

CENSUS OF INDIA, 1921.

VOLUME XXV.

TRAVANCORE.

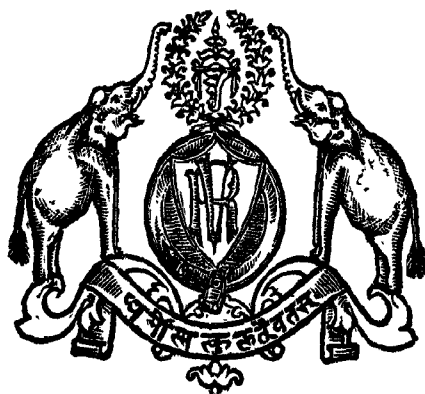
PART V. —ADMINISTRATIVE VOLUME

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PART V.

ADMINISTRATIVE VOLUME.

CHAPTER I—ENUMERATION.

1. Appointment of the Census Commissioner.—The appointment of the Census Commissioner was made on the 8th November 1919, 16 months before the Final Census, while in the 1911 and 1901 Censuses, the appointments were made 17 and 18 months, respectively, in advance of the Final Census. Officers in charge of the Census Operations in all Provinces and States in India, are designated "Provincial Superintendents" except in the case of Travancore where the officer is designated "Census Commissioner" as a special case.

2. Interview with the Census Commissioner for India.—I was relieved of the duties of the Sanitary Commissioner and put in exclusive charge of the Census on the 16th August 1920, interviewed the Census Commissioner for India in Madras on the 6th November 1920 and discussed with him the arrangements made here. Copy of Notes on the interview is given in Appendix I.

3. Records of the last Census.—The first duty of the Census Commissioner after his appointment is to get all records of the previous Censuses and books of reference from the Huzur Office where they are kept. A list of the records, by no means a complete one, was found among the records and as per that list, the records were taken. As there was no knowing, whether during the interval between Censuses, any of the contents of files had been removed for reference and if so kept back, all the records required were not found. As regards books of references, some were missing. In the absence, in the present staff, of any officer who worked in the superior grade in the last Census, everything have had to be done *de novo*. In the interval between Censuses, several important matters bearing on Census might have been published and if there does not exist a Department entrusted with Census work, there is no chance of those publications being got and notes taken from them for the next Census.

4. Census Regulation and the Appointment of Census Officers.—The first operation in connection with Census consists in the passing of the Census Regulation and the issue of a Notification in the Gazette by Government informing the public of the taking of the Census and requiring all officers of Government to render every possible assistance for the purpose. The Division Peishkars and Commissioner, Devikulam and the Heads of the Forest, Marine, Police, Excise, Sanitary and other Departments, the members of which are entrusted with Census work are to be appointed as District Officers and the Tahsildars, Presidents of Municipal Councils, Sanitary Officers and Divisional Forest Officers as Charge Superintendents. For Enumerators and Supervisors, the school masters may be appointed as was done in this Census as the step was found to be satisfactory.

5. Village Register.—The preparation of the Village Register should be taken up in hand early. If before the next Census, Revenue Settlement Operations have not been undertaken and the Pakuthies sub-divided into convenient units of

administration, the old undefined Karas will have to be taken as units in Rural areas and Census Towns, and Wards in Municipal Towns. Pakuthi and Town maps showing the boundaries of Karas and Wards should be got from Talisildars and Presidents and the changes made in the boundaries since this Census, should be distinctly shown in the maps.

6. Census Divisions.—Each Municipal Town and each Taluk excluding the Municipal area and each Division of the Reserved Forest may be constituted into a Charge and placed under a Charge Superintendent. In Municipal Towns, a Block may consist of 50 houses and 30 houses in Rural areas. Special areas or institutions as Railway Stations, Jails, Seaports, big Landing Ghats, Military Lines, etc., should be formed into separate block or blocks. Also portions excluded from and included in any area during the intercensal period should be treated as separate block or blocks. Reserve Forests situated in the midst of inhabited Karas should be constituted as special blocks of the Karas, while those quite separated from and outside the control of Revenue authorities should be formed into separate Karas called "Hill Karas" of the Pakuthi. Similarly outlying parts of the Taluks should be constituted into separate Pakuthies called "Hill Pakuthies" of the Taluk and the Forest Department entrusted with the Census work in them.

7. Issue of Calendars and Census Code in advance.—It will be necessary before the commencement of the operation that a calendar showing the dates on which each operation should be commenced and completed, and the date of submission of several returns, be drawn up and published so that the officers may know beforehand what all are required to be done and when they should be done. The Code of Census Procedure, Part I, should be prepared sufficiently early and supplied to the Superintendents as soon as they are appointed. The instructions for House Listing and House Numbering should be printed on the wrappers of the schedules of House Lists so that they might always be at hand for ready reference to the subordinates entrusted with the work. Sufficient interval, say one month, should be left between each operation to allow time to review the returns of each operation and point out defects.

8. House Listing and House Numbering.—Instead of preparing one House List for each unit and extracting from it the Block List to be attached to the Enumeration Book, House Lists for each block should be prepared, at the first instance, for each block of the units instead of all the blocks. For House Numbering, stencil plates, though supplied this time, have not been used in Rural areas. It is reported that with an ordinary brush, the House Numbering can be better and more quickly done than with stencil plates. Except in the case of Towns, the use of stencil plates may be dispensed with. The House Listing and Numbering should be entrusted to the regular Revenue agency in Rural areas and Conservancy staff in Towns.

9. Preliminary Enumeration.—For Preliminary Enumeration, the Enumerators should be given training immediately after their appointments, by the Charge Superintendents. Complete instructions should be printed on the wrappers of Enumeration Books. The posting of Enumerators was done this time at this office and this increased the office work enormously. The Charge Superintendents may be entrusted with this duty. There should be one Enumerator for 3 blocks in Rural areas and 5 in Towns and a Supervisor for each unit. The teacher-enumerators should be posted to places in which their schools are situated so that the help of their students may be made available to them. At least the Supervisors should, if possible, be selected from persons having previous Census experience. Considering that education has much advanced in the State and particularly in Towns, the Household Schedules should be freely used as information supplied in them is found to be complete and accurate.

10. Final Census, Non-Synchronous Tract and Provisional Totals.—The power of appointments of Enumerators and Supervisors for the Final Census should be given to the Charge Superintendents as was done this time. For each block, there should be one Enumerator and for every 10 blocks, a Supervisor.

As long as this State is declared to be non-synchronous area on account of the difficulty of taking night Census, no further division into synchronous and non-synchronous in a non-synchronous area is correct. Either the Census should be taken on the morning of the date fixed for the Census in India or the next morning and the Census throughout the State, including the inmates in Hospitals, Jails and Asylums, and Travellers, etc., should be taken at one and the same time. The Charge Superintendents should be asked about the facilities for the communication of the Provisional totals after the Final Census and suitable arrangements made for such communication.

11. Special Arrangements for Railways, Ports, Etc.—Special arrangements on the lines followed this time and described in the Census Code and instructions issued by the Census Commissioner for India in this connection should be adopted.

12. Special Censuses.—For Factory Industrial Census, the instructions issued by the Census Commissioner for India should be followed. It is better that if any other special Census be taken, it should be done by the regular Revenue and Conservancy agencies, some time either before or after the Preliminary Enumeration so as not to interfere with it and the Final Census.

STATEMENTS.

I. Census Divisions and Agency.

DIVISION.	NUMBER OF			NUMBER OF			AVERAGE NUMBER OF HOUSES PER		
	Charges.	Circles	Blocks.	Charge Superintendents.	Supervisors.	Enumerators.	Charge Superintendent	Supervisor.	Enumerator
1	2	3	4	5	6	7	8	9	10
Southern	17	230	9,133	16	247	2,565	13,458	871	83
Central	22	197	10,114	18	225	3,602	15,651	1,252	78
Northern	18	164	9,349	17	241	2,666	14,879	1,049	94
High Range	3	39	909	2	181	393	5,920	65	30
Total	60	630	29,505	53	894	9,226	14,374	852	82

II. Number of Forms Supplied and Used.

DIVISION.	(A)—SUPPLIED, (B)—USED											REMARKS.
	* Enumeration Book Covers		* Block Lists.		GENERAL SCHEDULES.				* OTHER FORMS ISSUED.			
	a	b	a	b	Actual Number.		Per 100 Houses.		Household Sched-ules.	Boat Tickets.	Travelers Tickets.	
1	2	3	4	5	6	7	8	9	10	11	12	13
Southern	11	10	11	10	92	90	43	42	8	..	18	
Central	11	10	15	14	122	118	43	42	11	6	19	
Northern	12	11	13	12	103	100	41	39	8	3	22	
High Range	1	1	2	1	10	9	85	77	1	..	2	
Total	35	32	41	37	327	317	43	42	28	9	61	

* 000s omitted.

III. District Census Charges.

District or State.	District Office Establishment.	House Numbering.			Remuneration of Census Officers.			Travelling Allowances of Census Officers.	Local Purchase of Stationery.			Postage, Freight, Miscellaneous.			Total.		
		Rs.	Ch.	C.	Rs.	Ch.	C.		Rs.	Ch.	C.	Rs.	Ch.	C.	Rs.	Ch.	C.
1	2	3			4			5	6			7	8	9	10		
Southern	.	80	10	10	279	13	2	...	8	...	...	..	..	...	367	23	12
Central	..	108	16	4	235	22	7	...	36	23	14	...	...	...	381	6	9
Northern	..	123	5	9	328	12	0	...	23	15	0	...	...	..	475	4	9
High Range	..	3	26	4	82	20	4	.	...	..	.	...	...	...	86	18	8
Total	..	316	2	11	926	11	13	...	68	10	14	...	..	...	1,310	25	6

CHAPTER II.

ABSTRACTION AND TABULATION.

13. Census Offices.—The office of the Census Commissioner was organised with one clerk and 2 peons and at the beginning of the Malabar Year 1096, the strength of the office staff was as follows :

Manager (1)	Clerks (8)
Accountant (1)	Peons and Daffadar (9)
Typist (1)	Mochee (1)

The Permanent Advance was Rs. 50 at first and subsequently increased to Rs. 200. The office was located till the end of the Malabar Year 1095, *i. e.*, for a period of 8 months, in my private quarters free of rent and then removed to the completed buildings of the new Ophthalmic Hospital under construction. The Central Office and the Slip Copying, Sorting and Compilation offices were also held in the same building. As the number of public holidays inclusive of Christmas holidays and Sundays comes to about 100 in a year and if all the holidays are to be availed of, the work will suffer much, the office should be closed only on important holidays and Sundays.

14. Slip Copying.—The slip copying was done this time at the Central office. It was given to understand that the system followed last time in having the work conducted in Taluks was found to be unsatisfactory and caused much confusion and difficulty in the Central office. The advantages of having the work performed under the eye of the Census Commissioner cannot be denied, but the disadvantages are also many. The Copyists and Sorters are generally youths just fresh from schools and not expected to realise their responsibilities and not amenable to discipline. It is well known that only in big towns where there are several educational institutions and a large number of educated men not dependant on Government service, that agitations on political and social problems are much in evidence than elsewhere. The views are likely to spread more in places where a large number of educated youths are collected as in a Central Census Office. This time when these persons came to know of the attempted strike in the Madras Census Office for lowering their outturn and increasing their wages, they attempted to strike work here ; but the attempt was nipped in the bud. Again, there was a strike attended with disturbances among the school boys in connection with the raising of school fees and unfortunately the Census Office happened to be in the midst of the storm centres, the High Schools, where the disturbance and strike originated. The Sorters, many of whom had just left schools and had therefore many friends and school mates among the students on strike, sympathised with them and prepared to join them. Even in this they were frustrated. With all the success in preventing strikes, Police Guards have had to be put in the office both day and night to see that the slips are not removed or otherwise interfered with. The whole period was one full of anxiety and uneasiness.

15. The defects in having the Copying done in Taluks.—The inconvenience and difficulty felt last time in having the slip Copying conducted in Taluks do not appear to be caused by any fault in the system itself, but only due to the procedure followed. The copied slips should not have been sent to the Central Office. The Sorting also should be done at the place where slips are copied. The second defect consisted in entrusting the work to Tahsildars (Charge Superintendents) who have multifarious duties to perform. The best way is to form one office for each Revenue Division at its Head Quarters, the work of the High Range Division being attended to at Kottayam and each office put in charge of a selected officer and trained at the Central Office. The whole work from the slip copying to the preparation of the Compilation Registers should be done there. The special officers should be appointed a couple of months before the Final Census and given training by the Census Commissioner. The Census Code, Part II, should be drafted by them under the supervision of the Census Commissioner and printed and each supplied with a copy. It is not difficult to find the required staff in each Division, inasmuch as on

the present occasion several Copyists from the mofussil parts had applied and were appointed. The Census Commissioner may go out on tour and examine the work done at each office. This arrangement will be both economical and efficient.

16. Sorting.—The order in which the Tables are taken for sorting requires modification from that given in the Imperial Code of Census Procedure. No sorting of slips is required for the preparation of the first 6 Tables. Instead of taking Table VII first, Table XIII may be taken. After that, Tables IX, XXI, X, XI, XVII, XIX and XX. These do not require sorting by age periods. Then VII, VIII, XIV, XV and XVI may follow.

17. Units for Sorting.—The smaller the units taken for sorting, the more accurate are the results obtained though it may involve much time and trouble. The detection of omissions and their rectification are easier in small units. This time for 3 Pakuthies where mistakes were found, re-sorting was done. One sorter was detected placing Chetty slips (non-Malayali) under Malayali. About 200 slips of one Pakuthi were missing and re-sorting of the Pakuthi was done and on account of difference among sorters, as to the joining the student strike or not, the slips of the sorters not inclined to join the strike, were found removed and placed among the slips of others. If Taluks have been taken as units it would not have been possible to detect mistakes and much less to rectify them. It may be possible to know whether in a village a particular caste predominates or not. If it is found in sorting the village that the number is low, doubt will be roused and slips may be taken to find out the mistakes and rectify them. If on the other hand, Taluk is taken as unit the difference in the number of the particular caste may not be striking and even if doubts arise it is not possible to find in which village of the Taluk it is to be found.

18. The Use of Slips.—From the intimate knowledge acquired in this Census in the use of slips, I am inclined to doubt whether the slip system is the best one and whether the old system of strokes which was superseded by the slip system cannot be improved. The chances of error are multiplied in the slip system and besides there are other drawbacks. Difficulty was experienced at the close of copying, on account of the misplacement, of the want of slips for Musalmans and some categories of the Christians. The required colour papers for the slips were not available either in the shops or Stationery Department and no time had to be lost, as delay for a day means the loss of Rs. 150, the pay of the Copyists for a day. Other papers were used and the particulars stamped with rubber stamp. When the copying is made from the schedules in the slips there is the chance of mistakes being made and again when the sorting is made, the entries in the slips which are not always legible, there is again the chance of mistakes arising. In addition, there is the chance of putting the slips in the wrong pigeon-holes and lastly there is the difficulty in counting. It is within the experience of officers now whose pay is disbursed in one rupee notes that they have to be counted several times before being satisfied with the number. Besides, the slips being of different colours, the impression left by pencil writing is not always clear in all of them. And certainly after repeated handling with wet and greasy hands, the entries become illegible and the slips stick together and when they are separated the entries are completely obliterated. In addition to the usual disadvantages incidental to the slip system observed in other parts, Travancore has to meet with peculiar disadvantages. The time when the sorting commenced coincides with the onset of the Monsoon and by the time the last and most difficult Table (XVII—Occupation) is taken up for sorting, the Monsoon is at its height and the daily rains and absence of sunshine seriously interfere with the sorting of the already illegible slips. The advantage obtained from this slip system is said to be that it saves time and labour; but even this does not seem to be correct. If Tabulation is done at the Head Quarters of each Division, it may be possible to get Copyists and Sorters on a rate of pay lower than that given in this Census for they had come from distant places for Rs. 15 this time.

19. The Drawback in the System.—The chief defect in the old system is said to be the confusion caused by the "Sea of Strokes". But if smaller units are taken for Tabulation, this defect can be removed. After the close of sorting, I tried

the old system as an experiment. It was found that a Sorter was able to prepare the compilation register for all the 15 Tables (VII to XXI) from an Enumeration Book in 3 days. At this rate, the Copying, Sorting and Compilation, leaving the preparation of the Imperial Tables, can be finished for the whole population by 200 persons in 6 months time. The time actually taken for conducting these operations in this Census was 8 months and the average number of persons daily at work was 230. Thus, there is not only saving of time but of expense also by adopting the old method. As regards accuracy, the old system is by far the best adapted to secure it. The most important advantage in this system is that it is possible to compare the total number in each Table with the total number given in the wrapper of each enumeration book and satisfy that nothing is omitted. The time taken and expenses involved in getting down the slips and enumeration schedules to the Central offices and checking them are saved. The cost of stationery and printing of slips is a substantial saving.

20. Printing of Forms, Tables and Report.—One of the important items to be attended by the Census Commissioner after getting all the records of the previous Censuses is to settle the Press where the Forms, Tables and Reports have to be printed. In previous Censuses, while the forms were printed in the Government Press, the Reports and Tables were done in private Presses. In British Indian Provinces where there are Government Presses and facilities for undertaking Census work exist, the work is done there and it seems to be but right that all Government work which can be done in Government institutions should be invariably done there. This time the whole printing work was done at the Government Press. The work done as far as the printing of forms and the Report is indeed satisfactory. But, the printing of Tables was not so. According to the rules of printing once the strike order is given, the Press does all the work and the author sees only the completed volume. As the office of the Census Commissioner for India requested for the supply of a copy of each of the finally printed Tables in advance, I got a copy of each Table and when I perused them I was surprised to see that while the Census Commissioner for India had detected and made corrections for 68 mistakes in all the Tables, the final copies had come out with 115 mistakes, including a few of the corrected mistakes of the Census Commissioner for India not being embodied. It is not known whether the finally printed Tables are usually verified in other provinces and if so done whether they will be found free from mistakes. Anyhow as I detected the mistakes, corrigenda became necessary and they were added at the end of the Volumes. If it is decided in the next Census to have the work done in the Government Press, I would advise my successor to pay particular attention to the following points:—

- (1) To satisfy himself that the required quantity and quality of types are in stock.
- (2) To have a special staff consisting of experienced compositors and proof readers and examiners appointed solely for the Census.
- (3) As the number of holidays in the Press comes to about 120 days in a year, all except for important holidays and Sundays, the work should not be stopped.
- (4) An officer experienced in proof reading and correcting should be appointed in the Census Office and he must attend the Press daily to see that the work is carried on properly.

If it is decided to have the work done in Private Presses, conditions must be prescribed as to the size of the type to be used and the number of lines to be printed in a page. In the previous Census Reports, the types are big and only 50 lines are found on a page while in the Reports of British Indian Provinces, the types are smaller and 60 lines are printed on a page. If these details had been attended to the cost of printing and stationery and the bulk of the Report could have been reduced.

The question of cost requires consideration. The practice, however, of debiting the cost of types purchased, additional accommodation provided, etc., to the Census is incorrect, particularly so, when it is not certain that the types purchased

CHAPTER III.—FINANCE.

22. Census Expenditure. In the calculation of the Census expenditure, no uniform principle has been followed. The pay of the Census Commissioner was not included in 1901 Census while it was included in 1911. I have given in the annexed Statement the expenditure incurred and the figures are compared with those of the last Census.

In British India while the cost of printing including the preparation of maps done at the Government Presses and Survey Departments are not included in the Census charges, the cost of stationery supplied from the Stationery Stores to the Census seems to have been included in the Census expenditure. In this State, the cost of stationery supplied from the Stationery Department for the Census is not included in the Census expenditure whereas the cost of printing done in the Government Press and of maps prepared in the Survey Department are included. The statement of expenditure incurred and disbursed from the Census Department Budget, is given below for each year, under several heads and the total for 1911 Census is also given for comparison.

STATEMENT OF CENSUS CHARGES.

Serial No.	Item of Expenditure.	1095		1096.		1097.		1098.		Total.			
										1921		1911	
		Rs.	ch c.	Rs.	ch c.	Rs.	ch c.	Rs.	ch c.	Rs.	ch c.	Rs.	ch c.
1	Census Commissioner's Salary	827	16 6	8,601	8 2	8,640	.. ..	3,180	.. ..	21,248	24 8	21,943	21 ..
2	Personal Assistant's Salary.	..	.. ..	450	.. ..	1,748	12 4	450	.. ..	2,648	12 4	5,162	3 8
3	Manager's Salary	..	.. ..	1,200	.. ..	1,675	22 3	.. ..	.. ..	2,875	22 3		
4	Pay of Office Establishment	649	.. 7	4,579	22 6	4,949	1 ..	1,866	23 13	12,044	19 10	11,960	22 10
5	Remuneration to Supervisors and Enumerators of Preliminary Enumeration	..	.. ..	926	11 13	..	.. ..	.. ..	.. ..	926	11 13	7,135	4 1
6	Pay to Temporary Tabulation Establishment	..	.. ..	13,643	3 3	14,879	20 12	.. ..	.. ..	28,522	23 15	13,974	17 4
7	Office rent	..	.. ..	66	3 9	87	14 ..	.. ..	.. ..	153	17 9	1,319	19 13
8	Purchase and repair of furniture	447	20 14	2,599	15 9	49	27 ..	.. ..	.. ..	†3,097	7 7	949	16 11
9	British Postal charges	14	14 2	76	11 5	17	4 15	10	1 7	118	3 13	100	19 1
10	Telegram charges	8	14 11	110	11 ..	35	21 2	5	13 4	160	4 1	155	15 5
11	Travancore Anchal charges	165	.. ..	1,104	21 ..	..	.. ..	.. ..	.. ..	1,269	21 ..	..	.. ..
12	Printing and binding of Report, Tables and Forms	189	14 6	†7,565	7 8	1,081	10 1	2,300	.. ..	11,136	3 15	5,880	26 15
13	Printing of maps and diagrams	..	.. ..	..	.. ..	333	.. 14	479	13 14	812	14 12	*4,991	13 6
14	Purchase of books and periodicals	116	27 13	127	15 8	89	13 13	.. ..	.. ..	334	1 2	197	20 4
15	Purchase of Tar	..	.. ..	316	2 11	..	.. ..	.. ..	.. ..	316	2 11	126	2 8
16	Purchase of Stencil Plates.	..	.. ..	279	25 8	..	.. ..	.. ..	.. ..	279	25 8	152	19 ..
17	Card board tickets	..	.. ..	577	20 9	..	.. ..	.. ..	.. ..	577	20 9	108	14 6
18	Miscellaneous	116	13 12	1,694	13 2	368	6 13	146	12 14	2,325	18 9	1,682	18 1
19	Travelling allowance	..	.. ..	611	4 10	..	.. ..	.. ..	.. ..	611	4 10	1,175	4 2
	Total	2,535	10 7	44,530	1 7	33,955	14 13	8,438	9 4	89,459	7 15	77,017	5 15

† The amount realised by the sale of furniture was 1991-27-3.

‡ This amount includes the cost of the Types (6456-21-2) and cost of accommodation (383-7-0).

* Of this amount Rs. 4,000 was spent for the purchase of camera and outfit for the preparation of maps.

¶ The amount does not include the charges for printing Forms and Slips.

APPENDIX I.

NOTES ON THE CENSUS ARRANGEMENTS IN TRAVANCORE.

Travancore.

I had a talk with Dr. S. Krishnamurthi Ayyar at Madras about the Census arrangements in Travancore.

2. The arrangements in this State are peculiar, in that on account of the dearth of Enumerators the preliminary enumeration is done by a limited official staff who divide up the Blocks between them, each man taking 3 or 4 Blocks. For the final enumeration the officials of the State are specially mobilized so that each Enumerator after 4 or 5 days' training is able to revise the Schedules of a single Block and thus complete the Census. On the present occasion by employing schoolmasters the Superintendent of Census Operations has been able to raise 8,638 Enumerators for the preliminary enumeration as against 1,294 at last Census. This is very satisfactory and should secure greater care and accuracy in the Census.

3. The Census divisions are based on the previous organization, the *Kara* or residential village being the village unit and the Taluk the Charge. The returns of the number of Circles and Blocks are not yet complete but operations are well forward house-numbering being almost completed; and as the staff is composed almost entirely of State officials the final arrangements should present little difficulty. The Superintendent of Census Operations thinks that there will be no hitch over the railway enumeration and that the new rules will work well. Special arrangements are being made for the floating population on the sea, canals and backwaters, the organization centering round the customs *chowkey* and mooring ghats. There will be no place in which no final enumeration is made but throughout the State the final enumeration will be done by day instead of by night.

4. The Schedule closely follows the Standard Schedule, sects of religions will not be taken nor, in most cases, subcastes, but the distinction between Malayala and Non-Malayala will be made throughout. I notice that the draft instructions still retain the distinction "from birth" in the case of deaf mutes. This has been discarded and the instructions should be corrected accordingly. As at last Census the number of those suffering from elephantiasis, a disease prevalent in the State, will be asked. Special columns are inserted to obtain the number of persons who have *migrated from* the village within the last ten years. This would hardly be considered an appropriate enquiry on a General Schedule but it is rendered possible by the special conditions and should give some useful statistics.

5. Tabulation will be carried out at a Central Office at Trivandrum where the necessary clerical labour is available. Paper for the Schedules and slips has been obtained locally and the printing is undertaken by the Government Press.

6. The Superintendent of Census Operations has instituted some interesting subsidiary enquiries on various subjects by means of special questionnaire. Besides the Special Industrial Schedules for organized industries there is a Schedule for non-factory (*i. e.*, Cottage Industries) asking for detailed returns both of persons engaged and material used in manufacture. There is also a full questionnaire regarding the size of families and some special returns are being collected from hospitals which also bear on the question of fecundity. The Superintendent of Census Operations hopes that the conditions under which these enquiries are undertaken will secure a high degree of accuracy in the statistics obtained. If this is so, the information will be of considerable interest and value, but the Superintendent of Census Operations should not hesitate to reject any material of the accuracy of which he has any doubts whatever.

Pachmarhi, }
The 1st December 1920. }

(Sd.) J. T. MARTEN,
Census Commissioner for India,
7-11-20.

APPENDIX 2.

EXTRACT FROM ADDENDUM TO FIFTH NOTE

ON THE CENSUS OF 1901.

The ages of the people.

It is easy to calculate the mean age of the population by sex and civil condition. In order to ascertain the number of years lived by the aggregate population we must first determine the total number of persons living at the close of each age period. The sum of these totals multiplied by 5, the difference of the age divisions, and raised by two and-a-half times the number of persons of that sex or civil condition, gives the number of years lived. The mean age is obtained by dividing this last number by the number of persons living.

An example taken from the report which I quote will show how the calculation is worked in detail:—

Resultats Statistiques
du Denombrement de
1891, Paris 1898 Pages
223, 224 and 414.

Number of males enumerated	...	...	18,932,354
Deduct age not stated	...	...	9,859
Male population for the purposes of the calculation	...	...	18,922,495
Deduct population under 5	....	...	1,667,153
Remains population living at 5 and over	...	...	17,255,342
Adding to population under 5 the population under 10 and deducting the total from the original 18, 922,495 we get—			
Population living at 10 and over	...	...	11,577,495
and so on			
Sum of these totals	...	...	111,141,696
Multiplied by 5	...	...	555,708,480
Initial figure (third line) multiplied by $2\frac{1}{2}$	....	....	47,306,237.5
Total years lived	...	....	603,014,717.5
Divided by 18,922,495 gives mean age 31 years $10\frac{2}{3}$ months.			

The process can be applied to any civil condition or group of ages. It might be worth while to determine the mean age of the population in one or two famine districts for comparison with the mean age of the population of the province or of the selected districts at the last Census.

4. In connexion with this as well as with the general question of the value of the mean age of the living, the following remarks of a leading German statistician deserve consideration:—

"Great caution is necessary in drawing far-reaching conclusions from statistics of the mean age of the living. Like all large statistical averages, such figures are of value rather for the questions which they suggest than for the answers which they supply. In the case of mean age this remark applies equally to its variations at different periods. Nothing could be more fallacious than to assume, as has been done in France, that a rise in the mean age of the living of itself indicates an increase in the duration of human life, for it is clear that the mean age is affected not only by mortality but also by the course of the birth-rate. If the births increase, the numbers in the younger age groups increase also, and this reduces the mean age of the living. On the other hand, if the birth rate declines, the converse result follows. A population which is actually dying out is bound to show a constant rise in the mean age of the living." As, however, in famine areas we get both a reduction in the births and an increase in the deaths, it is possible that the results may be of interest.

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5. The same authority gives the following method for calculating the aggregate of years lived, and the mean age of the population from the age return by single years. "It is sufficient" he says "to assume that the persons shown in the n th year of life have in each case lived $n - \frac{1}{2}$ year, that those shown in the first year of life were on an average half a year old, that those in the second year were a year and-a-half, and so on. In fact, owing to the rapid falling off in the higher ages, this method slightly exaggerates the number of years lived. This error is small with groups of single years, but increases substantially if, as is the case with the French calculations, five-year groups are used to compute the number of years. Having ascertained the total number of years lived by the aggregate population, this total divided by the number of persons gives the mean age of the living.

* * The smaller the range within which the mean age is reckoned the more useful are the results. In this manner brief and telling expressions may be arrived at for the differences between particular sections of the population." He gives as instances the school-going ages, the ages of criminality, of maturity of physical powers, etc.

6. It is possible that this method, if applied to the returns of 100,000 ages of each sex, might give interesting results. Or again, it might be applied to the total population after adjustment and distribution by single years.

7. An excellent account of the graphic method referred to in paragraph 2 of my note of 13th August will be found in Newsholme, *Vital Statistics*, pages 265, *etesq.* It seems to me simple and easy to work, and even if the results are only approximate, they will be better than the chaos of absurdities, which the recorded ages present. I gather that before applying the graphic method, the ages must be grouped into 5-year periods by the arithmetical process described in Mr. Hardy's memorandum already referred. There are in fact four stages to be gone through.—

- (1) arithmetical construction of 5-year groups;
- (2) expression of these as rectangles;
- (3) formation of a curve;
- (4) determination of the single year on the curve.

Simla,
The 29th August 1901. }

H. H. RISLEY,
Census Commissioner for India.

(True Extract.)