

## **Triennial report on vaccination in Burma.**

### **Contributors**

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*Col. H. J. Agnew*

*X*

TRIENNIAL REPORT

ON

VACCINATION IN BURMA

FOR THE YEARS 1911-12 TO 1913-14



RANGOON

OFFICE OF THE SUPERINTENDENT, GOVERNMENT PRINTING, BURMA

1914

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RESOLUTION  
ON THE  
TRIENNIAL REPORT ON VACCINATION IN BURMA  
FOR THE YEARS 1911-12 TO 1913-14.

Extract from the Proceedings of the Government of Burma in the General Department,—No. 1Z.—19,  
dated the 31st July 1914.

READ—

The Triennial Report on Vaccination in Burma for the years 1911-12—1913-14.

RESOLUTION.—The report on Vaccination in Burma for the triennial period 1911-12 to 1913-14 is an encouraging one. There has been a sudden and unexplained rise in the total number of persons vaccinated by the special staff. The figures for the last triennium were respectively 382,326, 392,470 and 392,877, with an average of 389,224. In the year 1911-12 the figures rose to 506,149 which represents an advance of 29 per cent. over the figures for the previous year. The average for the triennium under report was 517,096, which thus exceeds the former triennial average by 127,872 or nearly 33 per cent. It is possible that implicit trust cannot be placed in these returns. The Superintendent-General has certainly given us one instance, in paragraph 9 of his report, where the figures seem improbable. But though they cannot be accepted absolutely the figures for the first of the three years under review are at least as likely to be correct as those for the closing year of the former triennium, and the conclusion is inevitable that a very considerable improvement has taken place in the work of the vaccination staff. The better results achieved have caused a decrease in the cost of each successful operation from 8 annas 4 pies to 7 annas 6 pies. This is a good sign, but there is room for further improvement in this direction. In 1905-06 the average cost worked out to 4 annas 9 pies, while the average for the triennium 1905-06 to 1907-08 was only 5 annas 10 pies. The gross expenditure of the Department is steadily rising, and the amount spent in 1913-14 exceeds that spent in 1910-11 by some Rs. 11,600. The greater portion of this excess is due to an increase in the staff followed by a proportionate rise in travelling allowance, and calls for no comment. Contingencies have risen by over Rs. 2,000 to Rs. 13,724. This figure though high amongst those for recent years, was nearly equalled in 1906-07 and is considerably below the sum spent on contingencies in 1909-10. And in view of the gradual expansion of the Department, His Honour is not disposed to consider it unduly high.

2. There was a marked increase of 22 per cent. in the number of primary operations, and of these the successes increased by 24 per cent. upon the figures for the last triennium. The most marked improvements occurred in the Insein,



Hanthawaddy and Ma-ubin Districts; and the Lieutenant-Governor notes with pleasure that in the case of the last two the work of the Department received valuable support from the district officers concerned. The statistics relative to the protection of children in towns are of great importance as the number of successful operations in a given town sometimes exceeds the number of children under twelve months of age who should be available for vaccination according to the vital statistics. In the first place, as Colonel Williams points out, the registration of births and deaths is not always to be relied on, and Major Harriss, in examining a similar phenomenon in the last triennial report, accounted for minor discrepancies by assuming that children of immigrants and country folk were vaccinated within the urban area, and that some of the registered deaths took place after vaccination. His Honour considers that the vaccination statistics afford a valuable opportunity for checking the admittedly defective records of vital statistics and trusts that the opportunity so given for effecting an improvement on the latter is utilised. When allowance has been made for all sources of error the average protection rate of 102·84 is a distinct improvement on that for the former triennium, 90·41. Civil Surgeons have displayed more energy in the verification of primary vaccinations, especially in the middle year of the period, but Sir Harvey Adamson regrets to observe that the verification of re-vaccinations is yearly receiving less and less attention at their hands. In the last Triennial Resolution it was remarked that several Civil Surgeons could and should devote more of their time to this important work, and there is apparently need to repeat this exhortation. In many cases however, the Civil Surgeon's duties at headquarters are too heavy to permit him to exercise effective supervision over the vaccination staff. The Lieutenant-Governor agrees with the Superintendent-General that the first step towards an improvement in the work of the Department must be to provide for competent supervision, and the problem how best to effect this is receiving the attention of the Local Government.

3. His Honour is glad to see that the Vaccine Depôt at Meiktila has still further enhanced its reputation for efficiency. There has been an increased out-turn of lymph, the number of doses prepared during 1913-14 amounting to 806,660, which is the highest figure yet attained. The same holds good of the success-rate per cent. which has risen annually from 94·9 in 1910-11 till it now stands at 96·75. Expenditure is also steadily rising, though the present Director, Major Walker, is reported to have effected considerable economies in the purchase and feeding of the calves. During the triennium the Depôt received a grant from Imperial funds of Rs. 50,000, which is being spent on the construction of a new laboratory, quarters for the staff, and additional stalls for calves. The old laboratory is being converted into a lecture-room, and a cold-storage plant has been installed. The Lieutenant-Governor takes this opportunity of acknowledging the services of the Director and of the Assistant Director, Mr. Govinda Pillay, who has received the title of *Rao Sahib* for his long and meritorious services at the Depôt.

4. The Vaccination Act of 1880 was extended to six towns during the triennium. The Burma Prohibition of Inoculation and Licensing of Vaccinators Act, 1908, has



not been extended beyond the three districts of Syriam, Insein and Pegu. In another place the Superintendent-General of Vaccination has recorded his opinion that though the extension of the Act is not absolutely necessary to the improvement of vaccination, yet it should be made in respect of any district in which adequate facilities for vaccination have been provided. With this view His Honour is inclined to concur, though he agrees with Colonel Williams that with improved supervision of the vaccinators, who in some instances have compared very unfavourably with inoculators in respect of the attention bestowed upon their patients, the opposition of the majority of village populations to vaccination will vanish, and legislation may thus become unnecessary. The average percentage of Native Superintendents dismissed or removed annually within the past three years is 5·4. The Superintendent-General believes that he can improve the quality of the work turned out by these men by the adoption of a superior method of training, and his detailed proposals are awaited. Of vaccinators some 5 per cent. were annually so removed; the Superintendent-General considers that these men in the midst of the many temptations which beset them need encouragement in the tangible form of improved prospects and he has been invited to submit proposals to that end.

By order of the Lieutenant-Governor of Burma,

C. M. WEBB,

*Offg. Secretary to the Government of Burma*





# TRIENNIAL REPORT ON VACCINATION IN BURMA

For the years 1911-12 to 1913-14.

1. *Administration*.—Major S. A. Harriss, I.M.S., held officiating charge as Superintendent-General of Vaccination during the first eight months of the triennium under review, until relieved by me at the beginning of December 1912.

2. *Establishment*.—The strength of the establishment during each year of the triennial period is shown in the marginal table. There has been no change in the number of native Superintendents, while the number of vaccinators has risen from 268 in the last year of the previous triennial period to 278 in 1913-14.

Year.	District Superintendents.	Native Superintendents.	Vaccinators.
Triennium 1908-09 to 1910-11.	41	48	264
1911-12 ...	41	49	269
1912-13 ...	41	49	272
1913-14 ...	41	49	278
Average ...	41	49	273

Statement II.

These 10 additional vaccinators included 6 for Municipalities (Sadoway 1, Insein 1, Thaton 2, Ma-ubin 1, Myaungmya 1) and 4 for rural areas of Ma-ubin District.

In the year 1913-14 several temporary additional vaccinators were sanctioned for work in Kyaukpyu District and in Meiktila District.

An additional vaccinator was sanctioned for Salween District to work during the dry season as an experimental measure.

3. *Dismissal and Removal*.—In 1911-12, 3 native Superintendents and 16 vaccinators were dismissed or removed from the service for bad conduct and inefficiency; in 1912-13, 3 native Superintendents and 13 vaccinators; and in 1913-14, 2 native Superintendents and 13 vaccinators, making a total of 8 native Superintendents and 42 vaccinators discharged from the department. In 1913-14 3 native Superintendents resigned and 3 retired on pension.

4. *Expenditure*.—The expenditure on the Vaccination Department has risen from Rs. 1,49,847 in 1908-09 to Rs. 2,04,873 in 1913-14. The increase was continuous up to 1912-13, but there was a slight decline amounting to Rs. 325-10-6 in 1913-14.

The average cost of each successful operation has fallen from 8 annas 4 pies in the previous triennium to 7 annas and 6 pies in the period under review which was also the cost in 1913-14. The cost per operation varied in different districts from 3 annas 3 pies in Sagaing, 3 annas 9 pies in Magwe, 4 annas 1 pie in Akyab, Tharrawaddy and Katha to Re. 1-8-11 in the Ruby Mines and Re. 1-5-0 in Northern Shan States.

5. *Comparative study of vaccination operations in the years 1908-09 to 1913-14*.—A comparative study of the returns of vaccination work in the eight divisions of the Province in each of the two triennial periods 1908-09 to 1910-11 and 1911-12 to 1913-14 furnishes the following information:—

The total number of persons vaccinated by agencies other than Dispensary and Army staffs during the second triennium was 1,551,289 and exceeded that in the former period (1,167,673) by 383,616. The excess primary operations totalled 224,391 and re-vaccinations 156,869. All divisions shared in the increased total, Pegu Division being at the head with an excess of 1,02,836, followed by Arakan Division with 59,933, Irrawaddy with 57,539, Magwe with 49,771, Meiktila with 34,160, Sagaing and Tenasserim with 20,886 and 20,793, respectively, the Shan States with 18,938, and Mandalay with 18,024.

6. *Successful Primary Vaccination*.—The total successful primary operations reported as performed by all agencies during the triennium 1911-12 to 1913-14 is 1,179,848, against 955,561 in the previous triennium. The increase during the latter period was 224,287.

The total of successful primary operations by all agencies for 1913-14 was slightly less than in either of the two earlier years of the triennium, being 392,111 against 393,793 in 1912-13, and 393,944 in 1911-12, the highest total.

The decrease from the first year of the triennium has therefore been 1,833 and from the second year 1,682.



There has however been a successive annual increase in primary successful operations by the Vaccination Staff in combined rural and urban areas during the last three years, the decrease referred to above being confined to Dispensary and Army Vaccination.

Statement I.

7. *Primary Vaccination in rural and urban areas by Special Staff.*—The total operations performed during the triennium 1911-12 to 1913-14 was 1,255,460, against 1,031,069 in the triennium 1908-09 to 1910-11, the increase amounting to 224,391. The total of successful operations during the second triennium was 1,164,704, against 937,695 in the earlier period, the increase in the last triennium being 227,009.

The returns for the year 1913-14 show a higher total of successful primary operations than do those of any one of the previous five years. The Provincial totals for each of the years of the last triennium vary very little, and the work during the whole period has been markedly better in results than that of the previous triennium.

In studying the results of primary vaccination in towns and rural areas, which afford the most important evidence as to the progress of vaccination, we find that seven only out of the eight divisions shared in the excess of 224,391, Sagaing Division showing a decrease on the previous triennium of 5,085. The increase in each of the other seven divisions was as follows:—

Arakan Division 44,754, Pegu 49,878, Irrawaddy 52,398, Tenasserim 4,579, Mandalay 3,621, Magwe 31,067, Meiktila 26,027.

In comparing the returns of primary operations by districts for the last two triennial periods, we may separate the districts into five groups under the following heads:—

*Group I.*—Showing a marked improvement, includes the districts of Akyab, Kyaukpyu, Hanthawaddy, Insein, Pegu, Tharrawaddy, Toungoo, Thatôn, Ma-ubin, Rangoon, Meiktila, Henzada, Salween, Minbu, Magwe and Myitkyina. Of these, Henzada, Tharrawaddy, Rangoon, Thatôn, Salween, Minbu and Magwe Districts show a falling off in the last year which may be attributable to temporary causes leading to a failure to maintain the previous higher level of work. These causes will be examined later.

*Group II.*—Showing a slow but steady improvement, includes the districts of Sandaway, Pyapôn, Bassein, Katha, Yamèthin, Kyauksè and the specially administered territories of the Northern and Southern Shan States and Chin Hills.

*Group III.*—Stationary, includes Mandalay and Shwebo Districts.

*Group IV.*—Fluctuating, includes Sagaing, Upper Chindwin, Thayetmyo, Ruby Mines, Pakôkku and Myingyan Districts.

*Group V.*—Declining, includes Myaungmya, Lower Chindwin, Northern Arakan, Prome, Amherst, Tavoy, Mergui and Bhamo Districts.

The largest increase in primary vaccination is claimed by Ma-ubin District, with an excess of 27,671 on the preceding triennium, Kyaukpyu is second with 20,574 followed closely by Henzada with 18,715, Akyab 18,503, Magwe 16,345, Tharrawaddy 16,116, Pegu 14,806, Southern Shan States 12,368, Meiktila 10,381.

Prome District alone in the Pegu Division returns a decrease (3,895) and Myaungmya District alone in the Irrawaddy Division (5,535). In the Tenasserim Division, Amherst, Tavoy and Mergui Districts show respectively decreases of 7,093, 2,487, and 2,168 primary operations as compared with the preceding triennium.

The decrease in the Sagaing Division is shared by Sagaing District and Lower Chindwin (the totals for these districts being 7,123 in the former and 2,501 in the latter below those for the previous triennium). In the Mandalay Division, Mandalay, Bhamo and Ruby Mines Districts all show a falling off in primary vaccination, the decreases being 2,303, 1,359 and 697 respectively.

In the Magwe Division there was a decline in primary operations only in Thayetmyo District, amounting to 2,071. There is a creditable increase of over 8,000 primary operations in each of Minbu and Pakôkku Districts and 16,345 in Magwe District.

In Meiktila Division the increase is least in Kyauksè District (1,993), largest in Meiktila District (10,381), while it is 7,351 in Myingyan, and 6,302 in Yamèthin.

The combined Insein-Hanthawaddy District returns an increase of 17,464 primary operations over the total for the previous triennium. This increase is largely due to the work of the last year 1913-14, the totals for the last three years being 7,279, 8,563, and 19,685. The increased outturn of work in 1913-14 over that of the previous year was thus 11,122, or 129.88 per cent. This large increase



was shared in by both districts, Insein claiming 6,631 and Hanthawaddy 4,491 of the excess primary operations.

This increased activity on the part of the Vaccination Staff of these two districts has been due in part to special efforts made to investigate the condition of vaccination in Insein District during the past year which brought to light among other important facts, the existence of a large unprotected child population within easy reach of the main lines of communication and only a short distance from District Headquarters; which discovery was promptly followed by the concentration of the Vaccination Staff upon some of the areas referred to. In Hanthawaddy District a stimulus was given to the work by the increased interest taken in vaccination by the officers concerned with the administration of the district after its separation from Insein, and by frequent tours made by the Civil Surgeon and his medical assistants. Large as was the increase of work in the Insein-cum-Hanthawaddy District over that of the preceding triennium, it is overshadowed by that of Ma-ubin District, 27,671, the totals for the two triennial periods in this district being, for the former 11,188 and for the latter 38,859. The average annual outturn of operations in the first triennium was 3,729, and in the second 12,953, an increase of nearly 400 per cent. The annual return of primary operations in this district has risen from 2,878 in 1908-09 to 14,375 in 1913-14. As stated in my Notes for last year the remarkable progress effected in vaccination in this district is due to the personal interest and efforts of the present Deputy Commissioner, Captain Roberts, I.A., who has been ably seconded by his assistants, both Lay and Medical.

Although the increase in the work of Pegu District is not so marked as in Insein and Hanthawaddy Districts, it is nevertheless considerable. The return of primary operations rose in the last year of the triennium under review to 17,614 from 9,252 in the previous year. The average for the triennium under review has been 12,666 primary operations against 7,731 per annum in the previous triennium.

The returns for Prome District show a steady decline in the number of primary operations performed throughout the successive years of the two triennial periods: from 12,249 in 1908-09 the return of primary operations has steadily fallen to 9,689 in 1913-14.

In contrast with the progress being made in vaccination in Ma-ubin District the low state of protection in Pyapôn and Myaungmya Districts and the falling off in primary operations in the latter district must attract unfavourable criticism. It is true that there is a slow upward movement in Pyapôn District, and that a total of 10,430 primary operations was returned during the last triennium as compared with 6,196 in the earlier period, yet the protection afforded to the district population is only 15.55 per mille, the lowest district ratio in the Province.

In Myaungmya District the average annual number of persons vaccinated by each vaccinator was only 731, or 4 more than was the case in Pyapôn District. This compares unfavourably with the 1,214 per vaccinator returned for the previous year. Primary operations have steadily decreased year by year since 1909-10, when the total was returned as 9,813, down to 5,636 in 1913-14.

Amherst District shows a steady decline from 29,400 primary operations in 1910-11 to 14,485 in 1913-14.

In Toungoo District there is for the last triennium an increase of 9,315 which is a material gain.

The record of vaccination work in Thatôn District fell in 1913-14 from 14,709 in the previous year (the highest total yet reached) to 9,901. The Civil Surgeon attributes this decline to absence of small-pox.

In Ruby Mines District the primary vaccinations have steadily fallen in number since 1911-12. The work of the past year has been less owing to bad work by vaccinators and the outbreak of plague in the district.

In Lower Chindwin District primary vaccination has fallen from 12,984 in 1908-09 to 10,747 in 1913-14. The last year's total was less than that of any one of the previous five years. The Civil Surgeon attributes the decrease in the last year to the high infantile mortality in the district, and to the prevalence of scabies.

Thayetmyo District returned only 8,565 primary operations in 1913-14 against 13,734 in 1908-09, and 11,539 in the previous year. There is a decrease of 2,071 primary operations on the previous triennium. Inefficiency and sickness of the vaccinators, the absence of small-pox and I think it likely, the general bad health of the district from malaria acted unfavourably on the progress of vaccination.



Magwe District shows a decrease of nearly 4,000 primary operations on the total of the previous year which was the highest on record. The gain in numbers of primary operations in the last triennium was 16,345 which is largely owing to the activity of the present Civil Surgeon, Mr. Isa Charan.

The decrease in Minbu District amounted to nearly 4,700 primary operations less than the total of the previous year. The large child mortality from malarial fever in the two previous years, and the outbreak in Minbu town at the end of 1913 probably affected the outturn of work.

Meiktila District shows an increase of 10,381 primary operations on the returns of the previous triennium.

Myingyan District returned 7,351 more primary operations in the last triennium than in the previous period. There was a decrease of some 4,000 operations in the last year, attributed by the Civil Surgeon to the result of the special efforts of the previous year, and to the prevalence of plague in the towns.

*Yamèthin District.*—The increase has been slow but steady since 1909-10. There were 6,302 more primary operations than in the previous triennium.

*Kyauksè District.*—The increase is slow but continuous. The gain on the previous triennium was 1,993 cases.

*Northern Shan States.*—The work of primary vaccination has shown a fairly steady though slow improvement during the last six years. The last triennium returns an increase of 4,414 on the previous period.

*Southern Shan States.*—The returns for the last year of the triennium show a decline of about 3,700 primary operations on those of the two previous years, but the gain on the previous triennium is over 12,000.

Primary vaccination in the Chin Hills makes no decided progress. The gain in the last triennium is only 371 operations in excess of the total of the previous three years. The average annual outturn of work from 1911-12 has been 2,918.

8. *Vaccination in Towns.*—Returns were received from 53 towns in 1913-14, and from 6 of these, *vis.*, Insein, Syriam, Thongwa, Magwe, Yenangyaung, Pyaw-bwè for the first time. In three of these towns the Vaccination Act came into force for the first time at the end of 1912-13 and in Thongwa in 1914. Returns from these places were in previous years included with those from rural (voluntary) areas. Returns were received from Zalun town in the previous year, but were discontinued last year.

The total operations performed in 53 towns in 1913-14 was 67,183, of which 32,774 were primary, and 34,409 re-vaccinations.

A comparative study of the work done in 43 towns during the last triennium (excluding Rangoon) gives the following result :—

—	Primary operations.	Re-vaccinations.	Total.
In 1911-12 (43 towns) ... ..	30,391	13,573	43,964
In 1912-13 (43 towns) ... ..	27,007	24,928	51,935
In 1913-14 (43 towns) ... ..	23,460	10,528	33,988

There is a decrease in primary operations in the last year of the triennium of 3,547 on the total of the previous year, and of 6,931 (or more than 20 per cent.) on that of 1911-12.

In re-vaccinations there is a decrease on the previous year of 14,400 operations, and on 1911-12 of 3,045.

The decrease in total operations in 1913-14 from the totals of the previous years was from 1912-13—17,947, and from 1911-12—9,976. The decrease in 1913-14 was shared in by 21 towns out of the 43 under comparison of which the following are examples :—

Moulmein, decrease 2,961 or nearly 60 per cent., Allanmyo decrease 636 or 66 per cent., Henzada 485, about 18 per cent., Mandalay 303, Toungoo 212, Shwegyin 144, Myingyan 150, Sandoway 125, Shwebo 84, Kyaukpyu 88, Kyauksè 64, Salin 57, Minbu 50, Akyab 42.

The very large decrease in Moulmein town is attributed by the Civil Surgeon to the less number of coolies available for vaccination in 1914 owing to most of this class being protected while in Rangoon. The proportionally still greater decline in primary vaccination in Allanmyo town is attributed to the absence of small-pox and the incapacity of the town vaccinator. No explanation is given of



the decline in the towns of Akyab and Kyaukpyu, where small-pox was prevalent. In Sandoway it was due to the inefficiency of the town vaccinator. In the case of the other towns the explanation offered is either the absence of small-pox, deficiency of the vaccination staff, or excessive vaccination in the previous year. In the case of Myingyan it is attributed to plague.

Twenty-one of the 43 towns show an increase in primary operations over the previous year. Although the total numerical increase is small, the percentage increase in some of the towns is considerable. Thus Meiktila shows an increase of 294, equal to 149 per cent., Ma-ubin 145 or 86 per cent., Thônzè 238 or 93 per cent., Gyobingauk 148 or 82 per cent., Pyinmana in spite of the prevalence of plague showed an increase of 102 primary cases or 38 per cent. Other towns returning a considerable increase were Pakòkku 139 excess operations, Paungdè 126, Pyapôn 102, Pegu 451 (47 per cent. increase), Prome 94, Letpadan 77. The whole of the towns in the Pegu Division show an improvement in the work of primary vaccination, as do those of Ma-ubin District.

9. *Protection afforded in towns.*—In 53 towns there were returned, during 1913-14, 28,117 births and 8,135 deaths under 12 months, leaving 19,982 survivors available for vaccination. The return of successful primary vaccination under 12 months of age is 18,694, or 93·55 per cent. of the available number. Appendix B.

Several towns show a larger number of infants successfully vaccinated than the infants available after subtracting deaths from births. Thus Rangoon returns 4,296 successful operations against 4,158 infants available, Bassein 671 against 561, Nyaunglebin 187 against 114, Gyobingauk 177 against 116, Moulmein 1,245 against 1,108, Mandalay 2,988 against 2,892. Other towns presenting the same phenomenon are Sagaing, Pakòkku, Minbu, Thayetmyo, Yamèthin, Pyinmana, Pyawbwè and Myingyan. Taungdwingyi claims to have successfully vaccinated all surviving infants.

This excess of infants operated upon is to be explained in many cases by omissions in the registration of births, and affords a useful insight into the degree of efficiency with which registration is carried out.

Of greater interest from the point of view of the organization and supervision of vaccination work in towns is the study of the cases where the number of infants successfully vaccinated fell far short of the number available. This result is usually evidence of neglect or indifferent supervision on the part of the responsible authorities. It occurred in Akyab, Kyaukpyu, Sandoway, Insein, Syriam, Prome, Thônghwa, Paungdè, Ngathaingyaung, Henzada, Myanaung, Kyangin, Wakèma, Tavoy, Mergui, Thatôn, Kyaikto, Maymyo, Bhamo, Magwe, Yenangyaung and to a less extent in some other towns.

10. *Primary successful vaccination.*—The Provincial success-rate averages for the whole triennium 96·63 per cent. In 1911-12 it was 96·61, in 1912-13, 96·71, and in 1913-14, 96·59. Statement No. I.

The highest rate of success in Primary operations is claimed by Lower Chindwin District 99·42, followed closely by Rangoon 99·34, Mandalay 99·16, Myitkyina 99·13, Sandoway 99·00. The lowest ratio of primary successes is that for Northern Shan States, 87·00, and Bhamo 89·43. None of the other districts return ratios below 93·00, most being above 96·00.

The average success ratio for re-vaccination was for the triennium 68·57 per cent., that for 1913-14, 65·40 being the lowest.

11. *Persons successfully vaccinated per 1,000 of population.*—The rate for the Province for 1913-14 was 36·39 against 37·96 in 1912-13, and 36·33 in 1911-12. The figures on which the calculations are based include both primary and re-vaccinations. Statement No. I.

In 1913-14 the highest protection rate is claimed by Kyaukpyu, 105·70. Next comes Sagaing with 72·08 per mille but the re-vaccinations in this district were nearly as numerous as the primary operations, and the high success rate of 88·17 per cent. is claimed for re-vaccinations. In the Upper Chindwin District the proportion of population successfully vaccinated is stated to be 60·80 per mille with a re-vaccination success rate of 91·34 per cent. The lowest protection rates are recorded by Northern Shan States, 8·52 per 1,000 of population, Pyapôn 15·55, Myaungmya 16·21, Chin Hills 16·33, Southern Shan States 21·79, Thatôn 22·11, Bhamo 22·44, Hanthawaddy 23·39.

The average outturn of work per vaccinator provides some indication of the relative activity of the district staffs, and of the thoroughness of the organization of the work.



Accepting 200 operations per vaccinator per month as a fair average outturn of work in districts where communications are difficult and supervision generally very perfunctory, the following districts show good or fairly satisfactory work:—

Kyaukpypu 3,498, Akyab 2,764, Pegu 2,776, Tharrawaddy 2,389, Katha 2,352, Sagaing 4,113, Magwe 2,152, Pakòkku 2,245, Meiktila 2,183, Insein 2,102, Lower Chindwin 2,066, Myingyan 2,087, Kyaukse 2,011. The real value of these figures is to a great extent an unknown quantity since dependence has to be placed upon the returns of the vaccinators checked to a varying extent by the native Superintendents. Neither class can be wholly relied upon, though some individuals are honest and capable workers.

A low outturn of work is shown by the following districts:—Ruby Mines 684, Northern Shan States 727, Pyapôn 727, Myaungmya 731, Bhamo 833, Prome 1,018, Toungoo 1,145, Thayetmyo 1,205, Thatôn 1,354, Henzada 1,430, Minbu 1,512, Sandoway 1,578, Hanthawaddy 1,664, Shwebo 1,667, Yamèthin 1,775.

Statement  
No. I.

12. *Re-vaccination*.—The total operations performed during the triennium amounted to 298,463, against 141,594 in the preceding triennium. The annual totals were for 1911-12, 90,740, for 1912-13, 117,526 and for 1913-14, 90,197. The highest annual total in the previous triennium was that of 1910-11, 47,380. There has thus been a marked advance in re-vaccination during the last three years. The excess in operations performed in 1912-13 was due to the prevalence of small-pox.

Statement  
No. I,  
Summary.

13. *Vaccination of infants and children*.—During the triennial period 1911-12 to 1913-14 the number of infants under twelve months successfully vaccinated was 291,853, against 258,579 in the previous triennium. Of the former number 102,311 were vaccinated in 1913-14, the figures for 1911-12 being 92,154, the steady progress being shewn throughout the period.

The percentage of available infants vaccinated was in 1913-14, 38·65 against 32·65 in 1910-11 the last year of the previous triennial period.

The number of children between the ages of twelve months and six years successfully vaccinated in the last triennium was 601,034 against 493,916 in the previous period. The total of successful vaccinations within this age period reached the maximum in 1911-12, *viz.*, 205,637, and fell to 197,994 in 1913-14, which was however 591 more than in the previous year, and 27,014 more than in 1910-11, the highest total in the previous triennium. There has thus been a distinct improvement in the vaccination of infants and children during the last triennium.

Statement  
No. V.

14. *Verification of results*.—Civil Surgeons inspected and verified in 1911-12 14·45 per cent. of primary operations, and 8·91 re-vaccinations. In 1912-13 they verified 16·45 per cent. primary, and 7·31 per cent. re-vaccinations. In 1913-14 the percentages were respectively 14·61 and 5·66. Thus the improvement in verification of primary cases observed in the middle year of the period has not been maintained, and the verification of re-vaccinations has steadily declined from year to year. The figures for verification of primary cases are on the whole better than in any year of the previous triennial period, the totals for the three years from 1908-09 to 1910-11 having been 9·79, 10·42, and 10·69 per cent.

The disabilities under which most Civil Surgeons suffer in prosecuting the duty of verifying the work of their rural vaccination staffs have been dwelt on at length by Major Harriss when officiating for me in his Triennial Report on Vaccination in Burma for the years 1908-09 to 1910-11. One cannot expect Civil Surgeons with heavy medical and jail duties at headquarters to be able to do much verification in rural areas, and no surprise will be felt at the low returns of verification recorded for the Civil Surgeon, Bassein, (175 primary cases with a percentage of 1·07), and Amherst (588 and 3·99). On the other hand, in districts where the work at headquarters is less exacting though still important, more interest should be shown by the Local Superintendent of Vaccination. The outturn of verification work by the Civil Surgeons, Myingyan, (235 primary cases and 1·64), Shwebo (605 and 5·22), Prome (859 and 8·87—these figures compare favourably with those for the previous year, 47 and 0·48), Tharrawaddy (537 and 2·90), Pyapôn (526 and 13·30) was low. The above instances are quoted as instances when opportunities for the improvement of district vaccination have been neglected to a greater or less extent and my remarks will apply to other localities than those specifically mentioned. It is an axiom of universal application in sanitary as well as medical and other branches of administrative district work that the results vary closely with the amount of personal interest



shewn in the work by the local head of the department and these often afford a valuable indication of his capacity for the appointment he fills.

But although some district Superintendents of Vaccination could undoubtedly do more than they have hitherto done to popularize vaccination in the areas within their charge, it has also to be admitted that there are serious limitations to the prosecution of their duties in this respect. To supervise vaccination in rural areas with any thoroughness it is necessary to employ an officer of a higher stamp than the native Superintendent and to give him every facility for making tours of considerable duration in those parts of the district which are not readily accessible from headquarters. He must also be able to give a large share of his time and personal attention to the organization and control of his subordinate staff. It is quite impossible for the average Civil Surgeon to fulfil these conditions, owing to the press of other duties, and the prior claims of the Medical and Jail departments for his presence at headquarters. This has long been recognized, and representations have been made to the Local Government with a view to obtaining qualified assistants to relieve the Civil Surgeon in certain districts of his responsibilities in connection with rural vaccination.

15. *Vaccination in Fails.*—This has been well maintained throughout the triennial period. During 1913-14, in an average population of 16,746 prisoners, 26,017 were vaccinated. There were 2,173 primary cases with 1,864 or 85·78 per cent. successes, and 23,844 re-vaccinations with a success rate of 70·93.

16. *Inoculation of Small-pox virus.*—Inoculators were found at work during 1913-14 in several districts in connection with outbreaks of small-pox some of which appear to have originated from this operation. These districts were Akyab, Saudoway, Bassein, Myaungmya, Pegu, Thatôn, Meiktila, Lower Chindwin, Katha. In Pegu District, where the act for the prohibition of inoculation is in force, one inoculator, an *ex-vaccinator*, was convicted, and 22 persons who had allowed themselves to be inoculated, were prosecuted and fined.

17. *Dispensary Vaccination.*—The highest totals were obtained in 1912-13, *viz.*, a total of operations of 10,703, with 5,968 primary cases and 4,737 re-vaccinations. The total in 1913-14 was 5,667, the decline in primary cases being 2,395, and in re-vaccinations 2,643. Statement No. III.

In Arakan and Sagaing Divisions, and in the Shan States there was an increase in the total operations performed; these amounted in Arakan to 434, and in Sagaing to 1,412. The decrease was most marked in Irrawaddy Division (714 from 1,377), Tenasserim (641 from 2,891), Mandalay (299 from 1,944), and Meiktila (100 from 570). The decline has been steady during the three years in both Pegu and Irrawaddy Divisions. The only explanation which is of any weight in accounting for this decline is the decrease in epidemic small-pox in these divisions.

The percentage of success attained in 1913-14 in primary operations was 92·26 and in re-vaccinations 61·20.

18. *Meiktila Vaccine Dépôt.*—The report submitted for 1913-14 by the Director of the Vaccine Dépôt, Meiktila, is an unusually interesting one. It shows that the outturn of work by the dépôt has increased progressively year by year throughout the last two triennial periods and that the quality of the vaccine lymph and paste produced has been maintained and even improved.

Thanks to careful supervision by the Director, Major E. A. Walker, I.M.S., considerable economies have been effected in the cost of upkeep of the institution, especially in the feeding of calves, and to a simple modification of the method previously in use for the vaccination of the calves. This improvement in technique we owe to the industry of the Assistant Director, Sub-Assistant Surgeon P. Govinda Pillay, *Rao Sahib*, and has led to a greatly augmented yield of lymph of high potency.

By the new method the average yield obtained from cow calves at the dépôt is stated to be 48·2 grammes.

*Percentage successes.*—In 348,031 primary operations of which the result was communicated, the success-rate was 96·75 per cent. which is the best return yet obtained. In 1909-10, the success-rate was 94·9 and it has risen annually since that year.

*Expenditure.*—Expenditure on the upkeep of the dépôt (including the training school for vaccinators) has increased year by year since 1908-09. From Rs. 13,290 in 1911-12 it rose to Rs. 15,900 in 1913-14. The increase in cost in 1913-14 over the preceding year amounts to Rs. 1,895 which is accounted for by Statement No. II.



an increase in Europe stores, and in the salaries of the staff. One additional menial servant, a peon, was sanctioned during the year. There was a saving of Rs. 823 on cost of feeding calves, and in the purchase of calves.

The building of a new laboratory and the provision of a small ice-making and refrigerating plant received sanction during the year. The latter has been already installed and the former will, it is hoped, be completed during the current year. Enlargement of the calf stables, and the conversion of the old laboratory building into a lecture-room for apprentice vaccinators has also been arranged for.

*Work done at the dépôt during 1913-14.*—The number of calves vaccinated during the year was 361, against 477 in 1912-13. There was less demand for lymph owing to the relative absence of small-pox from the Province as compared with the previous year. The number of doses of glycerinated vaccine lymph issued was 755,114 against 757,518 in 1912-13, and 693,913 in 1911-12. The actual number of doses of vaccine prepared, 806,660, constituted a record for the dépôt, although, owing to a less demand, the issue to vaccinators was slightly less than in the previous year.

19. *Work of the Training School.*—Thirty-six apprentice vaccinators were trained during the year as compared with 32 in 1912-13. Of this number 35 eventually obtained qualifying certificates.

I have pleasure in acknowledging the valuable results obtained by Major Walker and his Assistant Rao Sahib Govinda Pillay during the year and to express my thanks to them and to all members of the dépôt staff for the good work performed, including Captain Farebrother, R.A.M.C., who officiated for Major Walker during June, and Sub-Assistant Surgeon Ramachandram, who relieved Mr. Govinda Pillay when the latter proceeded on leave in January 1914.

20. *General Remarks.*—In conclusion, I desire to thank the various officers who have assisted me from time to time during the past year in inspecting and verifying vaccination work in the districts. Major G. H. Stewart, I.M.S., who officiated as Deputy Sanitary Commissioner in the earlier months of the year, did some useful work in the Pegu District, where he found rural vaccination much neglected, and the vaccination staff without any effective supervision. Captain W. F. Brayne, who officiated as my Deputy from July 1913, carried on the investigation into the condition of vaccination in Insein, Pegu, and Tharrawaddy Districts which he had already been engaged upon earlier in the year. He obtained results of great importance as showing that in many parts of these districts rural vaccination is in a very backward condition, and that large areas are rarely visited by a vaccinator, and that the vaccinators' returns are in many cases quite unreliable. The groups of villages selected for examination in Insein District show a vaccination protection-rate in children under 15 of under 23 per cent., and, if those having single scars are eliminated from the "protected" class, the vaccination protection-rate is barely 16 per cent. Here again the lack of supervision in the past by a superior officer has been the main cause of the present state of vaccination in the district.

Captain S. C. Chuckerbutty, I.M.S., in the intervals of plague duty, performed some useful investigations of a similar nature in the Irrawaddy Division, arriving at practically identical results.

Major H. A. Williams, I.M.S., Civil Surgeon, Mandalay, who, in spite of the heavy work claiming his attention at headquarters has himself done a good deal of useful verification work in rural areas of his district, speaks highly of the excellent work performed by his District Sanitary and Epidemic Assistant, Civil Sub-Assistant Surgeon Dhulip Singh, who did much during the last two years to further the interests and popularity of vaccination in the district.

In many districts, where formerly little attention was paid to vaccination by the Lay Authorities, the Deputy Commissioner and his subordinate officers have during the last three years given much assistance towards furthering the popularization of this operation, and better results have invariably followed their action.

C. E. WILLIAMS, M.D., D.P.H., D.T.M.,

LIEUT.-COL., I.M.S.,

*Superintendent-General of Vaccination, Burma.*

RANGOON, 26th May 1914.



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## A.—VACCINATION

STATEMENT NO. I.—Showing the particulars of Vaccination in the

No.	Districts.	Population of district according to census of 1911.	Average population per square mile.	Average number of vaccinators employed throughout the year.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	PRIMARY VACCINATION.					
									Total.	Successful.			Un- known.	
										Under one year.	One and under six years.	Total of all ages.		
1	2	3	4	5	6			7	8	9	10	11	12	
ARAKAN DIVISION.														
					Males.	Females.	Total.							
1	Akyab ...	529,943	103	10	14,038	13,581	27,619	12,764	20,209	2,132	10,353	20,684	767	
2	Hill Tracts, Northern ...	22,234	15	2	588	419	1,007	508	899	11	245	863	9	
3	Arakan ...	184,916	42	6	10,842	10,147	20,989	3,498	19,661	1,265	5,170	18,672	343	
4	Kyaukpadaung ...	102,863	27	4	9,347	9,603	18,950	1,878	5,167	168	1,719	5,158	...	
	Total ...	839,896	87	22	24,735	23,720	48,455	2,543	48,156	2,876	17,887	45,554	1,119	
PEGU DIVISION.														
5	Rangoon ...	228,316	10,476	4	25,637	4,344	29,981	17,495	7,022	4,293	1,389	6,477	502	
6	Insein ...	165,245	126	6	5,704	6,902	12,610	12,102	10,239	1,414	8,876	7,153	2,879	
7	Hanthawaddy ...	332,569	136	6	4,950	5,001	9,951	1,661	8,315	1,876	4,712	7,560	1,516	
8	Pegu ...	370,416	91	8	11,168	11,193	22,361	12,776	17,634	3,930	8,795	16,210	743	
9	Tharrawaddy ...	432,320	151	8	9,356	9,859	19,215	2,889	18,136	5,599	9,379	17,562	...	
10	Prome ...	378,871	133	12	6,268	6,251	12,519	1,018	9,689	2,901	5,186	8,949	307	
	Total ...	2,078,737	183	44	62,055	48,435	110,490	2,412	72,046	19,606	33,337	63,911	5,977	
IRRAWADDY DIVISION.														
11	Maubin ...	105,073	185	9	7,745	7,496	15,241	1,693	14,375	2,074	8,885	13,666	98	
12	Pyawb ...	280,215	119	6	2,092	2,367	4,459	727	3,956	744	2,611	3,880	94	
13	Bassein ...	440,938	107	10	8,619	7,962	16,581	1,658	15,886	4,103	7,938	15,121	626	
14	Henzada ...	332,357	187	15	16,765	19,610	36,375	1,485	30,819	4,908	10,939	18,692	1,256	
15	Myingmya ...	334,832	127	8	5,848	5,003	10,851	781	6,696	715	2,930	5,812	219	
	Total ...	1,869,455	139	48	37,049	31,418	68,467	1,262	60,672	12,634	22,663	50,692	2,212	
TENASSERIM DIVISION.														
16	Amherst ...	367,918	82	9	9,810	8,546	17,556	1,984	14,485	2,829	6,923	13,580	535	
17	Tavoy ...	135,293	25	5	3,050	3,061	6,111	1,210	4,905	2,839	2,452	5,386	187	
18	Mergal ...	111,454	11	4	2,381	2,790	5,171	1,443	3,728	614	2,417	5,601	155	
19	Toungoo ...	351,076	57	9	5,448	4,854	10,302	1,145	9,411	2,586	4,409	8,268	346	
20	Thaon ...	416,975	85	8	5,302	5,332	10,634	1,354	9,301	1,849	4,625	8,803	698	
21	Salween ...	46,608	17	1	1,194	755	1,949	1,849	1,105	13	172	1,127	...	
	Total ...	1,429,294	40	32	27,185	26,478	53,663	1,463	46,496	10,730	21,069	42,814	1,979	
MANDALAY DIVISION.														
22	Mandalay ...	340,770	161	10	8,582	8,676	17,258	1,726	15,532	6,836	3,352	10,115	126	
23	Bhamo ...	107,811	16	4	2,097	1,213	3,310	833	2,477	882	761	2,150	286	
24	Katha ...	193,193	28	4	4,623	4,764	9,407	2,262	7,145	877	3,163	8,686	169	
25	Ruby Mines ...	100,638	18	4	1,432	1,305	2,737	1,084	1,715	492	1,465	2,993	214	
26	Myittha ...	16,577	8	2	1,066	1,018	2,084	1,042	1,042	136	920	1,932	14	
	Total ...	832,969	26	24	17,800	17,016	34,816	1,451	33,862	8,721	9,764	25,476	869	
SAGAING DIVISION.														
27	Shwebo ...	356,363	62	8	6,307	7,065	13,372	1,667	11,699	2,331	7,153	10,808	167	
28	Sagaing ...	312,111	171	6	10,647	14,030	24,677	4,111	12,002	5,561	6,145	11,718	158	
29	Lower Chindwin ...	316,176	54	6	5,111	6,295	11,406	2,066	10,747	3,709	3,966	10,665	...	
30	Upper Chindwin ...	170,023	11	6	5,764	5,424	11,188	1,865	8,693	461	5,614	8,137	319	
	Total ...	1,155,271	44	26	28,779	32,814	61,593	2,869	58,031	14,121	22,893	41,348	644	
MAGWE DIVISION.														
31	Thayetmyo ...	248,975	52	8	4,784	4,853	9,637	1,266	8,371	2,037	3,970	7,831	492	
32	Pakokko ...	436,169	44	10	11,566	10,886	22,452	2,245	20,336	4,927	9,393	15,455	418	
33	Mabin ...	263,109	80	7	5,268	5,314	10,582	1,519	9,063	3,020	4,685	8,223	198	
34	Magwe ...	316,909	96	5	8,679	8,583	17,262	2,182	15,080	6,047	5,740	15,649	35	
	Total ...	1,265,162	59	30	30,297	29,556	59,853	1,815	58,038	16,081	26,789	51,759	1,148	
MEIKTILA DIVISION.														
35	Meiktila ...	279,322	128	6	6,495	6,604	13,099	2,183	9,540	1,228	5,421	8,125	1,019	
36	Yamethin ...	307,419	72	7	6,140	6,385	12,525	1,775	10,750	4,583	6,394	11,047	956	
37	Kyaukse ...	141,425	111	3	2,911	3,121	6,032	2,011	4,021	1,216	1,775	4,825	169	
38	Myingyan ...	441,905	142	7	7,269	7,343	14,612	2,087	14,321	4,561	7,503	13,083	445	
	Total ...	1,170,072	108	23	22,815	23,453	46,268	2,007	44,474	14,112	20,299	37,080	2,589	
SHAN STATES.														
39	Northern Shan States ...	453,952	33	8	4,609	1,895	6,504	1,127	5,552	115	1,010	8,855	1,121	
40	Southern Shan States ...	900,202	12	11	10,463	11,254	21,717	11,974	20,043	1,846	10,164	18,665	846	
	Total ...	1,354,154	25	19	15,072	13,149	28,221	1,449	25,665	1,961	11,174	27,520	1,967	
CHIN HILLS.														
41	Chin Hills ...	119,566	15	3	2,474	1,453	3,927	1,311	3,713	92	451	1,582	1,696	
GRAND TOTAL FOR 1913-14														
		13,115,217	59	278	267,691	244,439	512,130	1,842	412,694	101,667	196,417	588,746	20,151	
		GRAND TOTAL FOR 1912-13	12,115,217	52	272	255,708	247,812	503,520	1,900	416,121	98,473	194,939	587,823	18,688
		GRAND TOTAL FOR 1911-12	12,115,217	51	269	278,475	257,674	536,149	1,862	416,785	91,283	213,013	588,155	14,978

NOTE.—This statement does not include the figures for Dispensary

\* Secondary operations

† Work done by other

‡ Including the area and population



## DEPARTMENT.

Province of Burma during the year 1913-14 (Paragraphs 5, 7 and 10 to 13).

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.		No.
Total.	Successful.	Unknown.	Primary.	Re-vaccination.		Primary.	Re-vaccination.	No.	Ratio per 1,000.	No.	Ratio per 1,000.	
13	14	15	16	17	18	19	20	21	22	23	24	25
5,430	3,001	205	99.46	57.44	44.69	3.45	3.78	12,941	26.34	83	.37	1
138	100	...	99.97	84.75	49.31	1.00	...	1,071	49.62	...	...	2
1,124	873	83	99.09	61.40	106.70	1.72	7.36	9,046	50.64	130	.74	3
1,123	871	...	99.00	50.86	55.50	...	...	3,441	85.10	11	.12	4
7,799	4,315	233	99.35	57.85	19.41	2.32	3.69	26,490	32.75	224	.29	...
22,303	12,526	3,911	99.34	65.96	64.79	7.13	17.17	20,116	72.96	295	1.10	5
2,320	1,019	659	96.32	61.35	30.81	27.08	18.41	...	...	...	...	6
366	218	218	96.32	59.54	23.99	16.44	37.20	5,844	12.78	...	...	7
4,590	3,127	491	96.08	76.23	52.20	4.22	10.79	9,113	25.89	268	.74	8
1,079	552	6	97.57	51.44	41.89	...	.65	14,527	34.97	589	1.63	9
2,530	1,286	504	95.38	63.47	27.01	3.17	19.22	11,516	39.81	295	.80	10
34,064	18,728	5,819	96.73	60.31	39.35	8.99	17.08	61,931	31.63	1,636	.80	...
866	409	40	95.72	49.52	46.14	.63	4.63	7,227	24.33	87	.30	11
403	134	30	96.16	39.92	15.95	.88	7.44	2,635	11.01	145	.62	12
198	121	26	96.63	76.10	34.79	3.82	18.46	13,724	22.66	63	.15	13
1,136	434	170	97.06	48.40	35.61	6.88	15.10	16,708	32.54	134	.27	14
218	87	60	98.60	56.13	16.21	2.87	57.91	8,491	27.15	172	.67	15
2,805	1,135	336	96.82	48.00	20.91	3.65	11.08	48,833	27.33	602	.34	...
3,371	1,696	490	97.77	53.56	41.02	4.11	14.21	24,806	72.76	246	.76	16
394	153	96	93.20	51.34	40.93	3.13	24.87	5,573	44.57	3	.04	17
234	88	35	92.78	44.22	40.12	2.76	14.96	5,313	51.89	3	.04	18
291	471	117	97.83	63.31	26.60	3.68	16.30	7,621	23.31	162	.35	19
933	415	178	95.05	51.97	22.11	7.6	19.03	11,841	30.55	187	.50	20
654	350	...	94.31	45.87	30.02	...	...	912	21.84	...	...	21
6,477	3,133	935	96.17	56.36	32.14	4.26	14.45	56,097	42.29	602	.50	...
6,917	3,693	1,350	99.16	66.43	40.58	1.22	19.86	13,469	39.25	115	.32	22
678	269	151	89.43	61.04	22.41	10.63	22.27	3,691	39.21	...	...	23
243	60	3	96.65	25.00	44.13	1.84	1.23	7,149	37.75	...	...	24
19	11	1	95.67	61.11	23.89	1.87	9.26	2,537	27.11	...	...	25
121	74	3	99.13	62.71	23.44	.71	9.43	1,147	14.65	...	...	26
8,008	4,112	1,538	97.02	63.55	35.28	2.01	19.21	23,042	24.18	...	...	...
1,740	974	97	94.60	59.28	33.06	1.14	5.57	11,643	35.43	59	.19	27
12,875	10,789	443	98.94	88.17	72.08	1.32	3.53	17,183	57.21	38	.06	28
1,672	1,267	...	99.42	75.18	37.77	...	...	12,117	40.36	13	.04	29
2,495	2,237	45	97.17	91.34	80.80	2.67	1.24	6,161	37.16	...	...	30
18,532	15,248	591	97.54	84.75	48.99	1.30	3.18	47,045	43.43	89	.10	...
1,081	655	116	97.00	67.88	34.18	5.74	10.73	10,900	44.43	52	.21	31
2,116	815	26	97.68	15.07	45.33	2.06	1.23	16,371	40.24	94	.27	32
1,199	847	35	96.06	46.99	35.90	2.11	2.92	10,360	40.74	43	.18	33
1,102	665	1	94.38	60.40	51.48	.22	.69	16,084	55.67	77	.28	34
5,498	2,132	178	96.90	41.02	42.63	2.10	8.24	53,514	44.26	265	.24	...
3,659	1,408	540	95.35	46.14	34.07	10.08	15.17	8,124	30.33	19	.07	35
28	21	2	96.56	63.46	32.01	7.71	7.14	9,442	33.51	101	.37	36
929	588	53	95.60	66.89	38.26	3.24	5.71	4,839	34.24	11	.08	37
291	89	57	94.29	32.28	29.79	3.11	15.71	13,743	38.73	63	.14	38
4,807	2,099	632	95.36	50.08	33.47	6.24	13.15	36,153	32.92	183	.17	...
262	55	40	87.00	24.77	8.32	10.19	15.17	3,164	7.84	...	...	39
1,676	947	147	97.23	61.94	21.79	4.22	8.77	17,921	20.08	...	...	40
1,983	1,062	187	95.31	57.22	17.31	7.68	9.05	21,085	16.69	...	...	...
219	70	37	93.61	35.46	16.33	45.68	16.90	2,576	19.45	...	...	41
90,197	52,494	10,512	96.59	65.40	36.29	4.76	11.69	261,326	31.31	...	...	...
117,526	72,106	11,681	96.71	68.12	37.06	3.63	9.94	363,723	31.81	...	...	...
90,740	52,038	19,234	96.61	72.77	36.83	3.59	21.20	332,653	30.82	...	...	...

Vaccination which are shown separately in Statement III, included.  
 agencies included.  
 off the Pakokku Chin Hills.



## Summary (Paragraph 13).

	Total number of persons vaccinated.		Total number of operations performed.		Percentage of successful cases in which results were known.		Average number of persons vaccinated by each vaccinator.		Number of children successfully vaccinated.		Ratio of successful vaccinations per 1,000 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 one year.	One year and under six years.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
												Rs. A. P.	Rs. A. P.
By special staff (Statement I).	417,496	88,747	418,167	88,547	96.69	65.37	278	1,810	100,705	194,583	35.97	2,04,873 1 8	0 7 6
By dispensary staff (Statement III).	3,573	2,004	3,573	2,004	92.26	61.20	...	...	644	1,577	.35	...	...
By other agencies, if any.	4,437	1,680	4,437	1,680	96.54	66.99	...	...	961	1,834	.42	...	...
Total for 1912-14 ...	425,506	92,431	426,177	92,231	96.65	65.21	278	1,830	102,311	197,994	36.73	...	...
Total for 1912-13 ...	421,439	92,234	422,069	92,263	96.69	67.64	272	1,890	97,388	197,403	38.62	...	...
Total for 1911-12 ...	421,369	94,797	422,521	94,571	96.61	71.79	269	1,850	92,154	206,637	36.96	...	...

# INVESTIGATION

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## A.—VACCINATION

## STATEMENT NO. II.—Showing the cost of the Department in the

No.	Districts.	European super- vising officers.	Expenditure.								Total paid of establish- ment.
			Pay.	Native super- vising officers.	Pay.	Vaccinators.	Pay.	Clerks.	Pay.	From, etc.	
1	2	3	4	5	6	7	8	9	10	11	12
	ARAKAN DIVISION.		Rs. A. P.		Rs. A. P.		Rs. A. P.		Rs. A. P.		Rs. A. P.
1	Akyab ...	...	...	2	780 0 0	10	2,001 0 0	...	...	...	3,681 0 0
2	Hill Tracts, Northern Arakan...	...	...	...	...	...	688 0 0	...	...	...	688 0 0
3	Kyaukpadaung ...	...	...	1	531 15 10	6	1,988 5 9	...	...	...	2,470 5 7
4	Sandoway ...	...	...	1	600 0 0	4	745 0 8	...	...	...	1,345 0 8
	Total ...	...	...	4	1,911 15 10	22	6,065 5 5	...	...	...	8,179 5 8
	PEGU DIVISION.										
5	Rangoon ...	...	...	...	...	4	5,954 2 7	...	...	5	658 13 9
6	Insein ...	...	...	3	1,313 8 9	6	2,011 8 8	...	...	...	3,319 12 5
7	Hanthawaddy ...	...	...	3	1,191 14 5	6	2,450 0 0	...	...	...	3,641 14 5
8	Pegu ...	...	...	2	1,500 0 0	8	2,651 0 4	...	...	...	3,851 0 4
9	Tharrawaddy ...	...	...	1	600 0 0	8	2,167 1 4	...	...	...	2,767 1 4
10	Prome ...	...	...	1	900 0 0	12	3,815 14 0	...	...	...	4,715 14 0
	Total ...	...	...	8	5,213 7 2	44	19,069 5 11	...	...	5	658 13 9
	IRRAWADDY DIVISION.										
11	Magway ...	...	...	1	900 0 0	9	1,806 5 7	...	...	...	2,706 5 7
12	Pyawb ...	...	...	1	275 10 8	6	2,133 2 7	...	...	...	2,409 13 3
13	Bhamo ...	...	...	2	874 15 9	10	2,468 12 7	...	...	...	3,343 12 4
14	Ilczada ...	...	...	1	600 0 0	15	4,485 12 0	...	...	...	5,085 12 0
15	Myingmya ...	...	...	1	550 10 11	8	1,833 0 4	...	...	...	2,383 11 3
	Total ...	...	...	6	3,200 5 4	48	12,757 1 1	...	...	...	15,999 6 5
	TENASSERIM DIVISION.										
16	Amherst ...	...	...	3	900 0 0	9	3,002 13 0	1	240 0 0	...	4,142 13 0
17	Tavoy ...	...	...	1	600 0 0	6	1,445 6 11	...	...	...	2,045 6 11
18	Mergal ...	...	...	1	600 0 0	4	1,567 4 6	...	...	...	1,667 4 6
19	Toungoo ...	...	...	1	586 12 5	9	2,091 1 8	...	...	...	2,677 14 1
20	Thatun ...	...	...	1	600 0 0	8	2,181 3 11	...	...	...	2,781 3 11
21	Salween ...	...	...	...	...	1	469 5 8	...	...	...	469 5 8
	Total ...	...	...	7	3,192 12 5	36	10,268 3 8	1	240 0 0	...	13,715 0 1
	MANDALAY DIVISION.										
22	Mandalay ...	...	...	1	781 7 2	10	3,891 1 2	...	...	...	4,672 8 4
23	Bhamo ...	...	...	...	...	4	1,384 7 4	...	...	...	1,384 7 4
24	Katha ...	...	...	1	557 13 11	4	912 0 0	...	...	...	1,469 13 11
25	Ruby Mines ...	...	...	1	1,170 0 0	4	1,382 0 0	...	...	...	1,552 0 0
26	Myittha ...	...	...	...	...	2	881 2 1	...	...	...	881 2 1
	Total ...	...	...	3	2,609 5 1	24	8,560 10 7	...	...	...	10,869 15 8
	SAGAING DIVISION.										
27	Shwabo ...	...	...	1	600 0 0	8	2,235 0 0	...	...	...	2,835 0 0
28	Sagaing ...	...	...	1	600 0 0	6	2,136 5 4	...	...	...	2,736 5 4
29	Lower Chindwin ...	...	...	1	805 0 4	6	1,803 8 5	...	...	...	2,718 8 5
30	Upper Chindwin ...	...	...	1	422 6 4	6	2,497 6 4	...	...	...	2,789 12 9
	Total ...	...	...	4	2,517 6 5	26	8,752 4 1	...	...	...	11,269 10 6
	MAGWE DIVISION.										
31	Thayetmyo ...	...	...	1	900 0 0	8	2,500 8 7	...	...	...	3,400 8 7
32	Pakokko ...	...	...	1	500 0 0	10	2,775 11 2	...	...	1	211 8 0
33	Minbu ...	...	...	1	200 0 0	7	2,083 0 0	...	...	...	2,283 0 0
34	Magwe ...	...	...	12	854 5 5	8	1,805 0 1	...	...	...	2,659 5 6
	Total ...	...	...	5	2,854 5 5	33	9,164 3 10	...	...	1	211 8 0
	MEIKTILA DIVISION.										
35	Meiktila Vaccine Depot ...	...	...	1	1,500 0 0	1	1,060 0 6	†	1,949 1 6	2	1,113 4 7
36	Meiktila ...	...	...	1	552 10 4	6	1,689 15 10	...	...	...	1,251 8 10
37	Yamethin ...	...	...	2	1,050 0 0	7	2,000 0 0	...	...	...	3,050 0 0
38	Kyaukse ...	...	...	1	605 7 2	3	1,468 1 0	...	...	...	1,753 8 2
39	Myingyan ...	...	...	1	569 14 10	7	2,130 10 11	...	...	...	2,699 9 9
	Total ...	...	...	1	1,800 0 0	6	4,488 0 4	23	7,897 13 3	2	1,612 4 7
	SHAN STATES.										
40	Northern Shan States ...	...	...	2	780 0 0	8	2,241 3 10	...	...	...	3,021 3 10
41	Southern Shan States ...	...	...	5	3,130 6 9	11	3,688 13 0	...	...	10	2,538 6 9
	Total ...	...	...	7	3,910 6 9	19	5,929 0 10	...	...	10	2,538 6 9
	CHIN HILLS.										
42	Chin Hills ...	...	...	...	...	3	1,182 4 0	...	...	...	1,182 4 0
	GRAND TOTAL FOR 1913-14 ...	...	...	50	29,931 0 0	278	89,680 5 8	3	1,582 4 7	16	4,610 5 4
	GRAND TOTAL FOR 1912-13 ...	...	...	49	31,303 10 8	272	91,271 11 2	3	1,766 3 1	21	4,479 0 6
	GRAND TOTAL FOR 1911-12 ...	...	...	49	32,272 5 8	280	87,276 11 6	2	1,812 0 0	23	4,627 2 1

\* The average cost in this column is calculated on the total number of successful

† Apprentice

‡ This amount represents stipendiary allowance

§ Includes one Sub-Assistant Surgeon receiving an allowance



## DEPARTMENT.

Province of Burma during the year 1913-14 (Paragraphs 2 and 4).

Travelling allowance.	Contingen- cies.	Total cost.	Paid from					Total.	Number of all suc- cess- ful vac- cinations and re-vac- cinations.	Average cost of each successful cost.*	No.
			Imperial Funds.	Provincial Funds.	Local Funds.	Municipal- ities.	Native States.				
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.	
2,887 5 0	94 10 6	6,062 15 6	.....	.....	5,610 12 6	492 3 0	.....	6,062 15 6	33,337	0 4 2	1
239 15 0	.....	1,022 15 0	.....	1,022 15 0	.....	.....	.....	1,022 15 0	963	1 1 0	2
2,651 13 9	106 1 0	5,138 4 4	.....	.....	5,008 4 4	120 0 0	.....	5,128 4 4	19,545	0 4 2	3
884 4 8	.....	2,311 5 4	.....	.....	2,111 5 4	120 0 0	.....	2,231 5 4	5,706	0 6 3	4
6,063 6 5	200 11 6	11,445 8 2	.....	1,022 15 0	13,730 6 2	692 3 0	.....	14,445 8 2	49,551	0 4 8	
237 1 6	4,207 6 8	11,037 8 6	.....	471 11 7	.....	10,565 9 11	.....	11,037 8 6	17,809	0 9 11	5
2,421 13 9	87 5 0	5,398 15 2	.....	.....	5,210 13 5	278 1 9	.....	5,398 15 2	7,677	0 12 4	6
2,445 0 0	116 11 0	6,913 9 11	.....	.....	6,243 9 11	.....	.....	6,243 9 11	7,778	0 12 10	7
2,873 13 9	.....	6,733 14 1	.....	.....	6,767 0 4	656 13 9	.....	6,733 14 1	19,312	0 5 7	8
1,772 13 3	92 0 0	4,631 14 7	.....	.....	4,531 14 7	.....	.....	4,631 14 7	15,114	0 4 1	9
1,682 7 6	.....	6,428 5 6	.....	.....	5,425 5 6	993 0 0	.....	6,428 5 6	10,235	0 10 1	10
11,542 2 3	4,503 6 8	40,904 3 9	.....	471 14 7	27,993 11 9	13,493 9 5	.....	40,954 3 9	80,925	0 8 1	
2,779 11 0	.....	4,806 0 7	.....	.....	4,581 14 7	225 2 0	.....	4,806 0 7	14,075	0 5 6	11
1,091 0 0	.....	3,500 13 9	.....	.....	3,319 1 4	681 12 5	.....	3,500 13 9	3,984	0 14 1	12
1,510 11 11	.....	4,181 8 3	.....	.....	4,244 8 3	700 0 0	.....	4,984 8 3	15,348	0 5 2	13
2,758 5 0	.....	7,794 1 0	.....	.....	6,714 1 0	1,080 0 0	.....	7,794 1 0	15,955	0 6 7	14
1,639 0 2	243 15 0	4,256 10 5	.....	.....	3,816 10 5	440 0 0	.....	4,256 10 5	5,429	0 12 7	15
9,098 12 7	241 15 0	25,442 2 0	.....	.....	22,347 3 7	3,094 14 5	.....	25,342 2 0	57,787	0 7 0	
2,128 11 6	81 8 6	6,370 1 0	.....	.....	5,185 1 0	1,185 0 0	.....	6,370 1 0	15,276	0 6 8	16
1,618 15 0	180 0 0	3,742 5 11	.....	.....	3,402 2 0	340 3 11	.....	3,742 5 11	6,638	0 10 10	17
1,492 9 0	.....	2,759 13 0	.....	.....	2,520 5 6	239 8 0	.....	2,759 13 0	5,139	0 8 7	18
1,379 11 0	.....	5,067 9 1	.....	.....	3,196 9 7	570 15 6	.....	4,679 9 1	9,309	0 7 0	19
2,308 8 9	.....	5,032 7 8	.....	.....	4,628 7 8	404 0 0	.....	5,032 7 8	9,215	0 8 10	20
384 2 0	.....	803 7 8	.....	.....	803 7 8	.....	.....	803 7 8	1,427	0 9 0	21
8,772 4 3	268 8 6	26,835 13 10	.....	.....	20,066 1 1	2,769 11 5	.....	21,835 13 10	45,907	0 7 11	
1,117 12 9	9 0 0	5,799 5 1	.....	3,397 5 1	.....	2,402 0 0	.....	5,799 5 1	10,813	0 6 9	22
660 14 5	.....	1,705 5 9	.....	1,601 15 9	.....	804 0 0	.....	1,705 5 9	3,449	0 12 10	23
751 4 6	16 0 0	2,395 2 0	.....	2,235 2 0	.....	.....	.....	2,395 2 0	5,446	0 4 1	24
1,192 14 5	.....	1,744 14 5	.....	2,809 3 5	.....	.....	855 12 0	2,744 14 5	1,404	1 8 11	25
446 8 6	.....	1,327 10 7	.....	1,327 10 7	.....	.....	.....	1,327 10 7	2,606	0 10 7	26
4,169 6 7	24 0 0	10,054 6 3	.....	11,453 4 8	.....	2,744 6 0	855 12 0	15,054 6 3	22,383	0 8 2	
1,653 13 6	.....	4,478 13 0	.....	4,303 13 6	.....	275 0 0	.....	4,478 13 0	11,783	0 6 1	27
1,698 14 6	3 8 0	1,056 11 4	.....	4,411 6 0	.....	213 5 4	.....	4,626 11 4	22,498	0 3 3	28
1,692 8 1	.....	3,811 0 6	.....	3,431 0 6	.....	361 0 0	.....	3,811 0 6	11,942	0 5 1	29
1,271 0 11	.....	4,063 13 8	.....	4,063 13 8	.....	.....	.....	4,063 13 8	10,374	0 6 3	30
5,707 4 6	3 8 0	16,900 7 0	.....	16,132 1 8	.....	818 5 4	.....	16,980 7 0	56,195	0 4 10	
1,738 15 0	18 8 0	5,177 15 7	.....	.....	4,541 15 7	636 0 0	.....	5,177 15 7	8,466	0 9 9	31
2,688 14 6	.....	6,076 1 8	.....	6,768 1 8	.....	818 0 0	.....	6,076 1 8	19,771	0 5 4	32
634 14 0	100 0 0	3,307 14 0	.....	2,377 14 0	.....	660 0 0	.....	3,037 14 0	9,370	0 5 2	33
1,366 13 10	.....	3,806 3 4	.....	3,106 3 4	.....	420 0 0	.....	3,526 3 4	16,214	0 3 9	34
6,249 9 4	118 8 0	18,618 2 7	.....	19,047 3 0	4,541 15 7	2,029 0 0	.....	18,618 2 7	53,941	0 5 6	
401 8 0	8,225 14 8	15,900 5 7	.....	15,900 5 7	.....	.....	.....	15,900 5 7	.....	.....	35
1,154 9 9	0 12 0	3,077 15 11	.....	3,106 15 11	.....	271 0 0	.....	3,377 15 11	9,533	0 5 8	36
1,688 12 6	.....	4,718 12 6	.....	3,908 12 6	.....	720 0 0	.....	4,718 12 6	11,070	0 6 10	37
768 2 1	.....	2,621 10 3	.....	2,351 10 3	.....	.....	.....	2,621 10 3	5,411	0 7 5	38
1,074 5 9	.....	3,704 15 6	.....	3,199 15 6	.....	505 0 0	.....	3,704 15 6	13,165	0 4 7	39
5,037 6 1	8,226 10 8	30,233 11 9	.....	28,727 11 9	.....	1,506 0 0	.....	30,233 11 9	39,179	0 12 4	
2,021 7 0	43 15 6	5,036 10 4	.....	2,857 2 2	.....	.....	2,229 8 2	5,036 10 4	3,878	1 5 0	40
4,023 2 6	91 5 0	13,032 2 0	.....	13,032 2 0	.....	.....	.....	13,032 2 0	16,604	0 13 0	41
6,044 9 6	135 4 6	18,618 13 4	.....	16,389 4 2	.....	.....	2,229 8 2	18,618 13 4	29,482	0 14 7	
548 11 0	.....	1,730 15 0	.....	1,730 15 0	.....	.....	.....	1,730 15 0	1,902	0 14 2	42
63,235 8 6	13,724 8 10	3,04,873 1 8	.....	87,975 5 5	57,554 6 6	26,238 1 7	3,005 4 2	2,04,673 1 8	435,134	0 7 6	
63,136 13 3	11,443 6 1	2,05,118 12 2	.....	86,360 5 4	87,682 11 11	27,275 11 8	3,880 15 8	2,06,198 12 2	453,023	0 7 8	
62,903 15 6	10,411 6 7	2,00,803 9 4	.....	87,044 3 2	84,920 5 10	24,514 3 6	4,094 13 10	2,00,603 9 4	410,173	0 7 5	

vaccinations and re-vaccinations performed by the special staff only.

vaccinators.

given to apprentice vaccinators.

of Rs. 10 per month for supervising vaccination work.



## B.—DISPENSARY

STATEMENT No. III—Showing Dispensary Vaccination in the

No.	Districts.	Number of dispensaries in each district to which a vaccinator is attached.	Average number of vaccinators attached to dispensaries during the year.	Total number of persons vaccinated.	Average number of persons vaccinated by each vaccinator.	Total.
1	2	3	4	5	6	7
<b>ARAKAN DIVISION.</b>						
1	Akyab	...	...	...	...	...
2	Hili Tracts, Northern Arakan	...	...	...	...	...
3	Kyaukpada	...	...	...	...	...
4	Sandoway	...	...	...	...	...
	<b>Total</b>	...	...	434	...	327
<b>PAHO DIVISION.</b>						
5	Rangoon	...	...	...	...	...
6	Insein	...	...	183	...	99
7	Hanthawaddy (Syriam)	...	...	274	...	234
8	Pegu	...	...	106	...	86
9	Tharrawaddy	...	...	784	...	472
10	Prome	...	...	...	...	...
	<b>Total</b>	...	...	1,317	...	891
<b>IRRAWADDY DIVISION.</b>						
11	Maubin	...	...	...	...	...
12	Pyawda	...	...	...	...	...
13	Bassein	...	...	...	...	...
14	Hemada	...	...	...	...	...
15	Myaungmya	...	...	...	...	...
	<b>Total</b>	...	...	714	...	432
<b>TENASSERIM DIVISION.</b>						
16	Amherst	...	...	...	...	...
17	Tavey	...	...	...	...	...
18	Mergol	...	...	...	...	...
19	Toungoo	...	...	...	...	...
20	Thabon	...	...	...	...	...
21	Salween	...	...	...	...	...
	<b>Total</b>	...	...	641	...	381
<b>MANDALAY DIVISION.</b>						
22	Mandalay	...	...	...	...	...
23	Ishimo	...	...	...	...	...
24	Katha	...	...	...	...	...
25	Kuby Mines	...	...	...	...	...
26	Myitkya	...	...	...	...	...
	<b>Total</b>	...	...	299	...	210
<b>SAGAING DIVISION.</b>						
27	Shwebo	...	...	...	...	...
28	Sagaing	...	...	...	...	...
29	Lower Chindwin	...	...	...	...	...
30	Upper Chindwin	...	...	...	...	...
	<b>Total</b>	...	...	1,332	...	807
<b>MAGWE DIVISION.</b>						
31	Thayemyo	...	...	...	...	...
32	Pakoku	...	...	...	...	...
33	Mimba	...	...	...	...	...
34	Magwe	...	...	...	...	...
	<b>Total</b>	...	...	475	...	249
<b>MEIKTILA DIVISION.</b>						
35	Meiktila	...	...	...	...	...
36	Yamethin	...	...	...	...	...
37	Kyaukse	...	...	...	...	...
38	Myingyan	...	...	...	...	...
	<b>Total</b>	...	...	100	...	47
<b>SHAN STATES.</b>						
39	Northern Shan States	...	...	...	...	...
40	Southern Shan States	...	...	...	...	...
	<b>Total</b>	...	...	196	...	149
41	Chin Hills	...	...	...	...	...
	<b>GRAND TOTAL</b>	...	...	5,667	...	3,673
	<b>GRAND TOTAL FOR 1913-14</b>	...	...	10,708	...	5,568
	<b>GRAND TOTAL FOR 1911-12</b>	...	...	9,917	...	5,786







COMPARATIVE STATEMENT NO. IV—Showing the number of persons primarily vaccinated  
Burma in each of the under

Establishments.	PERSONS PRIMARILY VACCINATED									
	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.	Total number.	Number success-fully vaccinated.
	1904-05.		1905-06.		1906-07.		1907-08.		1908-09.	
	1	2	3	4	5	6	7	8	9	10
Government	138,485	109,201	162,044	144,074	136,106	111,288	148,497	133,223	147,185	131,451
Municipal	59,410	46,118	64,883	52,398	59,352	48,431	43,060	41,811	43,072	38,908
Local Funds	1,639	141,636	181,999	160,428	167,418	148,271	133,772	119,609	138,167	122,307
Native States	6,986	4,989	8,197	6,933	6,833	5,739	5,303	4,330	6,991	5,262
Dispensary	9,516	7,112	9,812	7,272	10,590	7,180	10,443	7,457	7,592	5,287
ARMY.										
Europeans	25	14	66	38	24	14	59	36	37	35
Natives	879	215	304	183	281	143	408	219	453	396
Total	381,000	309,365	427,305	371,376	370,704	321,661	351,442	306,751	343,469	306,816

STATEMENT NO. V—Showing particulars of Vaccination verified

No.	Districts.	TOTAL NUMBER OF PERSONS VACCINATED.						TOTAL NUMBER INSPECTED	
		Primary.		Re-vaccination.		By Deputy Sanitary Commissioner or Civil Surgeons.		By Native Superintendents or other Inspecting Officers.	
		Primary.		Re-vaccination.		Primary.		Re-vaccination.	
		3	4	5	6	7	8	9	10
1	Akyab	22,009	5,430	1,132	.....	12,973	4,002	.....	.....
2	Hill Tracts, Northern Arakan	900	119	.....	.....	40	10	.....	.....
3	Kyaukpadaung	19,952	1,126	3,432	.....	10,416	1,035	.....	.....
4	Sandoway	5,424	1,229	1,384	255	4,639	1,466	.....	.....
5	Rangoon	7,022	22,959	251	643	8,571	17,899	.....	.....
6	Insein	10,289	2,364	758	59	8,534	1,660	.....	.....
7	Hanthawaddy	9,629	636	700	13	7,272	278	.....	.....
8	Pegu	17,700	4,620	2,617	461	6,897	1,711	.....	.....
9	Tharawaddy	18,608	1,291	937	9	7,250	463	.....	.....
10	Prome	9,689	2,530	859	91	3,941	1,181	.....	.....
11	Maungblau	14,700	897	1,676	.....	7,658	315	.....	.....
12	Pyawb	3,956	401	806	21	1,859	129	.....	.....
13	Bassein	16,986	426	176	.....	5,785	308	.....	.....
14	Henzada	20,319	1,126	1,777	.....	10,150	381	.....	.....
15	Myaungmya	5,633	125	937	10	4,067	151	.....	.....
16	Amherst	14,719	3,608	558	9	8,973	2,031	.....	.....
17	Tavoy	8,657	894	3,291	282	4,676	103	.....	.....
18	Mergui	8,621	234	672	29	3,347	89	.....	.....
19	Toungoo	9,411	891	436	.....	6,064	294	.....	.....
20	Thatun	9,901	803	3,183	36	4,600	433	.....	.....
21	Salween	1,258	677	209	125	13	9	.....	.....
22	Mandalay	10,412	6,953	1,066	200	5,262	1,133	.....	.....
23	Bhamo	2,652	678	674	.....	50	104	.....	.....
24	Katha	9,185	264	1,519	20	3,601	138	.....	.....
25	Ruby Mines	2,718	19	1,193	.....	2,413	13	.....	.....
26	Myittha	2,061	171	187	91	1,671	77	.....	.....
27	Shwabo	11,595	1,744	605	4	8,795	1,134	.....	.....
28	Sagaing	12,076	12,076	1,064	1,278	9,377	7,984	.....	.....
29	Lower Chindwin	10,721	1,677	2,770	408	6,780	1,137	.....	.....
30	Upper Chindwin	9,474	3,096	2,029	.....	614	135	.....	.....
31	Thayetmyo	8,556	1,081	1,265	30	7,182	805	.....	.....
32	Pakokko	20,576	2,243	4,313	124	8,113	149	.....	.....
33	Minbu	9,833	1,199	2,207	71	3,761	755	.....	.....
34	Magwe	16,119	1,201	5,117	200	9,821	56	.....	.....
35	Mektila	9,567	3,012	2,908	4	3,636	564	.....	.....
36	Yamethin	12,897	28	2,167	28	9,465	.....	.....	.....
37	Kyaukse	5,105	929	1,679	23	4,045	889	.....	.....
38	Myingyan	14,321	321	235	5	6,877	88	.....	.....
39	Northern Shan States	5,590	391	815	104	3,062	93	.....	.....
40	Southern Shan States	26,151	1,684	4,405	428	11,576	937	.....	.....
41	Chin Hills	3,793	219	235	.....	.....	.....	.....	.....
GRAND TOTAL FOR 1913-14		428,503	92,291	62,177	5,221	224,161	49,181	.....	.....
GRAND TOTAL FOR 1912-13		421,489	122,224	69,830	8,913	224,351	63,826	.....	.....
GRAND TOTAL FOR 1911-12		421,289	91,797	60,863	8,453	226,404	51,029	.....	.....



and the number of those persons who were successfully vaccinated in the Province of mentioned official years (Paragraph 6).

## MILK VACCINATED.

Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Establishments.
1909-10.		1910-11.		1911-12.		1912-13.		1913-14.		
7	8	9	10	11						
178,334	177,619	145,542	132,535	106,142	138,306	184,794	174,075	171,005	158,632	Government.
45,673	44,057	37,145	32,368	44,023	40,089	35,714	34,275	33,038	31,476	Municipal.
112,135	90,744	154,649	145,461	193,961	180,546	186,353	171,957	210,401	192,887	Local Funds.
10,081	6,581	13,177	10,462	11,357	9,194	8,062	7,516	6,826	5,761	Native States.
5,475	4,304	8,068	7,304	5,786	5,481	5,906	5,518	3,673	3,477	Dispensary.
										Armed.
68	56	102	62	47	40	62	59	69	64	Europeans
306	269	190	183	338	338	464	393	335	214	Natives.
351,872	323,630	356,073	325,185	421,704	393,941	422,015	393,793	425,830	392,111	Total.

by Inspecting Officers during the year 1913-14 (Paragraph 14).

PERCENTAGE OF INSPECTIONS TO TOTAL NUMBER VACCINATED.				PERCENTAGE OF CASES FOUND SUCCESSFUL OF TOTAL NUMBER INSPECTED.				PERCENTAGE OF SUCCESS REPORTED BY VACCINATORS.		No.
By Deputy Sanitary Commissioner or Civil Surgeons.		By Native Superin- tendents or other Inspecting Officers.		By Deputy Sanitary Commissioner or Civil Surgeons.		By Native Superin- tendents or other Inspecting Officers.				
Primary.	Re-vaccina- tion.	Primary.	Re-vaccina- tion.	Primary.	Re-vaccina- tion.	Primary.	Re-vaccina- tion.	Primary.	Re-vaccina- tion.	
9	10	11	12	13	14	15	16	17	18	19
5-10	.....	65-26	75-26	86-93	.....	98-70	61-83	93-46	57-44	1
.....	.....	4-44	8-40	.....	.....	60-00	80-00	96-57	81-75	2
17-20	7-90	52-26	91-76	87-68	57-95	91-85	38-74	93-69	61-40	3
29-52	20-75	85-56	95-92	93-84	67-45	98-35	43-65	94-09	50-85	4
2-98	2-80	79-94	76-61	97-01	49-77	92-33	66-85	92-24	65-86	5
7-30	2-31	60-01	68-13	66-23	39-51	91-39	51-21	98-52	61-35	6
7-27	1-63	75-92	44-41	96-14	100-00	93-43	57-91	93-32	59-24	7
14-16	9-95	38-97	37-00	95-63	89-67	90-10	62-70	96-18	76-59	8
2-90	3-5	39-17	33-21	95-12	100-10	96-23	45-03	97-37	51-44	9
8-87	3-60	40-67	45-19	95-63	93-41	79-83	49-87	95-38	63-47	10
11-38	.....	51-88	38-46	92-96	.....	85-05	41-64	95-72	49-52	11
13-30	5-21	39-41	32-01	92-40	61-90	95-32	27-91	94-16	35-92	12
1-07	.....	59-72	70-64	82-39	.....	99-70	79-67	97-59	76-19	13
8-75	.....	49-95	33-93	78-73	.....	78-84	21-35	91-46	45-10	14
17-37	4-44	71-36	67-11	62-41	.....	91-61	43-71	98-60	50-13	15
3-99	.....	60-96	56-29	99-83	.....	98-27	47-71	97-77	85-66	16
58-18	63-96	82-65	31-22	98-86	51-19	93-39	41-46	93-29	61-34	17
10-18	16-67	59-54	15-67	93-35	45-15	96-21	64-10	94-78	44-21	18
4-63	.....	64-42	44-23	100-00	.....	96-90	61-17	97-83	63-31	19
39-15	3-86	46-46	46-30	90-54	41-67	96-93	46-99	91-65	51-97	20
10-61	18-02	1-03	1-33	89-47	54-92	100-00	65-67	94-61	45-87	21
10-24	2-87	60-34	15-95	90-43	62-50	95-15	73-46	92-13	66-41	22
25-41	.....	1-89	15-34	91-99	.....	100-10	110-00	89-41	51-01	23
16-34	7-68	32-71	62-17	91-69	55-00	95-04	31-16	96-56	25-00	24
43-89	.....	88-85	6-42	71-58	.....	96-07	67-23	95-37	61-11	25
8-78	54-97	9-22	45-01	96-67	92-55	98-40	66-23	96-13	62-71	26
5-24	.....	43-63	65-02	90-41	100-00	83-63	61-82	91-60	49-28	27
4-73	10-03	77-65	63-99	97-53	79-97	97-42	83-13	98-94	88-17	28
25-84	24-22	63-22	73-98	98-84	66-67	98-85	73-17	99-42	75-18	29
27-90	.....	4-52	4-46	89-31	.....	94-14	81-48	97-17	91-31	30
14-67	.....	89-94	74-47	100-00	.....	96-35	25-33	97-90	67-88	31
21-11	5-63	24-95	8-64	98-99	70-00	97-93	34-33	97-63	13-02	32
29-62	5-92	34-78	62-97	95-10	47-61	96-57	82-25	96-06	45-99	33
31-76	16-63	57-23	4-76	9-67	60-00	95-63	53-93	90-38	60-40	34
30-83	.....	88-34	15-61	99-97	100-00	93-23	39-54	90-35	46-61	35
17-43	91-56	70-35	.....	85-53	89-46	96-63	.....	96-56	85-46	36
32-90	2-69	79-27	95-69	94-79	88-00	94-46	55-23	95-60	63-39	37
1-64	1-72	45-02	30-24	100-00	100-00	85-94	28-11	94-29	82-28	38
15-12	68-00	54-78	31-00	81-18	.....	88-21	16-13	87-00	24-77	39
21-86	25-39	57-44	58-61	88-26	51-17	79-69	51-27	97-22	61-94	40
6-72	.....	.....	.....	83-24	.....	.....	.....	93-31	38-46	41
14-61	5-66	32-68	53-26	90-26	64-35	93-16	61-19	93-59	63-40	
16-45	7-31	63-23	49-77	88-24	64-11	94-72	64-78	94-71	63-12	
14-15	8-91	56-12	57-64	92-16	74-95	94-37	29-25	96-61	72-77	



## APPENDIX A.

Statement showing the ratio per 10,000 successfully vaccinated and the mortality from small-pox by quinquennial periods for Lower Burma only.

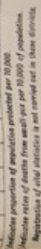
Official year.	Ratio per 10,000 successfully vaccinated.	Quinquennial mean.	Calendar year.	Ratio per 10,000 of mortality from small-pox.	Quinquennial mean.
1	2	3	4	5	6
1898-99	650.47	495.25	1898	10.70	7.24
1899-00	678.31		1899	13.21	
1900-01	530.41		1900	6.76	
1901-02	352.69		1901	4.45	
1902-03	323.04		1902	2.82	
1903-04	353.66	344.74	1903	2.30	6.26
1904-05	324.89		1904	2.38	
1905-06	385.48		1905	10.10	
1906-07	339.61		1906	14.19	
1907-08	300.06		1907	2.75	
1908-09	297.50	333.61	1908	1.34	5.12
1909-10	377.19		1909	1.50	
1910-11	290.12		1910	3.13	
1911-12	398.87		1911	8.83	
1912-13	366.05		1912	9.53	
1913-14	378.63	...	1913	2.76	

## APPENDIX B.

Statement showing the number of vaccinations performed in Municipal towns on children under one year of age (Paragraph 9).

Towns.	Number of births during the year 1913-14.	Number of deaths among children under one year during the year 1913-14.	Number of successful operations on children under one year during the year ending 31st March 1914.	Date of extension of Vaccination Act into towns.
1	2	3	4	5
Akyab	574	220	232	August 1883.
Kyaukpada	50	9	24	April 1894.
Sandoway	96	18	17	September 1890.
Rangoon	5,846	1,678	4,266	April 1884.
Insein	298	67	108	14th March 1912.
Syriam	219	33	23	24th January 1913.
Thongwa	231	56	5	2nd March 1914.
Pegu	501	110	237	March 1893.
Nyaung-U	184	70	107	20th March 1910.
Thabe	319	52	230	October 1897.
Letpadan	243	76	153	January 1897.
Gyobingauk	151	75	177	February 1897.
Prome	805	21	292	June 1890.
Paungde	412	106	267	August 1890.
Maubin	184	25	144	October 1891.
Yandoo	221	87	145	January 1892.
Danubyu	199	46	130	9th July 1892.
Pyaw	130	27	92	November 1904.
Kyaukse	236	56	133	15th December 1904.
Bassein	937	376	671	September 1888.
Ngathalaggyaung	140	21	81	February 1890.
Henzada	772	180	437	January 1889.
Myanaung	274	43	192	July 1889.
Kyaukse	232	42	90	August 1894.
Myaungmya	83	37	50	June 1894.
Wakama	159	38	58	27th April 1907.
Meiktila	1,324	226	1,245	August 1885.
Tavoy	954	147	716	December 1889.
Mergui	486	111	350	October 1891.
Thabe	440	117	254	October 1891.
Kyaukse	214	25	142	March 1897.
Toungoo	440	118	307	May 1890.
Shwegyin	194	35	140	January 1890.
Mandalay	4,976	2,084	2,888	August 1890.
Maymyo	583	63	145	October 1912.
Bhamo	149	20	98	26th October 1891.
Shwebo	302	135	142	June 1894.
Sagaing	339	101	191	April 1894.
Monywa	282	65	191	March 1893.
Thayetmyo	186	79	137	May 1889.
Alaukmye	336	32	275	May 1901.
Pakokko	663	193	527	April 1892.
Meiktila	207	61	150	March 1893.
Salin	214	64	145	March 1893.
Magwe	199	66	119	10th March 1913.
Toungdwiemyi	210	78	132	February 1893.
Yensagyaung	240	80	102	10th March 1913.
Meiktila	232	94	136	June 1906.
Yamethin	285	101	214	February 1892.
Pyawbwa	378	171	214	November 1891.
Kyaukse	128	82	73	May 1912.
Myingyan	202	53	137	May 1894.
	532	147	379	September 1891.
TOTAL	23,117	8,135	18,694	

Diagram showing the Proportion of Population protected during the seven official years from 1907-08 to 1913-14 and the death-rate from small-pox during the calendar year 1913 in districts where registration is in force.











TRIENNIAL REPORT  
ON  
VACCINATION IN BURMA

FOR THE YEARS 1911-12 TO 1913-14



RANGOON

OFFICE OF THE SUPERINTENDENT, GOVERNMENT PRINTING, BURMA

1914