                               | 24              | 11,915          | ...             | 9'43                           | ...             |
| Hazaribagh ...      | 39,650                              | 477             | 11,812                                              | ...             | 803             | ...             | 7,474                                                | ...             | 11,878          | ...             | 29'79                          | ...             |
| Ranchi ...          | 46,657                              | 776             | 12,048                                              | ...             | 3,681           | ...             | 14,868                                               | ...             | 20,156          | ...             | 25'92                          | ...             |
| Palamanu ...        | 25,585                              | 1,807           | 12,723                                              | ...             | 289             | 88              | 9,849                                                | ...             | 10,428          | 40              | 49'72                          | ...             |
| Manbhum ...         | 51,529                              | 1,159           | 5,825                                               | ...             | 790             | 912             | 4,333                                                | ...             | 10,384          | ...             | 11'23                          | ...             |
| Singbhum ...        | 17,384                              | 1,082           | 6,121                                               | ...             | 1,845           | 134             | 6,133                                                | ...             | 9,017           | 369             | 35'41                          | ...             |
| TOTAL ...           | 1,069,072                           | 38,604          | 155,456                                             | ...             | 65,694          | 6,385           | 221,446                                              | 3,572           | 383,402         | 6,092           | 14'67                          | ...             |

verified by Inspecting Officers during the year 1917-18.

| Inspection to total number vaccinated. |                 |                                                         |                 |                 |                 | Percentage of cases found successful to total number inspected. |                 |                 |                 |                                                         |                 |                 |                 |       |       | Percentage of successful cases reported by vaccinators. |  |
|----------------------------------------|-----------------|---------------------------------------------------------|-----------------|-----------------|-----------------|-----------------------------------------------------------------|-----------------|-----------------|-----------------|---------------------------------------------------------|-----------------|-----------------|-----------------|-------|-------|---------------------------------------------------------|--|
| Commissioners or Surgeons.             |                 | By Native Superintendents or other Inspecting Officers. |                 |                 |                 | By Deputy Sanitary Commissioners or Civil Surgeons.             |                 |                 |                 | By Native Superintendents or other Inspecting Officers. |                 |                 |                 |       |       |                                                         |  |
| Civil Surgeons.                        |                 | District Inspectors.                                    |                 | Sub-Inspectors. |                 | Deputy Sanitary Commissioners.                                  |                 | Civil Surgeons. |                 | District Inspectors.                                    |                 | Sub-Inspectors. |                 |       |       |                                                         |  |
| Primary.                               | Re-vaccination. | Primary.                                                | Re-vaccination. | Primary.        | Re-vaccination. | Primary.                                                        | Re-vaccination. | Primary.        | Re-vaccination. | Primary.                                                | Re-vaccination. | Primary.        | Re-vaccination. |       |       |                                                         |  |
| 14                                     | 15              | 16                                                      | 17              | 18              | 19              | 20                                                              | 21              | 22              | 23              | 24                                                      | 25              | 26              | 27              | 28    | 29    |                                                         |  |
| 1'10                                   | 73'67           | 35'44                                                   | ...             | 42'21           | ...             | 98'78                                                           | ...             | 98'28           | 75'53           | 98'16                                                   | ...             | 98'23           | ...             | 99'05 | 70'41 |                                                         |  |
| 1'09                                   | 27'55           | 23'64                                                   | 65              | 44'23           | 27'69           | 96'32                                                           | ...             | 99'90           | 96'66           | 96'92                                                   | 60'0            | 94'68           | 98'06           | 95'30 | 85'30 |                                                         |  |
| 8'32                                   | 62'05           | 16'03                                                   | ...             | 36'01           | 57'12           | 93'25                                                           | ...             | 98'74           | 96'06           | 96'57                                                   | ...             | 98'56           | 94'72           | 18'98 | 84'06 |                                                         |  |
| 9'08                                   | 99'37           | 22'83                                                   | ...             | 41'76           | ...             | 99'99                                                           | ...             | 98'70           | 55'22           | 98'69                                                   | ...             | 97'79           | ...             | 97'99 | 51'72 |                                                         |  |
| 10'45                                  | 84'08           | 13'18                                                   | ...             | 26'63           | ...             | 96'53                                                           | ...             | 99'61           | 59'33           | 98'85                                                   | ...             | 99'11           | ...             | 99'66 | 49'36 |                                                         |  |
| 12'67                                  | 71'25           | 9'63                                                    | ...             | 22'08           | 1'89            | 97'27                                                           | ...             | 99'02           | 45'50           | 88'24                                                   | ...             | 85'05           | 36'84           | 99'34 | 49'35 |                                                         |  |
| 4'39                                   | 73'80           | 24'15                                                   | 2'06            | 49'97           | ...             | ...                                                             | ...             | 99'70           | 57'50           | 98'06                                                   | 100'0           | 98'85           | ...             | 99'52 | 40'73 |                                                         |  |
| 5'52                                   | ...             | 21'79                                                   | 17'23           | 25'83           | 7'17            | 99'35                                                           | ...             | 99'30           | ...             | 90'51                                                   | 44'44           | 98'46           | 98'63           | 99'89 | 44'97 |                                                         |  |
| 12'40                                  | ...             | 27'96                                                   | 3'14            | 55'50           | 1'24            | 98'33                                                           | ...             | 99'87           | ...             | 90'36                                                   | 53'24           | 96'45           | 56'66           | 99'83 | 68'09 |                                                         |  |
| 1'06                                   | ...             | 10'84                                                   | 32'42           | 24'84           | 32'46           | ...                                                             | ...             | 98'04           | ...             | 99'26                                                   | 70'43           | 98'79           | 62'30           | 99'49 | 57'12 |                                                         |  |
| 82                                     | 13'55           | 9'07                                                    | ...             | 34'07           | 35'83           | 98'56                                                           | ...             | 99'26           | 55'35           | 98'60                                                   | ...             | 98'66           | 63'51           | 99'55 | 61'13 |                                                         |  |
| 4'67                                   | 1'06            | 14'29                                                   | 3'31            | 33'04           | ...             | 70'62                                                           | ...             | 99'75           | 79'61           | 98'38                                                   | 18'06           | 97'47           | ...             | 99'10 | 50'24 |                                                         |  |
| 7'73                                   | 6'50            | 25'62                                                   | 4'74            | 32'87           | 11'10           | 55'56                                                           | ...             | 98'38           | 92'60           | 92'06                                                   | 81'49           | 98'02           | 81'06           | 99'46 | 88'12 |                                                         |  |
| 7'85                                   | ...             | 38'62                                                   | 8'43            | 33'45           | 13'67           | 77'45                                                           | ...             | 99'02           | ...             | 94'28                                                   | 77'77           | 95'48           | 81'42           | 89'00 | 77'71 |                                                         |  |
| 1'24                                   | 5'99            | 30'68                                                   | ...             | 35'29           | 11'11           | 83'13                                                           | ...             | 96'87           | 82'35           | 98'65                                                   | ...             | 97'73           | 86'06           | 95'12 | 70'59 |                                                         |  |
| 13'66                                  | 36'54           | 41'31                                                   | 2'74            | 48'18           | ...             | 26'06                                                           | ...             | 94'73           | 80'67           | 94'98                                                   | 91'68           | 95'09           | ...             | 91'65 | 52'23 |                                                         |  |
| 2'02                                   | ...             | 18'85                                                   | ...             | 29'96           | ...             | 94'17                                                           | ...             | 99'00           | ...             | 99'29                                                   | ...             | 99'57           | ...             | 99'61 | 36'96 |                                                         |  |
| 7'88                                   | ...             | 31'87                                                   | ...             | 43'11           | ...             | 80'10                                                           | ...             | 98'98           | ...             | 97'09                                                   | ...             | 99'55           | ...             | 98'35 | 56'57 |                                                         |  |
| 1'12                                   | 4'87            | 28'49                                                   | ...             | 40'75           | 2'17            | 98'27                                                           | ...             | 98'88           | 71'59           | 90'18                                                   | ...             | 93'41           | 82'59           | 99'37 | 82'14 |                                                         |  |
| 1'54                                   | 58'84           | 8'30                                                    | ...             | 20'93           | ...             | 69'11                                                           | ...             | 100'00          | 66'88           | 99'14                                                   | ...             | 99'32           | ...             | 99'91 | 62'12 |                                                         |  |
| 10'67                                  | 12'38           | 35'50                                                   | ...             | 52'17           | 34'10           | 73'04                                                           | ...             | 99'78           | 70'89           | 99'43                                                   | ...             | 99'22           | 69'64           | 99'80 | 63'30 |                                                         |  |
| 6'20                                   | 10'63           | 20'90                                                   | 9'25            | 30'20           | 15'78           | 89'89                                                           | ...             | 98'87           | 70'87           | 97'50                                                   | 68'42           | 97'00           | 74'00           | 98'31 | 61'79 |                                                         |  |

112,22 460 233,02 50 601,71 24 121,23 22 ...

933,82,1 22 224,08,1 21 220,12,1 22 121,1 22 ...

Statement No. VI.—Showing side by side the ratios, per 1,000 of population, of Deaths from

| District.       |     |     | 1908-09                         |                                    | 1909-10                         |                                    | 1910-11                         |                                    | 1911-12                         |                                    |
|-----------------|-----|-----|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|
|                 |     |     | Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. |
| 1               |     |     | 2                               | 3                                  | 4                               | 5                                  | 6                               | 7                                  | 8                               | 9                                  |
| Patna ...       | ... | ... | 2·94                            | 52,570                             | 1·23                            | 51,589                             | ·30                             | 45,665                             | ·09                             | 48,687                             |
| Gaya ...        | ... | ... | 2·68                            | 72,395                             | ·62                             | 74,725                             | ·07                             | 68,104                             | ·07                             | 69,923                             |
| Shahabad        | ... | ... | 1·76                            | 53,759                             | ·67                             | 46,311                             | ·04                             | 39,890                             | ·02                             | 36,809                             |
| Saran ...       | ... | ... | ·96                             | 74,035                             | ·84                             | 76,930                             | ·07                             | 86,741                             | ·03                             | 83,221                             |
| Champaran       | ... | ... | ·80                             | 56,148                             | ·44                             | 63,172                             | ·02                             | 59,887                             | ·03                             | 60,354                             |
| Muzaffarpur     | ... | ... | ·23                             | 101,612                            | ·22                             | 98,808                             | ·06                             | 101,395                            | ·05                             | 102,535                            |
| Darbhanga       | ... | ... | ·13                             | 75,833                             | 29                              | 83,005                             | ·07                             | 84,025                             | ·06                             | 83,343                             |
| Monghyr         | ... | ... | ·61                             | 78,958                             | ·30                             | 79,069                             | ·11                             | 85,497                             | ·09                             | 89,123                             |
| Bhagalpur       | ... | ... | ·15                             | 71,328                             | ·24                             | 77,682                             | ·26                             | 74,438                             | ·43                             | 80,294                             |
| Purnea          | ... | ... | ·08                             | 50,937                             | ·36                             | 61,698                             | ·39                             | 63,167                             | ·24                             | 59,409                             |
| Santal Parganas | ... | ... | ·71                             | 65,509                             | ·36                             | 67,015                             | ·07                             | 67,446                             | ·08                             | 61,909                             |
| Cuttack         | ... | ... | ·28                             | 107,484                            | ·12                             | 134,160                            | ·007                            | 139,487                            | ·002                            | 153,747                            |
| Balasore        | ... | ... | ·64                             | 35,811                             | ·56                             | 44,340                             | ·41                             | 56,052                             | ·19                             | 63,287                             |
| Angul ...       | ... | ... | ...                             | 9,022                              | ...                             | 7,602                              | ...                             | 9,353                              | ...                             | 8,207                              |
| Puri ...        | ... | ... | ·83                             | 53,920                             | ·16                             | 52,438                             | ·007                            | 53,738                             | ·006                            | 53,619                             |
| Sambalpur       | ... | ... | ·17                             | 28,265                             | ·04                             | 27,124                             | ·08                             | 33,399                             | ...                             | 33,153                             |
| Hazaribagh      | ... | ... | 1·27                            | 42,294                             | ·42                             | 42,659                             | ·01                             | 50,075                             | ·006                            | 46,544                             |
| Ranchi          | ... | ... | 1·48                            | 44,656                             | ·81                             | 46,968                             | ·07                             | 57,541                             | ·02                             | 48,913                             |
| Falamau         | ... | ... | 1·19                            | 27,936                             | 1·42                            | 31,133                             | ·11                             | 21,059                             | ·008                            | 24,782                             |
| Manbhum         | ... | ... | ·46                             | 62,937                             | ·21                             | 58,160                             | ·01                             | 60,086                             | ·0006                           | 60,420                             |
| Singhbhum       | ... | ... | ·22                             | 22,721                             | ·42                             | 17,409                             | ·08                             | 26,593                             | ·004                            | 22,841                             |
| Total           | ... | ... | ·83                             | 1,189,184                          | ·45                             | 1,241,997                          | ·10                             | 1,283,638                          | ·08                             | 1,288,620                          |

## Small-pox and the number of successful vaccinations during the 10 years ending 1917-18.

| 1912-13                         |                                    | 1913-14                         |                                    | 1914-15                         |                                    | 1915-16                         |                                    | 1916-17                         |                                    | 1917-18                         |                                    |
|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|------------------------------------|
| Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. | Ratio of deaths from small-pox. | Number of successful vaccinations. |
| 10                              | 11                                 | 12                              | 13                                 | 14                              | 15                                 | 16                              | 17                                 | 18                              | 19                                 | 20                              | 21                                 |
| ·07                             | 48,768                             | ·17                             | 48,480                             | ·48                             | 57,665                             | ·71                             | 68,438                             | ·28                             | 67,870                             | ·15                             | 68,529                             |
| ·008                            | 66,965                             | ·03                             | 67,817                             | ·10                             | 65,855                             | ·68                             | 75,641                             | ·37                             | 66,139                             | ·18                             | 62,246                             |
| ·006                            | 47,086                             | ·09                             | 53,812                             | ·32                             | 62,079                             | ·45                             | 65,016                             | ·26                             | 51,176                             | ·10                             | 51,858                             |
| ·006                            | 85,339                             | ·06                             | 81,699                             | ·06                             | 80,739                             | ·15                             | 79,608                             | ·27                             | 74,895                             | ·16                             | 77,721                             |
| ·07                             | 55,486                             | ·02                             | 63,100                             | ·10                             | 64,146                             | ·14                             | 68,255                             | ·07                             | 49,091                             | ·11                             | 51,755                             |
| ·04                             | 101,405                            | ·01                             | 103,052                            | ·09                             | 105,292                            | ·24                             | 104,624                            | ·20                             | 88,702                             | ·09                             | 85,898                             |
| ·01                             | 93,546                             | ·06                             | 93,735                             | ·24                             | 97,760                             | ·41                             | 95,237                             | ·28                             | 96,020                             | ·07                             | 93,206                             |
| ·08                             | 84,475                             | ·48                             | 89,024                             | ·46                             | 89,749                             | ·42                             | 87,999                             | ·17                             | 67,229                             | ·10                             | 68,361                             |
| ·41                             | 77,274                             | ·31                             | 75,244                             | ·35                             | 75,831                             | ·38                             | 74,532                             | ·22                             | 66,899                             | ·22                             | 68,166                             |
| ·14                             | 56,916                             | ·22                             | 60,587                             | ·30                             | 53,496                             | ·38                             | 51,206                             | ·33                             | 53,018                             | ·64                             | 49,490                             |
| ·19                             | 60,236                             | ·27                             | 64,815                             | ·18                             | 53,182                             | ·37                             | 57,558                             | ·43                             | 46,826                             | ·14                             | 56,728                             |
| ·01                             | 137,175                            | ·01                             | 134,227                            | ·06                             | 113,297                            | ·69                             | 89,925                             | ·46                             | 73,415                             | ·81                             | 62,177                             |
| ·006                            | 68,271                             | ·11                             | 69,059                             | ·90                             | 53,281                             | ·90                             | 38,609                             | ·24                             | 22,173                             | ·03                             | 25,800                             |
| ...                             | 5,906                              | ...                             | 7,945                              | ...                             | 7,680                              | ·01                             | 9,686                              | ·15                             | 9,226                              | ·01                             | 6,956                              |
| ·02                             | 55,642                             | ·07                             | 47,269                             | ·02                             | 33,820                             | ·30                             | 37,595                             | ·52                             | 29,228                             | ·26                             | 34,639                             |
| ·04                             | 25,955                             | ·05                             | 25,063                             | ·02                             | 27,561                             | ·75                             | 22,606                             | 1·09                            | 19,938                             | ·24                             | 23,345                             |
| ·02                             | 46,150                             | ·02                             | 51,777                             | ·03                             | 48,299                             | ·49                             | 46,709                             | ·19                             | 42,148                             | ·07                             | 39,761                             |
| ·004                            | 51,096                             | ·01                             | 49,989                             | ·03                             | 50,958                             | ·12                             | 52,111                             | ·05                             | 46,667                             | ·03                             | 47,094                             |
| ...                             | 23,683                             | ·07                             | 21,459                             | ·10                             | 28,327                             | ·17                             | 31,808                             | ·15                             | 25,542                             | ·06                             | 26,893                             |
| ·005                            | 61,191                             | ·02                             | 61,316                             | ·43                             | 73,369                             | ·63                             | 54,056                             | ·23                             | 49,379                             | ·02                             | 62,289                             |
| ·05                             | 20,254                             | ·09                             | 23,496                             | ·45                             | 25,900                             | ·28                             | 19,526                             | ·12                             | 17,429                             | ·09                             | 17,872                             |
| ·06                             | 1,270,859                          | ·11                             | 1,292,965                          | ·22                             | 1,273,285                          | ·42                             | 1,230,745                          | ·28                             | 1,053,015                          | ·19                             | 1,070,784                          |

Statement No. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1917-18.

| District.                | Towns.     | Number of births during the year ending 31st March 1918. | Number of deaths amongst infants under one year during the year ending 31st March 1918. | Number of successful vaccinations amongst infants under one year during the year ending 31st March 1918. | Date of extension of Vaccination Act to town. |
|--------------------------|------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| 1                        | 2          | 3                                                        | 4                                                                                       | 5                                                                                                        | 6                                             |
| Patna                    | Patna      | 3,328                                                    | 644                                                                                     | 2,278                                                                                                    | 1st October 1884.                             |
|                          | Bihar      | 1,154                                                    | 210                                                                                     | 872                                                                                                      | 1st April 1887.                               |
|                          | Dinapur    | 1,002                                                    | 202                                                                                     | 767                                                                                                      | 28th January 1891.                            |
|                          | Barh       | 362                                                      | 89                                                                                      | 248                                                                                                      | 1st April 1887.                               |
|                          | Khagole    | 222                                                      | 26                                                                                      | 148                                                                                                      | 12th July 1910.                               |
|                          | Total      | 6,068                                                    | 1,171                                                                                   | 4,313                                                                                                    |                                               |
| Gaya                     | Gaya       | 2,484                                                    | 833                                                                                     | 884                                                                                                      | 1st January 1883.                             |
|                          | Tikari     | 284                                                      | 47                                                                                      | 72                                                                                                       | 3rd January 1891.                             |
|                          | Daudnagar  | 274                                                      | 50                                                                                      | 139                                                                                                      | Ditto.                                        |
|                          | Total      | 3,042                                                    | 930                                                                                     | 1,095                                                                                                    |                                               |
| Shahabad                 | Arrah      | 1,525                                                    | 373                                                                                     | 1,328                                                                                                    | 20th July 1885.                               |
|                          | Buxar      | 415                                                      | 91                                                                                      | 368                                                                                                      | 1st April 1887.                               |
|                          | Dumraon    | 526                                                      | 90                                                                                      | 136                                                                                                      | Ditto.                                        |
|                          | Jagadispur | 329                                                      | 90                                                                                      | 267                                                                                                      | 20th December 1890.                           |
|                          | Sassaram   | 996                                                      | 196                                                                                     | 709                                                                                                      | 1st April 1887.                               |
|                          | Bhabhua    | 166                                                      | 39                                                                                      | 155                                                                                                      | Ditto.                                        |
|                          | Total      | 3,987                                                    | 879                                                                                     | 2,963                                                                                                    |                                               |
| Total of Patna Division. |            | 13,097                                                   | 2,980                                                                                   | 8,371                                                                                                    |                                               |
| Saran                    | Chapra     | 1,614                                                    | 151                                                                                     | 694                                                                                                      | 1st April 1887.                               |
|                          | Revelganj  | 431                                                      | 91                                                                                      | 279                                                                                                      | 12th December 1890.                           |
|                          | Siwan      | 567                                                      | 103                                                                                     | 262                                                                                                      | 1st April 1887.                               |
|                          | Total      | 2,612                                                    | 345                                                                                     | 1,235                                                                                                    |                                               |
| Champanan                | Motihari   | 457                                                      | 95                                                                                      | 256                                                                                                      | 1st April 1887.                               |
|                          | Bettiah    | 929                                                      | 240                                                                                     | 441                                                                                                      | Ditto.                                        |
|                          | Total      | 1,386                                                    | 335                                                                                     | 697                                                                                                      |                                               |

Statement No. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1917-18—contd.

| District.   | Towns.                    | Number of births during the year ending 31st March 1918. | Number of deaths amongst infants under one year during the year ending 31st March 1918. | Number of successful vaccinations amongst infants under one year during the year ending 31st March 1918. | Date of extension of Vaccination Act to town.                                          |
|-------------|---------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1           | 2                         | 3                                                        | 4                                                                                       | 5                                                                                                        | 6                                                                                      |
| Muzaffarpur | Muzaffarpur               | 1,301                                                    | 280                                                                                     | 998                                                                                                      | 1st January 1886.                                                                      |
|             | Sitamarhi                 | 391                                                      | 78                                                                                      | 225                                                                                                      | 1st April 1887.                                                                        |
|             | Hajipur                   | 739                                                      | 163                                                                                     | 391                                                                                                      | 1st May 1890.                                                                          |
|             | Lalganj                   | 343                                                      | 65                                                                                      | 266                                                                                                      | 1st April 1887.                                                                        |
|             | Total                     | 2,774                                                    | 586                                                                                     | 1,880                                                                                                    |                                                                                        |
| Darbhanga   | Darbhangha                | 2,265                                                    | 433                                                                                     | 736                                                                                                      | 24th May 1884.                                                                         |
|             | Roserha                   | 295                                                      | 73                                                                                      | 116                                                                                                      | 3rd January 1891.                                                                      |
|             | Samastipur                | 258                                                      | 55                                                                                      | 74                                                                                                       | 25th July 1910.                                                                        |
|             | Madhubani                 | 581                                                      | 85                                                                                      | 175                                                                                                      | 1st April 1887.                                                                        |
|             | Total                     | 3,399                                                    | 646                                                                                     | 1,104                                                                                                    |                                                                                        |
|             | Total of Tirhut Division. | 10,171                                                   | 1,913                                                                                   | 4,926                                                                                                    |                                                                                        |
| Moaghyr     | Monghyr                   | 1,882                                                    | 354                                                                                     | 495                                                                                                      | 15th November 1882.                                                                    |
|             | Jamalpur                  | 955                                                      | 206                                                                                     | 500                                                                                                      | Ditto.                                                                                 |
|             | Total                     | 2,837                                                    | 560                                                                                     | 995                                                                                                      |                                                                                        |
| Bhagalpur   | Bhagalpur                 | 1,683                                                    | 352                                                                                     | 684                                                                                                      | 15th February 1884 ; withdrawn on 16th October 1895 ; re-extended on 18th August 1898. |
|             | Colgong                   | 145                                                      | 38                                                                                      | 38                                                                                                       | Ditto ; re-extended on 19th December 1901.                                             |
|             | Total                     | 1,828                                                    | 390                                                                                     | 722                                                                                                      |                                                                                        |
| Purnea      | Purnea                    | 410                                                      | 80                                                                                      | 230                                                                                                      | 1st July 1887.                                                                         |
|             | Kishanganj                | 205                                                      | 22                                                                                      | 118                                                                                                      | 12th November 1892.                                                                    |
|             | Katihar                   | 347                                                      | 33                                                                                      | 212                                                                                                      | 8th August 1910.                                                                       |
|             | Forbesganj                | 113                                                      | 8                                                                                       | 87                                                                                                       | 9th August 1912.                                                                       |
|             | Total                     | 1,075                                                    | 143                                                                                     | 647                                                                                                      |                                                                                        |

Statement No. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1917-18—contd.

| District.           | Towns.                       | Number of births during the year ending 31st March 1918. | Number of deaths amongst infants under one year during the year ending 31st March 1918. | Number of successful vaccinations amongst infants under one year during the year ending 31st March 1918. | Date of extension of Vaccination Act to town.                 |
|---------------------|------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| 1                   | 2                            | 3                                                        | 4                                                                                       | 5                                                                                                        | 6                                                             |
| Santal Parganas ... | Sahibganj ...                | 510                                                      | 121                                                                                     | 456                                                                                                      | 1st May 1884.                                                 |
|                     | Deoghar ...                  | 295                                                      | 63                                                                                      | 104                                                                                                      | Ditto.                                                        |
|                     | Dumka ...                    | 165                                                      | 37                                                                                      | 123                                                                                                      | Notifications, dated the 9th April 1884, and 3rd August 1910. |
|                     | Madhupur ...                 | 253                                                      | 46                                                                                      | 71                                                                                                       | 22nd August 1910.                                             |
|                     | Total ...                    | 1,223                                                    | 267                                                                                     | 754                                                                                                      |                                                               |
|                     | Total of Bhagalpur Division. | 6,963                                                    | 1,360                                                                                   | 3,078                                                                                                    |                                                               |
| Cuttack ...         | Cuttack ...                  | 1,275                                                    | 267                                                                                     | 779                                                                                                      | 1st September 1884.                                           |
|                     | Kendrapara ...               | 467                                                      | 131                                                                                     | 199                                                                                                      | 7th February 1838.                                            |
|                     | Jajpur ...                   | 366                                                      | 81                                                                                      | 55                                                                                                       | Ditto.                                                        |
|                     | Total ...                    | 2,108                                                    | 479                                                                                     | 1,033                                                                                                    |                                                               |
| Balasore ...        | Balasore ...                 | 557                                                      | 145                                                                                     | 154                                                                                                      | 7th February 1888.                                            |
| Puri ...            | Puri ...                     | 696                                                      | 263                                                                                     | 279                                                                                                      | Ditto.                                                        |
| Sambalpur ...       | Sambalpur ...                | 461                                                      | 110                                                                                     | 228                                                                                                      | 7th March 1895.                                               |
|                     | Total of Orissa Division.    | 3,822                                                    | 997                                                                                     | 1,694                                                                                                    |                                                               |
| Hazaribagh ...      | Hazaribagh ...               | 540                                                      | 71                                                                                      | 165                                                                                                      | 1st January 1885.                                             |
|                     | Chatra ...                   | 256                                                      | 44                                                                                      | 166                                                                                                      | 1st August 1885.                                              |
|                     | Giridih ...                  | 261                                                      | 32                                                                                      | 99                                                                                                       | 8th September 1910.                                           |
|                     | Total ...                    | 1,057                                                    | 147                                                                                     | 430                                                                                                      |                                                               |
| Ranchi ...          | Ranchi ...                   | 1,344                                                    | 163                                                                                     | 1,169                                                                                                    | 1st April 1887.                                               |
|                     | Lohardaga ...                | 149                                                      | 14                                                                                      | 208                                                                                                      | 25th June 1892.                                               |
|                     | Total ...                    | 1,493                                                    | 177                                                                                     | 1,377                                                                                                    |                                                               |

*Statement No. VII.—Showing the protection afforded to infants in each town in the Province of Bihar and Orissa during the year 1917-18—concl'd.*

| District. |     | Towns.                          | Number of births during the year ending 31st March 1918. | Number of deaths amongst infants under one year during the year ending 31st March 1918. | Number of successful vaccinations amongst infants under one year during the year ending 31st March 1918. | Date of extension of Vaccination Act to town. |
|-----------|-----|---------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| 1         |     | 2                               | 3                                                        | 4                                                                                       | 5                                                                                                        | 6                                             |
| Palamau   | ... | Daltonganj ...                  | 277                                                      | 55                                                                                      | 94                                                                                                       | 9th October 1890.                             |
| Manbhum   | ... | Purulia ...                     | 379                                                      | 59                                                                                      | 463                                                                                                      | 1st January 1887.                             |
|           |     | Raghunathpur ...                | 176                                                      | 44                                                                                      | 77                                                                                                       | 9th February 1894.                            |
|           |     | Jhalda ...                      | 165                                                      | 24                                                                                      | 74                                                                                                       | 9th July 1892.                                |
|           |     | Total ...                       | 720                                                      | 127                                                                                     | 608                                                                                                      |                                               |
| Singhbhum | ... | Chaibassa ...                   | 292                                                      | 36                                                                                      | 218                                                                                                      | 20th June 1892.                               |
|           |     | Total of Chota Nagpur Division. | 3,849                                                    | 542                                                                                     | 2,727                                                                                                    |                                               |
|           |     | Total for the Province          | 37,875                                                   | 7,792                                                                                   | 20,786                                                                                                   |                                               |

Statement No. 141—Summary of the statistics of the fishery in each month of the year 1917-18—continued.

| 1<br>Name of vessel | 2<br>Gross tonnage | 3<br>Net tonnage | 4<br>Number of days fished | 5<br>Number of fish taken | 6<br>Total weight of fish taken in pounds |
|---------------------|--------------------|------------------|----------------------------|---------------------------|-------------------------------------------|
| Colman, W. L. 1917  | ...                | ...              | 87                         | ...                       | ...                                       |
| " " 1918            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1919            | ...                | ...              | 84                         | ...                       | ...                                       |
| " " 1920            | ...                | ...              | 84                         | ...                       | ...                                       |
| " " 1921            | ...                | ...              | 87                         | ...                       | ...                                       |
| " " 1922            | ...                | ...              | 87                         | ...                       | ...                                       |
| " " 1923            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1924            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1925            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1926            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1927            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1928            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1929            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1930            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1931            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1932            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1933            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1934            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1935            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1936            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1937            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1938            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1939            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1940            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1941            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1942            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1943            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1944            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1945            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1946            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1947            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1948            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1949            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1950            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1951            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1952            | ...                | ...              | 86                         | ...                       | ...                                       |
| " " 1953            | ...                | ...              | 86                         | ...                       | ...                                       |



## Provincial Statement.—Showing the different kinds of lymph

| District.       | Primary vaccination.  |             |               |          |                                 |                                   |             |               |          |                                 |             |             |
|-----------------|-----------------------|-------------|---------------|----------|---------------------------------|-----------------------------------|-------------|---------------|----------|---------------------------------|-------------|-------------|
|                 | Direct from the calf. |             |               |          |                                 | With lanoline or glycerine lymph. |             |               |          |                                 | Arm-to-arm. |             |
|                 | Total.                | Successful. | Unsuccessful. | Unknown. | Percentage of successful cases. | Total.                            | Successful. | Unsuccessful. | Unknown. | Percentage of successful cases. | Total.      | Successful. |
| 1               | 2                     | 3           | 4             | 5        | 6                               | 7                                 | 8           | 9             | 10       | 11                              | 12          | 13          |
| Patna           | ...                   | ...         | ...           | ...      | ...                             | 69,173                            | 68,084      | 649           | 440      | 98.42                           | ...         | ...         |
| Gaya            | ...                   | ...         | ...           | ...      | ...                             | 61,553                            | 60,945      | 282           | 126      | 99.33                           | ...         | ...         |
| Shahabad        | ...                   | ...         | ...           | ...      | ...                             | 50,639                            | 50,128      | 439           | 72       | 98.99                           | ...         | ...         |
| Saran           | ...                   | ...         | ...           | ...      | ...                             | 79,063                            | 77,370      | 631           | 1,067    | 97.85                           | ...         | ...         |
| Champaran       | ...                   | ...         | ...           | ...      | ...                             | 51,641                            | 51,470      | 121           | 50       | 99.66                           | ...         | ...         |
| Muzaffarpur     | ...                   | ...         | ...           | ...      | ...                             | 85,995                            | 85,431      | 496           | 68       | 99.34                           | ...         | ...         |
| Darbhanga       | ...                   | ...         | ...           | ...      | ...                             | 93,380                            | 93,099      | 256           | 25       | 99.69                           | ...         | ...         |
| Monghyr         | ...                   | ...         | ...           | ...      | ...                             | 68,341                            | 68,267      | 42            | 32       | 99.89                           | ...         | ...         |
| Bhagalpur       | ...                   | ...         | ...           | ...      | ...                             | 66,641                            | 65,947      | 60            | 41       | 99.84                           | ...         | ...         |
| Purnea          | ...                   | ...         | ...           | ...      | ...                             | 44,838                            | 44,612      | 203           | 23       | 99.49                           | ...         | ...         |
| Santal Parganas | ...                   | ...         | ...           | ...      | ...                             | 56,477                            | 56,223      | 126           | 128      | 99.55                           | ...         | ...         |
| Cuttack         | ...                   | ...         | ...           | ...      | ...                             | 61,415                            | 59,970      | 543           | 902      | 97.64                           | ...         | ...         |
| Balasore        | ...                   | ...         | ...           | ...      | ...                             | 23,319                            | 22,632      | 122           | 445      | 97.55                           | ...         | ...         |
| Angul           | ...                   | ...         | ...           | ...      | ...                             | 5,766                             | 5,132       | 472           | 162      | 89.00                           | ...         | ...         |
| Furi            | ...                   | ...         | ...           | ...      | ...                             | 35,992                            | 34,237      | 731           | 1,434    | 95.12                           | ...         | ...         |
| Sambalpur       | ...                   | ...         | ...           | ...      | ...                             | 24,729                            | 22,889      | 701           | 1,159    | 92.55                           | ...         | ...         |
| Hazaribagh      | ...                   | ...         | ...           | ...      | ...                             | 39,650                            | 39,489      | 136           | 25       | 99.59                           | ...         | ...         |
| Ranchi          | ...                   | ...         | ...           | ...      | ...                             | 46,657                            | 46,655      | 1             | 1        | 99.99                           | ...         | ...         |
| Palamau         | ...                   | ...         | ...           | ...      | ...                             | 25,585                            | 25,418      | 31            | 136      | 99.35                           | ...         | ...         |
| Manbhum         | ...                   | ...         | ...           | ...      | ...                             | 51,829                            | 51,326      | 183           | 320      | 99.02                           | ...         | ...         |
| Singbhum        | ...                   | ...         | ...           | ...      | ...                             | 17,284                            | 17,189      | 56            | 39       | 99.45                           | ...         | ...         |
| TOTAL           | ...                   | ...         | ...           | ...      | ...                             | 1,059,072                         | 1,046,526   | 5,881         | 6,665    | 98.43                           | ...         | ...         |

## II.

used and their rates of success during the year 1917-18.

|               |          |                                 | Revaccination.        |             |               |          |                                 |                                   |             |               |          |                                 |                         |             |               |          |                                 |  |
|---------------|----------|---------------------------------|-----------------------|-------------|---------------|----------|---------------------------------|-----------------------------------|-------------|---------------|----------|---------------------------------|-------------------------|-------------|---------------|----------|---------------------------------|--|
| vaccination.  |          |                                 | Direct from the calf. |             |               |          |                                 | With lanoline or glycerine lymph. |             |               |          |                                 | Arm-to-arm vaccination. |             |               |          |                                 |  |
| Unsuccessful. | Unknown. | Percentage of successful cases. | Total.                | Successful. | Unsuccessful. | Unknown. | Percentage of successful cases. | Total.                            | Successful. | Unsuccessful. | Unknown. | Percentage of successful cases. | Total.                  | Successful. | Unsuccessful. | Unknown. | Percentage of successful cases. |  |
| 14            | 15       | 16                              | 17                    | 18          | 19            | 20       | 21                              | 22                                | 23          | 24            | 25       | 26                              | 27                      | 28          | 29            | 30       | 31                              |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 694                               | 445         | 187           | 62       | 64.10                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 1,524                             | 1,301       | 171           | 52       | 85.36                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 2,057                             | 1,730       | 221           | 106      | 84.10                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 636                               | 351         | 185           | 100      | 50.00                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 706                               | 285         | 203           | 118      | 40.36                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 1,002                             | 467         | 386           | 149      | 40.60                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 271                               | 107         | 131           | 33       | 39.51                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 269                               | 94          | 115           | ...      | 44.97                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 2,479                             | 2,220       | 253           | 20       | 89.79                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 8,688                             | 4,878       | 3,299         | 511      | 56.14                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 826                               | 505         | 262           | 59       | 61.13                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 5,252                             | 2,207       | 1,788         | 1,257    | 42.02                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 4,781                             | 3,148       | 424           | 1,209    | 65.84                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 2,347                             | 1,824       | 386           | 137      | 56.41                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 567                               | 432         | 121           | 44       | 70.89                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 873                               | 456         | 165           | 252      | 52.23                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 477                               | 272         | 185           | 20       | 57.02                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 776                               | 489         | 144           | 193      | 57.31                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 1,807                             | 1,475       | 231           | 101      | 81.63                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 1,550                             | 903         | 465           | 122      | 62.12                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 1,082                             | 683         | 343           | 56       | 63.12                           | ...                     | ...         | ...           | ...      | ...                             |  |
| ...           | ...      | ...                             | ...                   | ...         | ...           | ...      | ...                             | 38,694                            | 24,233      | 9,745         | 4,691    | 62.84                           | ...                     | ...         | ...           | ...      | ...                             |  |





