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REPORT

ON

FAMINE

IN THE

BOMBAY PRESIDENCY

1911-12



BOMBAY
PRINTED AT THE GOVERNMENT CENTRAL PRESS
1918

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Bombay Castle, 22nd September 1913.

From

THE HONOURABLE MR. G. CARMICHAEL, C.S.I., I. C. S.,
Chief Secretary to the Government of Bombay;

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
Department of Revenue and Agriculture (Famine).

Sir,

As required by Nos. 23 and 24 of the Rules in Appendix II to the Bombay Famine Relief Code, I am directed to submit the final report on the famine operations carried out during the season of 1911-12 in this Presidency.

I.—THE ECONOMIC AND AGRICULTURAL CONDITION OF THE
AFFECTED TRACT BEFORE THE FAMINE.

2. The area affected included two distinct tracts of country, the northern part of Gujarát which only in recent years has come to be regarded as liable to famine and the plains of the Deccan and Karnátak where the rainfall is always apt to be scanty and capricious. Both had suffered severely from the widespread famine of 1899-1900 and the two succeeding years of scarcity, and the Deccan and Karnátak had been again visited by famine in 1905-06, but a rapid recovery was in progress. The cultivators were profiting by a rise in the price of agricultural produce and fortunately had two distinctly good seasons immediately before the year under report. Increased industrial activity and a number of large works in progress had created a demand for labour in excess of the supply, and rendered the labouring classes largely independent of agricultural employment. Thus when the strain came the people displayed an unexpected power of resistance, and, though the failure of the harvest was nearly as complete and the prices of food-grains rose nearly to the same level as in 1899-1900, the assistance the people required from Government was infinitely less. Employment on relief works had to be provided only for the Bhils and Kolis of the Panch Maháls district. Elsewhere the district officers were able to devote all their energy to the task of mitigating the effects of a severe fodder famine and of preventing a disastrous loss of agricultural stock.

II.—THE CAUSE OF THE FAMINE AND THE EXTENT OF THE
FAILURE OF THE HARVESTS.

3. In Appendix 1 is given the rainfall at selected stations during June to November 1911, compared with the average of normal years. The monsoon opened in the second week of June, but the rain practically ceased in the third week, thus retarding kharif sowing. The current again strengthened in the first week of the following month, but the precipitation did not last very long and a break of over a month ensued causing the young seedlings of the early sown crops to wither, especially in north Gujarát. Moderate rain in the middle of August facilitated the completion of kharif sowing and revived those crops which were not past hope. After this there was no rain in north Gujarát, and in other places the September and October rains were considerably below the average. The kharif crop consequently was stunted and rabi sowing was greatly retarded except in favoured tracts. Some good rain at the end of November, and the beginning of December, however, benefited the late sown kharif crops which had survived the drought and the rabi crop wherever it was sown, but the fall was generally too late to resume sowing.

4. As a result of this deficient and capricious rainfall the kharif crop yielded almost nothing in the three northern districts of Gujarát and a very poor outturn in the east Deccan and Karnátak. The rabi crops also did not fare much better except in tracts favoured with facilities for irrigation.

5. The extent of crop failure can be gathered from the following statement in which the areas sown and the outturn of the food crops for the last three years are compared:—

	Area sown (in thousands of acres).			Outturn (in thousands of tons).		
	1909-10.	1910-11.	1911-12.	1909-10.	1910-11.	1911-12.
Gujarát	2,378	2,184	1,545	915	780	230
Deccan	10,869	10,626	9,453	1,791	2,041	1,185
Karnátak	4,748	4,651	4,060	1,084	1,182	629
Total ...	17,995	17,461	15,058	3,790	4,003	2,044

6. The precarious character of the rainfall of the season led to a considerable increase in the area under irrigation amounting to 12 per cent. in the Presidency proper over the previous year's area, the highest recorded since 1897-98. The districts of Ahmedabad, Kaira, Khándesh, Násik, Ahmednagar and Sholápur chiefly contributed to the increase, while there was a falling off in this respect in Poona, Sátára and Dhárwár. The natural sources of irrigation were adversely affected by the deficient rainfall and *pats* or irrigation channels generally ran dry. But irrigation from wells received a great stimulus. No less than 2,700 *pukka* and 2,500 *kacha* wells were constructed, of which 1,200 and 1,000 were in Gujarát alone. Some 800 *kacha* tanks are reported to have been dug in the Dhárwár district alone.

III.—THE AREA, POPULATION AND CLASSES AFFECTED AND THE DEGREE OF DISTRESS.

7. The failure of crops affected the three northern districts of Gujarát, *viz.*, Ahmedabad, Kaira and the Panch Maháls and to some extent Broach, five districts of the Deccan, *viz.*, West Khándesh, Násik, Ahmednagar, Poona and Sholápur and all the three districts of the Karnátak. The area and the population affected by the distress in these districts are shown below:—

District.	Total.		Affected.	
	Area.	Population (Census of 1911) (000s omitted).	Area.	Population (000s omitted).
	Sq. Miles.		Sq. Miles.	
Ahmedabad	3,816	828	3,512	766
Kaira	1,595	692	1,440	581
Panch Maháls	1,606	323	1,606	323
Broach	1,468	307	900	150
West Khándesh	5,497	581	2,388	325
Násik	5,850	905	890	150
Ahmednagar	6,586	945	6,586	945
Poona	5,349	1,071	2,274	329
Sholápur	4,541	768	2,790	335
Bijápur	5,669	863	2,932	420
Belgaum	4,649	944	1,214	207
Dhárwár	4,620	1,026	1,540	340
Total ...	51,246	9,253	28,072	4,871

An exceeding dearth of fodder was the marked feature of the year, and therefore the classes most affected were the cultivators who had to maintain their agricultural stock and the professional cattle breeders of Gujarát. The weaker section of the labouring classes also felt the strain, but for the ordinary able-bodied labourer there was no lack of employment on a good wage. In the Deccan labour has learned to move freely in accordance with demand. This tendency is less marked in Gujarát, but there fodder operations and the large extension of well irrigation promoted by a liberal distribution of takávi provided local employment for many. In the Panch Maháls district, which was severely hit, special provision had to be made for the large population of backward castes—Bhils, Naikdas and Kolis—poor and shiftless cultivators who normally live a hand to mouth life. They had their cattle to maintain and were naturally disinclined to move out in search of employment, while their dislike for regular work and the strict discipline of famine camps made it necessary to watch their condition with the utmost care.

IV. & V.—GENERAL NARRATIVE OF THE COMMENCEMENT, PROGRESS AND CLOSE OF THE FAMINE; RELIEF MEASURES AND ADMINISTRATION, ORGANIZATION OF THE RELIEF SYSTEM, PUBLIC WORKS RELIEF NON-DEPARTMENTAL RELIEF, CHARITABLE RELIEF.

8. As soon as a failure of crops appeared probable in the affected tract, orders were issued for the submission of special reports regarding the condition of the districts threatened. Conferences of district officers were held to consider details of the measures to be adopted and the policy to be pursued. Plans were sketched out as regards the works to be undertaken in case of necessity and details of other measures of relief were also settled.

9. Steps were taken to strengthen the permanent establishment wherever necessary. In order to ensure more efficient inspection of the affected tracts the ordinary charges of the táluka were split up into relief circles, and additional Circle Inspectors were entertained, and trained talátis and men with previous famine experience were selected for the work. Special relief aval-kárkuns were also employed to help the Mámlatdárs. Additional Assistant Collectors were posted to the Panch Maháls and Kaira districts as Personal Assistants to the Collectors. As a large number of village tank works had to be carried out in the Panch Maháls, a special officer was appointed for the acquisition of land in that district and two additional sub-treasuries were opened to facilitate payments on works. The office establishments of the Collectors and sub-divisional officers were strengthened where necessary, and relief was given to the táluka and sub-divisional officers by the appointment of special magistrates.

10. As the Gujarát districts are interlaced with Native State territories which were also affected, special measures were taken to guard the frontiers in order to prevent the in-roads of Bhils and other criminal tribes. Strong patrol parties were organised, an additional Assistant Superintendent of Police was entertained in the Panch Maháls and the assistance of the armed mounted police of the Kharághoda frontier was requisitioned.

11. As the season advanced and distress deepened, test works were opened in Ahmedabad, Kaira and the Panch Maháls. They were started in the last week of August 1911, but in the first two districts they failed to fill. In the Panch Maháls, on the other hand, the test works soon filled to overflowing and were converted into regular relief works after the declaration of famine on 1st October 1911.

12. The Kaira and the Panch Maháls districts being ordinarily in charge of one Executive Engineer, an additional Relief Executive Engineer and an additional Assistant Engineer were appointed to assist him in looking after the famine works in the Panch Maháls. The Executive Engineer, Gujarát Irrigation, was in charge of the irrigation works opened as relief works. Public Works subordinates, overseers, sub-overseers and charge officers for public works were appointed in accordance with the scale laid down in the famine Relief Code; and, as it was desirable to have experienced men for these posts, they were drawn from districts where no relief works were in progress.

13. A District Medical Officer was appointed for the Panch Maháls, and Sub-Assistant Surgeons were employed to watch the condition of the people, to afford relief at their homes and to hold charge of the dispensaries provided for the large relief works.

14. In Appendix 2 is given a statement showing the dates of the commencement and termination of the relief works carried out. The statement given below shows month by month the distribution of workers between village and public works :—

Month.	Number of works.			Workers.		
	Village.	Public.	Total.	On village works.	On public works.	Total.
October 1911	19	3	22	6,198	808	7,006
November "	21	8	29	7,621	10,619	18,240
December "	22	10	32	9,842	21,653	31,495
January 1912	18	17	35	10,062	26,018	36,080
February "	21	19	40	10,833	30,589	41,422
March "	18	22	40	8,283	36,557	44,840
April "	19	26	45	8,325	35,892	44,217
May "	26	21	47	7,712	30,684	38,396
June "	31	16	47	8,346	29,821	38,167
July "	31	14	45	8,270	21,138	29,408
August "	4	6	10	3,150	8,101	11,251

The population to be provided for belonged to wild and backward tribes for whom it has been recognised that village works are most suitable. Village works were accordingly from the first made the backbone of the system of relief. A number of such works were opened in each taluka, but, as the famine gradually became more acute and the attendance increased, groups of village works were replaced each by a big central work and other village works were opened in order to close up the gaps. Thus the number of village works remained more or less constant, while the increase in the number of workers was met by an increase in the number of public works. This policy was maintained until the approach of the monsoon, when it became advisable to replace some of the public works by village works.

15. All attempts to induce the workers to reside in camp at the public works proved abortive. They came to work from their villages every day, returning in the evening in the same way as on village works. The children and other dependants were not brought on the works and were relieved by the grant of dole in the villages. Other deviations from strict Famine Code practice that were necessitated by the fact that the people to be relieved belonged to wild jungle tribes were—

- (a) the reduction of the task by 25 per cent. on public works and on village works to the ordinary famine task ;
- (b) abandonment of the admission order system on village works ;
- (c) grant of gratuitous relief to dependants of workers employed on village works.

It is scarcely necessary to justify (a) and (b), while (c) was adopted because village works formed a very important factor in the relief operations, and a large number of people were maintained upon them throughout the famine. The system followed in granting dole to dependants of workers both on public and village works is explained under the head gratuitous relief.

16. Generally the workers did go to 90 to 100 per cent. of the reduced task. In the beginning, however, some of the Bhils seemed unable to do anything like the full task for metal breaking. To provide for such cases each gang was given metal breaking work for some days and earthwork for the rest of the week.

17. From the table in paragraph 14 it will be observed that the attendance on works went up steadily till the maximum was reached in the middle of March.

Thereafter the collection of *mhowra* and *timru* leaves drew off some of the workers, the hot weather affected the regularity of the attendance, while many had to take days off in order to prepare their lands for sowing. With the first fall of rain towards the middle of June 1912 the numbers on works began to decline more rapidly. A break in the rains at the end of June and beginning of July caused another rush on works, but a sufficient fall of rain put an end to all anxiety, and the works were completely closed from 31st August 1912.

18. The large public works were placed in charge of officers recruited from the Revenue Department. The village works were managed mostly by talátis selected for the purpose and were constantly supervised by superior officers of the Revenue Department. In places where literate persons could be found local committees were formed to supervise village works and the distribution of dole, the Committee usually consisting of the village patel, the local shopkeeper and the school master.

Gratuitous Relief.

19. Gratuitous relief at the expense of the State was given—

(a) in villages by cash or grain dole ;

(b) to a very limited extent on works to dependants of workers.

The numbers gratuitously relieved are shown in Appendix 5. Except in the Panch Maháls this form of relief was largely confined to provision for the village servants whom it was necessary to retain on duty in the villages, but dole was also extended to a small number of decrepit and infirm persons in the districts of Kaira, Poona and Ahmednagar. No poor-houses or village kitchens were opened in any of the districts.

20. In the Panch Maháls it was found necessary to make a deviation from the ordinary rule regarding the wives and children of village servants on dole. While a village servant was on duty, one member of the family had to remain at home to look after the children and cattle ; generally it was the wife who had to stay, and as her husband was given only the dependants' allowance they had not enough to live on. The result was that it was very difficult to get any village servant to consent to remain on duty, and in order not to dislocate the work in villages the dependants of the village servants were also placed on the dole lists.

21. The following further deviations from the ordinary rules of the Famine Relief Code were permitted.—The dependants of workers on public works were not relieved at the works but by grant of dole in their villages ; and similar provision was made for dependants of workers on village works, though under the rules they do not receive any allowance. All dependants as such were granted dole in the village, unless they actually resided at a public work according to the arrangement described below. At the end of each week each worker was given a card at a village work by the manager, or if at a public work by an officer specially deputed for the purpose, certifying that the worker was present for so many days at the work, and (in case of a public work) that during that time none of his dependants resided or were paid at the work. On production of this card the village officer granted dole to the true dependants of such worker (*i.e.*, the non-working children and others incapable of work and entirely dependant on him for support) for as many days (including rest day) as the card holder was present at the work in the preceding week. Every morning at roll-call the worker had to produce his card to be initialled by the mustering kárkun, and at the end of the week before signing the cards the manager or charge officer was required to test some of the entries. At the village the number of dependants was verified from a census previously taken of each household, and the names were entered, not in the ordinary dole list, but in a separate register which was carefully checked and scrutinized by the Circle Inspector and the Famine Aval Kárkun. The allowances were distributed in kind on the weekly rest day. No dole was, however, granted to the dependants of anyone working at a village work, if there was a public work within seven miles of the village of residence.

22. At one time some doubt was felt that the numbers on gratuitous relief in the Panch Maháls were excessive. After full enquiry Government were satisfied that in view of the peculiar circumstances of the district the relief granted was not unduly liberal. The explanation given by the district officers is printed as Appendix 3.

23. Extra remuneration was granted to a few village headmen whose emoluments together with their private means were found to be insufficient for their support.

Private Works.

24. Advantage was taken of the cheapness of labour, and many works were carried out by private persons from their own resources as well as with the aid of takávi. The Railway Companies laid in large stocks of ballast at various centres and the earthwork of two feeder branches was thrown up in the affected tracts, thus serving to relieve the pressure on Government works. Two manganese mines in the Panch Maháls also gave employment to a fair number of persons. Besides these, works for the improvement of existing and the construction of new wells were undertaken with the help of takávi advances, and these went a long way towards the relief of distress among both men and cattle.

Private Charity.

25. As in previous famines private charity to a large extent contributed towards the alleviation of distress which was outside the sphere of Government measures.

26. A Central Famine Relief Fund was started in the city of Bombay, and the Committee collected and distributed nearly Rs. 3½ lákhs, of which Rs. 1½ lákhs came from the Indian People's Famine Trust Fund, Calcutta. The allotments made from this fund to the several districts and Native States were as follows :—

	Rs.
Ahmedabad	67,000
Kaira	39,000
Panch Maháls	53,000
Broach	10,000
Ahmednagar	15,000
Native States	1,61,000
	3,45,000

Contributions to the amount of two lákhs of rupees were received from the Bombay Pinjrapole, the Native Piece-goods Merchants' Association, the Pearl Merchants' Scale Charities, and the Bombay Gaurakshak Mandali. The Trustees of the Wadia Charities voted Rs. one lách for grass and Rs. 78,000 were collected by the "Two-anna Famine Fund" started by the Sheriff of Bombay. A special cess was levied by the Grain Merchants' Association and the Condiment Merchants' Association on the goods sold, and the sum thus collected amounted to over Rs. 1¼ lákhs. In addition to these, funds were locally collected and donations of clothes and large quantities of grass were sent for free distribution.

27. The energies of the Charitable Committees were directed mainly to the preservation of agricultural cattle by means of cattle camps and kitchens and by providing supplies of fodder for issue free or at cheap rates. Part of the money was also spent on —

(a) distribution of clothing on relief works and in the villages to the recipients of gratuitous dole ;

(b) grant of maintenance allowances to poor but respectable persons whose pride or social position prevented them from coming on to relief works or accepting Government gratuitous relief ;

(c) grants of seed, cattle and agricultural implements free or at cheap rates to agriculturists to give them a fresh start in life after the distress had subsided ; and

(d) digging of temporary wells for the supply of drinking water.

In the Ahmedabad district a new departure was made in the utilization of these funds, which stimulated the flow of charity in the affected villages. The Collector's report on the working of what has been called the *dharmada* dole is quoted below :—

"Government dole and poor-houses have hitherto been the expedients, and it appeared, at the end of the cold weather, as if they would have to be resorted to ; for in many villages (all in the west of the district) there were children and adults who could not possibly keep themselves. To Mr. Bharucha, District Deputy Collector in charge of the worst affected part, belongs the credit of a most successful innovation known as the *dharmada* dole, which

was adopted all over the district. It consisted in the distribution of relief to these helpless persons at the cost, not of Government, but of the village communities backed up by the central charitable funds, the collection of which by committees formed at the head-quarters of each taluka was begun in September, when the sub-divisional officers went out into their charges. About four thousand persons were relieved in this way, by grain or cooked food and by clothing, and part of the funds subscribed was also utilized in helping destitute *pardanashin* women, and, in the District Deputy Collector's charge, in buying fodder for the cattle of the very poorest and in providing materials for destitute weavers. Apart from its practical results this system has taught the people a valuable lesson of self help, and it was possible only because, thanks to their improved resources and to timely help by Government, they were able to spare from their own meagrely-spread table a few crumbs for their even more unfortunate brethren in adversity."

A detailed description of the system adopted is given in Appendix 4.

VI.—STATISTICS AND COST OF RELIEF AND NATURE AND UTILITY OF FAMINE WORKS CONSTRUCTED WITH FAMINE LABOUR.

28. Appendix 5 gives the daily average numbers relieved in different ways month by month during the season under report. In Appendix 6 are given the daily average numbers of men, women and children among relief workers and their dependants and among persons gratuitously relieved in villages in the last week of each month. The following table gives the daily average numbers of relief workers and dependants and of persons gratuitously relieved in villages during each month. Their proportion to the total numbers is shown in block type:—

Month.	Daily average numbers of				Total.
	Workers.	Dependants.	Gratuitously relieved.		
			Destitutes.	Village servants.	
August 1911 ...	1,502	.....	.....	.....	1,502
September 1911 ...	2,173	.....	.....	.....	2,173
October " ...	7,006 71	99 1	2,440 28	313	9,858
November " ...	18,240 75	600 3	4,695 22	621	24,156
December " ...	31,495 61	890 2	18,335 37	837	51,557
January 1912 ...	36,080 62	467 1	18,887 37	2,569	58,003
February " ...	41,422 53	433 0.5	28,519 48.5	7,930	78,304
March " ...	44,840 45.5	546 0.5	44,783 54	7,699	97,868
April " ...	44,217 40.5	548 0.5	56,342 59	7,781	108,888
May " ...	38,396 384	625 0.6	51,862 61	9,246	100,129
June " ...	38,167 37	722 0.7	54,077 62.3	10,645	103,611
July " ...	29,408 32.6	424 0.4	48,184 67	10,908	88,924
August " ...	11,251 24	91 0.2	26,918 75.8	8,639	46,899
September " ...	.....	.....	5,866	6,739	12,605
October " ...	.....	.....	.....	736	736
November " ...	.....	.....	.....	488	488
December " ...	.....	.....	.....	115	115
Total average ...	20,252 44	320 1	21,230 55	4,427	46,229

29. Appendix 7 gives the direct expenditure on famine relief operations, and Appendix 8 the indirect expenditure under different classes. The total direct cost to Government on account of relief operations amounted to about Rs. 40 lakhs, to which may be added Rs. 12 lakhs on account of remissions of land revenue.

30. The incidence of the cost of relief in the Panch Maháls works out to—

Workers (per unit)	...	...	2 annas.
Gratuitously relieved (per unit)	...	...	7 pies.
Total cost (per unit)	...	...	1 anna 3 pies.

In the other districts there were no works, and gratuitous relief was confined mostly to the grant of dole to village servants, except in Kaira, Ahmednagar and Poona where a number of destitutes were relieved by State charity. The village servants were generally paid at the rate of Rs. 2 per month, and the average cost on account of the relief of the destitute works out to about the same as in the Panch Maháls.

31. Famine labour was employed on 116 large and small tanks, two canals, seventeen road and metal collection works, and five field embankment and terracing works. The tanks and canals are of undoubted utility, inasmuch as the large tanks and the canals will promote irrigation while the small ones have improved the water-supply of the neighbouring villages. The repairs to roads are an improvement to the communications of the district. The utility of the field embankment and terracing works remains to be tested, as it depends on the increased outturn of the fields in which these improvements were effected. Many works of this nature have been carefully surveyed and included in the famine programmes. In the Panch Maháls they proved unsuitable for famine relief purposes, as the private owners of the land objected to the works being carried out under the mistaken idea, which it was found impossible to remove, that the assessment would be raised after the improvements had been carried out. The works had therefore to be replaced by tank and road works.

VII.—INDIRECT RELIEF: THE SUSPENSIONS AND REMISSIONS OF LAND REVENUE AND OTHER DUES, LOANS AND ADVANCES.

32. Early in the season requisite action was taken for the suspension of land revenue and the grant of takávi advances on a liberal scale. Anna-valuations of the crops were made as expeditiously as possible, and remissions and suspensions declared before the first instalments fell due. The introduction of revised rates of assessment involving increases was generally postponed wherever it became due. The following statement gives the figures of suspensions and remissions granted during the period of famine:—

District.	Suspensions.	Remissions.
	Rs.	Rs.
Ahmedabad	13,22,157	1,36,112
Kaira	14,81,717	2,36,352
Panch Maháls	3,30,254	6,018
Broach	6,16,490	.....
Surat	1,70,674	.....
West Khándesh	4,97,045	4,744
Násik	1,93,782	1,94,040
Ahmednagar	7,80,846	2,41,639
Poona	5,90,626	1,76,736
Sholápur	4,26,355	1,24,440
Sátára	1,60,976	.....
Bijápur	2,45,553	4,896
Belgaum	2,91,076	9,769
Dhárwár	11,98,690	74,278
Total	83,06,241	12,09,024

33. In distributing takávi the main object kept in view was the preservation of agricultural cattle. Liberal advances were made for the purpose of stimulating the cultivation of fodder crops under wells, for the purchase of grass and for moving cattle to areas where grazing was available. When the next cultivating

season approached, advances were made for the purchase of seed and cattle, and loans for subsistence were made to some cultivators of the better class in the Panch Maháls and to the *maleks* in Kaira. In making advances the joint-bond system was extensively used, and the distribution was promptly and methodically carried out.

34. The amounts distributed under the two Acts are given below:—

District.	Under Land Improvement Loans Act.	Under Agriculturists' Loans Act.	Total.
	Rs.	Rs.	Rs.
Ahmedabad	3,27,402	24,40,872	27,68,274
Kaira	3,90,065	9,65,036	13,55,101
Panch Maháls	26,206	3,92,818	4,19,024
West Khándesh	34,215	75,648	1,09,863
Násik	19,066	29,362	48,428
Ahmednagar	77,960	76,369	1,54,329
Poona	45,000	47,146	92,146
Sholápur	97,295	1,31,879	2,29,174
Bijápur	71,958	53,840	1,25,798
Belgaum	86,996	37,032	1,24,028
Dhárwár	7,236	1,59,565	2,34,801
Total	12,51,399	44,09,567	56,60,966

35. Though the amounts advanced, especially in the affected districts of Gujarát were large, these loans were undoubtedly the most appropriate means of meeting the situation. Their importance is illustrated by the following quotation from the report of the Collector of Ahmedabad:—

“The figures of advances made during the year constitute a record for the district, and exceed twice the amount of the year's Land Revenue which was suspended. They represent the principal weapon with which the famine of 1911-12 was fought and defeated. Of the 27½ lakhs of rupees advanced one-third was on account of fodder supplied from our grass depôts or through authorised private importers, and the remainder was fairly equally distributed over—

- (a) the purchase of well-gear and seed for raising irrigated crops ;
- (b) the construction of new or the renovation of old wells ;
- (c) the exportation of cattle and miscellaneous purposes ; and
- (d) the purchase of new cattle and seed for monsoon crops at the end of the famine.

Not a pie was given for 'maintenance' ; this was clamoured for as necessary at the beginning and quite comfortably done without when it was announced that no application of the kind would be entertained. This year's takávi was takávi in the true sense of the word, *viz.*, a loan which supports the industrious, not the idle, rayat in, and helps him to tide over, the time of trouble. There were no idle rayats, and the State support, conditional on hard work, was accepted and utilized to the full by enterprising Pátidár, industrious but improvident Koli and ease-loving Girássia alike ; more than that it was available, for the first time, to the Rabári, to the 'Ubhadia' or landless agricultural labourer, to the Dhed, to the very sweeper himself if he only set about digging a water hole and raising a couple of gunthas of jowári in the village tank : it was advanced not to particular individuals, but to the village community as a whole on its joint responsibility and to such extent, within reasonable limits, as the community itself decided. The system by which this expansion of the power of takávi to reach the most needy was brought about was at the same time the only one under which the work of distributing such enormous sums, whether in cash or in the shape of grass, to such vast numbers of people could have been accomplished : it was that of the Joint Bond. The whole village appears on a day fixed beforehand, binds itself, almost as a body corporate might, for the proper utilization and repayment of the advance which it recommends to be made to its members, and the thing is done. Four turns on an average were given to each village : the first for late irrigated jowári, the second for rabi, the third for hot weather jowári and the last for monsoon sowings, and in most cases cash and grass were advanced on the same occasions.”

"Our supplies of imported fodder were bound to be inadequate, especially until forest grass could be expected in November; and the half crore of lbs. of last season's grass, which we were able to get up on our own account and to distribute between August and November, was given only to those who would agree to use it to feed their bullocks while working on wells. Everyone agreed, and not only agreed but carried out the agreement, being assisted by us in every possible way. The use of Government land and Government water was notified as available free of charge for raising fodder crops, and cash takávi was liberally advanced for the digging of new and the repairing of old wells, for the construction of hand lifts and for the purchase of well-gear and seed. Never did official ideas and popular inclination march so well together. By the end of September I was able to report on the almost marvellous way in which the rayat had risen to the occasion and how the country side was dotted with green oases of jowári; by November this was feeding not only the animals which had raised it and their owners, who by this time were busy raising a winter crop of wheat or barley, but not a few of the domestic milch-cattle as well. In the hot weather yet a third crop was yielded to many a cultivator, who, had we not begun early, would have had neither well nor crop nor cattle in existence. The figures of this and last years' crops irrigated from wells are 96,716 acres and 44,955 acres respectively, out of which the Viramgám taluka shows a remarkable rise of from 2,200 to 12,800 acres."

36. In the districts of Sholápur and Bijápur small loans were granted on proper security to weavers to enable them to purchase materials for their work as the sávkárs had ceased to give them credit. The number of weavers thus relieved were twelve in Sholápur and 86 in Bijápur. This assistance enabled the weavers to tide over a period during which there was no market for their wares and their credit was exhausted.

VIII.—FOOD STOCKS, TRADE AND PRICES AND THE EFFECT OF HIGH PRICES ON CRIME.

37. As all the affected districts had enjoyed good harvests in the preceding year, and in some of them there had been two good seasons in succession—the local stocks of grain at the beginning of the year were ample for the time being, though later on import from outside the Presidency was required. From the worst affected district, the Panch Maháls, it is reported that grain which had been lying in the godowns for a number of years was put on the market, and the town of Dohad is said to have supplied grain to the surrounding Native States. Of late years highly paying crops like cotton have displaced food-grains to a considerable extent, with the result that the actual stocks of grain which cultivators keep with themselves are less than they used to be.

38. It will be seen from the following figures of the exports and imports of food-grains for the year ending 31st March 1912 that the import trade was brisk compared with the preceding year, and during the latter part of the season, *i.e.*, after March onwards, the imports must have exceeded the exports to a still greater degree :—

Blocks.	Exports.		Imports.	
	1910-11.	1911-12.	1910-11.	1911-12.
	In thousands of maunds.			
Gujarát and Káthiáwár ...	51	33	11,53	16,04
Konkan ...	10	8	2,81	3,27
North Deccan ...	65	44	3,03	2,97
East " ...	2,54	2,29	1,47	97
West " ...	13	5	11,39	9,24
S. M. Country ...	1,36	1,59	8,14	4,85
Goa ...	.....	18	84	58
Bombay Port ...	8,43	2,96	19,48	22,46
Total ...	13,72	7,92	58,69	60,38

39. Appendix 9 shows the prices of staple food-grains at the head-quarters of the affected districts, as compared with the normal. They were well above normal when the season commenced, and were forced to a higher level when it became evident that the kharif rains would be a failure over a large tract of country. After easing off very slightly in the cold weather, they again rose till the highest point was reached in June. In the worst affected districts the rates were at times more than double the normal and approached the high level prevailing in the widespread famine of 1899-1900.

40. Notwithstanding the high prices and consequent distress there was on the whole no marked increase in crime. In the worst affected district, the Panch Maháls, no serious offences attributable to famine occurred. There was a net increase of 130 cases as compared with the preceding year, chiefly under the heads theft, house-breaking, killing animals and grievous hurt; but, as the Collector remarks, it is very probable that, on account of the increased police staff and their constant touring, information was supplied of thefts which in ordinary years would not have come to notice.

IX.—THE PUBLIC HEALTH AND THE MORTALITY OF THE FAMINE PERIOD.

41. The public health of the affected districts was on the whole good. No cases of emaciation or starvation were reported. In Appendix 10 is given a comparative statement showing the total deaths and the death-rate *per mille* from all causes and the mean of the previous five years. Side by side are given similar figures exclusive of plague, and the quinquennial mean of the years 1907—1911.

42. The figures show little variation from the normal in the Gujarát districts but a considerable increase in the districts of the Deccan and Southern Marátha Country. There was no marked rise till towards the end of the hot weather and beginning of the rains. The Deccan and Karnátak districts were visited by a severe epidemic of cholera during April and May, which did not subside till the end of August, while in Gujarát fevers, which were prevalent to a great extent in the months of August and September, helped to swell the general mortality. Of the total deaths (350,196) in the ten districts during the thirteen months, plague and cholera were responsible for 43,842 and 33,647 deaths respectively.

X.—IMMIGRATION AND EMIGRATION.

43. Immigration from outside the Presidency was almost *nil*, except that in the Panch Maháls some labourers from the adjoining Native States were seen on the relief works. Emigration from the Gujarát districts was also on an insignificant scale.

XI.—WATER AND FODDER-SUPPLY AND THE PRESERVATION OF CATTLE.

(i) *Water-supply.*

44. As in former famines the scarcity of water presented great difficulty. The rainfall in some districts was so scanty that wells with a perennial supply began to run dry, and almost all tanks were empty throughout the whole season. Every effort was made to improve the water-supply, and very early steps were taken for the erection of temporary dams in streams, digging of temporary wells and water pits, clearing and deepening of existing wells and removing silt from tanks. In the Gujarát districts jumping bars and boring machines were utilized for tapping subterranean supplies with satisfactory results, the number of wells dug successfully being 61 (out of 89 attempted) in Ahmedabad, 54 (out of 89) in Kaira and 32 (out of 58) in the Panch Maháls. In addition to these, *kacha* wells were dug everywhere in the affected districts, no less than 792 being dug in the Panch Maháls alone. In the same district about 500 existing wells were

either cleaned or deepened. The amounts sanctioned by Government for the improvement of water-supply in the several districts are given below :—

			Rs.
Kaira	...	...	30,000
Panch Maháls	...	..	58,000
Broach	...	...	34,000
East Khándesh	...	...	12,000
West Khándesh	...	...	2,000
Násik	...	...	10,500
Ahmednagar	...	...	15,000
Sholápur	...	...	15,000
Dhárwár	...	...	10,000
Kánara	...	...	1,000
Total	...	...	<u>1,87,500</u>

(ii) *Fodder-supply and preservation of cattle.*

45. The most serious feature of this famine, however, lay in the very serious dearth of fodder and the enormous rise in its price. The British districts and Native States of Gujarát were involved in a fodder famine as acute as in 1899-1900. The following account given by the Collector of Ahmedabad illustrates the severity of the strain :—

“Everything available in the district itself which was capable of being fed to cattle was utilized to the full. Prominent among these emergency fodders was the root called *bid*, found in abundance this year in the dried-up bed of the Nal, and pounded and used as food both for cattle and for human beings. Its collection and sale gave employment throughout the season to many hundreds of the poorest people in the Nal Kantha villages, and *takávi* was advanced for its purchase for fodder purposes. Equally important was *tammar*, *i.e.*, the leaves of the mangrove bushes growing in abundance on the flats of Dhandhuka below high water mark. It served the cattle for miles round and they appeared almost to thrive on it. The extensive Khars or salt waste lands in the southern reaches of the Bhál usually produce coarse grass, despised and left to rot in ordinary times, but this year last season's dry remains were gathered by the local villagers, formed into large stacks and sold to cattle owners in the interior. Leaves, especially those of the *khijda*, *khakhra* and *bordi* trees were everywhere utilized, while *nimb*, Babul and Mahuda leaves were on occasion pressed into service. Even *juvasa*, a rank thorny weed which grows in the Bhál, was crushed and used as fodder; but prickly-pear does not appear to have been tried to any extent; leaf fodder was chiefly given to buffaloes, which are less particular in their diet than cows or bullocks, but a good many of the latter had perforce to make common cause with their less epicurean fellows.”

46. The measures adopted for the preservation of cattle consisted in throwing open forests for free grazing, granting permission to cut grass from closed forest areas, importing grass by Government agency, deporting cattle to forests for grazing under the supervision of Government officers and feeding cattle in what were termed “Cattle kitchens”. In the Gujarát districts, as has already been mentioned, strenuous efforts were made to grow under wells as large an area of fodder crops as possible.

47. The importation of Government grass was carried out under the general supervision of the Conservator of Forests, Central Circle. In Appendix 11 will be found the report of that officer on the work done during the season. The total quantity of grass obtained amounted to 865 lákhs of lb., and its distribution is shown below :—

Supplied to.	From the Northern Circle.	From the Central Circle.	From the Southern Circle.	From the Central Provinces.	Total.
	Lákhs of lb.	Lákhs of lb.	Lákhs of lb.	Lákhs of lb.	Lákhs of lb.
Ahmedabad	164½	73½	...	130½	368½
Kaira ... ..	...	137	...	19	156
Panch Maháls	109½	...	...	4	113½
West Khándesh ... ..	...	47½	...	...	47½
Ahmednagar	5	...	...	11	16
Poona	15	2½	...	...	17½
Sholápur ... ..	...	2	...	...	2
Bijápur	23½	...	½	...	24½
Belgaum ... ..	...	...	30½	...	30½
Mahi Kántha ... ..	...	...	...	22½	22½
Rádhanpur ... ..	...	16½	...	...	16½
Pálanpur ... ..	...	½	...	...	½
Baroda	½	...	...	...	½
Military Farms	44	½	...	...	44½
(Not despatched)	2	...	...	3	5
Total	364	280	31	190	865

About one-third of the Government grass obtained from forests in the Presidency was collected departmentally, and the rest, together with the bulk of the supplies from the Central Provinces grass, was obtained through contractors. In addition to this the district officers made their own arrangements to get grass either locally or from outside. The quantities thus obtained are shown below :—

	Lákhs of lb.
The Collector of Ahmedabad ...	250
The Collector of Kaira ...	104
The Collector of the Panch Maháls ...	140½
The Collector of Násik ...	4
The Tálukdári Settlement Officer ...	41½
	<hr/> 540

Thus the total quantity of grass obtained by Government agency amounted to 14 crore lb. or over 58,000 tons, as compared with 8 crores of lb. in the great famine of 1899-1900. For the storage and sale of this grass depôts were established at convenient places with an adequate establishment of depôt-keepers and watchmen. The average cost of the grass supplied by the Forest Department came to about Rs. 11 per 1,000 lbs., while the sale price was fixed at Rs. 12 per 1,000 lbs. for the Gujarát districts and Rs. 10 for the Deccan. The grass obtained by the district officers was disposed of at prices sufficient to cover the cost of purchase and transport to the district. The grass was mostly given as takávi to genuine cultivators, while to others it was sold for cash.

48. Besides the grass distributed by Government agency, large quantities were supplied by various charitable funds. The approximate amounts supplied by the Bombay Central Famine Relief Fund and the Wádia Charities are shown below :—

	Lákhs of lb.
Ahmedabad	27½
Kaira	68
Panch Maháls	20
Broach	1
Ahmednagar	5½
Rewa Kántha	7½
Mahi Kántha	33
Pálanpur	1½
Káthiáwár	182
Cutch	1½
Undefined (mostly Gujarát)	14½
	<hr/> 361½

The arrangements made by the Bombay Central Famine Relief Fund under the direction of the Secretary, Mr. Purshottámdas Thákurdas, were thorough and efficient to a degree. A close touch was kept with the needs of every district, information was collected as to the supplies of fodder available, and agents were employed to purchase and despatch grass not only on behalf of the fund but for Collectors who were buying departmentally. An account of the operations is given in Appendix 12.

49. Private enterprise for the importation of grass was active, and the trade was greatly stimulated by the specially reduced railway rates sanctioned for the carriage of fodder. About Rs. 17 lákhs had to be paid to the several Railway Companies on account of the difference between the reduced rates fixed by the Companies and the still lower rates actually recovered from the traders, Government officers and the agents of charitable funds. This amount was paid in respect of freight on 6,373,817 maunds or about 5,258 lákhs of pounds of grass. Deducting 1,405 lákhs lb. imported on behalf of Government and 361 lákhs lb. imported by charitable agencies, the balance moved by private traders into the affected districts amounts to 3,492 lákhs of lb.

50. The carriage of fodder to the affected districts was greatly hampered by difficulties of transport on the Railways, chief amongst which was the shortage of rolling stock. Other minor difficulties also intervened, such as the scarcity of water available for the engines along the Godhrá-Rutlam section, while there was some loss of energy on account of cross bookings and because each district attempted to make provision for its own requirements instead of the arrangements for supply and transport having been placed under one centralised control.

51. Exportation of cattle was begun at an early stage by the Rabáris and Bharvads of their own accord in the Gujarát districts. In most cases they migrated on foot, and the bulk of them found their way to the jungles of Songad, Vyára and Rájpipla. The results were not encouraging: the cowherds fell sick with malaria, and the cattle suffered from neglect and unaccustomed surroundings and diet; in many cases the owners started to bring back their animals almost as soon as they had reached their destinations, and in not a few they left them in charge of local residents or of no one at all and came home alone. The cattle and men, on their return, generally presented a pitiable appearance. In October arrangements were made by the Collector of Ahmedabad for exporting cattle to the Dangs, where they were to be grazed under arrangements made with the Collector of Surat. Owners were persuaded only with considerable difficulty to send their cattle. Confidence was however at length created, so much so that, when the second special train was about to leave Viramgám it was found that villagers whose cattle were not booked to go till a week or so later had arrived at the Railway station early in the morning and loaded up their animals in trucks reserved for others. Five thousand six hundred cattle in all were sent, the expenses being advanced as takávi. Their owners brought them back before they should have done so, but according to their own showing 43 per cent. got home safely and were in good condition at the beginning of the monsoon. The figure is not improbably an under-estimate due to the hope that takávi advanced for cattle which died would be remitted. It is known that many Rabáris sold animals before they reached the Dangs: these were not always their own property and they are doubtless accounted for as dead. The total cost debited as takávi worked out to about Rs. 4 per head of the cattle sent, including outward freight, feeding *en route* from the detraining station to the Dangs and grazing fees. The weak point in the operations was the impossibility of controlling the movements of the cattle and of preventing them from leaving the Dangs to graze on jowári stubble in the plains, instead of staying where they were intended to stay and being fed on cut grass in the hot weather months as it had been arranged for them to do. The Collector of Surat complained of the untractability of the Rabáris and the way in which they neglected their animals. There can be no doubt that had they been more amenable to control the percentage saved would have been far greater.

52. Deportation of cattle on a larger scale to the Gir was organised by the Tálukdári Settlement Officer. The cattle deported were drawn entirely from the Ahmedabad district. They included 9,862 head from tálukdári and 3,156 head

from Government villages, making a total of 13,018 belonging to 8,805 different owners. To these were added 709 'charity' cattle, which were sent to the Gir, bringing the total number of cattle handled in the Gir to 13,727. A grazing reserve was obtained in the Gir jungles of the Junágadh State, and the operations in the Gir itself were under the charge of Mr. L. H. Barford of the Salt Department, who was placed on special duty for the purpose. The operations included the collection of cattle from a large area, their concentration at distant entraining stations by selected routes which had to be provided with facilities for feeding and watering, entrainment, detrainment, a march through 40 to 60 miles of foreign territory and the improvising of all resources including a water-supply in the heart of a primeval jungle.

53. The total cost of maintaining the cattle for six months amounted to Rs. 2,38,033, plus Rs. 39,426 for the upkeep of the charity cattle. This covered the transportation of the cattle by rail to the Gir and back, the creation of a water-supply by blasting rock-wells with gelignite, the purchase of 112 lakhs of lb. of cut grass and 31,306 lb. of concentrated food, maintaining a staff that rose to over 700 units and other petty items. The total expenditure per head of cattle works out to only Rs. 18-4-7.

54. The number of cattle that returned from the Gir was slightly over 50 per cent. of those deported. Not more than 10 per cent. of the loss can be described as legitimate, 40 per cent. was due in about equal degrees to two causes—the inclusion of some 20 per cent. of old and decrepit animals that nothing could save, and the loss of some 20 per cent. of the weaker animals owing to the scanty and inferior grazing available in the Gir in March, combined with the inability of the Junágadh State to deliver in time or in full the cut grass which should have taken the place of the exhausted grazing. With the experience gained in the Gir deportation operations there is no reason why 90 per cent. of the cattle should not be saved in future. In spite of the difficulty caused by the partial break-down of the Junágadh State's arrangement for supplying cut grass, villages which sent really good cattle (cultivators' cattle, not the hardier breed of graziers' herds) received back 80 per cent. to 100 per cent. Among villages which sent considerable numbers the following may be noted :—

Modhwana sent 55 head and received back 52, *i. e.*, 94.5 per cent.

Ukerdi sent 211 head and received back 192, *i. e.*, 91 per cent.

Dhanala sent 86 head and received back 73, *i. e.*, 84.9 per cent.

The percentages in many other villages range from 80 to 100. If all the villages had sent the same class of cattle, the results would have been equally good. The people have now gained confidence, and it is expected that in future will be more ready to deport good cattle.

55. The value of the deportation operations lay quite as much in the numbers which were saved in the home district by the fodder which was rendered available for them by the absence of the deportees as in the number of cattle successfully brought back. The 8,800 cultivators, who sent away three head on the average to every two owners, were practically all small men with four or five animals apiece. They could not possibly have saved all these at home, and religious and sentimental considerations forbade the destruction of the less valuable animals, which would have continued to exhaust the fodder-supply to the eventual starvation of themselves and the other cattle. Deportation took the place of destruction, and the 13,727 head deported saved an equal or larger number of more valuable cattle which were kept at home. The cost of deportation, a little over Rs. 3 a month, makes it possible to save average cattle of the value of about Rs. 50 a head, which would not be worth saving at a cost of Rs. 8 to Rs. 10 a month in the home village when grass costs Rs. 20 to Rs. 30 a thousand pounds. A detailed report of the operations will be found in Appendix 13.

56. The Ahmedabad Famine Charitable Committee devised a system of cattle kitchens the main feature of which was that, while food was supplied free, the owners themselves or their servants fed and tended the cattle under the expert supervision of Government veterinary officers. The system is more fully described

in Appendix 14. Six kitchens were opened in Ahmedabad to which 5,281 animals were admitted, and 5,253 were preserved at an average monthly cost of Rs. 6-6-0 per head. The advantages claimed for the system were economy and efficiency; the first, because practically no expensive staff had to be entertained, and the second and the most important, because cattle were better tended by their owners than they would have been by any hired agency. In making selection for admission attention was paid to the need of the owner and to the quality of the animal, only animals of good class and worth saving being admitted.

57. About 1,400 animals were relieved in the three kitchens established on the same lines in the Kaira district. In the Panch Maháls the kitchens did not find so much favour. In his report the Collector states :—

“ At first I intended to adopt this system in this district. But from actual experience we found it impossible to enforce the third condition, *viz.*, to keep the animals in charge of the owners or other interested persons. It is to be remembered that in Ahmedabad district there was no human distress, and the people were not driven to the end of their resources. So they were able to pay the persons in whose charge their cattle were kept, or could reside at the kitchens themselves. But in this district the circumstances were different. The people are mostly poor and had no resources to fall back upon. The large attendance on our works amply proves that they were in want of maintenance. It was, therefore, utterly useless to expect them to make their own arrangements to look after the cattle at a distance from their homes. Those who were too poor to keep their cattle alive were bound to go to work themselves for their maintenance. Again we found it impossible to persuade people, even in order to save their cattle, to leave their homes, and go and reside near the camp. We had therefore perforce to give up the idea of kitchens and turn them into camps.”

In that district six cattle camps were opened in which only selected animals were admitted. Some 2,250 animals were kept alive in these institutions at a cost of Rs. 19,910. The camps were managed by private agency under official control, and most of them were financed from private charity. In Appendix 15 is given a statement showing the working of these camps.

58. It was unfortunate that when the Presidency was emerging from the effects of the disastrous famine of 1899-1900, a fodder-famine of almost unequalled severity should have supervened. The last general cattle census was taken in October 1909, and the next will not take place till 1914. It is not therefore possible to specify with any certainty the diminution that has taken place during the famine under report. It may be noted, however, that in Ahmedabad a census taken after the famine had ended, disclosed contrary to expectation an increase of about one-quarter of a lách over the figures of 1909. Every effort was made to save the fittest, and it is generally reported that working bullocks were throughout in good condition. One indirect proof of the increased mortality in the Presidency will be found from the comparison of the figures of hides, skins and horns exported during the years 1910-11 and 1911-12 :—

	1910-11.	1911-12.
	<i>In Maunds.</i>	
Hides and skins of—		
(a) Cattle	10,983	41,391
(b) Sheep and other animals	103,318	119,628
Horns	112	377

The figures are up to the end of March 1912 and consequently do not cover the whole period of the famine.

59. The cultivators were fully alive to the necessity of replacing the animals which they lost, and they were assisted in the matter from takávi funds and also under a scheme devised by the Tálukdári Settlement Officer, who with the aid of Rs. 30,500, provided by the Committee of the Bombay Central Famine Relief Fund and others, bought cattle while prices were low, and after maintaining them

through the hot weather distributed them free of charge, except actual cost of maintenance, to deserving cultivators who had lost their animals in the Gir. About half of the 'charity cattle' were deported to the Gir, and the rest were kept in a special cattle camp erected on the banks of the Sábarmati at Ahmedabad. 1,182 head representing 88·4 per cent. were saved. The average cost of purchase was Rs. 23 per head, and that of maintenance Rs. 29-7-10. The average value at current rates after the fodder-famine was nearly Rs. 70 per head. The net profit made by these operations on the charity money, before it reached the cultivators in the shape of cattle, was Rs. 10,000 which, being realized in some four months, represents nearly 100 per cent. per annum. The recipients will have to repay Government the cost of their upkeep only in easy instalments as a takávi debt.

XII.—INFLUENCE OF RAILWAYS AND IRRIGATION WORKS IN THE MITIGATION OF DISTRESS.

60. All the affected districts are well served by railways: the Gujarát districts by the B. B. and C. I. Railway and its branches, and the Deccan and Karnátak districts by the G. I. P. and Madras and Southern Marátha Railway systems. These lines were of great value for the transport of grain and fodder and also in facilitating migration.

61. In Gujarát the irrigation works are on a small scale, and are of little use in a year of short rainfall. The Khari cut system remained dry throughout and the Hathmati canal was able to serve only three villages. The Deccan benefited by the new Godavari canals in addition to the help afforded by the older canals, such as the Mutha and Nira systems.

XIII.—GENERAL REMARKS.

62. The provisions of the Famine Code were on the whole found to be suitable. The deviations that had to be permitted have already been described.

63. The measures of relief adopted were timely, adequate and successful. Every effort was made to provide work wherever there was a demand for it, and gratuitous relief was provided for those who really needed it. The liberal aid given in the shape of takávi and suspensions and remissions of land revenue was highly appreciated by the cultivating classes, and, while to a great extent relieving Government of the necessity of employing the machinery of the Famine Code, prevented any marked deterioration in the condition of the cultivators. Demand for labour in industrial centres, with the attraction of high wages, has continued to stimulate emigration, and to make the people more and more self-reliant.

64. The position is appropriately summed up in the following quotation from the report of the Collector of Ahmedabad :—

"There was a complete failure of the monsoon, which would, a few years ago, have meant famine in the sense ordinarily understood; by a happy combination of public enterprise and official policy, the calamity was tided over with scarcely any suffering on the part of the people and at a cost to the exchequer which, except for the losses which may have been incurred over grass supplied from Government sources and provided the takávi advanced is recovered, is nominal only. The rest was done by the people themselves, led and assisted by the responsible officers of Government, and by charity organised both from within and from without."

As to the future outlook the rainfall of 1912 was good except in some parts of the Deccan, especially Ahmednagar. In this district as well as in parts of Poona and Sholápur it has been found necessary to continue relief measures during the current season.

I have the honour to be,
Sir,
Your most obedient servant,
G. CARMICHAEL,
Chief Secretary to Government.

APPENDIX 1.

(Referred to in paragraph 3 of the Report.)

Statement showing the rainfall in inches of the season of 1911, compared with the average.

District and Station.				June.	July.	August.	September.	October.	November.
<i>Ahmedabad.</i>									
Daskroi	...	...	1911	4.16	2.96	1.57	0.89	...	...
			Average	4.56	10.84	8.58	6.31	0.51	0.23
Parántij	...	...	1911	2.24	0.82	2.42	1.06	...	...
			Average	5.45	12.26	8.63	5.59	0.25	0.21
Viramgám	...	...	1911	1.93	0.32	0.07	2.24	...	...
			Average	3.98	9.59	7.58	5.71	0.18	0.43
<i>Kaira.</i>									
Kaira	...	...	1911	8.94	0.99	0.71	2.94	...	0.11
			Average	4.28	11.71	9.42	6.21	0.62	0.28
Nadiád	...	...	1911	7.83	1.27	0.89	1.31	...	0.23
			Average	5.81	12.08	11.60	6.78	0.77	0.25
Thásra	...	...	1911	4.89	0.80	2.66	0.53	...	...
			Average	5.68	11.98	9.23	6.14	0.58	0.12
<i>Panch Maháls.</i>									
Godhra	...	...	1911	3.31	0.90	1.59	0.84	0.01	0.03
			Average	5.79	13.51	10.58	6.91	0.63	0.12
Hálol	...	...	1911	4.67	3.33	1.12	1.38	...	0.02
			Average	5.54	14.64	11.49	7.67	0.96	0.11
Jambughoda	...	...	1911	8.21	3.60	2.35	1.66	...	...
			Average	6.96	16.82	12.14	6.38	0.99	0.16
<i>West Khándesh.</i>									
Dhulia	...	...	1911	1.28	1.73	1.27	0.13	0.01	3.42
			Average	3.90	5.77	3.97	6.28	1.19	0.74
Sákrí	...	...	1911	4.03	1.62	1.76	0.16	0.38	1.03
			Average	4.87	5.70	3.19	4.40	1.53	0.37
Sindkheda	...	...	1911	3.69	2.87	1.46	0.94	...	0.78
			Average	4.31	6.01	4.25	5.04	1.44	0.27
<i>Násik.</i>									
Násik	...	...	1911	5.09	2.12	5.66	0.61	2.74	2.14
			Average	6.30	8.82	4.74	5.84	1.83	0.23
Niphád	...	...	1911	3.88	1.39	3.47	0.12	...	1.55
			Average	5.18	5.59	2.90	6.19	1.35	0.37
Báglán	...	...	1911	2.97	4.69	1.96	0.06	0.03	1.31
			Average	4.49	4.64	2.76	4.51	1.67	0.41
<i>Ahmednagar.</i>									
Ahmednagar	...	...	1911	2.24	9.96	2.99	0.49	0.02	1.63
			Average	5.84	3.14	2.06	7.12	2.00	0.41
Shrigonda	...	...	1911	4.99	3.47	1.54	0.02	...	0.44
			Average	3.75	2.15	1.27	6.15	2.25	0.63
Karjat	...	...	1911	3.20	3.53	1.61	0.25	0.09	0.79
			Average	3.67	2.21	2.07	7.16	1.70	0.70

APPENDIX 1—continued.

District and Station.				June.	July.	August.	September.	October.	November.
<i>Poona.</i>									
Poona	...	...	{ 1911	5'96	1'26	7'04	0'14	0'25	2'50
			{ Average	6'02	8'53	4'77	4'33	5'13	0'48
Dhond	...	...	{ 1911	1'79	2'55	2'03	1'81	0'14	0'91
			{ Average	3'79	2'87	1'43	5'99	2'43	0'83
Indápur	...	...	{ 1911	1'49	5'20	2'42	0'74	1'45	0'27
			{ Average	2'89	2'06	1'72	6'93	2'86	0'76
<i>Sholápur.</i>									
Sholápur	...	...	{ 1911	3'85	6'26	4'89	2'03	0'22	0'24
			{ Average	4'36	3'41	3'11	8'61	3'01	0'89
Karmála	...	...	{ 1911	1'13	3'02	1'29	0'13	0'40	0'80
			{ Average	3'92	2'51	2'71	8'39	2'40	0'99
Málsiras	...	...	{ 1911	2'38	4'79	1'46	0'51	1'23	0'76
			{ Average	3'08	2'56	2'13	7'22	3'64	0'64
<i>Bijápur.</i>									
Bijápur	...	...	{ 1911	1'79	5'44	1'11	0'86	1'73	0'22
			{ Average	4'35	2'18	2'12	6'84	3'78	0'99
Indi	...	...	{ 1911	0'39	5'28	2'05	4'87	3'12	0'14
			{ Average	3'39	2'87	3'11	7'18	4'39	0'73
Bilgi	...	...	{ 1911	4'52	2'42	0'28	0'96	2'72	...
			{ Average	4'40	1'53	2'10	6'59	4'10	0'77
<i>Belgaum.</i>									
Belgaum	...	...	{ 1911	9'84	9'01	10'34	1'60	5'61	0'34
			{ Average	9'72	14'32	9'36	5'46	5'29	1'33
Gokák	...	...	{ 1911	1'48	2'98	1'66	2'96	2'44	0'39
			{ Average	4'42	2'20	2'06	3'46	5'90	0'94
Athni	...	...	{ 1911	2'56	4'21	1'42	0'28	4'45	0'13
			{ Average	2'86	2'22	2'09	5'29	4'63	0'54
<i>Dhárwár.</i>									
Dhárwár	...	...	{ 1911	2'80	5'19	2'84	1'36	7'13	0'03
			{ Average	5'88	6'00	3'94	4'67	5'28	0'80
Karajgi	...	...	{ 1911	4'77	2'44	2'59	1'07	4'19	...
			{ Average	5'08	4'75	3'87	3'99	5'68	0'97
Nargund	...	...	{ 1911	2'32	4'58	0'12	2'80	3'08	0'33
			{ Average	3'39	1'72	2'84	5'87	5'02	0'81

APPENDIX 2.

(Referred to in paragraph 14 of the Report)

List of famine relief works in the Panch Mahals District carried out during the famine of 1911-12 with the dates of their commencement and closure.

Serial No.	Name of Work.	Date of commencement.	Date of closure.	Serial No.	Name of Work.	Date of commencement.	Date of closure.
GODHRA TALUKA.				KALOL TALUKA—contd.			
VILLAGE WORKS—TANKS.				VILLAGE WORKS—TANKS—contd.			
1	Bakhar	11-8-1911	21-10-1911	55	Delol	21-6-1912	31-7-1912
2	Sampá	{ 3-9-1911 2-4-1912	{ 9-11-1911 2-7-1912	56	Delol	1-8-1912	17-8-1912
3	Bodidra Bujrag	4-10-1911	9-11-1911	57	Rohen	8-7-1912	17-8-1912
4	Khanpur	4-10-1911	6-11-1911	58	Kanpur	12-6-1912	17-8-1912
5	Nadisar	5-10-1911	1-3-1912	PUBLIC WORKS.			
6	Mehtral	{ 5-10-1911 30-1-1912	{ 13-11-1911 6-3-1912	59	Pingli Tank	14-2-1912	21-6-1912
7	Mahulia	{ 7-11-1911 11-7-1912	{ 8-1-1912 20-7-1912	60	Derol-Pandu Road	4-3-1912	10-8-1912
8	Dhayka	7-11-1911	15-1-1912	61	Improvements to Kamalia Tank at Satamna	15-1-1912	1-6-1912
9	Rasulpur	{ 11-11-1911 7-5-1912	{ 29-1-1912 17-8-1912	HALOL TALUKA.			
10	Sajivav	13-11-1911	18-12-1911	VILLAGE WORKS—TANKS.			
11	Ratanpur Relia	{ 13-11-1911 30-5-1912 15-7-1912 4-8-1912	{ 15-1-1912 13-7-1912 27-7-1912	62	Tarkhanda	11-8-1911	6-9-1911
12	Bhadrala	{ 11-1-1912 13-3-1912	{ 31-1-1912 17-8-1912	63	Dharola	{ 8-10-1911 17-6-1912	{ 14-12-1911 18-7-1912
13	Timba	29-1-1912	27-4-1912	64	Muswád	8-10-1911	3-1-1912
14	Wandeli	29-1-1912	5-3-1912	65	Ghansar	15-12-1911	10-2-1912
15	Wansdelia	29-1-1912	8-3-1912	66	Varasda	4-1-1912	24-2-1912
16	Achhala	27-3-1912	10-7-1912	67	Gajápára	{ 12-2-1912 24-6-1912	{ 8-4-1912 20-7-1912
17	Godhra	1-4-1912	2-5-1912	68	Sathrota	25-2-1912	15-6-1912
18	Dhanitra	29-4-1912	17-8-1912	69	Kharakuwa	9-4-1912	15-6-1912
19	Vavdi Bujrag	11-7-1912	17-8-1912	70	Vav and Vinjo	10-6-1912	10-8-1912
20	Vaghjipur	1-7-1912	17-8-1912	71	Udiania Tank, Rameshra	1-4-1912	8-6-1912
21	Náda	11-7-1912	17-8-1912	72	Nawaria	19-6-1912	17-8-1912
22	Asardi	14-7-1912	17-8-1912	PUBLIC WORKS.			
23	Dalwáda	15-7-1912	17-8-1912	73	Halol Feeder Road	1-11-1911	15-2-1912
24	Godhra-Pali Road	10-10-1911	17-8-1912	74	Champaner Feeder Road	14-11-1911	20-2-1912
25	Metal collection on Orwada-Sunth Road	15-10-1911	27-1-1912	75	Halol-Ajiva Road	16-2-1912	17-8-1912
26	Field embankment and terracing at Kanjia	1-11-1911	17-3-1912	76	Wada Talao Tank	27-11-1911	17-8-1912
27	Guneli	15-1-1912	17-8-1912	77	Vedpur Tank	25-12-1911	15-6-1912
28	Metal breaking at Orwada and on Godhra-Dohad Road...	25-1-1912	31-8-1912	78	Vasania Tank	26-3-1912	29-6-1912
29	Improving Godhra-Dohad Road	4-6-1912	31-8-1912	79	Udiania Tank, Rameshra	1-4-1912	8-6-1912
30	Bodidra Tank	25-1-1912	31-8-1912	80	Koprej Tank	1-4-1912	22-6-1912
31	Orwada Canal	21-4-1912	31-8-1912	DOHAD TALUKA.			
32	Bhensál Tank	25-1-1912	15-7-1912	VILLAGE WORKS—TANKS.			
33	Sureli Tank	25-1-1912	15-7-1912	81	Lilar	11-8-1911	7-9-1911
34	Dangaria	5-2-1912	17-8-1912	82	Gángarda	2-9-1911	13-11-1911
35	Rajaita and Vandeli	29-2-1912	17-8-1912	83	Nadhelav	2-9-1911	13-11-1911
36	Kanelao	6-5-1912	11-7-1912	84	Vanbhorí	8-9-1911	12-11-1911
KALOL TALUKA.				85	Nagrála	24-9-1911	16-10-1911
VILLAGE WORKS—TANKS.				86	Bhilwa	28-9-1911	13-11-1911
37	Adadra	11-8-1911	31-8-1911	87	Khangela	{ 8-10-1911 8-2-1912	{ 6-11-1911 17-8-1912
38	Vejalpur	20-9-1911	17-3-1912	88	Simalia	17-10-1911	12-11-1911
39	Kanpur	20-9-1911	27-10-1911	89	Amlí	13-11-1911	10-12-1911
40	Boru	16-10-1911	12-11-1911	90	Bavka	16-11-1911	3-3-1912
41	Bhadroli Bujrag	13-11-1911	7-1-1912	91	Rachheda	17-11-1911	26-12-1911
42	Khanduval	25-10-1911	14-1-1912	92	Rawalikheda	20-11-1911	10-3-1912
43	Chaláli	27-10-1911	13-12-1911	93	Rentia	{ 16-12-1911 23-5-1912	{ 31-1-1912 27-5-1912
44	Karoli	14-12-1911	4-5-1912	94	Himála	27-12-1911	21-2-1912
45	Vyasda	16-1-1912	30-4-1912	95	Gundikheda	17-2-1912	30-4-1912
46	Vyasda (Kheda Tank)	20-12-1911	15-1-1912	96	Matva	5-3-1912	31-8-1912
47	Kátol	8-1-1912	5-3-1912	97	Jabua	{ 11-3-1912 1-8-1912	{ 30-4-1912 31-8-1912
48	Kanpur	28-10-1911	11-6-1912	98	Simalia	1-5-1912	10-8-1912
49	Bedhia	18-3-1912	27-7-1912	99	Bordi	1-5-1912	17-8-1912
50	Malav	24-4-1912	30-6-1912	100	Bulbar	1-5-1912	31-7-1912
51	Rinchhia	8-5-1912	7-7-1912	101	Tarvadia	1-5-1912	16-7-1912
52	Bhukhi	1-5-1912	18-6-1912	102	Gamlá	1-5-1912	31-8-1912
53	Bhukhi	19-6-1912	17-8-1912	103	Tanda	22-5-1912	10-8-1912
54	Kánod	17-6-1912	17-8-1912	104	Menakyar	3-7-1912	31-8-1912
				105	Chandwána	17-7-1912	5-8-1912

APPENDIX 2—concluded.

Serial No.	Name of Work.	Date of commencement.	Date of closure.	Serial No.	Name of Work.	Date of commencement.	Date of closure.
DOHAD TALUKA—contd.				JHALOD PETHA—contd.			
PUBLIC WORKS.				VILLAGE WORKS—TANKS—contd.			
106	Suki River project	15-1-1912	31-8-1912	123	Hadmat Khunta	{ 20-11-1911	11-3-1912
107	Muvalia service road	15-4-1912	29-6-1912			17-5-1912	15-6-1912
108	Muvalia Tank Dam	30-6-1912	31-8-1912	124	Tadagola	29-11-1911	14-2-1912
109	Rentia Tank	28-5-1912	31-8-1912	125	Varod	19-12-1911	5-2-1912
110	Field embankment at Kharaj and terracing field at Kharaj	10-10-1911	15-4-1912	126	Boda Dungar	7-2-1912	14-4-1912
111	Dohad-Kundanpur Road, Section II	1-11-1911	30-4-1912	127	Mundaheda	7-2-1912	10-4-1912
112	Independent terracing at Garbada	7-11-1911	29-5-1912	128	Kakrakuwa	12-2-1912	6-5-1912
113	Garbada Tank	15-1-1912	31-8-1912	129	Chhayan	14-2-1912	30-4-1912
114	Independent Terracing at Nadhelav	26-11-1911	8-4-1912	130	Pipalia (metal breaking)	12-3-1912	27-4-1912
115	Futelao Tank	12-2-1912	31-8-1912	131	Rupakheda	12-4-1912	14-4-1912
116	Amli Chharchhoda Tank	26-3-1912	31-8-1912	132	Kadwal (Varod Border)	15-4-1912	17-8-1912
JHALOD PETHA.				133	Sabli	1-5-1912	17-8-1912
VILLAGE WORKS—TANKS.				134	Parewa	28-4-1912	27-6-1912
117	Raliati	24-8-1911	26-9-1911	135	Chakalia	7-5-1912	5-6-1912
118	Raniar	24-8-1911	30-9-1911	136	Shankerpura	4-6-1912	17-8-1912
119	Anwarpura	5-9-1911	30-9-1911	137	Garadu	17-6-1912	31-7-1912
120	Anwarpura	1-10-1911	14-1-1912	138	Moti Handi	18-6-1912	31-7-1912
121	Raliati	6-10-1911	28-11-1911	PUBLIC WORKS.			
122	Pethapur	20-11-1911	6-2-1912	139	Mandelao Tank	26-2-1912	17-8-1912
				140	Rupakheda Tank	15-4-1912	17-8-1912
				141	Jhalod-Kushalgadh Road	15-1-1912	15-6-1912

APPENDIX 3.

(Referred to in paragraph 22 of the Report.)

Report regarding the high proportion of the numbers on gratuitous relief to workers in the Panch Mahals District.

Letter from the Collector of the Panch Mahals, No. F.—1812, dated 2nd May 1912:—

"I have the honour to submit, for the information of Government, the following report as to the comparatively large number of persons receiving gratuitous relief in this district during the present famine. That the number is heavy I admit, and I only hope to establish that the number is not higher than in previous famines, that in this district the number will always be high, that we have kept down the figures to the minimum, and that, really speaking, the figures show a marked improvement compared with previous real famines.

"2. Before proceeding further, I must explain a peculiar feature of this famine, as compared with previous ones, as regards the grant of dole and allowance to dependants.

"On account of the non-residence of workers in this district, in previous famines also dependants never lived on works and only a few from the nearest villages came daily to the work. The other dependants were given dole in villages under gratuitous relief. Thus in former famines the number of dependants was insignificant, compared with the number on gratuitous relief.

"While in this famine, as we give dole to all but a microscopical number at the villages, the number on gratuitous relief proper is insignificant, and those getting dole as dependants form the majority. Most crippled or infirm people have got some able-bodied supporters who go to works, so all these now count as dependants. There are only a few cripples, etc., who have got no one to support them or have been abandoned, and they alone—and but few in number—get gratuitous relief proper.

"So if we are to compare figures with previous famines, we must take for all famines past and present the combined figures of dependants and those getting dole as gratuitous relief. This combined number will be considered in this report as if in receipt of gratuitous relief only.

"3. In the Famine Code and Handbook the normal ratio of dependants to workers is put down at 1 to 4, and that of gratuitously relieved to total on relief at roughly 1 to 3. Thus taking dependants and gratuitously relieved together in a normal real famine, roughly, the sanctioned proportion, so to speak, is two dole recipients to every three workers. In previous famines the proportion in this district was much higher, and often the number gratuitously relieved—as will be explained later on—far exceeded that of workers. In the present famine the number gratuitously relieved is only about the same as the number of workers.

"4. Firstly, I wish to point out that, in my humble opinion, for years to come in every famine the number on dole in this district will be high. Present as well as past experience has shown this to be a fact, and I will try to analyse the reasons underlying this fact. As you are aware, I am a comparatively new comer to this district, so I may be pardoned if I am wrong in my deductions.

"5. The fact, which cannot be denied, is that the Bhils, Naikdás and other primitive people including the Dharalas, who form the majority of our workers, are extremely prolific. I had a census taken of these working classes in Godhra Taluka, and found that in many families there were five or six children. The fact that the poorer classes of this district are prolific may be gathered from the fact that at the last census the proportional increase in the population of this district was one of the highest, if not the highest of this Presidency. This probably accounts more than anything else for the large number of dependants to each worker, and so in the number gratuitously relieved. The next probable reason is that the people are extremely poor without any resources of any kind, and the whole family verges on starvation whenever the crop fails and the sávkár stops their credit. So every member of the family has either to go to work or get dole. There is no private charity possible, firstly, because these people are poor and, secondly, because they would not leave their homes and go far to beg. Another important point to note is that there is no village proper. A village really consists of numerous groups of huts scattered throughout the village area. It is seldom that one comes across more than three or four huts together. More often it is only one hut by itself. Amongst the Bhils when the son comes of age and marries, he generally builds a little hut for himself at a distance and so separates himself. The result of this is that no joint communal action is possible. Each family is generally a community by itself. It must look after its own cattle, protect the house and property and earn sufficient livelihood. Thus even when famine is most severe, at least one adult member must stay at home to look after the cattle and

protect the property. A neighbour cannot be asked to do so. In a family of six or seven, of which only two or three at most are adults, if one adult be permanently eliminated, the proportion of workers to dependants (even when the adult at home gets no allowance) will go up materially. Then again in the Deccan, for instance, I have often found that, even if the parents are poor, often some uncle or other relative has irrigated land or other resource out of which he can maintain at least the children of the poor parents. But in this district, partly because of the isolation mentioned above and partly because of the primitive nature of the people, their bad cultivation and want of resources and happy-go-lucky habits it is seldom that any, even distant relative, can be found whom we can call upon for aid.

"The above reasons may roughly explain why in my opinion the number on dole in this district will always be much higher than in the Deccan for instance.

"6. The next point I wish to urge is that the famine this year was really very severe. The fact that this is the only district in the whole Presidency where famine had to be declared, and that there is no famine even in the neighbouring districts naturally makes one think that if there be famine it must be a mild one. I, therefore, wish to try and show that this is not the case. In fact, this famine is regarded by the local people as much severer than any we had yet, because the scarcity is no less severe, while the resources in the shape of ornaments, credit, etc., which the people had in previous famines are non-existent. It is admitted that in former times the Bhils had a certain amount of ornaments, pots and pans, and that these disappeared at the last famine and have not since been replaced. It is difficult for the Bhil to do so even in a good year, for, if at all, he sells his grain in small quantities, and the surplus proceeds are always devoted to drinks and orgies. They also got more advances from *sávkárs* in the old days, but these *sávkárs* are now-a-days less willing to give credit to these Bhils, and after the last famine a fair area of land has been converted to new tenure. Thus the Bhils have in a way less resources and diminished credit. Of course, this is also partly due to many petty *sávkárs* being hard hit over successive bad years and having less credit themselves with their capitalist *sávkárs*.

"7. Now as to the present famine, when there is scanty rainfall and a general failure of crops, the gravity of the situation, and so the acuteness of the distress, is dependent to a great extent on the following factors:—

- (a) The extent of failure of crops.
- (b) The area under irrigation.
- (c) The resources of the people.
- (d) Habits of the people.
- (e) Supply of fodder.
- (f) Prices.
- (g) Charity.

"8. The rainfall this season, as the following table will show, was very scanty:—

Táluka.	Normal.		Of current season.	
	(June to October.)			
	In.	ct.	In.	ct.
Godhra	37	42	6	76
Kálol	36	83	11	17
Hálol	40	30	10	50
Dohad	28	8	10	13
Jhálod	29	94	18	76

Add to this that caterpillars practically destroyed the whole of the early sown crop—the only crop which had any rain—and that the heat later on in the season was most abnormal and withered up even the cotton crop in Hálol and the small area of maize, etc., grown under favourable conditions in tank beds, and that will give an idea of the extent of failure. In fact, the failure of crop may be regarded as complete.

"9. Then as to the area under irrigation. This in this district is almost negligible. We have only one big irrigation work, viz., the Muvália tank. As luck would have it, last year the sluice went wrong, and to repair it, just before the monsoon, about two years' supply of water was let out to waste and the tank remained dry.

"These Bhils do not understand or care for irrigation. Only in Godhra Táluka in one corner where *patidárs* have settled and, strange to relate, in parts of Jhálod we have a little irrigation. The rest of the district can be neglected, as far as

irrigation is concerned. In any case the Bhils and those who come to our relief works have little irrigation as a stand-by.

"A certain amount of irrigation was noticeable later on for raising fodder crops, but this could not alleviate human distress. Thus, as far as irrigation goes, it was negligible.

"10. Then as to the resources of the people. I have already said that as regards the true working classes of this district it is *nil* and worse than in previous famines. The Bhils live a hand-to-mouth existence. The custom is that as soon as the crop is ready, he takes over the whole or practically the whole to his *sávkár*. The *sávkár* in return gives him from time to time some money for drink, and clothes and grain for his maintenance. The grain given is very limited, and in April and May and afterwards he has to live on *mhowra*, mango, *ráyan* and forest produce generally. Even those who do not go to *sávkár's* waste away all the grain long before the monsoon, relying on *mhowra* and jungle products. Thus the Bhil has really no resources. He never thinks of the morrow.

"11. Then as to the habits of the people. Even in a bad year partial relief can be obtained by emigration. This year, for instance, the crops in the neighbouring districts were not bad, there was plenty of field work available in *Málwa*, and there was a great demand for grass-cutting operations in other districts. The local mines were willing to take up more labourers than they got. But the Bhils of this district are peculiar. They would much rather die than leave their homes. As you are aware, in spite of all our efforts we have met with absolute failure in our endeavours to persuade the people to go and reside on the works. If people would not go five miles away to a work, it is evident they will not go to other districts to look for work. Thus one means of relief is absolutely barred to them. That this makes the distress in this district severer than it need be has to be admitted, but we cannot ignore the habits of the people. I have already mentioned the other habits which make the distress more acute. I mean the absence of communal feeling, the isolated home-stead, and their idea that at least one adult member must always remain in. The fact that this district is surrounded by, and interlaced with, Native States, and that it abounds in hills and forests has also something to do with the isolation of the Bhils and their disinclination to leave their homes.

"12. Next, the supply of fodder also plays a prominent part in this district as to human distress. Briefly the Bhil loves his own cattle, and will try to save it almost at the cost of his own life and much more so at that of his children, though he has no compunction in stealing and killing his neighbour's cattle for his own food. Secondly, in ordinary years fodder is so abundant that no one ever dreams of laying by a stock against a fodder famine. Lastly, ordinarily fodder is so abundant and water so freely available that the number of cattle which a Bhil keeps is unlimited and out of proportion to his needs. Where a *Deccani* keeps two cattle, the Bhil has five. So it will be seen that in a bad year like this, with scanty rainfall and a failure in the grazing, the Bhil cannot but strain every nerve and waste all his energy and income in the hopeless struggle to save his cattle. As it is, a good deal of what he gets at the relief works or his children get as *dole* goes towards saving the cattle. Of course, this has made the scarcity very much more acute.

"13. Next as to prices. Taking that prevalent at *Godhra* as fairly representative, while the normal price of maize is 40 lbs., early in October it went up to 20½ lbs., and since then it has fluctuated between 20 and 22 lbs. The price of *bájrí* is normally 30 lbs.; early in October it went up to 18 lbs., and since then it has fluctuated between 18 and 20 lbs. Thus the prices were higher than in any previous famine except that of 1899-1900. It cannot be denied that a rise of 50 per cent. in the prices, as in this year, would be a severe strain at the best of times.

"14. As to charity, I have already said that, partly because of the general poverty of the district and partly because a Bhil never goes out to beg, there is no charity available. This is why poor-houses proved a failure in the last famine and people died in preference to going there, and those who were taken there ran away to die in their homes.

"15. As to the antipathy of these Bhils to leaving their homes, I might mention the following incident.

"During the last famine subordinates of, both Revenue and Police Departments were sent to inspect villages and persuade people to go to works, but they met with no success. One *kárkun* saw an adult starving by himself in his isolated hut. He begged the man to go to a work. The man said it was too far to go daily and back, and on being pressed further ran at the *kárkun* with a hatchet and threatened to brain him if he was not left alone to die in peace in his home. Talking of habits we must not also forget that we are dealing with a people full of superstition. Only the other day I heard that a gang of men were going to a work as usual one morning, when a cock crowed twice from the wrong direction and a black dog barked thrice

from another wrong direction, and they went back and would not come till the devil had left that side even though they were starving. All this of course makes them feel the scarcity the more. On our works often people suddenly absent themselves without any apparent cause.

"As another instance, with great difficulty we had persuaded about 150 workers to live in camp. Two days after they had come there, unfortunately, a strong cold wind suddenly sprang up one night, and the Bhils took it to be the devil after them, and the whole 150 left the work in the middle of the night and trudged home, but turned up to work next morning quite cheerful. Our camp has however remained uninhabited ever since.

"16. I hope that I have made it clear that on account of the absolute failure of crops, the absence of irrigation to any extent, through complete want of resources, through their refusal to leave their homes, their infatuation almost for their cattle and the great scarcity of fodder, their peculiar habits and superstitions, the high prices and the absence of charity, this famine must rank as one of the severest we had, though at first sight it might not appear to be so.

"17. I would next try to show that, though the number on dole appears high, this year it is comparatively less than in previous famines.

"In former famines gratuitous dole was given in various shapes, *e. g.*, at works, in villages, in kitchens and in poor-houses. In this famine gratuitous relief to all, including dependants of workers, is given in villages. So as explained before for the sake of comparison for all famines, I will take together all those who got gratuitous relief in any shape.

"18. The first big famine we had in Panch Maháls District was in 1899-1900. As is well-known, unfortunately that was the first famine in this district. Famine being unknown to both officers and the people, the measures for relief were not perfect and the mortality was very high. Measures which had answered well elsewhere were applied to this district without success, and the failure at first was put down to the absence of distress till the high mortality caused a *volteface*. In any case in spite of distress, practically no dole was allowed till late in the season. By then though many children and old people had died, there were many emaciated adults, and the number on dole was very heavy. Thus in June against 42,351 workers, there were 30,633 on dole. In July against 63,714 workers, there were 47,773 on dole. In August the proportion was 45,040 workers to 79,133 dole recipients. In September the figures were 17,937 workers to 65,524 on dole. In October there were 2,430 workers against 29,839 dependants.

"Thus on account of the previous neglect, the number gratuitously relieved was excessively high later on. Still it must be admitted that, even if we had been consistent throughout, the average on dole would still have been higher than the number of workers.

"I might mention here that in the famine of 1899-1900, though no Panch Maháls people left the district, outsiders in large numbers, specially from Káthiáwár side, came and joined our works. These generally brought with them practically no dependants. Thus if these outside workers be omitted, the proportion of dependants to workers will go up still higher.

"19. The next famine was in 1900-01. This was really only a continuation of that of the year before. The distress was not great. Only about 4 per cent. of the population was relieved. Still the number gratuitously relieved was equal to the average of those on works. Had it not been for the heavy mortality amongst the children and the infirm the year before and a survival of the fittest so to speak, without doubt the number of dependants would have been very much higher, and was in fact higher because many of the foreign emigrants who came over the year before stayed on here till the end of this famine.

"20. The next famine was in 1901-02. This year there was a marked decrease in the proportion of dependants to workers, and I would try and explain why this was so. The principal causes may be summarized as follows:—

- (a) the famine was not severe,
- (b) the prices were not high,
- (c) there was no fodder scarcity,
- (d) there was no water scarcity,
- (e) children were allowed freely on the works,
- (f) the grant of dole was refused except to those absolutely starving, and
- (g) there was a good crop of forest produce.

"As to (a).—The following statement will show the rainfall in 1901 :—

Name of taluka.	June.	July.	August.	September.	October.	Total.
	In. ct.	In. ct.	In. ct.	In. ct.	In. ct.	In. ct.
Godhra	3 59	8 48	11 49	1 15	0 4	24 75
Kálol	2 73	11 14	11 18	0 59	0 56	26 10
Hálol	2 38	11 25	11 72	0 95	0 53	26 83
Dohad	2 86	4 23	9 3	0 8	0 17	16 37
Jhálod	1 95	11 41	5 19	0 38	0 27	19 20

This will make it clear that the rainfall at least did not warrant any scarcity. What really caused a scarcity was a plague of rats. In some villages the crop was at least 8 annas. In the Eastern Maháls the revenue collected was 44 per cent. and in the Western Maháls 25 per cent. of the total demand. The rats, it is true, did much damage, but there was no complete failure of crops. Many individual fields and villages escaped.

"As to (b).—As to prices, that of maize, the staple crop, the minimum in 1902 was 23 lbs. only in Jhálod and 25 lbs. elsewhere and that only for a short period, while this year almost from the beginning the price went up to 20 lbs., and there has been no appreciable recovery since. As to bájri, the staple crop of Kálol and Hálol, in 1901 the price was 25 or 26 lbs., while this year it is only about 18 or 19 lbs.

"As to (c).—As shown before, there was good rainfall. So in spite of rats damaging the crops there was, as reported by the Collector, abundant fodder supply, and the cattle were in excellent condition. The amount of indirect relief this gave to the people can be well imagined. There was no cattle lifting or cattle killing. This of itself proves that the famine was not severe.

"As to (d).—The water-supply too was abundant. This was also an indirect relief, and the people had not to waste their time in search of water for men and cattle.

"As to (e).—Many children and infirm had died in the previous famines, so the population fit for getting gratuitous relief had greatly decreased. The actual drop in the number of children under five years was from 49,902 to 24,485. It can be presumed that the decrease was confined to the starving lower classes who resort to work, and that there was the normal increase in population amongst the better classes. So the net decrease amongst the children of the working classes was really much greater than this difference.

"As to (f).—The system of a large number of village works was first introduced towards the end of the famine of 1900-01 and given full effect to in 1901-02, and thus relief was brought to the homes of the majority. Again children were admitted freely to the works. While now we never admit children under 10 and children 10—14 are not necessarily admitted. In 1901-02 most of the children above 8 were admitted as workers. Of course, this resulted in an increase in the number of workers and a decrease in the number of dependants. Moreover, as so many children were admitted on works, as work was available almost at their doors, as the famine was not severe, as infants in arms were given separate dole, stringent orders were issued that as far as possible dole was to be refused, and so dole was given very sparingly, and really this did not do much harm as the famine was not severe, and probably famine need not have been declared if the three previous years had not been such bad ones. I might state that one reason why the number of workers was proportionately so great was that the task of the Naikdas had that year been reduced by 50 per cent., and so they got full wages for short work. This was presumably to keep them from crime.

"As to (g).—The Collector in one report writes as follows :—

'They have been greatly aided by the mhowra crop, the flowers being used largely to supplement the daily allowance of grain. The collection of timru leaves has also been a lucrative employment to the people in Hálol.'

As the rainfall was not very deficient, the forest produce on the whole was normal and sufficient to provide, if not for all the adults, at least for many of the children who were employed to pick these flowers, etc.

"I hope the above will make it clear that the famine of 1901-02 was not a real first class one, and the high attendance was due entirely to special circumstances, and the figures of that season cannot serve for purposes of comparison.

"21. In my humble opinion, considering the peculiar circumstances of this district and the acuteness of scarcity this year, the number on dole at present is

really less in proportion than in previous famines. After all the number on dole this year almost equals the number of workers, while, as I have said before, in 1899-1900 the proportion was really greater and in 1900-01 about the same. So it cannot be said that our number on dole is excessive. Again we are giving dole to many who do not come properly under gratuitous dole, and this has unnecessarily swollen our number. Flagholders supplied to surveyors and dependants of Falia patels and watchmen come under this head. Flagholders supplied to surveyors and their dependants are given dole on the authority of Government Resolution No. 9896, dated 20th October 1911. Then as to the dependants of inferior servants, about 2,500 come under this head. This item is rather heavy in this district, and the expenditure under this head might more properly be debited to famine police. As explained before, in this district we have no regular villages. There are only scattered huts and hamlets. So a group of them is under a Falia patel elected by the people though not recognised by Government. The official patel really knows very little except about his own Falia. To check crimes, to get necessary help in checking dole registers and in general famine inspection work we have to seek the help of these Falia patels; therefore all of them had to be kept on dole. Not only these but also their dependants, for otherwise these patels refuse to work. In some cases where we refused to give dole to the dependants, the Falia patel at once went on to a relief work, and we could get no other to do his village duties. The Falia patel is the only one who has influence and can keep the people in his charge in order and keep them from crime. I think it is owing to this system that crime this year in spite of such a bad year has kept practically normal, and in some places has gone below normal. Apart from Falia patels and their dependants, only watchmen and their dependants again get dole.

"22. Then, as explained before, in the previous famine children above 8 years of age were allowed to attend a work. We do not allow any children under 10 to join a work. As a matter of fact, few children above 10 and under 14 even have been admitted at the work. The majority of them till recently were declared unfit for work, and ordered by the work managers to be put on dole. If all these children had been entered as workers, and had there been a corresponding decrease in the number on dole, there might have been a marked shifting of the balance. Last but not least we must note that since the last famine the birth-rate has gone up enormously. Forty per cent. of the present population consists of children under 14. In 1901 children under 5 made up only 9.3 per cent. of the decreased population. Now children of the same age form 17.40 of the increased population. I might end this paragraph by noting that of the number gratuitously relieved 80 per cent. are children.

"23. Before concluding I would briefly describe the steps taken to keep an effectual check over the grant of dole.

"To begin with, I refused to commence the grant of dole till the number of persons on relief in any taluka fully established this necessity. Thus, though famine was declared from 1st October, dole was not commenced in Godhra and Dohad till 15th October. In Kálol and Hálol I postponed it another month, and in Jhálod dole was refused till the middle of December. Even then in the commencement dole was granted very sparingly.

"Next, before the system of dole was extended, I had a census taken of every household throughout the district. In that statement against the name of each child and of each person who was infirm or unfit for work a note was made as to whose dependant he or she was. Thus, when dole is issued on a dependant's card, none but his true dependants can get its benefit. Again I have repeatedly impressed on the subordinates the necessity for discrimination of dependants. Thus supposing, for instance, the father does not go to work but only an adult son, then, since the other sons are not the dependants of this brother, they cannot get allowance on any card received by the elder brother and so on. Again under the cards system, dependants are paid only for the days the parents for instance attended the work; so, on the whole, dole is not given so promiscuously as before. In fact none but true dependants can get dole.

"As a further check, no dole is given to dependants solely on the authority of the taláti. The Circle Inspector has to visit a village every week, and he has to scrutinise and sanction the weekly statement before dole can be issued to dependants for that week. The Circle Inspector or the Aval Kárkun has by turns to be present at the distribution of grain at the different centres. A special form has been prescribed for every inspecting officer, and he has to show in his diary in detail the number of persons on the dole register, the alterations therein made by him and the reasons. These diaries are thoroughly checked by the Mámlatdárs, Sub-divisional Officers and my office, and wherever the percentage is high, explanatory remarks are compulsory. Besides in many cases I have ordered special enquiries by Sub-divisional Officers.

" 24. That the number cannot be further reduced will be evident from the following incidents :—

(a) In Godhra Táluka the number on dole is specially high, and so I sent Mr. Husbands to visit certain villages. The result was no reduction, but in some cases additions in the list.

(b) I thought that I might possibly reduce the number of dole recipients, or compel the distressed to come to work by ruling that, if both parents did not come to work, the children would not get dole. The result was that as before only one parent came and the other remained at home to look after the cattle. The children could not get dole, so they began to get emaciated. Some workers even lost condition, as the whole family shared the wages. In many places petty crimes went up rapidly, and in short there was general unrest. In consequence there was a general protest from the District Superintendent of Police, the Deputy Sanitary Commissioner and all revenue officers, and I had to cancel my order.

(c) As an experimental measure, I ordered that in the case of one selected village work dole was not to be given to any dependant who did not actually attend the work. Of course, all true dependants could not possibly come daily to the work. Many of them were too young and many infirm and unfit to make the daily double journey. Still at the present date on an average there are 166 dependants to 245 workers. This will show that we are not unnecessarily giving dole in this district. Of course, the above figures do not include those getting dole under section 146 or other clauses. If all that be taken into account and a percentage added for those of the dependants unable to travel to the work, the proportion will probably be higher than our average for the district. I am mentioning this fact only to show that the dependants' card system has not resulted in excessive numbers. In fact, as stated before, it has kept the number in check, for dole is restricted to the number of days of attendance, and under the census system there is no shifting of responsibility. To ensure that cards are not wrongly issued, inspecting officers have orders to take at random some cards from villages visited and take them to the relief works for being checked with the muster rolls.

" 25. In fact, every precaution is being taken to see that none but those who deserve it or have earned it are entered in the dole register.

" All the Mámlatdárs and Sub-divisional Officers have been clamouring for some time that we should now extend to each táluka the benefit of section 226, Famine Code, so that the adult now left at home to look after the cattle can get dole. I have not done so, partly because the number is already high, partly because with a little privation to which these Bhils are accustomed the dole given to the rest of the family or the wages earned by the adults might suffice at present for the whole family, and partly because later on in the monsoon we may be compelled to be more liberal in the grant of gratuitous relief generally.

" Even children between 10 and 14 are not now entered in the dole register, unless certified after actual trial at the relief work to be unfit for work.

" 26. I hope the above report will convince Government that, though the number on dole is apparently high, it is not excessive taking into consideration the peculiar circumstances of this district, and I hope you will recognize that every precaution has been and is being taken to ensure that there should be no abuses."

Memorandum from the Commissioner, N. D., No. P.—324, dated 7th May 1912 :—

" Submitted to Government.

" 2. The same influences are at work now in the Panch Maháls as were observed in the famine of 1900-01, although they were then apparently not fully recognized until the season was far advanced. The Bhil is still prepared to starve in his own house rather than go far in search of work, or take up his residence on the works; he is still ready to sacrifice almost everything else in order to preserve his own cattle; he is still superstitious to a degree which renders it possible for a single bad omen to make him forego the advantages of the most carefully considered plans for his support. The key-note of famine administration in this peculiarly constituted district is 'persuade but don't attempt to drive.'

" 3. The low mortality and the state of petty crime are sufficient evidence of the efficacy of the Collector's arrangements. His present report is intended to show that no undue leniency has been shewn in the matter of admission to gratuitous relief. The Commissioner is satisfied that there is, if it be needed, abundant justification for the extent to which the concession has been granted, and that all possible precautions against abuse of it are being taken, nor would he advise further tightening up in any direction. It has been shown that the total of dependants and of those on gratuitous relief taken together is, at least, no greater than in the famine of 1900-01; a re-classification has had the effect, however, of transferring largely from one head to the other, with the result that the ideal proportion of the Famine Code of the gratuitously relieved to workers has been departed from."

APPENDIX 4.

(Referred to in paragraph 27 of the Report.)

Steps taken to organise private charity for the relief of distress in the Ahmedabad District.

Circular memorandum from the Collector of Ahmedabad, No. F.—841, dated 25th March 1912:—

"The Collector has recently toured in the worst affected part of the district (north Viramgám) and has come to the conclusion that, if the methods adopted there by Mr. Bharucha are carried on, with the necessary additional official supervision which is being arranged for, there may be no necessity of instituting Government dole; should such necessity, however, arise, it will be a simple matter to transfer the 'dole' now being given from charitable resources to the shoulders of Government.

"2. The methods alluded to are briefly these. Each village is induced to open a 'dharmáda fund' the Mukhi, taláti or one of the non-official leaders of the village keeps the money, and persons who are really helpless and unable to work, and who must starve or at any rate endure extreme privation unless they get assistance, are entered on a 'dole' register kept, as far as may be, in the form prescribed in the Famine Code. A local bania or, failing him, any other suitable person, distributes daily one seer of jowári to adults and half a seer to children whose names figure in the list; he is paid once a week or as often as is convenient, and the whole affair is managed by the village itself.

"3. One of the great advantages of the method is that, as the villagers pay, they are careful only to enter really deserving cases, and their knowledge of individual circumstances must be far greater than that of any official could be.

"4. When a village is too poor to raise an adequate or any dharmáda fund itself, the necessary money is placed at its disposal by the Táluka Relief Committee. In such cases sharper outside (*i. e.*, mainly official) supervision may be necessary to prevent abuse. The Táluka Committees will, if need be, in their turn receive assistance from the Ahmedabad Famine Charitable Relief Fund.

"5. The only criticisms the Collector has to offer, from his recent experiences in Viramgám, are, *firstly*, that the power of entering of names on, and removing names from, the list should not be reserved to officials as has hitherto been done; in cases where there is a village fund, at any rate, the subscribers should be left a perfectly free hand; and, *secondly*, that in the case of emaciated children cooked food should be given instead of dry rations. The cooking can easily be arranged for, and there can be no question, if the children are seen fed, that the grain goes to the right place.

"6. The undersigned has had to get thin children entered on the list in several cases, and the attention of inspecting officers is especially drawn to the necessity of examining the children of the poorer classes, as the villagers apparently think more of the claims of lame, halt and blind adults than they do of those of sound but under-fed children; but they are quite willing to enter any of the latter, when the desirability of doing so is put to them.

"7. This system may well be adopted in other tálukas where there may soon be human distress, though in a less degree, and the Collector invites the co-operation of all officers in carrying it out. It is not advocated with a view to saddling private charity with any expenditure which Government ought to undertake; should famine conditions actually arise, Government can and will at once take over the dole lists, but, unless and until they do arise, not only is it proper that the private charity available should be organized and directed to the systematic alleviation of isolated cases of privation, but it is also highly desirable that the people should be assisted in the laudable efforts they are making to help themselves. The Collector, in starting new or adding to existing dharmáda funds, has found a ready response when the matter is put this way: 'The Sarkár has kept the village alive with takávi, the village must, therefore, keep its own helpless people alive with a few crumbs from the feast'."

APPENDIX 5.

(Referred to in paragraph 28 of the Report.)

Statement showing the number of persons relieved in the affected districts of the Bombay Presidency.

	1911-12.					
	Relief workers.	Dependants.	Gratuitously relieved.		Total daily average.	Total units.
			Destitutes.	Village servants.		
PANCH MAHALS.						
August 1911	1,502	...	...	...	1,502	10,514
September "	2,173	...	...	...	2,173	76,069
October "	7,006	99	2,440	313	9,858	236,110
November "	18,240	600	4,695	621	24,156	676,410
December "	31,495	890	18,335	823	51,543	1,804,012
January 1912	36,080	467	18,887	1,016	56,450	1,580,579
February "	41,422	433	28,519	1,117	71,491	2,001,776
March "	44,840	546	40,345	949	86,680	3,033,772
April "	44,217	548	47,680	1,069	93,514	2,618,399
May "	38,396	625	39,358	1,220	79,599	2,228,779
June "	38,167	722	39,029	1,247	79,165	2,770,789
July "	29,408	424	33,000	1,241	64,073	1,794,058
August "	11,251	91	20,430	976	32,748	1,146,194
Total average	26,477	419	22,517	815	50,227	19,977,461

APPENDIX

	1911-12.				1911-12.			
	Gratuitously relieved.		Total daily average.	Total units.	Gratuitously relieved.		Total daily average.	Total units.
	Destitutes.	Village servants.			Destitutes.	Village servants.		
	AHMEDABAD.				WEST KHA'NDESH.			
December 1911	.....	14	14	434	...	...	...	...
January 1912	.....	38	38	1,178	...	768	768	23,808
February "	.....	335	335	9,715	...	768	768	22,272
March "	.....	296	296	9,176	...	798	798	24,738
April "	.....	326	326	9,780	...	822	822	24,660
May "	.....	480	480	14,880	...	777	777	24,087
June "	.....	543	543	16,290	...	780	780	23,400
July "	.....	532	532	16,492	...	...	...	...
August "	.....	.....	.....	.....	...	...	...	...
September "	.....	.....	.....	.....	...	...	...	...
October "	.....	.....	.....	.....	...	...	...	...
November "	.....	.....	.....	.....	...	...	...	...
Total average	.....	320	320	77,945	...	785	785	142,965
	KAIRA.				NA'SIK.			
December 1911	.....	.....	.....	.....	...	...	...	...
January 1912	.....	.....	.....	.....	...	...	...	...
February "	.....	271	271	7,859	...	...	...	...
March "	2,806	271	3,077	86,975	...	20	20	620
April "	6,680	271	6,951	195,170	...	94	94	2,820
May "	9,049	271	9,320	261,766	...	114	114	3,534
June "	10,561	1,402	11,963	411,702	...	138	138	4,140
July "	7,890	1,891	9,781	279,541	...	132	132	4,092
August "	240	1,046	1,286	37,466	...	104	104	3,224
September "	.....	.....	.....	.....	...	124	124	3,720
October "	.....	.....	.....	.....	...	...	...	...
November "	.....	.....	.....	.....	...	...	...	...
December "	.....	.....	.....	.....	...	...	...	...
Total average	5,318	775	6,093	1,280,479	...	104	104	22,150

5—continued.

1911-12.				1911-12.				1911-12.			
Gratuitously relieved.		Total daily average.	Total units.	Gratuitously relieved.		Total daily average.	Total units.	Gratuitously relieved.		Total daily average.	Total units.
Destitutes.	Village servants.			Destitutes.	Village servants.			Destitutes.	Village servants.		
AHMEDNAGAR.				SHOLA'PUR.				BELGAUM.			
...
...	...	...	...	...	26	26	810	...	36	36	1,116
...	3,205	3,205	92,945	...	1,307	1,307	36,589	...	54	54	1,566
1,632	3,628	5,260	176,182	...	971	971	30,105	...	67	67	2,077
2,082	2,956	5,038	146,990	...	1,004	1,004	30,133	...	81	81	2,430
3,455	3,755	7,210	213,138	...	1,134	1,134	35,139	...	83	83	2,573
4,487	3,433	7,920	260,042	...	1,180	1,180	35,409	...	85	85	2,550
7,131	3,853	10,984	319,118	...	1,160	1,160	35,952	...	81	81	2,511
6,069	3,342	9,411	316,024	...	1,244	1,244	38,559	...	41	41	1,256
5,694	3,830	9,524	274,339	...	1,050	1,050	31,517	...	...	...	...
...
...
3,819	3,500	7,319	1,798,778	...	1,009	1,009	274,213	...	66	66	16,079
POONA.				BIJA'PUR.				DHA'RWAR.			
...
...	685	685	21,235	...	...	...	...	...	...	...	...
...	873	873	25,317	...	...	...	...	...	...	...	...
...	586	586	18,166	...	113	113	3,503	...	...	...	...
...	917	917	27,510	...	238	238	7,140	...	3	3	90
...	923	923	28,613	...	238	238	7,378	...	251	251	7,781
...	925	925	27,750	...	358	358	10,740	...	554	554	16,620
163	927	1,090	32,167	...	358	358	11,098	...	733	733	22,723
179	896	1,075	34,041	...	371	371	11,501	...	619	619	19,189
172	820	992	29,570	...	283	283	8,490	...	632	632	18,960
...	...	...	...	...	360	360	11,160	...	376	376	11,656
...	...	...	...	...	168	168	5,040	...	320	320	9,600
...	...	...	...	...	115	115	3,565	...	...	...	...
57	839	896	244,369	...	260	260	79,615	...	436	436	106,619

APPENDIX 5—concluded.

	1911-12.					
	Relief workers.	Dependants.	Gratuitously relieved.		Total daily average.	Total units.
			Destitutes.	Village servants.		
			Total.			
August 1911	1,502	...	...	...	1,502	10,514
September "	2,173	...	...	...	2,173	76,069
October "	7,006	99	2,440	313	9,858	236,110
November "	18,240	600	4,695	621	24,156	676,410
December "	31,495	890	18,335	837	51,557	1,804,446
January 1912	36,080	467	18,887	2,569	58,003	1,628,726
February "	41,422	433	28,519	7,930	78,304	2,198,039
March "	44,840	546	44,783	7,699	97,868	3,385,314
April "	44,217	548	56,342	7,781	108,888	3,065,122
May "	38,396	625	51,862	9,246	100,129	2,827,668
June "	38,167	722	54,077	10,645	103,611	3,579,432
July "	29,408	424	48,184	10,908	88,924	2,517,752
August "	11,251	91	26,918	8,639	46,899	1,607,454
September "	...	...	5,866	6,739	12,605	366,596
October "	...	...	...	736	736	22,816
November "	...	...	...	488	488	14,640
December "	...	...	...	115	115	3,565
Total average	20,247	320	21,230	4,427	46,224	24,020,673

APPENDIX 6.

(Referred to in paragraph 28 of the Report.)

Statement showing the number of men, women and children on relief, during the last week of each month.

(A—On relief works in the Panch Mahals District.)

	Workers.				Dependants.			
	Men.	Women.	Children.	Total.	Men.	Women.	Children.	Total.
1	2	3	4	5	6	7	8	9
August 1911 ...	689	696	117	1,502	...	...	...	...
September " ...	1,674	1,787	252	3,713	...	...	...	...
October " ...	5,407	3,356	641	9,404	...	4	120	124
November " ...	12,494	8,802	1,682	22,978	3	10	848	861
December " ...	18,258	13,439	2,348	34,045	3	15	844	862
January 1912 ...	19,497	15,432	2,516	37,445	...	5	444	449
February " ...	21,136	16,649	2,313	40,098	...	6	451	457
March " ...	24,949	19,364	2,643	46,956	6	27	537	570
April " ...	22,553	16,600	2,139	41,292	4	7	594	605
May " ...	19,711	16,373	2,252	38,336	5	...	662	667
June " ...	11,638	14,542	2,083	28,263	3	...	533	536
July " ...	8,751	9,498	1,396	19,645	...	...	212	212
August " ...	2,779	3,142	580	6,501	1	...	40	41

APPENDIX 6—continued.

(B—On gratuitous relief.)

	Men.	Women.	Children.	Total.	Men.	Women.	Children.	Total.	Men.	Women.	Children.	Total.
	October 1911.				November 1911.				December 1911.			
	Panch Maháls ...	810	1,140	570	2,520	1,182	1,619	4,706	7,507	2,503	4,604	18,622	25,729
Kaira ...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmednagar ...	...	...	...	...	...	...	...	...	...	...	...	...
Poona ...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	810	1,140	570	2,520	1,182	1,619	4,706	7,507	2,503	4,604	18,622	25,729
	January 1912.				February 1912.				March 1912.			
Panch Maháls ...	2,761	4,214	10,863	17,838	3,619	6,070	25,824	35,513	3,239	7,679	34,255	45,173
Kaira ...	...	...	...	...	...	...	...	...	740	1,932	1,860	4,532
Ahmednagar ...	...	...	...	...	...	...	...	...	428	862	3	1,293
Poona ...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	2,761	4,214	10,863	17,838	3,619	6,070	25,824	35,513	4,407	10,473	36,118	50,998
	April 1912.				May 1912.				June 1912.			
Panch Maháls ...	2,941	7,535	36,328	46,804	2,650	5,890	28,741	37,281	2,682	6,005	33,718	42,405
Kaira ...	1,198	3,035	3,191	7,424	1,660	3,918	4,033	9,611	1,608	4,560	4,737	10,905
Ahmednagar ...	987	1,750	77	2,814	1,155	2,212	231	3,598	1,794	3,833	350	5,977
Poona ...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	5,126	12,320	39,596	57,042	5,465	12,020	33,005	50,490	6,084	14,398	38,805	59,287
	July 1912.				August 1912.				September 1912.			
Panch Maháls ...	2,410	5,125	28,493	36,028	1,148	1,665	5,279	8,092	...	...	...	...
Kaira ...	292	880	1,023	2,195	26	71	17	114	...	...	...	...
Ahmednagar ...	2,472	5,335	651	8,458	1,767	3,921	560	6,248	2,443	4,753	672	7,868
Poona ...	51	94	27	172	46	104	34	184	42	98	34	174
Total ...	5,225	11,434	30,194	46,853	2,987	5,761	5,890	14,638	2,485	4,851	706	8,042

APPENDIX 7.

(Referred to in paragraph 29 of the Report.)

Statement showing the direct expenditure on famine relief during 1911-12.

	I Salaries and Establish- ment.	II Relief works in charge of Civil Officers.	III Relief works in charge of Public Works Department Officers.	IV Relief to people employed otherwise than on relief works.	V Gratuitous relief.	VI Miscellaneous. •	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Ahmedabad† ...	8,671	1,770	...	...	2,746	2,74,785	2,87,972
Kaira and Panch Maháls ...	48,636	2,92,901	11,26,171,	...	4,33,473	32,986	19,34,167
Thána ...	822	...	...	...	...	27,767	28,589
Násik ...	210	...	...	...	182	1,546	1,938
Ahmednagar ...	864	...	...	21	16,159	1,140	18,184
Poona ...	747	73	...	...	1,385	7,273	9,478
Sholápur ...	91	...	...	498	751	-710	630
Bijápur ...	194	...	...	1,378	...	13,614	15,186
Belgaum ...	174	...	...	...	...	997	1,171
Presidency ...	...	...	...	...	...	†16,99,926	16,99,926
Total ...	60,409	2,94,744	11,26,171	1,897	4,54,696	20,59,324	39,97,241

* The figures shown under VI—Miscellaneous represent net expenditure after deducting receipts on account of the sale of grass.

† Includes expenditure incurred in the Mahi Kántha Agency.

‡ This figure represents the payments made to Railway Companies on account of the difference between the concession rates and the rates charged by the Companies for the carriage of fodder.

APPENDIX 8.

(Referred to in paragraph 29 of the Report.)

Statement showing the indirect expenditure incurred on account of famine during 1911-12.

Heads of account.	Grain compensation allowance.	Temporary establishments in connection with famine.	Travelling allowance and contingencies on account of famine.	Extra allowances in connection with famine.	Improvement of water-supply.	Irrecoverable takávi loans written off.	TOTAL.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Land Revenue ...	1,43,014	36,486	33,806	1,15,701	...	...	3,29,007
Opium ...	49	...	...	...	...	...	49
Salt ...	84,760	...	...	...	...	...	84,760
Stamps ...	787	...	...	...	...	...	787
Excise ...	20,555	...	...	...	...	...	20,555
Customs ...	5,036	...	...	...	...	...	5,036
Assessed Taxes ...	403	...	...	...	...	...	403
Forests ...	39,362	4,218	1,048	...	...	...	44,628
Registration ...	4,257	...	...	...	...	...	4,257
General Adminis- tration.	4,194	2,084	65	...	...	...	6,343
Law and Justice ...	56,274	...	...	...	...	...	56,274
Jails ...	7,770	...	...	...	...	...	7,770
Police ...	2,63,400	20,764	691	18,412	...	...	3,03,267
Marine ...	185	...	...	...	...	...	185
Education ...	7,401	...	...	...	...	...	7,401
Ecclesiastical ...	944	...	...	...	...	...	944
Medical ...	16,520	827	60	...	...	...	17,407
Political ...	12,016	3,293	2,016	...	...	...	17,325
Scientific and other minor Depart- ments.	4,154	...	...	...	...	...	4,154
Stationery and printing.	3,944	...	...	...	...	...	3,944
Miscellaneous ...	3,096	...	...	...	...	1,36,031	1,39,127
Civil Works ...	205	...	...	...	2,16,777	..	2,16,982
Total ...	6,78,326	67,672	37,686	1,34,113	2,16,777	1,36,031	12,70,605

APPEN

(Referred to in paragraph 89

Statement

(In seers of 80 tolas

District.	Normal—Third Quarter.	July 1911.	August 1911.	September 1911.	Normal—Fourth Quarter.	October 1911.	November 1911.	December 1911.	Normal—First Quarter.	January 1912.
Jowa'ri										
Ahmedabad ...	15	12	12	12	15½	12	12½	13	16½	12
Kaira ...	14½	14	11½	11½	16	12	11½	12	17	11½
Panch Maháls*	19	12½	10	10	20	10½	10½	11	22	11
West Khándesh ...	20	17½	11	11½	17½	11½	11½	12¾	22½	12¾
Násik ...	17	...	...	...	15½	...	...	...	21½	...
Ahmednagar ...	21	16½	13¾	11¾	20	11¾	11	13¼	21½	13¼
Poona ...	16½	15½	13¼	10¾	15½	10¾	10¼	10¾	17½	10¾
Sholápur ...	21	18½	14¾	13¾	19	13	13	14¾	23	14¾
Bijápur ...	22	18¾	14	12¼	20½	12¼	11¾	11¾	23½	12¼
Belgaum ...	18½	14½	14½	12½	18	13	10¾	12	21½	12
Dhárwár ...	20	15	13¾	13¾	19	13¾	10¾	11¼	22	11¾
Baj'ri.										
Ahmedabad ...	14	11	9½	9½	14	10	11	11½	15½	10½
Kaira ...	14	10½	9½	9½	14	9½	9½	10	15	10
Panch Maháls ...	15½	10	9	9	15	9	9½	10	17	10
West Khándesh ...	17½	14¾	10¼	10¼	14½	10¼	10¼	11¾	18½	11¾
Násik ...	16½	13¾	10¾	9½	15½	9½	9½	11	18	10¼
Ahmednagar ...	18	14	13¾	10½	17	9¾	10½	11¼	18½	11¼
Poona ...	14½	12	10¾	9¾	13½	8¾	9	9¾	15½	8¾
Sholápur ...	19½	14¾	14¾	12	17½	10¾	11¾	13	21	12
Bijápur ...	21½	18½	13¾	11¾	21½	...	11¾	11¾	23½	12¼
Belgaum ...	17½	14¾	15¼	12½	17	11¾	10¾	12¼	20	11¾
Dhárwár ...	20½	14½	13¾	12¾	21	12¾	10½	10¾	23	10¾

* The prices shown against this district are for maize.

DIX 9.

of the Report.)

of Prices.

each per Rupee.)

February 1912.	March 1912.	Normal—Second Quarter.	April 1912.	May 1912.	June 1912.	Normal—Third Quarter.	July 1912.	August 1912.	September 1912.	Normal—Fourth Quarter.	October 1912.
12	12	17	12	11½	10½	15	11	11	11½	15½	11
11½	11½	17½	11½	11	10	14½	11	11	11	16	13
10	10½	21½	10½	9½	8½	19	9	10	10½	20	11½
12½	12½	22½	12½	11½	11½	20	11½	10½	9½	17½	10½
...	...	19	...	...	...	17	...	...	...	15½	...
12½	12½	21½	12½	12½	11	21	11	11	9	20	10½
10½	10½	17½	10½	10½	10½	16½	10½	9½	9½	15½	10½
14½	13½	23	13½	13	13	21	12½	12½	11½	19	13½
12½	11½	23½	12½	11½	11½	22	11½	11½	11	20½	10½
12½	11½	20	11½	11½	11½	18½	11	11	11½	18	12
12½	11½	21½	11½	11½	11½	20	11½	11½	11½	19	12½
10½	10½	15	10	9½	9	14	10	10	10½	14	10½
10	10	15½	9½	9½	9	14	9½	9	10	14	12
10	10	17½	10	9½	9	15½	9	9	9	15	10
11½	11½	19	11½	8½	8½	17½	8½	8½	8½	14½	9
10½	10½	17	9½	9½	8½	16½	9½	9½	8½	18½	8½
10½	9½	19	9½	9½	9½	18	9½	9½	7½	17	9½
9	9	15	8½	8½	8½	14½	7½	7½	7½	13½	8½
12½	12	20	11½	11½	11½	19½	10½	10½	9½	17½	11½
12½	11½	23	11½	11½	11½	21½	11½	11½	...	21½	10½
11½	11½	19½	11½	10½	10½	17½	10½	10½	9½	17	10½
10½	10½	21	10½	10½	10½	20½	10½	10½	9½	21	10½

APPENDIX

(Referred to in paragraph

Statement showing deaths and death-rate per mille, per annum, during the districts as compared with the mean of

Districts.	Population (Census of 1911).	Total deaths from 'all causes'.	Total deaths from 'all causes' (exclusive of Plague).	Deaths from Plague.	Deaths from Cholera.
Ahmedabad ...	827,809	35,235	35,193	42	492
Kaira ...	691,744	24,199	23,996	203	343
Panch Maháls ...	322,695	7,864	7,864	...	51
West Khándesh ...	580,723	25,897	25,426	471	3,631
Násik ...	905,030	45,704	40,449	5,255	4,576
Ahmednagar ...	945,305	40,505	38,512	1,993	7,269
Poona ...	1,071,512	44,315	42,314	2,001	7,393
Sholápur ...	768,330	37,092	31,925	5,167	3,530
Bijápur ...	862,973	46,073	28,451	17,622	1,688
Belgaum ...	943,820	43,312	32,224	11,088	4,604

10.

41 of the Report.)

thirteen months (September 1911 to September 1912) in the famine affected the previous five years 1907—1911.

Quinquennial mean.		Annual ratio per 1,000 of population.					
'All causes'.	'All causes' (exclusive of Plague).	'All causes'.	'All causes' (exclusive of Plague).	Plague.	Cholera.	Quinquennial mean.	
						'All Causes'.	'All causes' (exclusive of Plague).
32,916	30,301	39·31	39·26	·05	·54	36·72	33·80
28,060	23,743	32·29	32·02	·27	·45	37·45	31·68
6,772	6,406	22·50	22·50	...	·14	19·37	18·32
17,688	17,498	41·16	40·41	·75	5·77	28·12	27·81
30,673	29,696	46·68	41·32	5·36	4·67	31·33	30·33
26,990	26,637	39·60	37·65	1·95	7·11	26·39	26·04
33,840	29,347	38·40	36·67	1·73	6·41	29·34	25·45
24,481	23,378	44·57	38·36	6·21	4·24	29·42	28·09
22,708	22,128	49·28	30·43	18·85	1·80	24·28	23·67
32,853	25,476	42·44	31·57	10·87	4·51	32·19	24·96

APPENDIX 11.

(Referred to in paragraph 47 of the Report.)

Report by the Conservator of Forests, Central Circle, on Famine Fodder Operations carried out during the season 1911-12 under the orders of the Government of Bombay.

I.—RESUME' OF THE ARRANGEMENTS MADE FOR OBTAINING FODDER.

N.B.—Throughout this report the expression "lákhs of grass" means "lákhs of pounds of grass".

1. The rains of 1911 were very unfavourable, and it became apparent towards the end of July that there was likely to be a total failure of the monsoon in Gujarát, and only scanty rainfall in the North-Eastern and Eastern Deccan. As this turned out eventually to be the case, there was in these parts of the Bombay Presidency a total absence of grass and in consequence a great scarcity of fodder for cattle. Steps were taken by Government at an early date to avert mortality amongst the cattle by arranging for the collection of grass from other districts where it was plentiful, and its despatch to the famine-stricken districts; but unavoidable delay occurred in giving effect to these arrangements, and the despatch of the grass could not be commenced until much later than had been expected. The delay was due to the following causes: (1) the grass was not fit to be cut for baling purposes so early as had been anticipated; (2) there was a great scarcity of labour to cut the grass—people in districts where this was plentiful being engaged in harvesting their crops, whilst people in districts where there had been failure of crops would not leave their villages to go on grass-cutting work elsewhere; (3) even when baled grass became available, there was great difficulty in procuring sufficient railway waggons for transport of the grass.

2. The first steps towards the provision of grass for starving cattle were taken by the Collector of Ahmedabad, who obtained the permission of Government to purchase for issue as takávi 50 lákhs of baled grass which merchants were offering from the stocks of the season of 1910-11. Government at the same time requested the Conservator, Central Circle, to report whether there were supplies of grass in the Central Circle which could be purchased for despatch to Gujarát. Reply was given that 225 lákhs of pounds of grass could be obtained from Mr. Bhiládswála from the forests of Navápur in Khándesh, in which he had been given the monopoly of cutting grass under certain conditions. Upon this Government requested that it might be ascertained whether any grass could be obtained from Mr. Bhiládswála in excess of that amount. The operations for the supply of fodder then came under my direction, and the first step taken was to enforce the clause in the agreement entered into in 1910 by Mr. Bhiládswála with Government, whereby on condition of being granted the monopoly for the collection of grass from forests in Navápur (West Khándesh) he was bound, (1) to provide a reserve of 25 lákhs of grass to be kept in the hands of Government for use in time of scarcity and to be replaced yearly, (2) to provide 225 lákhs of baled grass in addition to the above, whenever in any year on account of scarcity in any part of the Presidency grass should be required by Government. Unfortunately Mr. Bhiládswála had failed to make timely arrangements for the purchase and erection of the necessary hydraulic presses in 1910-11, which was the first year of his contract, and in consequence of no work having been done in that year the 25 lákhs of reserve grass had not been provided. This benefit was therefore lost to Government. Mr. Bhiládswála was now requested to supply the full 250 lákhs of grass for this season of 1911-12, and the result of his operations will be shown later.

3. As it was impossible to procure a larger quantity of grass from Mr. Bhiládswála the collection of grass from other sources was taken in hand and the following arrangements were made.

The Conservator of Forests, Northern Circle, was called upon to collect and to press the greatest quantity of grass possible in his Circle, and for this purpose he arranged that operations should be undertaken in the Kolába, North, South and Central Thána and Surat Forest Divisions. The demand made upon him was for the supply of 400 lákhs, and he reported that he could collect 350 lákhs. These proceedings of the Conservator, Central Circle, were approved of by Government and funds allotted. Meanwhile the Collector of the Panch Maháls had arranged with his Divisional Forest Officer to cut the grass of the previous year's growth, which was still standing in the forests, for supply to the cattle of that district. This grass, though naturally of very poor quality, was of great use in keeping the cattle alive till better fodder could be obtained.

The Commissioner, Northern Division, now submitted an estimate of the amount of grass that would be required in Gujarát, and stated that he considered there was need of supplementing local grass by purchases from the Central Provinces, whence in the famine of 1899-1900 a great quantity of grass had been supplied to the Bombay Presidency. The extent of the demand for fodder in the present famine could not be foreseen definitely at this time, because though the first rains had failed there was hope that the later rains would yet relieve the situation. Also the demand for fodder was mainly in Gujarát; there had been very scanty rain in Ahmednagar and Sholápur and Eastern Poona, but these districts were demanding only relatively small quantities of fodder; Khándesh though also hard hit

could support itself from grass obtained from its own forests without importations from outside. Government were loth therefore to indent upon the Central Provinces for grass, until it was certain that the fodder required for Gujarát could not be obtained from our own forests in sufficient quantity. Later the Conservator, Central Circle, was authorized to purchase 45 lákhs of grass from the Central Provinces, the actual request for which had, however, been sent on 3rd October in reply to a telegram from the Chief Conservator of Forests, Central Provinces, on 30th September 1911, offering that amount. He was informed further that an additional supply would be asked for from the Central Provinces, if the 750 lákhs, which had by this time been arranged to be collected in the Presidency, proved to be insufficient. Finally in November when all hope of rain had disappeared, the Conservator was authorized to make a request for the supply of an additional 350 lákhs, thus raising the amount required to 400 lákhs, which was practically the amount which had been obtained from Central Provinces in the famine of 1899-1900. This quantity was promised by the Chief Conservator, Central Provinces, who had shown in a previous letter that he could supply the amount; but for various reasons which will be stated latter, less than half this quantity had been supplied when the fodder operations were concluded.

4. In addition, as there was reason to fear that Mr. Bhiládwála would not be able to provide the full quantity of grass demanded of him, further collections of grass were arranged for in Khándesh as follows:—

(a) A contract was given to Mr. Nasarwánji Dádábhoj by the Collector of West Khándesh for the supply of 20 lákhs of baled grass for delivery to him for disposal in West Khándesh district only. This quantity was subsequently increased to 50 lákhs, but the actual quantity delivered was about 38 lákhs only.

(b) The Divisional Forest Officer, Working Plans, Central Circle, was directed by me to arrange and superintend the collection and baling departmentally of 25 lákhs of grass.

(c) A contract was given by the Divisional Forest Officer, West Khándesh, to Mr. Jagtap, a contractor for the Military Farms, for the collection and delivery of 50 lákhs of grass baled or unbaled at rates fixed accordingly. This contractor, however, failed to deliver more than about 20 lákhs of grass.

Further, the Conservator of Forests, Southern Circle, was requested to collect and bale 20 lákhs of grass for supply to the Belgaum and Bijápúr districts, where also there was a fear of a fodder famine. The amount actually supplied was 31 lákhs, and a larger amount would have been obtainable but for the failure of the late rains in Belgaum where only the collection of grass could be undertaken, and from other causes. At a later date the Divisional Forest Officer, Poona, was directed to collect and bale 2½ lákhs of grass from his Western Ranges for supply to the Eastern talukas. More would have been obtainable from this district, if the sales of Kurans had not been effected before the failure of the rains had been apprehended.

5. The result of the above arrangements was that 1,150 lákhs of grass in all were to be collected, baled and delivered, the quantity being made up as follows:—

Grass from Central Provinces	...	...	...	...	400
Northern Circle, Bombay	...	...	...	...	350
Central Circle, Bombay	...	...	...	...	380
Southern Circle, Bombay	...	...	...	...	20

) 1,150 lákhs.

Provision had thus been made for the collection of nearly 300 lákhs more of grass than had been provided in the famine of 1899-1900, when there had been a general failure of the rains throughout Gujarát and the Deccan. A deficiency in the collection of the Central Circle, due to the fact that all the operations were necessarily being carried on in one thinly populated corner of Khándesh where only was the grass obtainable within practicable distance of a railway, but more especially the failure of the Central Provinces to deliver quite half of what had been indented for, caused the actual supply of fodder to exceed only slightly that of the last-mentioned year, which was previously the largest ever made. As, however, various charitable associations which had been formed to assist the Gujarát districts were also able to despatch large quantities of fodder, the amount which was provided from all sources proved sufficient in the end, though a few lákhs of grass were purchased for Ahmedabad as a safeguard in July 1912, just before the monsoon of 1912 broke out. And it is satisfactory to note that with the exception of about 3 lákhs in the Central Provinces the whole of the grass collected was despatched before the rains of 1912 set in.

6. The unavoidable delay in commencing despatch of baled grass has already been recorded. The first lot was sent off, from the Central Provinces, on 15th October 1911; and the last consignment, also from the Central Provinces, was made on 21st July 1912.

II.—DIFFICULTIES OF OBTAINING (a) LABOUR, (b) TRANSPORT.

7. From the inception of the famine fodder operations difficulties were experienced in getting labourers in sufficient numbers for cutting the grass. I do not deal here with the Central Provinces, as except by one officer no reports of their work have been submitted to me by the Central Provinces officers. It is believed, however, that their difficulties were

confined to obtaining railway waggons for despatch of the grass, though if earlier intimation had been given there would have been greater facility in obtaining the amount of grass asked for, and the price would have been much less. In the Northern Circle (Bombay) the rice crops were being harvested, and in addition there was a large demand for labour on the part of the railways which absorbed much of the available local labour supply. Great delay was experienced in beginning work. The help of the Commissioner, Central Division, was obtained, and a number of men and women were imported into Thána from the Ahmednagar and Sholápur districts for grass-cutting work. These people had, however, only come under pressure, and they left the work after a few days. Some were attracted to the better paid railway work, but the majority went back to their villages; and their action caused Government to sustain a loss of several thousands of rupees which had been expended in paying their railway fares and giving advances. These sums had to be written off subsequently as irrecoverable, since on inquiry by the Mámlatdárs it was found that the people had no means to pay back the money they had received. The lack of labour delayed the cutting of grass, and this not only prevented early despatch of baled grass, but added to the trouble experienced by the shortage of railway waggons, since no advantage could be taken of the slack season when railway waggons were plentiful, and all the baled grass was brought for transport at a time when even in normal years the railways have difficulty in meeting the demands made on them for the supply of waggons.

8. Much the same state of affairs prevailed in Khándesh. Though there was less competition of the railway for labour, there were many different contractors who required labourers and a very scanty population to draw upon. Spurred on continually by the Divisional Forest Officer, West Khándesh, Mr. Bhiládwála made all efforts in his power to obtain men, and even went so far as to import a number of Mianas from Káthiáwár with disastrous results since these men performed a minimum of work and that often dishonestly (*e. g.*, putting stones, etc., in their grass bundles to increase weight, and bringing the same bundles twice for payment). They soon demanded to be sent back to their homes, and to prevent the possibility of violence it was necessary for him to pay their return fares and send them away. Mr. Nasarwánji and Mr. Jagtap had quarrels over the labour question, and there were mutual recriminations of enticing away each other's labourers. The work of both was much delayed, and partly from this reason, but mainly from lack of efficient supervision, the supply of grass made by Mr. Jagtap eventually fell much short of what he had contracted to collect. Looking back on it now a year hence, I cannot see how any further steps could have been taken anywhere to obtain at an early date the labour that was required, and the same difficulty will present itself in any future operations that may require to be taken. The climate of Thána and Khándesh in October, November and December is unhealthy for people who are not indigenous to the country, and people cannot be induced willingly to emigrate there, even temporarily, for work of the nature that we require.

9. The difficulties which were experienced in obtaining railway transport for the baled grass are fully known to Government, and I do not consider that I need go into further detail beyond stating that the complaints of the Central Provinces Forest Officers were particularly frequent and urgent, and that our own officers did their utmost to secure waggons. I acknowledge that, when the urgency of our requirements were realized, officials of the two railways concerned—the G. I. P. Railway and the B. B. and C. I. Railway (including T. V. Railway)—were prompt in their endeavours to assist Government. There were, however, troubles besides the actual shortage of waggons, *e. g.*, the scarcity of water for supply to engines along the Godhra-Rutlam section, which interfered with the despatch of grass from the Central Provinces to Gujarát. A conference was held, after the operations had concluded, in Ahmedabad in August 1912, when a number of Government officials and chief officers of the two railways were present. The matter of the supply of railway waggons for transport of grass in the past famine and in times of future scarcity was discussed in all its bearings. A copy of the report of the Conference and the orders of Government passed on it are appended to this report. Taking all the facts into consideration, I submit that it is a matter for congratulation that, although so much trouble was experienced in the transport of the grass, and although as a consequence the supply of grass from the Central Provinces was considerably curtailed, yet from the time that despatch of grass was begun a continuous supply of grass was maintained to all districts requiring it, so that the sale depôts were practically never depleted, and all the grass baled was in the end despatched and delivered. Further, only a small quantity of grass was delivered so late as to fail to find purchasers, after good rains in the month of July, 1912, had relieved the situation. For this result I think that the railways have well merited the thanks of Government. The actual quantity of grass carried by the railways during the famine was enormous. An official of the B. B. and C. I. Railway told me that it had amounted to 4,000 lákhs of pounds (if I remember correctly) on that railway alone. The carriage of the Government famine grass was therefore only a small part of the work done in the transport of grass. In concluding my remarks on the subject, I may remark that difficulties were often experienced in obtaining carts for the carriage of grass to depôts. These, however, were minor troubles, and were overcome without adding seriously to the delay experienced from other causes.

III.—ARRANGEMENTS FOR BALING GRASS.

10. On account of the fewer number of labourers required and the concentration of the work at depôts, less difficulty was experienced in obtaining labour for baling grass than was the case with the cutting. The work was, however, delayed on account of

- (i) the bad condition and need of repairs of the hand-presses already in stock ;
- (ii) the impossibility of buying new presses at once since no firms in Bombay held them in stock, ready-made ;
- (iii) by the failure of Mr. Bhiládwála to have his hydraulic presses set up and in working order in 1910-11, as he should have done according to his contract with Government.

Still in spite of the above difficulties, baling work was commenced with a few presses as soon as a sufficient quantity of grass had been cut and brought to depôts ; and in the earlier months after commencement of fodder operations there was always more grass at all depôts than there was transport available to take it away.

11. The hand-baling presses which had been purchased and used in previous years of fodder scarcity had been stored for future use, so that when the present operations were directed to be undertaken there were a number of presses available in all circles. In the Central Circle there were 58 presses, *viz.*, 30 stored at Mánjri in the Poona District, and 28 at Navápur in the Khándesh District. Ten of the Poona presses were lent to Mr. Nasarwánji and 20 were sent to the Conservator, Northern Circle, for use in that Circle. Of the Navápur presses 24 were lent to Mr. Bhiládwála, and 4 were used for departmental work. No new hand-presses were purchased in this Circle. Later, after inspecting the working of a steam baling plant at Talegaon employed by the Military Farms, we decided to experiment with a similar plant for pressing the grass which had been collected departmentally at Khandbara, and that which had been delivered by Mr. Jagtap. This grass was expected to amount in all to 50 lákhs of pounds or more. Accordingly an agreement was made with Messrs. Macbeth Brothers for the hire, with option of purchase, of a steam engine and two presses. There was a certain amount of trouble and correspondence with the firm regarding the kind of presses intended, etc., before this steam baling plant was set going in an efficient manner, but it is not now necessary to do more than refer to this, as the baling was done eventually in a satisfactory manner. The plant was set up at Khandbara, a station on the Tapti Valley Railway, in January, and, as the presses first supplied proved quite unable to perform the work, two of Howards' Lion Presses were brought up to replace them in February. The baling then commenced in earnest, and from that time it was carried on in a highly satisfactory manner. Messrs. Macbeth Brothers provided the working staff, and we paid the wages and the cost of all stores required. The condition of hire of the plant was the payment of Rs. 1,000 a month, with option of purchase at any time for Rs. 12,500 less any sum already paid for the hire, and plus 5 per cent. on sale price. This steam baling plant proved very successful. It was simple to work, required a small number of labourers, and baled the grass expeditiously and in very compact bales, so that about double the weight of grass could be loaded into a railway waggon as compared with hand pressed grass. The engine was kept at work till 31st May, when it completed the baling of all the grass in hand. In all over 38½ lákhs of pounds were thus steam-baled. The whole plant was then purchased from Messrs. Macbeth Brothers and resold to the Military Farms Department, Poona (who were anxious to buy it) for Rs. 3,000 less than the sum paid by Government. This was profitable to Government since, if the plant had not been purchased by Government, the bill for the hire would have amounted to more than Rs. 4,000. A few accessories and surplus stores were included with the plant when sold to the Military Farms.

The cost of the employment of the steam baling plant was therefore Rs. 3,000. The total cost of accessories, fuel, water barrels and carriage of water for the engine, wire for ties, oil and grease, etc., required for the working of the plant amounted to Rs. 3,919. Labour charges, etc., amounted to Rs. 2,122. The cost therefore of steam-baling 38½ lákhs of grass amounted to Rs. 9,041 which works out at Rs. 2-6-0 per 1,000 lbs. The estimate of the firm for doing the work by contract was 4 annas per bale.

12. The grass supplied by Mr. Bhiládwála at Navápur was according to his contract to be baled by hydraulic presses. For the purchase of these presses he had received advances from Government, but at the commencement of the operations only two hydraulic presses had been obtained instead of the six agreed upon. As already stated, Mr. Bhiládwála's contract work should have been started in the season of 1910-11, but nothing was done by him in that year, and, when work had to be undertaken this year, even the two hydraulic presses purchased had not been set up. The presses were set up in December, but worked most unsatisfactorily, and after a time and when only about 14 lákhs grass had been pressed the working of these presses was abandoned, and baling carried on entirely by hand-presses. There were various causes which led to the failure of the hydraulic presses—badly chosen site, inexperienced engineers and workmen, constant sickness, etc.—but the main cause was Mr. Bhiládwála's dilatoriness in getting and setting up the presses at the proper time. The result was the loss of all the advantages of the hydraulic baling, *e. g.*, nearly double the quantity of railway waggons were required for the carriage of the hand-baled grass than would have been the case if all the grass had been pressed by hydraulic presses ; and a greater cost was incurred by Government for the freight of the grass. Whilst recording the failure of Mr. Bhiládwála in his contract, it must be noted at the same time that the working resulted in considerable loss to himself. Although he had failed so completely to work according to his agreement, we bound him to his contract to supply the stipulated quantity of grass and he succeeded in giving 195 lákhs of grass. Owing to the high rates paid for grass cutting the price per 1,000 lbs. to be paid to him by Government was increased from Rs. 5-8-0 to Rs. 6 for the bulk of what he supplied, and there is reason to believe that he sustained a loss in his operations in spite of this concession. But

for this result he had largely to thank his own dilatory conduct in not having commenced his work in the preceding year when conditions were favourable.

13. Thus most of the baled grass in the Central Circle was obtained under contract. But in all the Bombay Forest Circles and in the Central Provinces the collecting and baling of grass was undertaken partly departmentally and partly by contracts given out to individuals, who undertook to deliver a certain quantity of baled grass on rail at a fixed rate per 1,000 lbs. or per ton. In the Northern Circle, Bombay, 155½ lákhs of grass were collected and baled departmentally, and 199 lákhs of baled grass were supplied by contractors. In the Central Circle 237 lákhs were collected and baled by contractors, 15½ lákhs collected by contractors but baled departmentally, and 27½ lákhs collected and baled departmentally. In the Southern Circle the whole of the operations were carried out departmentally. The proportion of the departmental and contract work in the Central Provinces are not known, but it is understood that the main part of the baled grass was obtained through contractors.

14. The number of presses on hand in the Northern Circle at the commencement of work has not been reported. Hemp presses lent by local merchants in the Panch Maháls were used with Irani presses, and baled grass satisfactorily. There were contradictory reports from different divisions of the relative advantages of Irani type presses and hand lever presses. In some divisions men could only with difficulty be got to use the Irani presses on account of the hard work involved in working them, and preferred the old fashioned hand lever presses. There is reason to believe that, where the severe labour was complained of, the presses had not been sunk into pits dug in the ground; when this was done so that half the height of the press was below ground level, the labour of filling the presses and exerting the pressure was much reduced. This was done invariably in the Central Circle, and greatly facilitates the working of the presses; but, if the presses are worked from the ground level, the labour involved is undoubtedly severe. Irani presses have distinct advantages over other hand-presses in that they press tighter and are less liable to breakages of essential parts. In South Thána twenty-one new Irani presses were supplied and were worked with success, after a start with them had once been made—whereas in North and Central Thána the Irani presses were discarded in favour of the hand lever presses. The Irani presses were worked successfully in the Central Circle, and were pronounced superior to other hand presses which were used in the Central Provinces. It follows that the trouble in the Northern Circle which was experienced must have been due to the correct manner of using the presses not having been taught. In future fodder operations an officer appointed specially on the work would travel round all the supplying districts, and would teach the better methods practised in one district to the officers of others.

15. The baling in the Southern Circle was performed by means of six Irani presses which were in stock from the fodder operations of previous years. They are reported to have given trouble from being old and in poor repair at the start, but were not complained of for any other reason.

IV.—TOTAL COLLECTION OF GRASS FROM ALL FOREST CIRCLES IN BOMBAY AND CENTRAL PROVINCES AND ITS DISTRIBUTION.

16. The total provision of grass which had been arranged for has already been stated to have been 1,150 lákhs. The actual quantity collected and baled was as follows:—

	Lákhs.
Northern Circle, Bombay	363½
Central Circle, "	280
Southern Circle, "	31
Central Provinces	190
Total	864½

NOTE.—It is interesting to note that in the famine of 1899-1900 the quantity of fodder supplied to grass depôts as in the present operations was 788 lákhs. Local supplies to cattle camps in different districts were, however, made in addition to the extent of 88 lákhs.

17. This grass was distributed as follows:—

	Lákhs.
Ahmedabad	368½
Kaira	156
Panch Maháls	113½
Khándesh	47½
Ahmednagar	17
✓ Poona	16½
Sholápur	2
Belgaum	30½
Bijápur	24½
Mahi Kántha	22½
Pálanpur	½
Rádhanpur	16½
Baroda	½
Military Farms	44½
	860
* Baled but not despatched... ..	4½
	864½

* Destroyed by fire or ruined by rain. (Central Provinces.)

A general summary of the operations in each of the Forest Circles is given below.

Northern Circle.

18. In all 354½ lákhs of grass were collected and despatched so that the amount promised from this Circle, *viz.*, 350 lákhs, was exceeded by 4½ lákhs. The quantity which the Conservator, Central Circle, had estimated as the possible supply had been originally 400 lákhs, and there is no doubt that the latter quantity even could be exceeded in any future operations provided timely arrangements were made. The total quantity of grass supplied by the Northern Circle includes 31,053,421 lbs. actually collected and despatched by rail, 3,734,289 lbs. collected in the Panch Maháls and supplied locally (not on rail), and 1,390,053 lbs. purchased from merchants in June and August as supplementary supplies after the fodder operations had been completed. The total of these figures amounts to 36,177,763 lbs. or in round figures 362 lákhs.

The collections made in the different Forest Divisions were as follows:—

	Departmental Lákhs.	By contract Lákhs.	Total Lákhs.
North Thána ...	11½	56½	68
Central Thána ...	...	64	64
South Thána ...	50	45	95
Kolába ...	...	34	34
Surat ...	56½	...	56½
Panch Maháls ...	37½	...	37½
* Purchased ...	...	...	9
		Total ...	364

19. The distribution of the grass from the Northern Circle was as follows:—

	Lákhs.
To Ahmedabad ...	164½
„ Panch Maháls ...	109½
„ Ahmednagar ...	5
„ Poona ...	15
„ Bijápur ...	23½
„ Baroda ...	½
„ Military Farms ...	44
	<u>362</u>

NOTE.—The difference between the amount collected and that distributed represents wastage.

The Northern Circle thus furnished a greater quantity of grass than any other Circle in Bombay and nearly double the quantity provided by the Central Provinces. The results of the fodder operations of this Circle were therefore very satisfactory.

Central Circle.

20. The amount of grass which was estimated to be collected in this Circle was 350 lákhs. The amount actually obtained was 241½ lákhs. To this, however, must be added the 38 lákhs collected for supply to Khándesh by Mr. Nasarwánji. This collection was made under the direction of the Collector of West Khándesh, but was made mainly from forest lands near Nandurbár which had been set apart for the contract. The contract was for the supply of 50 lákhs. Similarly the supply made by the Divisional Forest Officer, Poona, of 2½ lákhs of baled grass was for local consumption, and was arranged for at the instance of the Collector. Thus the total collection of grass in the Central Circle amounted to 280 lákhs approximately, and was obtained from the different sources as follows:—

	Loose grass. Lákhs.	Baled grass. Lákhs.
1. Bhiládhwála's contract ...	...	195
2. Jagtap's " ...	15½	4
3. Nasarwánji's " ...	...	38
4. Departmental collection ...	24½	...
3. Steam-baled by Government Agency... ..	...	38½
4. Hand-baled " " ...	...	1½
5. Poona ...	3	2½
	<u>43½ †</u>	<u>279½</u>
Totals ...	43½ †	279½

* Five lákhs of purchased grass has been included in the figures for North and Central Thána.

† The 43½ lákhs of loose grass produced 42½ lákhs of baled grass, showing a loss of ½ lákhs from dryage and wastage. The loss from this source was really greater than this, but had been made up for by deduction in the weight of grass brought for payment, for probable shortage.

21 The distribution of this grass was as follows, taken in round figures :

Khándesh grass—		Lákhs.
To Ahmedabad	...	73½
„ Kaira	... ..	137
„ Khándesh	... ..	47½
„ Poona	... ..	2½
„ Sholápur	... ..	2
„ Rádhanpur	... ..	16½
„ Pálanpur Police	... ..	½
„ Military Farms	... ..	½
		<hr/>
Total	...	280

The results show a deficiency of 100 lákhs in the quantity which was arranged for (380 lákhs). But considering the difficulties which were met with and overcome successfully, both in the matter of obtaining the grass and in despatching it when baled, they may be deemed to be satisfactory.

Southern Circle.

22. The operations in this Circle were on a relatively small scale. The first arrangement was for the collection of 20 lákhs of grass only. Afterwards it was amended to the collection of the greatest quantity available. The operations were carried on departmentally, and 31½ lákhs of loose grass were brought in, from which 31 lákhs (approximately) of baled grass were obtained. The grass was distributed as follows:—

Bijápur	... ..	30,500 pounds.
Belgaum	... ..	30½ lákhs.

The balance was sold locally or destroyed by white ants.

Central Provinces.

23. No summarized account of the fodder operations has been sent to me, and only in the case of the Hoshangabad Division has anything in the shape of a report upon the operations been submitted. Two other officers have sent short summaries of their operations but in the majority of cases I have been furnished with the total amounts of receipts and expenditure and nothing else. The amounts of baled grass which have been collected and despatched and the districts to which the grass was sent have been reported.

The amount of baled grass despatched was 187 lákhs and this was supplied by different Forest Divisions in the Central Provinces in the following quantities:—

Northern Circle, Central Provinces.

		Lákhs.
Hoshangabad	... ..	71½
Jubbulpur	... ..	9
Damoh	... ..	9
Saugor	... ..	10½

Southern Circle, Central Provinces.

North Chánda	... ..	21½
South Chánda	... ..	1½
Nagpur-Wardha	... ..	11
Raipur	... ..	½

Berár Circle.

Yeotmal	... ..	8
Nimar	... ..	44½
		<hr/>
Total	...	187

In addition to the above, about 3 lákhs of baled grass was either burnt or damaged by rain and was consequently not despatched. The total quantity of grass therefore provided for the Government of Bombay by the Central Provinces was 190 lákhs.

24. This grass was distributed as follows :—

	Lákhs.
Ahmedabad	130½
Kaira	19
Panch Maháls	4
Ahmednagar	11
Mahi Kántha	22½
Not despatched... ..	3
Total	190

As 400 lákhs of grass had been expected from the Central Provinces, the actual quantity received was disappointing. The poor result was not due to any lack of energy on the part of the Central Provinces officers who all worked loyally on our behalf. If the demand for grass had been given sooner the supply would have been greater; but though the lateness of the demand added to the cost of the supply, it by no means caused the whole of the deficiency. The Central Provinces officers reported that they had arranged for the whole quantity asked for, proving that the grass was still obtainable. An earlier demand by two months would have enabled earlier collection and despatch but it has to be noted that the 50 lákhs of grass asked for a month before the main request was made could not be despatched within two months; and it is a fair inference that, had the demand been made in September instead of in November, the additional amount of grass obtained would not have exceeded 50 lákhs. The real cause of the small supply lay in the difficulty of getting railway transport for the baled grass, which obliged the Central Provinces officers to curtail their operations, when it became evident that timely despatch of the full quantity, if delivered, could not be effected before the rains of 1912. Persistence in the supply would have caused a heavy loss to be sustained by the Government of Bombay, since all baled grass brought for despatch had to be paid for whether sent or not. Sale of the grass at that time would not have been possible, and its destruction by rain would have been inevitable.

25. It has been shown in paragraph 16 that the total amount of fodder supplied in the course of the operations under report was 864½ lákhs. Although not coming within the scope of the famine fodder operations conducted under the direction of the Conservator, Central Circle, it is of interest to record the quantity of grass which was obtained by Collectors of Districts directly, by purchase, in order to supplement the amount which they were receiving from the Government fodder supply. The additional grass thus obtained was as follows :—

By the Collector, Panch Maháls—	Lákhs of lbs.
from outside the district 10½ } ...	140½
„ local merchants 130 } ...	
By the Collector, Kaira	100
„ Ahmedabad	93
By the Tálukdári Settlement Officer, Gujarát—	
from contractors 18½ } ...	41½
„ Junágadh State 23½ } ...	
Total	375

The expenditure and receipts in connection with this supply are not known to me, but the grass was sold at a considerably lower rate than that at which it was purchased.

This amount of 375 lákhs added to the 864 lákhs provided by the fodder operations caused the total supply of grass which was made available directly by Government agency in this fodder famine of 1911-12 to amount to 1,239 lákhs of pounds.

Large quantities of fodder were also supplied from various Charitable Funds to the whole of Gujarát, including certain Native States.

V.—FINANCIAL RESULTS.

26. The financial results of the fodder operations of 1911-12 as exhibited by the accounts which have been submitted by the different supplying officers were as follows :—

	Receipts. Rs.	Expenditure. Rs.
Northern Circle, Bombay ...	3,79,957	4,22,645
Central Circle, Bombay ...	2,96,470	1,87,284
Southern Circle, Bombay ...	28,462	18,969
Central Provinces ...	2,89,216	2,56,198
Total ...	9,94,105	8,85,096
	Surplus.	1,09,009

NOTE.— In the receipts and expenditure of the Central Circle, Bombay, no account has been taken of the grass supplied by the Nasarwánji contract. This grass was paid for and sold by the Collector of West Khándesh, and no accounts have been submitted to me. The receipts and expenditure are estimated to have been about Rs. 38,000 and Rs. 30,000 respectively.

27. The figures of receipts and expenditure for the Bombay Circles are correct so far as they can be ascertained from the Forest Officers' accounts. They may differ to some extent from those which would be supplied by the Accountant General, but any possible variations would not affect appreciably the net results which show a profit of Rs. 75,991.

The receipts and expenditure in connection with the fodder operations of the Central Provinces have been obtained from the figures from their Divisions, furnished by the officers who supplied the fodder to Bombay. They do not represent the receipts and expenditure charged to the Bombay Government in connection with the same fodder. The Chief Conservator, Central Provinces, when he undertook to provide fodder at our request, agreed to supply it at the cost price, including incidental charges for extra establishments, cost of presses, etc., and we agreed to a maximum rate of Rs. 18 per 1,000 lbs. delivered at destination, and expected that the average price of the grass would be about Rs. 16-8-0. The grass supplied by the different despatching officers was charged at varying rates per 1,000 lbs. in the invoice bills sent for the acceptance of the officers to whose districts the grass was despatched. The sums shown in the invoice bills were on return of the bills entered in the books of the Central Provinces officers as receipts; and the expenses incurred by them in providing the baled grass were debited in their accounts as the expenditure on the operations. The average price per 1,000 pounds of the grass despatched and charged for in this manner has worked out at Rs. 15 instead of Rs. 16-8-0. But the same grass was under the orders of Government to be sold by Collectors of Districts at Rs. 12 per 1,000 lbs. in Gujarát and at Rs. 10 per 1,000 lbs. in the Deccan; consequently the real receipts which will be credited in Bombay for the sale of grass either for cash or as takávi will be less than the receipts shown in the accounts of the Central Provinces for the same grass. In fact, so far as the Bombay Government are concerned, the cost of the grass supplied by the Central Provinces is the amount shown in Central Provinces accounts as the receipts and not that shown as the expenditure. This, however, is a matter which may be left for settlement by the Accountant General. My explanation has been given merely to account for the fact that the fodder operations of the Central Provinces show a profit, whereas the Government of Bombay on whose behalf the grass was supplied must incur a loss over the transactions, since they sold the grass at less than the cost price.

28. In paragraph 26 it has been shown that the net result of the fodder operations has been a profit amounting to Rs. 1,09,009; and I have explained that this amount of profit has not really been obtained. It was not intended that any profit should be made. In the original forecast of the probable results of the operations we estimated that, if the grass were sold in the famine-stricken districts at Rs. 10 per 1,000 lbs., the receipts and expenditure in the Northern Circle operations would probably balance each other, and that at that price there would be a profit on the grass from the Central Circle. The reason was that in the latter Circle the major part of the grass was to be obtained from a contractor (Bhiládwála) at a cheaper rate, in the manner already reported. On the other hand, it was estimated that we should have to incur a considerable loss on the sale of the grass obtained from the Central Provinces, owing to the high price at which this grass was to be supplied. On consideration of all these circumstances, Government then fixed the selling price of Rs. 12 per 1,000 lbs. for the Gujarát districts which were to get the bulk of the expensive Central Provinces grass; and of Rs. 10 for the Deccan districts. In the end, the amount of baled grass which was taken by the Deccan districts proved to be much less than had been asked for in the beginning of the operations consequently a larger proportion of the fodder went to Gujarát and was sold at Rs. 12 per 1,000 lbs. than had been anticipated. This increased the receipts to some extent; but the main cause of the surplus lay in the shortage in the quantity of grass supplied by the Central Provinces and the cheaper rate charged for the grass which was actually despatched.

Thus instead of supplying 400 lákhs of grass at an average price per 1,000 lbs. of Rs. 16-8-0, the cost of which would have amounted to Rs. 6,60,000, the Central Provinces only provided 190 lákhs at an average price of Rs. 15 per 1,000 lbs., the total cost amounting to Rs. 2,89,2 6. Now the loss which we have sustained by selling the 190 lákhs of grass which had cost Rs. 15 per 1,000 lbs. at Rs. 12 per 1,000 must amount to about Rs. 57,000. The loss on 400 lákhs, if it had been supplied and sold at the same rates respectively, would have been Rs. 1,20,000 (since the Government of Bombay would have paid Rs. 6,00,000 for the 400 lákhs of grass @ Rs. 15 per 1,000 lbs., and recovered only Rs. 4,80,000 by selling the same quantity at Rs. 12 per 1,000 lbs.), and this would have wiped out all the surplus now shown.

29. I have given reasons why the net surplus shown in paragraph 26 should be reduced by the deduction of the apparent profit of Rs. 33,000 shown against the Central Provinces. To obtain the correct result of our famine fodder operations it is still necessary to curtail the surplus by a further sum of Rs. 57,000 representing the real excess of expenditure over receipts due to selling below cost price. If these subtractions are carried out, we are left with a net surplus of Rs. 19,000, and this I submit is the actual profit which Government have made on their fodder operations. Further, if the fodder collection and supply had been as extensive as Government had desired and anticipated, by selling the grass at the low rates which had been fixed, Government would have sustained a net loss of Rs. 1,00,000 approximately; and a loss of more than this amount had actually been budgetted for in connection with these fodder operations.

VI.—APPRECIATION OF THE SERVICES OF OFFICERS.

30. The thanks of the Government of Bombay are due to Mr. G. S. Hart, C.I.E., Chief Conservator of Forests, and to Messrs. Hill, Blunt and Haines, the Conservators of the Northern Berar and Southern Circles, Central Provinces, for the cordial assistance which they rendered and the care and trouble which they bestowed upon the work of supplying fodder to the Bombay Presidency. All the officers in charge of Divisions who were entrusted with the actual collection and despatch of the fodder displayed zeal and discretion; and it was in no way due to any want of forethought or energy on their part that the actual quantity of fodder supplied fell so much short of the quantity which had been promised. Courteous treatment was accorded to all my communications, although frequent changes in orders given regarding the distribution of the fodder, had to be made, due to the exigencies of the demands from different districts; and these changes caused them without doubt a certain amount of extra trouble.

31. In the Central Circle, Bombay, Mr. Hamilton, Divisional Forest Officer, West Khándesh, was placed in general charge of the operations, which were being carried on in his Division. He displayed a good capacity for organization combined with energy and great driving power. It was solely due to this quality in Mr. Hamilton that we succeeded eventually in getting 195 lákhs of grass out of Mr. Bhiládwála's contract. With a perfect will to act up to his contract Mr. Bhiládwála was confronted with great difficulties. Some were due to his previous dilatoriness, but mainly they were difficulties in procuring labourers to cut and bale grass. He had, however, to deal with covert opposition on the part of some minor officials and people in the neighbourhood, and might have succumbed if Mr. Hamilton had not supported and encouraged him, and forced him to fresh efforts. Also Mr. Hamilton's mechanical knowledge and ability were of great service in connection with the erection and working of the steam baling plant at Khandbara.

Mr. A. F. Gonsalves, Divisional Forest Officer, Working Plans, was placed in charge of the departmental collection of grass at Kholvihir, and was for some weeks subsequently in charge of the steam-baling work at Khandbára. He worked well and energetically, and secured a good collection of what turned out to be the best hay baled in Khándesh. After the transfer of Mr. Gonsalves, Mr. Pethe who succeeded him worked exceedingly well in supervising the steam-baling.

Mr. V. R. Mirchandani, Sub-Divisional Officer, West Khándesh, was in charge of the Navápur operations, and was more especially concerned with the arrangements for the despatch of the baled grass. Mr. Hamilton remarks of him that he deserves the greatest praise for the energetic way in which he worked and the satisfactory results, and I thoroughly agree with the commendation.

32. In the Southern Circle, Mr. E. M. Hodgson conducted the fodder work with great thoroughness, and his operations though on a limited scale were very successful.

33. In the Northern Circle, the Acting Conservator, Mr. Fisher, rendered all the assistance in his power, and worked hard to make the operations in his Circle a success. Mr. G. E. Marjoribanks, Divisional Forest Officer Surat, and Mr. C. E. L. Gilbert, Divisional Forest

Officer, North and Central Thána, deserve commendation for the manner in which the operations in the Divisions in their charge were conducted, and the satisfactory results which they achieved. Mr. Marjoribanks carried out well the difficult task of getting his baled grass to the railway, over bad roads and long distances, from the Dangs where it had been collected, and he supplied more than the quantity expected.

Mr. Gilbert was in charge of two Forest Divisions at the time, in both of which fodder operations were carried on upon an extensive scale; and he had to arrange for despatch of grass along both the B. B. & C. I. and the G. I. P. Railways. He had to work exceedingly hard and did so with unflinching pluck and energy; and he showed great tact in his dealings with grass merchants and contractors.

The good work done by subordinate officers has been brought to the notice of the Acting Conservator, Northern Circle, by the Divisional Forest Officers.

34. The Head Clerk of the Conservator, Central Circle, Mr. T. G. Mahajan, displayed zeal and ability in managing the additional work in the office, caused by the extensive correspondence and numerous references which were necessary in connection with the fodder operations.

VII.—LESSONS LEARNT AND RECOMMENDATIONS FOR FUTURE OPERATIONS.

35. With the further experience of the more limited collection of fodder required to be undertaken in October 1912 I am obliged to remark that we must take it as certain that, in any year in which famine fodder operations have to be undertaken in the Bombay Presidency, it will not be possible to begin an effective supply of new baled grass in the Northern Circle and Central Circle before the second week in November. In the first place the grass in the Konkan and in Khándesh is not fit to be cut until about October 15th; and secondly, there will always be a difficulty in obtaining labourers at that time in sufficient number to do the grass-cutting. In the Southern Circle where grass collection is made in the Belgaum District, it will be possible to commence on October 1st, since in normal years the rainfall there is not so great and ends sooner. I therefore recommend that, when there is not a sufficient reserve of grass in the hands of Government to carry on with in the early stages of a fodder scarcity, steps should be taken to purchase stocks of the last season's baled grass from merchants, as soon as *apprehension* is felt that by failure of the rains there may be scarcity in any part of the Presidency. For this purpose I advocate the issue of confidential instructions to selected officers to buy such quantity of grass as they can get up to a limit to be fixed by Government, at the best rate obtainable, but with a condition in the purchase agreement that Government have the option of cancelling the purchase within the period of (say one) month from date of agreement on paying a forfeit of say Rs. 2 per 1,000 lbs. of grass contracted for. This condition can be taken advantage of by Government if the apprehension of scarcity proves unfounded and the grass is not required. The loss to Government will not be very great, and is only the cost of a partial insurance against famine. The subject of buying grass after a time of scarcity of fodder has actually arrived has been dealt with in the report of the Conference at Ahmedabad, but the above suggestion is an amplification of what was recommended there for future guidance.

36. Other suggestions were also made, and the report of the Conference may be referred to in connection with this report. The extended use of steam-baling, for instance, has been advocated, and I have dealt with the working of the steam plant at Khandbára rather fully in order to show the advantages to be derived from it. It is much easier for the *baling* of grass to be undertaken departmentally than the *cutting* of grass, and contractors cannot be expected to incur the expense of purchasing steam baling plant for their work, and Government should therefore undertake it; and wherever large quantities of grass—about 50 lákhs of lbs. or over—can be brought into one depôt, it would pay to put up a steam baling plant. The endeavours of officers should be directed towards the giving out of contracts for the delivery of loose grass; and, if such contracts can be placed with reliable men for a sufficient quantity, arrangements for steam-baling should then be made—hand-baling being resorted to until the steam plant is available. But, if contractors will not take up contracts for cutting grass only, the steam presses may still be purchased by Government and placed at the disposal of contractors on terms to be arranged.

37. In all Circles the hand-presses in stock were found to be in a defective condition when required for use, and there was consequent delay in beginning baling work owing to the time occupied for getting new parts and executing the necessary repairs; this should be avoided in future. All presses should be overhauled and repaired at the end of any operations upon which they have been used, and their working parts thoroughly oiled and greased. The oiling and greasing should be repeated at least twice a year, and the officer in whose charge the presses have been placed should submit a yearly report on the condition of the presses. As breakages are bound to occur in working,

spare parts should be kept in readiness as suggested by the Divisional Forest Officer, Belgaum.

Winding axles.
Wire ropes.
Shafts.
Chain wheels.
Brake wheels.

The spare parts recommended are shown in the margin, and the proportion recommended is one set for every four presses kept in stock. These should be supplemented by further sets at once, when the presses are brought out for work on a larger scale.

38. The transport of the grass by railway will probably always present difficulties in times of fodder scarcity, since it throws an enormous additional traffic on the railways at a time when they are already, in normal years of trade, finding it difficult to provide enough waggons to cope with the traffic. Grass is for its weight the most bulky article of trade which the railways are called upon to deal with, so that a possible diminution in the amount of cotton and wheat which may be caused by a bad season would not set free a sufficient number of railway waggons to compensate for the greater demand of transport for grass. Steam-baling, which reduces the bulk of the grass bales and enables nearly double the weight of grass to be loaded into a waggon as compared with hand-pressed bales, will relieve the pressure on the railways to a large extent, but it will be a long time before the ordinary grass contractors and merchants will venture on the outlay necessary for the purchase and maintenance of steam baling plant. The railways intend in future to give preference to steam-baled over hand-baled grass in providing carriage for fodder (*cf.* Ahmedabad Conference), and this may lead eventually to an extension of the use of steam in baling; and it may happen that grass merchants will see where their advantage lies sooner than I have anticipated above.

39. When it is foreseen that the supply of grass from our own forests will not be sufficient and that grass must in addition be obtained from the Central Provinces, the decision to indent on the Central Provinces should be made not later than the middle of September, and earlier if possible. Unless early intimation is given, not only will there be a difficulty in arranging for the transport of the quantity which may be asked for, but the cost of the grass will be enhanced for the reason that the yearly sales of the forest grass will have been held already, as happened in 1911-12, and contractors will charge higher rates for supplying the grass than would otherwise be the case. Also the Divisional Forest Officers in the Central Provinces will not be able to undertake departmental supply which is often cheaper than contracts, if the request for grass is given after the sales of forest grass have been effected. It is important too that the despatch of Central Provinces grass should commence before the trade demand for railway waggons sets in, which is generally in November or December. It is understood that grass can be cut in the Central Provinces earlier than in Bombay, and the advantage of early supply is manifest. It is only in times of severe scarcity that grass from the Central Provinces will be wanted, but, even if an actual request for grass is not advisable so early as September, an intimation given in September that a certain quantity may be required will enable the Chief Conservator, Central Provinces, to make suitable arrangements for meeting the demand, should it be made definitely at a later date.

40. In the operations under report, after the urgent need of the transport of grass to famine-stricken parts had been fully realized by the railway companies, special trains were employed frequently for the grass, and the advantage of this procedure was enormous. The loading with baled grass and the despatch of a special train of sixty waggons could be completed within twelve hours. The loading was often performed at night, especially on moonlight nights, when ordinary work at the stations would not be going on. There was a great saving of time and an increase in the haulage performed by the rolling stock. This system of using special trains should be extended and developed to the utmost extent; and where the lead for the carriage of the grass is comparatively short, *e. g.*, within the distance of 200 miles, it would facilitate despatch greatly if one or two special trains could be made up and assigned specially and solely to particular stations for the carriage of grass from that station. This could not be done unless a constant supply of baled grass sufficient to keep the trains employed were arranged for; steam-baling would enable this to be done. On the other hand, when special trains are not assigned solely for the carriage of grass from certain stations, it should still be the particular care of the officer in charge of fodder at each despatching station to arrange that as far as possible sufficient bales to load a special train are always on hand; and he should give timely warning to the Railway Traffic Officers, whenever it becomes apparent that stocks in the depôt have been depleted, so that a special train may not be sent at a time when, owing to an insufficient quantity of baled grass, the train cannot be loaded to its full capacity.

41. The concession rate of $\frac{1}{2}$ anna per waggon per mile, which has been granted by the Government of India for railway freight of grass in times of scarcity, is liable to abuse, with the result of a further congestion in the railway traffic, and a serious increase in the amount which has to be paid to the railways by Government in compensation for the cheap rate. This subject was much discussed at the Ahmedabad Conference, and the views of officers were stated. I have been giving it further consideration, and I am of opinion that the concession rate should not be granted indiscriminately, and that, when sanctioned by the Government of India, the Government of Bombay should have power to limit its application. I recommend,

for example, that a maximum rate should be imposed at which grass should be sold by the merchants and others who have made use of the concession for the transport of their grass. The maximum rate may be fixed, if necessary, at an appreciably higher figure than the rate at which Government is disposing of the Government grass, so as to allow of a fair profit. In the famine of 1911-12 the rate at which fodder was sold by Government in Gujarát was Rs. 12 per 1,000 lbs., and if merchants sending grass by rail at the concession rate were limited to, *e. g.*, Rs. 15 per 1,000 lbs. as their selling rate, they should still be able to get a profit sufficient to make it worth their while to send grass to the famine districts; and there would be no diminution in the quantity of grass brought into the district. The application of the rule would be difficult but not impossible; the knowledge of its existence would check speculative removal of grass without in my opinion reducing the chances of grass being brought for legitimate sale at a rate which people can afford to pay. The case of grass imported into Native States at the concession rates was dealt with at the Ahmedabad Conference.

42. In case there is serious difficulty in procuring labourers to cut grass at the commencement of fodder operations or later on, the employment of gangs of prisoners from jails should be considered. This suggestion was made in the course of the operations under report, but the Inspector-General of Prisons refused to consent to such a procedure. There are obvious difficulties in the way of the employment of prisoners, but they do not appear to be insuperable. The men to be employed could be chosen from amongst those who have committed minor offences, or whose sentences will expire shortly, and who are of suitable class for the work of grass-cutting. It should be easy to guard against the escape of such men in the event of their having the inclination. Temporary huts could be erected for them in the forests and other necessary arrangements made. The nature of their employment would keep them close together in their work and facilitate supervision; and a great amount of grass could be cut daily by gangs of prisoners working regularly. The labour would in most cases prove congenial, and tend to improve their health. If, on the other hand, they were required to work in unhealthy districts, the members of the gangs could be changed, say every fortnight, or whenever any of them showed signs of suffering in health.

43. In conclusion it may be thought that some remarks are called for concerning the requisition, or possible collection, of fodder which can be made in the event of the occurrence of other periods of scarcity in the Bombay Presidency. It seems possible to state that there can never be a more complete failure of the rains in the Ahmedabad, Kaira and Panch Maháls Districts and the Mahi Kántha Agency than was the case in 1911-12. The Surat and Broach Districts were, however, only slightly affected. Although it is therefore within the bounds of possibility that a greater fodder scarcity than that now being dealt with may occur in Gujarát, it is not a likely event. In the Deccan, though there was severe scarcity of fodder in parts of all districts, the failure of the rains has not been general. The eastern talukas of all districts suffered from scarcity of fodder, but some suffered more than others. The amount of fodder which was imported into the Deccan districts by Government or charitable agencies was small, and in all cases less than the original estimates made by the Collectors of what was required. So far as can be ascertained, it amounted to 62½ lákhs from all sources, grass from our famine fodder operations being 60 lákhs only. All these districts utilized the local resources at their disposal to the greatest extent possible, and those which had the most forest lands fared best. Practically every blade of forest grass was cut, and never were the benefits of the fire protection which had saved the grass more appreciated. This was markedly the case in Khándesh, where a continual stream of grass-laden carts was passing throughout the season along the roads which led from the forests. Had the grass in the forests been burnt, as would have been the case a few years ago, the difficulties of Government in this year would have been enhanced considerably by the need of importing a large quantity of grass into this district. Actually, only 50 lákhs of grass from the famine fodder operations in that district were consumed in Khándesh. Taking these facts into consideration and comparing the general results of the fodder famine of 1911-12 with those of the fodder famine of 1899-1900, which was general throughout the Deccan, it may be inferred that in the event of a serious failure of the rains in the Deccan (1) Khándesh should be self-supporting, (2) the amount of fodder which would require to be imported to meet the scarcity in the other Deccan districts would not exceed 400 lákhs. In the famine of 1899-1900 the total supply was 375 lákhs only. In Gujarát the only districts which contain forest are Surat and the Panch Maháls. The demands for imported fodder in these parts are therefore much greater. Still in the present fodder famine the original estimates of the amount of fodder which should be imported proved to be exaggerated, mainly from the fact, it is presumed, that sufficient allowance had not been made for what the people of the districts might be able to do themselves in providing fodder for their cattle. Thus on 11th September 1911, even after the first estimates of the Collectors of Districts had been somewhat reduced, the Commissioner, Northern Division, was constrained to report that the estimates for Ahmedabad and Kaira alone amounted to 7 lákhs of grass per diem for 8 months, *i. e.*, 1,680 lákhs of grass. Under no circumstances can it be conceived that this amount of grass could be supplied by means of Government famine fodder operations, and in the famine of 1899-1900 the quantity supplied was only 482 lákhs. Endeavours were made, however, to supply 800 lákhs to these two districts

this year. The amount actually supplied was 525 lakhs. This was supplemented by supplies from other sources, *e. g.*, Charitable Funds and purchases by Collectors, but, so far as it has been possible to ascertain, the total amount of fodder imported into these two districts *from all sources* other than the private purchases of the people themselves was 937 lakhs only (Ahmedabad 615 lakhs, Kaira 322 lakhs). The Panch Maháls required 285 lakhs which included 37½ lakhs of local forest grass, and 140½ lakhs purchased from local merchants and others. The total amount of the fodder supplied to the above three districts out of the collection made in famine fodder operations now reported upon was 638 lakhs. Mahi Kántha and other Native States received 39½ lakhs so that our total supply to Gujarát was 677½ lakhs. The remainder was received by purchase and from Charitable Associations, etc. Reviewing all the circumstances, the amount of fodder available, of labour obtainable, and of railway transport which may be procurable, I am of opinion that the utmost amount of fodder which Government can and should undertake to provide in the event of a general scarcity should not exceed 1,200 lakhs of grass, *vis.*, 800 lakhs from the Presidency and 400 from the Central Provinces. At the same time by the employment of steam presses as far as possible it should be practicable to provide that amount. In the event of a scarcity in the Deccan only, 400 lakhs may, as already shown, prove to be as much as the people will take even in a severe famine.

44. The price at which the grass should be sold by Government, in order that the receipts and expenditure may balance as nearly as possible, should be fixed, as was attempted in the year under report, by calculating the probable total cost of the fodder operations. The calculations of 1911-12 were upset by the failure of the Central Provinces to supply the quantity of grass which had been promised. In future operations it may be possible to give more timely intimation to the Central Provinces, and in that case it may be expected that the price of this grass will not differ materially from that obtained in the Bombay Presidency. The experience derived from the fodder operations of 1899-1900 and 1911-12 proves that, if the grass collected in Bombay is distributed at a price of Rs. 10 per 1,000 lbs., the expenditure and receipts will balance fairly evenly; that rate may therefore be accepted as the fair, all round rate to fix as the selling price of fodder, provided (1) the arrangements for collection and supply both of Bombay and Central Provinces grass have been made at an early date, and (2) that the cost of labour does not increase. Government must always of course sustain a loss from the need of having to bear the cost of the difference between ordinary rates for carriage of grass on railways and the concession rates. This matter has been ignored in the present report, since it did not enter into the fodder operations, the expenditure being debited to Famine Relief.

45. Mr. Fisher in his report of the operations in the Northern Circle has recorded some useful calculations of the relative cost of departmental fodder supply and of fodder supply through contractors. It may be taken as proved, by the result of this year's work, that it is better to give out contracts for the work than to do the work departmentally. The cost to Government is somewhat higher in contract work, but the labour and responsibility of the forest staff in supervising contract work is much less than in undertaking departmental work. The ordinary forest work of Divisional Officers necessarily suffers through the extra work of fodder supply which is thrown upon them in times of famine; this disadvantage should be reduced as much as possible; and this can be done by giving out contracts whenever reliable men can be found to undertake them. In the case of each contract a definite area of forest would be assigned in which the contractor may cut grass, and his contract will include the cutting, collecting, baling and delivery into railway waggons of a stated quantity of baled grass at a fixed rate per 1,000 lbs. weight of grass taken at time of despatch; the minimum dimensions and weight of the bale which he must supply would also be determined and entered in his agreement.

General results of the fodder operations in the Bombay Presidency.

Circle.	Division.	Total quantity of grass.	Receipts.	Expenditure.	Name of Divisional Forest Officer.
		Lbs.	Rs.	Rs.	
Northern Circle.	Panch Maháls	3,734,289	12,745	13,129	Mr. D. R. S. Bourke.
	Surat	5,659,634	67,364	51,328	Mr. G. E. Marjoribanks.
	North Thána	13,185,319	1,50,123	92,675	Mr. C. E. L. Gilbert.
	Central Thána	9,493,501	1,02,506	74,487	Mr. A. C. Robinson.
	South Thána	3,392,329	32,731	26,334	Mr. R. H. Mádan.
	Kolába	887,033	14,103	27,414	
	Purchased ... ..	.....	385	.....
	Sundries ... ..	.....	.....	.....
	Railway freight, cost of presses and sundry expenses ... ..	.....	.....	1,37,278	
	Total, Northern Circle	36,352,155	3,79,957	4,22,645	
Central Circle.	West Khándesh	23,980,169	2,93,784	1,85,515	Mr. J. Hamilton.
	Mr. Nasarwánji's contract	3,800,000	38,000 (about)	30,000 (about)	Figures estimated only.
	Poona	268,585	2,686	1,769	Mr. E. G. Oliver.
	Total, Central Circle	28,048,754	3,34,470	2,17,284	
Southern Circle.	Belgaum	3,087,749	28,463	18,970	Mr. E. M. Hodgson.
	Grand Total	67,488,658	7,42,890	6,58,899	

Note.—Surplus Rs. 83,991, or, deducting the estimated profit on the Nasarwánji contract, surplus Rs. 75,991.

General results of the fodder operations in the Central Provinces.

No.	Name of the supplying officer.	Name of the district to which the supply of grass has been made.					Total quantity of grass supplied.	Date of		Revenue.	Expenditure.	Name of Divisional Forest Officer.
		Ahmedabad.	Kaira.	Panch Mahals.	Mahi Kantha.	Ahmednagar.		Commencement.	Finish.			
	<i>Northern Circle, Central Provinces.</i>	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.			Rs.	Rs.	
1	Hoshangabad ...	6,038,785	429,605	...	...	666,467	7,134,857	November 1911	July 1912	1,08,450	95,815	Mr. R. M. Williamson.
2	Jubbulpore ...	891,341	...	...	...	...	891,341	1st January 1912	30th June 1912	14,389	10,436	Ráo Bahádur S. G. Paranjpe.
3	Damoh ...	678,483	189,098	23,100	...	...	890,681	6th December 1911	21st July 1912	14,097	11,007	Mr. W. G. J. Peake.
4	Saugor ...	875,600	210,560	...	...	...	1,084,160	December 1911	July 1912	17,236	16,342	Mr. D. O. Witt.
	<i>Southern Circle, Central Provinces.</i>											
5	North Chanda ...	1,354,352	380,418	...	...	431,162	2,165,938	25th October 1911	30th June 1912	30,014	23,531	Mr. F. J. Langhorne.
6	South Chanda ...	140,706	...	...	...	...	140,706	23rd January 1912	Do.	2,251	2,196	Mr. J. Donald.
7	Nagpur-Wardha ...	1,120,000	...	...	...	...	1,120,000	15th October 1911	31st May 1912	15,837	16,066	Mr. G. M. Townshend.
8	Raipur ...	18,320	...	...	...	...	18,320	.....	19th December 1911	256	114	Mr. A. E. Lowrie.
	<i>Berar Circle.</i>											
9	Yeotmal ...	15,520	672,857	92,488	...	15,418	796,283	1st December 1911	20th June 1912	13,404	12,072	Mr. C. A. Malcolm.
10	Nimar ...	1,908,473	...	290,222	2,242,638	...	4,441,333	20th November 1911	27th June 1912	73,282	68,619	Mr. L. K. Martin.
	Total ...	13,039,586	1,822,538	405,810	2,242,638	1,113,047	18,683,619	.....	.....	2,89,216	2,56,198	

REPORT OF THE CONFERENCE HELD FOR CONSIDERING THE QUESTION OF THE
CONDUCT OF FAMINE FODDER OPERATIONS AND THE ORDERS
OF GOVERNMENT ON THE REPORT.

Letter from the Conservator of Forests, C. C., No. 2231, dated 23rd August 1913.

I have the honour to refer to Government memorandum No. 4772, dated 20th May 1912, forwarding copy of a letter, dated 16th idem, from the Agent, B. B. & C. I. Railway, with accompaniment, and to my letter* No. 818, dated 4th June, on the subject, and to state that as directed by Government a conference was convened by the Commissioner, N. D., and held at Ahmedabad on August 15th and 16th when the following officers and gentlemen were present :—

- Mr. Barrow, Commissioner, N. D.
- „ Woolcombe, Agent, B. B. & C. I. Railway.
- „ Rumboll, General Traffic Manager, G. I. P. Railway.
- „ Hanson, General Traffic Manager, B. B. & C. I. Railway.
- „ Purshotamdás Thákurdás.
- „ Chuckerbutty, Collector of Kaira.
- „ Painter, Collector of Ahmedabad.
- „ Ghosal, Collector of the Panch Maháls.
- „ Tupper, Tálukdári Settlement Officer.
- Major Wood, Political Agent, Jhálávád Pránt.
- The Hon. Mr. Millett, Senior Conservator of Forests.

2. The suggestions made by the Agent, B. B. & C. I. Railway, in his letter under reference were then considered, and the question of the best arrangements to be made for the collection, purchase and transport of grass in the event of the occurrence of a fodder famine in any future year were fully discussed. The result of the discussions and deliberations of the conference have been summarised, and, as requested by Government, I beg to submit my report with the summary of proceedings as follows.

Summary of Proceedings of the Conference.

1. Under the arrangements which existed in this past fodder famine of 1911-12, when each Collector and Political Agent was working for himself, cross-booking on railways was more or less inevitable, each officer in making purchases of grass sought the cheapest market and gave little consideration to any comparison of transport facilities. The chief complaints made by the railway authorities are that they were called upon to carry fodder from long distances when it might have been made available nearer, and that their working was hampered by the collection of fodder for the use of the affected districts being in the hands of a number of officers and agents, who were working independently of each other and without any attempt at co-ordination. We are of opinion that all ground for complaints of this nature might be removed by the adoption of the scheme now to be outlined.

2. As soon as a fodder famine appears to be imminent, the provisions of section 33 of the Famine Relief Code should be complied with, one point to be discussed at the meeting ordered therein to be convened being the special railway arrangements, as, *e. g.*, the provision of temporary sidings for loading grass, etc., which may be called for by the special circumstances of the time.

3. An officer on special duty, preferably the Senior Conservator, should be appointed at the earliest opportunity to direct and superintend all arrangements connected with the purchase, collection, transport and delivery of fodder to the affected areas. His first duty should be to ascertain (*a*) where, and to what extent, private stocks of fodder are available for purchase, (*b*) the amount of grass which is available in forest and revenue waste lands in the Presidency for cutting and baling, and (*c*) what supplies can be obtained, to supplement these, from similar areas outside the Presidency, if the local supply is insufficient.

4. Simultaneously with these enquiries the officer on special duty should ascertain from the Collector of each affected district the amount of fodder which, it is expected, will have to be imported, and the places at which the imported grass will have to be laid down.

5. When a fodder famine is threatened, all sales of grass from forests and revenue waste lands should be deferred or postponed, until the officer on special duty has determined

* Not printed.

whether he will require the grass in particular areas or not. The departmental cutting of grass in the areas selected for the supply of fodder should commence as early as possible, and, in view of the experience gained this year of the extreme difficulty of obtaining labour for cutting grass, the revenue officers should employ their influence fully in order to induce the people to go on the grass-cutting work in sufficient numbers. We are also of opinion that small prison gangs might, with advantage, be employed on this work. It has to be noted that the experience gained at Khandbāra this year shows that the use of steam-baling plant is both practical and economical, and it has enabled double the quantity of grass to be carried in a truck as compared with hand-pressed bales. Steam-baling should, therefore, be resorted to in preference to hand-baling wherever the quantity of grass which can be collected in a pressing centre is sufficient to justify it. The railways should give preference to pressed over unpressed fodder, in all cases where the latter may be offered for despatch.

6. To carry on until the new grass crop is available, the officer on special duty should proceed at once to purchase grass from old stocks in the most convenient places, even though by a change in the situation the grass thus bought should subsequently have to be resold at a loss. We suggest for consideration that the maximum amount of grass to be purchased in this manner should be limited to fifty lakhs of pounds for each affected district. This grass will be available for removal by the railways as soon as it is indented for by Collectors or Political Agents. It may be noted that the railway authorities are particularly anxious that the transport of grass should commence at the earliest possible date in order to avoid congestion of traffic.

7. In a severe famine the total quantity of the grass that can be collected by Government agency will generally fall short of the amount needed for the affected districts, and it will be the duty of the officer on special duty to consider the best way of supplying the deficiency by purchase through contractors. In order to effect this economically and to prevent, by simultaneous purchases in different places, the raising of prices by dealers, the officer on special duty should be given temporarily the services of a sufficient number of responsible officers, whom he will depute to visit the localities in which he has reason to believe grass is procurable. These officers will enter into contracts for the supply to Government of a fixed quantity of grass on the best terms obtainable, and the contracts will be arranged in such manner as to enable each district to be supplied from the purchasing centre which is nearest to it.

8. When the purchases have been effected, the officer on special duty will inform the railway authorities of the quantities of grass which will require to be carried from each purchasing centre situated on their respective systems, the stations of delivery, and the date from which operations may be expected to commence.

9. When a charitable relief society has been started—part of whose operations are to be directed towards the distribution of fodder—the officers of the society should before undertaking any operations place themselves in communication with the officer on special duty. They should inform him of the localities in which they propose to purchase grass, the funds at their disposal, and approximately the quantities which they hope to purchase, and should continue to do this as more funds become available. This will enable the officer on special duty to arrange that unnecessary competition between the agents of the charitable relief society and his own agents (*i.e.*, the officers mentioned in paragraph 7 above) shall be avoided. The officer on special duty and his agents will generally be in a position to render assistance to the society in the despatch of the society's grass to the affected areas to which they wish it to be consigned, and the officer on special duty will communicate to the authorities of the railways concerned the fact that the fodder which is to be despatched is being sent with the knowledge and approval of Government and that waggons may be supplied.

10. We have considered the effect of the grant of concession rates for the carriage of fodder during times of scarcity, and are of opinion that it has during the last year been granted with unnecessary liberality. In the case of takāvi grass and grass carried for charitable purposes there is of course nothing to be said against the grant of the concession; but there is no reason why it should be used to increase the profits of speculators or to relieve a wealthy Native State like Baroda of any portion of the famine expenditure which should rightly fall upon it; and we suggest that a refund of the amount paid by Government this year on importations into Baroda might equitably be demanded from the State. On the other hand, the effect of the concession on the price of grass imported by private traders to supply the demand of the people must be considered. Two questions arise, (*a*) whether, if the concession had not been granted this year, the price of grass in the affected areas would have been appreciably higher, and (*b*) whether, without the concession, grass would have been imported as freely by private traders. As to (*a*) we are in considerable doubt, and in fact it is impossible to obtain any certainty; but we have to admit that it is possible that the price of grass would have been generally higher in Ahmedabad and other affected areas, had the concession not been granted.

11. With regard to (*b*) it is clear that this year, when the concession has been granted, the distant markets where grass was cheap have been resorted to freely, with the result

that prices have been kept down within the affected areas. It is probable that, even without the reduction of the railway rates and the subsequent grant of the concession rates, it would have paid merchants to import this long distance grass, but it can scarcely be doubted that the concession, which induced the prospect of very large profits, stimulated the trade enormously. On a consideration of the *pros* and *cons* we are unable to recommend that the concession rate should be withdrawn, but we consider that some discrimination is called for in its application. Some of our members are in favour of a graduated scale of the concession rate, which would lower the value of the concession in the case of distant markets which are resorted to only because grass is obtainable cheaply, but the majority are of opinion that the concession rate should be uniform, whether the market is distant or near. The purchase of grass cheaply at places far distant from the affected parts is limited necessarily by the difficulty of obtaining sufficient transport, since the wagons used for the haulage are able to make fewer trips than in the case of short distance grass. The General Traffic Manager of the B. B. & C. I. Railway pointed out that, if the railway had made greater efforts to clear the long distance markets, it could not possibly have cleared the near markets as it has done this year.

12. We would urge that in times of stress such as famine, departmental regulations, such as the customs restrictions imposed at Viramgám, which are likely to hamper the free movement of railway wagons should be relaxed as far as may be practicable.

13. We have considered a suggestion that Government should maintain a permanent stock of grass to meet the possibility of a fodder famine occurring from time to time. We are not in favour of this being done, since we consider that the loss which would probably have to be incurred would be far heavier than the cost of special operations undertaken only when a fodder famine actually occurs.

RESOLUTION.—The suggestions contained in the summary of proceedings of the Conference are approved and should be embodied in the Famine Relief Code as Appendix X. The Superintendent, Government Central Press, should be requested to print the necessary correction slip to the Code.

2. As regards paragraph 9 of the summary, if a permanent Charitable Relief Fund Committee is constituted, the Special Officer should place himself in communication with it.

3. The questions at the employment of jail labour on grass cutting and the liability of the Baroda Darbár for the amount paid on account of the concession for the carriage of fodder to that State are under separate consideration.

4. A copy of this Resolution should be furnished to the Government of India and to the Quarter Master General in India. Copies should also be supplied to the Committee of Enquiry appointed under Government Resolution No. 10013, dated 28th October 1912.

5. Copies of the Resolution should be placed on the Editors' Tables and supplied to the Editors of Newspapers. The Resolution should be published in the *Bombay Government Gazette*.

(BOMBAY FAMINE RELIEF CODE, APPENDIX X.)

As soon as a fodder famine appears to be imminent, the provisions of section 33 of the Famine Relief Code should be complied with. An essential point to be discussed at the meeting ordered therein to be convened should be the special railway arrangements, *e. g.*, the provision of temporary sidings for loading grass, etc., which may be called for by the special circumstances of the time.

2. An officer on special duty, preferably the Senior Conservator, should be appointed at the earliest opportunity to direct and superintend all arrangements connected with the purchase, collection, transport and delivery of fodder to the affected areas. His first duty should be to ascertain (*a*) where, and to what extent, private stocks of fodder are available for purchase, (*b*) the amount of grass which is available in forest and revenue waste lands in the Presidency for cutting and baling, and (*c*) what supplies can be obtained, to supplement these, from similar areas outside the Presidency, if the local supply is insufficient.

3. Simultaneously with these enquiries the officer on special duty should ascertain from the Collector of each affected district the probable amount of fodder which will have to be imported, and the places at which the imported grass will have to be laid down.

4. When a fodder famine is threatened, all sales of grass from forests and revenue waste lands should be deferred or postponed until the officer on special duty has determined whether he will require the grass in particular areas or not. The departmental cutting of grass in the areas selected for the supply of fodder should commence as early as possible, and, in view of the experience gained of the extreme difficulty of obtaining labour for cutting grass, the revenue officers should employ their influence fully in order to induce the people to go on the grass-cutting work in sufficient numbers. Steam-baling should be resorted to in preference to hand-baling wherever the quantity of grass, which can be collected in a pressing centre, is sufficient to justify it. The railway should give preference to pressed over unpressed fodder in all cases where the latter may be offered for despatch.

5. To carry on until the new grass crop is available, the officer on special duty should proceed at once to purchase grass from old stocks in the most convenient places, even though by a change in the situation the grass thus bought should subsequently have to be re-sold at a loss. The maximum amount of grass to be purchased in this manner should be limited to fifty lakhs of pounds for each affected district. This grass will be available for removal by the railways as soon as it is indented for by Collectors or Political Agents. It should be noted that the railway authorities are particularly anxious that the transport of grass should commence at the earliest possible date in order to avoid congestion of traffic.

6. In a severe famine the total quantity of the grass that can be collected by Government agency will generally fall short of the amount needed for the affected districts, and it will be the duty of the officer on special duty to consider the best way of supplying the deficiency by purchase through contractors. In order to effect this economically and to prevent, by simultaneous purchases in different places, the raising of prices by dealers, the officer on special duty should be given temporarily the services of a sufficient number of responsible officers, whom he will depute to visit the localities in which he has reason to believe grass is procurable. These officers will enter into contracts for the supply to Government of a fixed quantity of grass on the best terms obtainable, and the contracts will be arranged in such manner as to enable each district to be supplied from the purchasing centre which is nearest to it.

7. When the purchases have been effected, the officer on special duty will inform the railway authorities of the quantities of grass which will require to be carried from each purchasing centre situated on their respective system, the stations of delivery, and the date from which operations may be expected to commence.

8. When a charitable relief society has been started—part of whose operations are to be directed towards the distribution of fodder—the officer on special duty should place himself in communication with the officers of such society and ascertain the localities in which they propose to purchase grass, the funds at their disposal, and approximately the quantities which they hope to purchase. This will enable the officer on special duty to arrange that unnecessary competition between the agents of the charitable relief society and his own agents (*i. e.*, the officers mentioned in paragraph 6 above) shall be avoided. The officer on special duty and his agents will generally be in a position to render assistance to the society in the despatch of the society's grass to the affected areas to which they wish it to be consigned; and the officer on special duty will communicate to the authorities of the railways concerned the fact that the fodder which is to be despatched is being sent with the knowledge and approval of Government and that wagons may be supplied.

9. In times of stress such as famine, departmental regulations, such as the customs restrictions imposed at Viramgám, which are likely to hamper the free movement of railway waggons, should be relaxed as far as may be practicable.

APPENDIX 12.

(Referred in paragraph 48 of the Report.)

Report of the Managing Committee of the Bombay Central Famine Relief Fund.

Owing to the almost complete failure of rains after June 1911 a large and important part of the Bombay Presidency was overtaken by famine and scarcity. The distress was severe especially in Káthiáwár, Cutch, Gujarát, Mahi Kántha, Kaira and Panch Maháls. Though it was not acute in the latter part of 1911 amongst the inhabitants of the affected areas, the cattle suffered severely from want of fodder and water, and it was feared that later on the poorer classes might require liberal assistance to enable them to tide over the bad times and give a fresh start in life. Government had introduced the usual relief measures under the Famine Code, but, from evidence collected in the famine-stricken districts, it was clear that, in addition to what Government were doing, considerable non-official relief was necessary, and Government would welcome the help of private charity to supplement their efforts in relieving the distress in the affected areas. With this object in view the Honourable Mr. Parckh, assisted by Messrs. Deodhar and Joshi of the Servants of India Society, arranged for a meeting of leading citizens of Bombay on 30th October 1911. Mr. G. K. Deodhar, who had just returned from his tour in some of the affected areas, gave the meeting an idea of the needs of the situation, and told them how Government officials and the public outside were willing to co-operate with a Central Famine Relief Committee, if one was formed. An influential Committee was appointed, and it was decided to start a Central Famine Relief Fund and to appeal to the public for support.

The objects of the Fund were as under :—

- (1) To supplement the Government measures of relief (with the co-operation of local committees and local officials) by taking such steps in saving the cattle as may be found useful and practicable.
- (2) To supplement the efforts made by Government in mitigating human suffering by organising relief with their co-operation, and also to adopt such measures as may be deemed necessary to relieve the distress of poor agriculturists and other famine-stricken people.
- (3) To collect funds for the purpose of organising and distributing private relief in the affected areas of this Presidency.
- (4) To secure volunteer workers and assistance of local committees in promoting the object of this Fund.
- (5) To take such other steps as may be thought necessary in furtherance of the end in view.

The Committee's scheme of relief was as follows :—

I. Cattle Relief—

- (a) Cattle Camps.
- (b) Cattle Kitchens.
- (c) Cheap fodder shops.
- (d) Distribution of fodder.
- (e) Deporting cattle to jungles, etc.
- (f) Supplying hay at cost price to those who in the affected areas undertook to use same for cattle camps or cattle kitchens, or sell it at a loss to deserving persons for their cattle.

II. Human Relief—

- (a) Gratuitous relief to the respectable poor not receiving outside help.
- (b) Distribution of clothing to the people on relief works.
- (c) Provision of some necessaries of life to those on the relief works.
- (d) Cheap grain shops in places severely affected by scarcity.
- (e) Help to orphans, widows and destitute and decrepit persons not in receipt of any other relief.
- (f) Distribution of valedictory dole to those agriculturists who receive no takávi from Government to enable them to start their agricultural operations at the beginning of the next monsoon.

Subscriptions were accepted ear-marked for any of the above objects if so desired by subscribers.

3. Towards the end of February 1912 distress to the cattle got very keen, and a requisition, signed by the leading citizens of Bombay of all communities, was sent to Mr. Narottam Morarji Goculdas, Sheriff of Bombay, to call a public meeting of the citizens

of Bombay to consider "What steps may best be taken to assist the Managing Committee of the Bombay Central Famine Relief Fund in their efforts to alleviate the distress amongst individuals and cattle in the affected areas."

His Excellency Sir George Clarke, Governor of Bombay, kindly consented to preside at such a meeting called at the Town Hall on 19th March 1912. About Rs. 15,000 were announced as donations on the spot, and the meeting was a very successful gathering attracting general sympathy of Bombay Presidency as a whole to the affected areas.

4. *Funds.*—Before this Fund was started representatives of various Mahajans, Pinjrapoles and Gau Shalas from the affected areas had been busy taking round subscription lists in Bombay for cattle relief. These lists got good support from the Bombay public and especially from inhabitants of the affected areas who had settled in Bombay for business purposes. Besides this, the following bodies had commenced distribution of funds available from accumulations in their Associations, or raised by special cesses on commodities in which their members dealt. The following Institutions and Associations gave money for relief purposes out of accumulated funds :—

- (1) Bombay Pinjrapole, Rs. 40,000.
- (2) Native Piece-goods Merchants' Association, Rs. 80,000.
- (3) Pearl Merchants' Charities Scale, Rs. 60,000.
- (4) Bombay Gaurakshak Mandali, Rs. 10,000.

The following Associations gave money from special cesses levied for famine relief purposes :—

- (1) Bombay Grain Merchants' Association (the cess being Rs. 1-8-0 per 100 bags of grain sold in the grain market at Mándvi, and Re. 0-1-6 per candy in grains sold by measurement), total contribution being Rs. 50,786.
- (2) Condiment Merchants' Association (the cess being on several articles of paint and condiments), Rs. 1,30,000 about.

Besides these, the Wádía Trustees had resolved to spend Rs. 1,00,000 for relief of famine distress, and Mr. Narottam Morarji Goculdas started on 13th January 1912 a "Two Annas Famine Fund" which amounted to Rs. 78,000.

Owing to the Royal visit, the work of collecting funds on behalf of this Committee was somewhat delayed, and the Committee had to requisition the assistance of the Indian Peoples' Famine Trust, Calcutta, to allow them to commence their operations of relief on a basis in keeping with the magnitude of distress. The appeal of the Committee was met by the Trustees of the Indian Peoples' Famine Fund on 6th January 1912 with a munificent donation of Rs. 50,000, and this sum may be said to be solely responsible for the free hand that the Managing Committee got at the commencement in giving relief. Subsequently, Rs. 1,00,000 more were voted by the Indian Peoples' Famine Fund Trust, in two more instalments. The Managing Committee desire to tender their best thanks to the Trustees of the Indian Peoples' Famine Trust, Calcutta, and all the generous contributors to this Fund, and trust that their mentioning the following donations here will not be looked upon as an invidious distinction :—

Rs.	500 0 0	His Excellency Sir George Sydenham Clarke, Governor of Bombay.
"	19,282 3 0	Remitted by Mr. Ichharam Suryaram Desai, Proprietor and Editor of "The Gujarati" (being collection in "One Anna Fund" in the columns of "The Gujarati").
"	19,025 0 0	From the Social Service League, Bombay (by a house-to-house collection in Bombay and suburbs).
"	16,951 3 0	Being collection by, and through, the Servants of India Society in various parts of India.
"	9,000 0 0	(about) were collected in June 1912 on the occasion of the Hindu "Purshottam" month by calling attention of the Hindus, by means of handbills, to the pitiable state of cattle in the affected areas, and offering to save from starvation till the end of July 1912 one cow for every Rs. 12 paid to the Managing Committee. Their Holinesses Maharaj Shree Tikayat Shree Gordhanlaljee of Nath Dwara and Maharaj Shree Gocul Nathjee of Bombay were pleased to give respectively Rs. 1,000 and Rs. 525 towards this collection, and this was followed by general sympathy of Hindus as a whole to the collection.

Very generous contributions amounting to Rs. 10,000 were received from Mr. Ratan Tata, Rs. 6,000 from Lálá Lajpatrái from the balance in his hands of the famine fund of 1908, Rs. 5,000 each from His Highness the Nizám, His Highness Sir Bhagavatsingji, G.C.I.E.,

Thákor Sáheb of Gondal, Miss Hamabai F. Petit, and Rs. 4,000 from Mrs. Jamnábai N. Sakkaí's collection. The total amount collected from all sources amounted to Rs. 3,46,418.

5. *Cattle Relief*.—Before the Fund was started, many officers from the affected areas had written to several of the prominent office-bearers of this Committee, inquiring whether Bombay would not extend her help to the affected areas during the distress. Immediately, therefore, after the formation of the Committee, the General Secretary placed himself in touch with such officers. It was found that the greatest need was of fodder being made available to the cattle in the affected areas at about normal rates. In some cases the officers advocated starting cattle camps or kitchens for preservation of plough cattle. The Committee voted grants for losses to be borne by sale of cheap fodder, and, in cases of cattle kitchens and camps, free fodder grants were voted.

Colonel H. D. Merewether, Political Agent, Pálanpur, called for cash remittances in case of all such grants, for he had in his districts, which are distant from railway lines, hay available at reasonable rates. The Mahajans in Cutch also called for cash remittances for the same reason. Barring these two, practically the whole of the affected areas applied for hay despatches to work off this Committee's grants.

The Delhi Durbar, an unusually pressing demand for coal for railway purposes in the first few months of 1912, and a large demand for rolling stock to move the export trade from other parts of India, all combined to make this period a time of "wagon famine" in conjunction with a fodder famine. Government officials and private individuals, together with managers of charitable institutions, in the affected areas, all uniformly complained that, in spite of their having purchased hay at various places, they were not able to import same in their own districts owing to wagons not being available. Many of the Dewáns of Native States wrote touchingly, asking this Committee's help to supply fodder at cost price.

The Railways had since 1st August 1911 introduced half rates for carriage of hay, *vis.*, two annas to two annas and six pies per waggon of hay per mile to the affected areas. The Government had offered concession on 1st October 1911, bringing the freight on wagon load of hay to the affected areas down to six pies per mile. In issuing the Press Note, dated 20th September 1911, notifying their concession, the Government of India had expressed a hope that the same would stimulate private venture in the importation of hay into the affected areas. As the concession was made available without any distinction to all who chose to send hay into the affected areas and as the waggon supply by the Railway Companies concerned grew smaller, the ventures of private dealers, who imported hay with the intention of making a profit, increased. Under such circumstances this Committee offered the General Traffic Manager, B. B. & C. I. Railway, that they would utilise wagons, placed at their disposal, for carrying hay to the affected areas, for supply of same at cost price or at reduced rates only. This Committee's hay was lying purchased at Bamanía, Amargarh and Bajarangarh on Godhra-Rutlam section of the B. B. & C. I. Railway line and at stations between Pálghar and Bulsár. The B. B. & C. I. Railway Company began giving about ten wagons a day from stations between Pálghar and Bulsár for carrying hay to Káthiáwár and Gujarát, and special trains on the Godhra-Rutlam line for carrying hay to the Kaira District. This supply of hay was distributed by the Managing Committee according to the needs of the several officers, individuals, and charitable institutions in the affected areas. Every one of the applicants for hay was requested to send in his requirements of quantity of hay per month, and the General Secretary took all possible care to see that no station in pressing need of hay was being starved for hay at the expense of any other that might be importing same with the object of laying in even small stock. Government are entitled to the best thanks of the people for the liberal concession, and on future occasions nothing will help famine areas so much as a freight concession being made available.

The Managing Committee have no hesitation in saying that their system of supply of hay has been keenly appreciated. Many of the indenters of the Committee's hay have assured the Committee that, were it not for the regular supply of hay from this Committee, their schemes of relief would have had to be given up; in several cases the Committee's hay is reported to have saved the position at many kitchens and camps, and, from reports received from all in the affected areas, there is no doubt that this Committee's hay-supplying operations have been the means of very considerable relief being afforded all round. Mr. H. L. Painter, I. C. S., Collector of Ahmedabad and Chairman of the Ahmedabad Famine Relief Committee, was given a first grant of Rs. 12,500 which was to be given in the form of free hay. On 15th April 1912 the Collector wired as under:—

"Have you despatched any grass as yet or must I close the kitchens."

The Committee are glad to report that, in reply to the above, hay was commenced to be despatched from 16th April, and by the 25th of April the Committee had posted to the Collector railway receipts for 625,000 lbs. of hay, thus preventing a breakdown in the Ahmedabad cattle kitchen. The quantities of hay moved to various stations against cheap hay grants, free gifts and cost price indents are given in the appended statement.

All the hay was insured against loss by fire in transit. At stations between Pálghar and Surat the hay lying in station yards was also insured. A charge of two annas per 1,000 lbs. was levied from those who imported hay at cost price, and in July one anna and six pies

per 1,000 lbs. were refunded, as the average cost on the total quantity moved did not come to more than six pies. There were no casualties during transit, but two fires took place at exporting stations in waggons immediately after they were loaded, the cause of the accidents being sparks from passing engines before the hay could be covered with sheets. The claims on this account, amounting to Rs. 272-8-0, were duly recovered from the Insurance Companies concerned.

6. *Supply of waggons.*—The Managing Committee commenced with a supply of ten waggons a day at stations near Bombay, and are glad to report that the General Traffic Manager increased this supply to 35 waggons a day towards the end of June 1912, when demand of hay was most pressing and piteous. Besides this, when circumstances permitted, specials were given to this Committee on the Tapti Valley line and latterly on the main line, too, despatches on the two lines amounting to two crores and eighty-eight lákhs of lbs.

On the Godhra-Rutlam section particularly, all hay, amounting to about 56 lákhs, was moved by specials, and Mr. S. G. Gogate, of the Servants of India Society, rendered signal service in buying with the assistance of Mr. A. Chuckerbutty, Collector of Kaira, 50 lákhs of lbs. from the Indore State at Rs. 11 per 1,000 lbs., and loading the specials under circumstances which might have baffled the patience of a less devoted, persevering and tactful person. It may be added that, besides moving 50 lákhs of lbs. of hay for the Committee, Mr. Gogate helped both the Government and local merchants there to move their hay also to the extent of a crore of lbs.

About 6 lákhs of lbs. of hay were bought through the Servants of India Society at Markundi, Bhopal, Datia, Dabourah, costing less than Rs. 10 per 1,000 lbs. at Ahmedabad, but, owing to inadequate waggon supply at these stations, it was not found possible to move more than 388,128 lbs. of this hay.

As has been mentioned above, a number of private funds were being administered from Bombay for relief in the affected areas. The managers of these funds, especially the Bombay Pinjrapole, the Gaurakshak Mandali, Piece-goods Merchants' Association, Condiment Merchants' Association and Mr. Narottam Morarji Goculdas, from time to time applied to the Committee for assistance by way of despatch of hay at cost price on their account, and the General Secretary attended to their applications as promptly as circumstances permitted. None who applied for hay to be sent at cost price on his account was refused that facility; in fact every one's indent has been fully attended to.

7. *Advancing rates of hay.*—The Managing Committee bought hay on B. B. & C. 1. Railway stations at Rs. 11, and paid steadily up to Rs. 20-8-0 per 1,000 lbs. The reason why more could not be bought at lower rates, say between Rs. 11 and Rs. 15, is that there was no certainty of a steady waggon supply at particular stations. In fact, the Committee bought hay wherever it suited the Railways to give them waggons. Again, buying hay in large quantities would have meant locking up that much cash, which also the Committee could hardly afford; it would have meant weighing over and storing the hay, and hence taking the risk of damage by fire or water at hay despatching stations. The despatches per day were limited, and hay merchants would not wait beyond a certain period for proceeds of their stocks, especially in a rising market. Under these circumstances the Managing Committee decided to buy in anticipation of a week's or fortnight's despatches only.

Mr. Tribhovandas Gandabhai of Umbargaon, doing hay business on commission, was engaged by this Committee, on a commission of four annas per 1,000 lbs. and net out-of-pocket expenses for carting and loading, to buy and despatch hay per the General Secretary's instructions. The total quantity bought and loaded by him for the Committee amounts to two crores and eighty-eight lákhs lbs. in all, at an average cost of Rs. 16.25, including charges of about Re. 0-8-0 per 1,000 lbs. The Managing Committee desire to express their satisfaction at the work done by Mr. Tribhovandas, whom they found straightforward in dealings and prompt and energetic in despatch.

8. *Loss of bales and weight during transit of hay.*—The Managing Committee had made it a rule to ask importers to accept their Agent's invoice weights and number of bales; whoever wished to assure himself better was allowed to send his representative to the hay-despatching stations to superintend the operations. Loss in hand-pressed bales during transit may be taken on an average to be 3 to 5 per cent. Many of the importers, however, complained of a bigger loss, especially those whose stations required hay to be transferred *en route* from broad-gauge to narrow-gauge waggons. At some of such importing stations, the Committee found that old and defective scales were used to check this Committee's weights, and hence weights at destination were not uniformly reliable.

To check the consignments at the most important of such junctions, *viz.*, Viramgám, the Káthiáwár Central Famine Relief Committee had posted a special clerk to superintend all transhipments of hay sent by this Committee, but the said clerk reported that loading and unloading of waggons used very often to be done at night, and "there was such stress of work that neither he nor the Railway authorities could possibly count the exact number of bales that were received, nor could they do so when re-booked in transshipment as the greater part of the work of transshipment was done at night." It is thus that the Managing Committee account for smaller number of bales than actually consigned being delivered to some of the consignees.

The Railway Companies refused to entertain claims for loss of bales or in weight, as they maintained they could take no responsibilities owing to the special mileage rate having been quoted.

9. *Cotton-seed Husks.*—For places where it was not possible to send hay for cattle, owing to their being distant from railway stations, towards the end of May 1912, when demand for fodder increased, the Committee despatched cotton-seed husks, a nutritive food for the cattle and a partial substitute for hay. A large quantity of these husks was sent to Cutch Mándvi and Anjar and to several places in the Daskroi Taluka of Ahmedabad. Everywhere the husks were found to be useful. At Cutch Mándvi Rs. 3,000 were given to the Mahajan for loss on sale of cotton-seed husks, which were sold at a loss of 33 per cent. Thus husks worth Rs. 9,000 were sold there at a loss of Rs. 3,000.

The cost of these husks was between Rs. 6-14-0 and Rs. 8-0-0 per 784 lbs., but railway freight was found to be prohibitively high, and, on the facts being brought to the notice of Mr. F. W. Hanson, the General Traffic Manager, B. B. & C. I. Railway, a special rate was allowed up to end of July 1912. About 800,000 lbs. of husks were sent in all, the major part having been bought from the Jamsed Oil Mill Co., Ltd., at Kurla.

10. The Managing Committee desire here to record their most sincere appreciations of the many numerous facilities afforded to them by the B. B. & C. I. Railway in the work of despatch of fodder to the affected areas. Whilst no one can deny the inadequacy of railway facilities for transport purposes during a period of unforeseen and abnormal circumstances, and taking into consideration the great scarcity of water even for railway purposes on the Godhra-Rutlam section from where 60 lákhs of lbs. of hay were despatched, it must be recorded that the very sympathetic manner in which Mr. F. W. Hanson attended to all the demands of this Committee has greatly assisted the affected areas in being supplied with as much fodder as was feasible under very trying circumstances. By a special resolution of the Managing Committee, their best thanks have been conveyed to Mr. Hanson for his valuable assistance.

11. The total quantity of hay carried to the affected areas by rail from 1st November 1911 to 30th June 1912 is 47,749 waggon-loads, containing about 45 crores of lbs. of hay. Of this, 39,940 waggons were despatched from stations on the B. B. & C. I. Railway, and 7,809 from stations on other railways. Of this total quantity, 4,709 waggon-loads carrying 4 crores of lbs. of hay were transhipped at Viramgám from 1st January 1912 to 30th June 1912 for Káthiáwár, of which more than 1½ crores were sent by this Committee; besides which the Bhávnagar Famine Relief Committee imported lbs. 2,086,512 by sea on their own account.

The B. B. & C. I. Railway carried 39,940 waggon-loads as under:—

Month.	No. of waggons.
November 1911	1,913
December "	2,710
January 1912	4,370
February "	5,217
March "	6,096
April "	7,487
May "	7,863
June "	4,284
	39,940

It will be seen that the bulk of the hay traffic was tendered in increasing quantities from month to month since November 1911. The B. B. & C. I. Railway maintain that, had the hay-moving operations of all concerned commenced on a large scale in October 1911, immediately after hay was harvested, the pressure for traffic on the railway line would have considerably fallen off from February onwards, when produce and cotton traffic demanded their attention. Besides this, the railways would have been able to move a much larger quantity of hay with considerably less strain to those responsible for cattle relief operations. The reduced rates of freight on hay available from 1st August 1911 and the Government concession from 1st October cost the B. B. & C. I. Railway alone more than Rs. 10 lákhs, and the Government about Rs. 12 lákhs.

12. *Human Relief.*—Human distress by famine was recognised by the Government in the Panch Maháls, where relief works had been opened. The monthly reports of the Collector, Panch Maháls, to the Bombay Government, have been satisfactory, stating the condition of the men on relief works as normal. To provide additional small comfort to the women and children on these works, 400 blankets were sent to the Panch Maháls during the winter of 1911.

But the greatest need for relief of human suffering was of help to the respectable poor who could neither beg nor go on the relief works. For such a good deal of money was placed at the disposal of the Government officials in Kaira, Panch Maháls and Pálanpur. Rates of grain were higher than in the preceding five years by 40 to 80 per cent.; to those who

earned a livelihood by petty cultivation and some sort of service during the cultivating season the sources of maintenance failed this year in the affected areas. To provide for these appeared to the Managing Committee to be necessary. Much of such relief work had to be done in Cutch through the Mahajans there, and liberal grants were given from time to time for this purpose.

Cheap grain shops have been included in the scheme of relief of this Committee; but all the officers in the affected areas pronounced this mode as being undesirable, as it required most careful watching and supervision. This was, therefore, given up at the commencement and was adopted later on for relief through the Salvation Army only, who offered to execute same satisfactorily.

A good deal of clothing was supplied to the persons on relief works in the Panch Maháls in May and June, when the need was pronounced to be very great. Generous persons offered the Committee old high class clothing for the poor and the needy. This was accepted and sent to places where respectable poor were being assisted. In cases where the clothing was found to be unsuitable to the people, it was sold off and the proceeds used to buy new clothing of the required quality.

To help *pardanashin* women in the Pálanpur Agency, the Managing Committee requested Mrs. Ramabai Ranade, President, Seva Sadan Society, Poona, to visit the Pálanpur Agency Thánas with a few lady volunteers. The invitation was readily accepted, and the Political Agent, Pálanpur, reports that Mrs. Ramabai and party were very helpful in giving relief to *pardanashin* women (inaccessible to male members of the Local Committee) there in a satisfactory manner. The Managing Committee's thanks have been duly conveyed to Mrs. Ranade and party.

13. *Wells*.—Benefiting by past experience, officers in charge of several districts in the affected areas had, since September 1911, arranged for the sinking of wells as a means of self-help to the people. However, in Kaira District there was a great scarcity of water reported, and at the request of the Collector the Managing Committee sanctioned Rs. 2,000 for kutchá wells.

The Collector's report shows that 28 wells were handled with Rs. 1,764-3-1 out of the amount as under :—

- 11 kutchá wells were dug.
- 13 wells were deepened by Kathawas, etc.
- 2 wells were cleansed.
- 1 well was repaired.
- 1 new Kandia well was constructed.

Many generous persons wrote to the Managing Committee, offering sums of money for the sinking of wells with troughs in the affected areas. Such grants were utilised for wells in places where the Committee was assured by the Government officers that water ran scarce even during normal years. During this distress such grants would provide work for the poor ones of the district too. The Managing Committee gave such grants on the express condition that the Mahajan or other responsible body of persons applying for the grant should undertake in writing, by an agreement with the local Government officer, to keep the well in good repair, and the trough filled ever after. Grants have been given for construction of wells and troughs at the following places at the cost stated below :—

- * Rs. 500 for a well and trough at Bhadwa (Hálár Pránt, Káthiáwár).
- " 350 for a well and trough at Samadhiala Charan in the Songadh Thána (Gohilwád Pránt). The cost of this has been given by Mr. Hargovinddas Moolchand of Bombay, in memory of Shethani Harkore, widow of the late Shet Damodardas Tapidas.
- " 300 for deepening of wells at Chomalpur (Gohilwád Pránt).
- " 1,202 for two wells and troughs at Virvadarka and Manaba through Malia Thándár. The cost of these has been defrayed out of Rs. 1,400 paid to this Committee by Mr. Mulji Damodar, of Bombay, in memory of his late wife and daughter.
- " 500 for repairs to a tank at Dudheri near Mahuva.
- " 200 for a well and trough at Songadh. The cost of this has been paid by Mrs. Surajbai in memory of her late husband, Mr. Chandulal Atmaram Kaji.

* The cost of this well was promised by "A Hindu Gentleman", but, as the well could not be completed before the rains, the same has not been recovered.

- Rs. 150 for a trough at Sultanpur in Gondal State.
 „ 300 for thorough repairs to a well and trough at Vadali, Mahi Kántha
 The cost of this has been defrayed out of Rs. 1,400 paid to this
 Committee by Mr. Mulji Damodar, of Bombay, in memory of his
 late wife and daughter.

Rs. 3,502

On the recommendation of Captain A. S. Meek, Political Agent, Gohilwád Pránt, Rs. 300 were voted for deepening of wells at Chomalpur, as the Committee were assured that this deepening of wells would, besides leaving a permanent boon to the people concerned, enable them to raise irrigated crops for their cattle during earlier part of 1912.

14. *Bullocks Grants.*—Item (f) in the scheme of human relief of the Committee has been attended to by placing Rs. 12,194 at the disposal of the undermentioned officers and Committees for distribution of cheap or free bullocks to such cultivators as had neither cash nor credit to enable them to re-start their work.

- 4,000 Collector, Panch Maháls.
 1,000 Political Agent, Mahi Kántha.
 1,000 Political Agent, Pálanpur.
 2,000 Káthiáwár Central Committee (out of this Rs. 1,000 were returned as not required).
 1,194 Kálol Committee.
 1,000 Collector, Ahmednagar.
 1,000 Political Agent, Gohilwád.
 1,000 Tálukdári Settlement Officer, Gujarát; as a special grant to help those who had lost their cattle in the Gir and were in consequence helpless for their agricultural operations. This was voted in September 1912.

12,194

These grants were made towards the end of June 1912, as the Managing Committee were informed that making these grants later would not be desirable, as the price of bullocks was going up. The Managing Committee could not vote more to this purpose at that time, because they had to attend to appeals for relief from various parts of the affected areas where rains were holding off. The distributing officers were requested to take necessary precautions that the bullocks thus made available to the poorest in the district may not be sold, thus frustrating the benevolent aim of this Fund. The Managing Committee are assured that necessary precautions have been taken, and at some places the animals so given have been branded for the sake of being distinguished, if trifled with.

15. The Managing Committee voted Rs. 25,000 to Mr. J. H. E. Tupper, I. C. S., Tálukdári Settlement Officer, Gujarát, for the purpose of giving cattle, free of cost price, to those who may have lost their cattle whilst out in Gir forest for grazing purposes. The Managing Committee were aware that the experiment of transporting cattle to forests or jungles for grazing purposes was not successful in the last famine, but the arrangements made by Mr. Tupper in the Gir were reported to be thorough. However, the Managing Committee felt that a certain percentage of death-rate was natural. It struck the Committee that good half-famished cattle, which were available in March at rates ranging between Rs. 20 and Rs. 25 per head of cattle, would cost, after the rains, about Rs. 80 per head. It was therefore arranged that Mr. Tupper should buy cattle with these Rs. 25,000 and any further sum that he could get from other charitable persons, and send them either to the Gir or keep them in the affected area in a camp, ultimately giving the same away to such rayats as may have lost their original cattle whilst in the jungles, charging them only the cost of upkeep during the intervening months. The following extract from Mr. Tupper's report shows how the scheme has worked out :—

“The net result of the operations was that 1,326 cattle (including cows, buffaloes, bullocks and a few bulls) were purchased with the funds subscribed, which amounted to Rs. 30,553. Of these cattle 1,181, estimated to be worth as nearly as possible Rs. 80,000 at current prices, were distributed in July to poor and deserving cultivators to replace animals lost in the Gir. The cost of purchase, averaging Rs. 23 per head, was lower than was anticipated, but the cost of maintenance, averaging Rs. 30 per head, was heavier. This was due to the cause already indicated and to the late inception of the monsoon, which rendered it necessary to keep the cattle for three weeks longer than had been expected before distribution. The total cost of operations, including purchase money and maintenance, is in round numbers Rs. 70,000, leaving a net profit in round numbers of Rs. 10,000. The scheme has saved 1,181 cattle which otherwise would have had a very slender chance of survival. At a cost of some Rs. 30,000 to charitable subscribers, the operations have placed in thoroughly deserving hands Rs. 80,000 worth of cattle, for the upkeep of which since purchase the recipients will have to repay Government about Rs. 40,000 in easy instalments. The profit of Rs. 10,000 was made in about

four months, so that, if it be credited solely to the Rs. 30,000 subscribed it represents 100 per cent. per annum calculated on the total expenditure of Rs. 70,000; the profit is nearly 43 per cent. per annum."

16. *Pinjrapoles and Gaushalas.*—Among the applications received for cattle relief grants, many were from managers of pinjrapoles and gaushalas in the affected areas. As has been said above, these had generally been provided for by private subscription lists. The Managing Committee, however, found that many needed hay at cost price and several needed help to take care of those cattle that had been admitted. Hay at cost price was given to all who applied and remitted money in advance. Morbi, Vánkánér and Gondal Pinjrapoles imported lbs. 574,100, 161,365 and 100,975 respectively.

As to help by grants, the Managing Committee required more information about the system of working of such applicants. Pinjrapoles and gaushalas as a rule, whilst admitting cattle, ask their owners to give up all right of ownership to them. Subsequently these cattle are, in some cases, never allowed to be used again for practical purposes; or, they are sold off, and proceeds utilized to swell the funds of the institutions concerned. In many pinjrapoles bullocks once admitted are never put to work but continue to be fed at charity's expense.

These customs of pinjrapoles and gaushalas are far from deserving of encouragement, especially in a famine year. If it ever appeared to the Managing Committee that a certain pinjrapole or gaushala deserved help, the managers were required to agree to one or more of the following conditions, as the case may be:—

- (1) Young and healthy cattle will, normal times prevailing, be handed over to their owners free of charge.
- (2) Or, if the owners be not traced, these cattle be given away free to poor and deserving cultivators or respectable but poor private parties.
- (3) All bullocks in the institution will be employed and made available for agricultural operations.

The mahajans of Tharád and Váo (Pálanpur), Jodia (Jámnnagar), Mundra, Anjar and Pera (Cutch) having agreed to these conditions, have received Rs. 5,500 from this Committee, Rs. 1,750 in cash and Rs. 2,500 in free hay

Many mahajans and private parties who had collected cattle for feeding purposes in what is known as "Vadas" refused to agree to the Managing Committee's conditions. On inquiring more closely the General Secretary learnt that some private individuals of means in the affected areas had opened vadas in which they would receive the cattle of all such who chose to leave them there, giving up their right of ownership. Such cattle owners would be persons of small means, but of some feeling; they would not sell their cattle to butchers for a few rupees, but would give them up to some respectable men who were likely to feed them during the critical months. What these men do is to beg charity money for upkeep of such cattle, and, at the end, sell the cattle (generally cows and buffaloes) at market rates when normal conditions prevail, pocketing the profit. On applications from such persons being received, the Managing Committee asked the applicants to agree in writing to return the cattle to their owners free or at such prices as would cover their own out-of-pocket expenditure at upkeep. This was refused, and no help was given from this Fund to such applicants.

17. *Co-operative Credit Societies.*—In 1912 the Committee wrote and offered Mr. R. B. Ewbank, I. C. S., Registrar, Co-operative Societies, Bombay Presidency, a grant of Rs. 1,000 for loss on sale of cheap hay at Rs. 12-8-0 per 1,000 lbs. free on rails at destination to deserving societies in the affected areas. The offer was gratefully accepted, and indents were sent for hay despatches to officers of various Co-operative Credit Societies in Gujarát. The Managing Committee have fully completed all such indents received, having despatched in all lbs. 349,160 of hay to various Co-operative Credit Societies. In the case of two Co-operative Credit Societies, on the recommendation of Mr. Ewbank, Rs. 25 were given up as a special concession for loss in weight during transit.

18. *Help to Rabaries.*—Mr. Revashankar Jagjivandas offered to assist the Managing Committee in giving relief to the Rabaries of Chotila and surrounding districts, whose cattle were said to be in great want. He required substantial assistance from the Managing Committee to begin his work, and the Managing Committee voted a first grant of Rs. 5,000 for loss on cheap fodder to be sent to Botad and Ningala. Mr. Revashankar subsequently appealed to the charitable public direct and collected some money. The Committee gave him lbs. 1,049,300 of fodder at a total loss of about Rs. 8,000, and the same is reported to have greatly helped the cattle of Rabaries in the said districts.

19. Although this Fund was started mainly for Gujarát, Káthiáwár and Cutch, its central nature for the Bombay Presidency brought forth appeals for help from Collectors of Broach and Ahmednagar. In the Jambusar and Vágna Tálukas of Broach, rainfall had been very scanty and great distress to the cattle and lower class of men was reported. Rs. 6,500 were voted to the Local Committee at Jambusar (out of which lbs. 102,625 costing Rs. 1,696-11-6 were sent), and Rs. 3,500 were voted and remitted to Mr. Otto Rothfeld, I. C. S., Collector of Broach, for Vágna Táluka.

20. Mr. A. F. Maconochie, I. C. S., Collector of Ahmednagar, applied for help to the Ahmednagar District in June 1912. It was reported that, although the cattle were worst off there, human distress also was very keen. Rs. 5,000 were remitted in cash and 225,618 lbs. of hay of the value of about Rs. 3,700 were despatched for free distribution.

21. It was reported that at stations on the Chitorgarh-Udepur Railway line cattle distress was very severe. The Adhikari of the sacred Nath Dwar temple, near Mauli, imported 381,245 lbs. of hay at cost price from this Committee. To help the cattle of the people round about Mauli, the Condiment Merchants' Association offered to pay at full cost price for hay if it could be sent. 355,865 lbs. of hay were despatched, and the Committee are informed the same proved a boon to the cattle there. Hay despatched to stations beyond Rutlam was not allowed the Government concession of one anna six pies per mile per waggon, and the dearth of hay there has been brought to the notice of the Agent to the Governor-General, Rajputana, for favour of his sanctioning Government concession on this Committee's despatches to Mauli and to two more stations.

22. The affected areas comprised many Native States of all classes. Dewáns of those First, Second and Third Class States that applied to the Committee direct were given grants, after the Committee had assured themselves that the Durbars concerned were doing the needful by way of relief, which required to be supplemented by private charity. Some of the First Class States did not ask for grants so much as for supply of hay at cost price, and the Managing Committee paid prompt attention to their requirements. The Porbandar, Rájkot and Bhávnagar States received from this Committee 4,097,515 lbs. in all at cost price. Those Native States that did not apply to this Committee officially have been given help through the local Mahajans on the latter's applications. States ranging below Third Class were required to apply to this Committee through their Political Agents.

23. In the report of the Bombay Presidency Famine Relief Committee of 1900 the following remark is made:—

“The Bombay Committee have not been able to assure themselves that in the actual working of the Local Committees the non-official members have taken as active a part as is desirable to ensure the most satisfactory distribution of the funds.”

This Committee is pleased to be able to report that their grants were distributed to a great extent through Local Committees in which private individuals took an active part in distribution. In the whole of Cutch, at Bhávnagar, Sihore, Mahuva, Kundla, Amrelli, Chital, Maliya, Botad, Viramgám, Patri, Idar, Sádra, Surkhej, Bavla, Dholka, Mehmabad, Nadiád, Burvalla, Cambay, Ambran, Bajana, Ghodasar, Ilol, Rádhanpur, Kukadia, Rupal, Pethapur, Lunsar, Vadnagar, Sera, Badoli, Agas, money or hay was sent to private individuals or to Local Committees composed of private individuals. At most of the places local residents were required whenever possible to start their own fund, small though it may be, before asking for help from this Committee, and this, the Committee note with gratification, has greatly induced the local residents of the affected areas to take a sustained and efficient interest in superintending the operations of relief.

Attempts were made to form Committees of officials and non-officials, as was done in the Panch Maháls by Mr. N. M. Joshi of the Servants of India Society, who assisted in the formation of the Táluka Committees at Hálol, Kálol, Dohad and Godhra.

In Kaira, a few Local Committees of a similar nature were started, but this Managing Committee voted grants for the district direct to Mr. A. Chuckerbutty, I. C. S., Collector of Kaira, who distributed money and hay among the various Táluka Committees according to the needs of each. In all the following grants were voted:—

	Rs.	2,300	for human relief.
About	„	18,500	„ cattle „
	„	2,000	„ wells.
	„	1,275	„ free seeds.

and 5,833,579 lbs. of hay distributed on behalf of this Fund.

Mr. H. L. Painter, I. C. S., Collector of Ahmedabad and Chairman of the Ahmedabad Famine Relief Committee, asked for grants for the cattle kitchens started by his committee. He was granted Rs. 22,500 in all of which he called for Rs. 4,000 in cash for special food to the cattle and the balance was worked off with 1,132,223 lbs. of free hay. The kitchens gave relief to about 4,500 heads of cattle and were successfully conducted.

For the Panch Maháls the Presidents of the various Local Committees communicated with the General Secretary and received help as under:—

(1) Hálol Committee—

	Rs.	1,500	for human relief,
	„	1,000	in cash for cattle relief, and
		347,605	lbs. of free hay.

The number of cattle in the camp was 523 with no deaths.

(2) Kálol Committee—

Rs. 2,000 for human relief,
 „ 1,000 in cash for cattle relief, and about
 412,500 lbs. of free hay.

Rs. 1,194, proceeds of cheap hay, were allowed to be reappropriated for bullocks; number of cattle in the camp 500 with 7 deaths.

(3) Godhra Committee—

Rs. 9,000 for cattle relief.
 „ 1,000 „ clothing.
 „ 1,000 „ cheap grain.
 „ 1,000 „ filling water troughs.
 „ 7,000 „ gratuitous relief.

No hay was sent by this Committee as the Local Committee could buy hay cheaper.

(4) Dohad Committee—

Rs. 4,000 for cheap hay loss.
 „ 3,000 „ human relief.
 „ 610 cost of 200 blankets.

No hay was sent by this Committee as the Local Committee could buy hay cheaper.

Colonel H. D. Merewether, Political Agent, Pálanpur, worked with the assistance of Local Committees, but grants to the Pálanpur Agency Thánas were given to the Political Agent for distribution at his discretion. Rs. 23,000 (Rs. 15,000 for cattle relief; Rs. 5,000 for human relief; Rs. 2,000 subsistence takávi; Rs. 1,000 cheap bullocks) in all were voted including cost of 138,240 lbs. of hay despatched.

Major J. W. B. Merewether (and later on Major N. S. Coghill), Political Agent, Mahi Kántha, Major W. M. P. Wood, Political Agent, Jháláwád, Captain A. S. Meek, Political Agent, Gohilwád, and Mr. C. G. Mehta, Deputy Assistant Political Agent, Rewa Kántha, applied to this Committee in their official capacity and received grants as under:—

(1) Mahi Kántha—

Rs. 3,000 free fodder grant.
 „ 16,500 cheap „
 „ 1,000 „ bullocks grant.

Quantity of hay sent 2,237,909 lbs.

(2) Jháláwád Pránt—

Rs. 1,800 for human relief.
 „ 16,850 „ cattle „

Quantity of hay sent about 24 lákhs lbs.

(3) Gohilwád Pránt—

Rs. 756 for human relief.
 „ 850 „ wells.
 „ 5,500 cheap fodder grant.
 „ 7,500 through Káthiáwár Central Famine Relief Committee.
 „ 1,000 for bullocks grant.
 „ 500 „ fodder grant for Vala State.

Quantity of hay despatched 2,637,687 lbs. direct, 1,314,000 lbs. through Káthiáwár Central Famine Relief Committee.

(4) Rewa Kántha—

Rs. 500 for human relief.
 „ 2,000 „ cattle „

Quantity of hay sent about 175,000 lbs.

The Káthiáwár Central Famine Relief Committee presided over by the Agent to the Governor rendered this Committee very useful help in distribution and in guiding this Committee regarding the qualifications of those who applied to the Committee for help. Grants to the Managed Estates in Káthiáwár* and to the Hálár Pránt were given through the Káthiáwár Central Committee. Total grants made about Rs. 22,000 for cheap fodder loss; Rs. 500 for a well; Rs. 100 for Brahmin relief; quantity of hay sent 4,425,000 lbs.

* Mr. Hormasji J. Antia, Superintendent, Managed Estates, applied to this Committee direct in June 1912 and was voted Rs. 1,250 as cheap fodder grants and given 325,450 lbs. of hay.

24. The Government officials at all stations in the affected areas co-operated with the Managing Committee most cordially in distribution of grants, etc., and the Managing Committee desire to thank them all very heartily.

Mr. S. N. Pandit, Vice-President, Káthiáwár Central Famine Relief Committee, was unremitting in his efforts to see that the Committee's help reached all deserving cattle and men in the whole of Káthiáwár. He corresponded very fully and lucidly with the General Secretary on behalf of the Káthiáwár Central Famine Relief Committee, and the Managing Committee beg to thank him very heartily for his valuable co-operation.

The Managing Committee desire to record with special appreciation the help rendered to them in distribution by the following amongst other energetic gentlemen:—

- (1) Mr. Panachand Mojilal of Mátar, district Kaira.
- (2) „ Khattau Valjee of Cutch (Manjal).
- (3) „ Ranchoddas Tricumjee Jivandas of Anjar.
- (4) Messrs. Sakarchand Panachand and Jivram Ajramar of Bhuj.
- (5) Mr. Maganlal Jayachand, President, and Mr. Howbhai Vrujlal, Honorary Secretary of the Viramgám cattle kitchen.
- (6) Mr. Chaturbhuj Mankeshwar of Sádra.

Messrs. Mangaldas M. Munshi and Manjee Mowjee of Bombay took great pains to be useful to the affected areas, by visiting various parts from time to time to ascertain the needs and to assure themselves that distribution of fodder from this Committee was being carried on in a satisfactory manner.

The zeal of the Government officials in the affected areas for collection of charity money and proper distribution of relief during this period was general, but the efforts made by Major Wood, the Political Agent, Jháláwád Pránt, and Captain Meek, Political Agent, Gohilwád Pránt, through his Deputy Mr. H. N. Gosalia, for collection in Bombay for adequate relief in their Pránts deserves to be specially noted. Major Wood commenced his collection in November 1911 when on a short visit to Bombay. Mr. Gosalia started his collection in May 1912, which was considered by many to be a very late start for a successful collection. But within about three weeks Mr. Gosalia succeeded in collecting about Rs. 20,000, which sum under the orders of Captain Meek he deposited with this Managing Committee for hay despatches to Gohilwád Pránt; he was thus instrumental in affording substantial relief to the cattle in his Pránt, at the same time relieving this Committee from the necessity of making further grants for Gohilwád, which, but for his collection, would have been quite imperative.

25. Besides local committees and officials in the affected areas, the Salvation Army offered to the Committee their services for distribution of help in Kaira and Ahmedabad Districts. This was readily accepted, and, as mentioned above, the cheap grain shops were worked through them at a total loss of Rs. 1,500, the grain having been sold at half the cost price. The Salvation Army also agreed to send up their representatives to inland villages of Jámnagar for distribution of grain there amongst persons who were reported to be in great distress. Rs. 1,000 were spent through them and the accounts rendered were satisfactory. They also distributed for this Committee 60,000 lbs. of cheap hay at Rs. 12-8-0 per 1,000 lbs. at Cambay in June, and towards the middle of the same month, when distress to the cattle of Rabaries in the Kaira District was reported to be most keen, a cattle kitchen was opened by them for this Committee at Barejadi, where 750 heads of cattle were fed during the most critical period before the monsoon set in. The Managing Committee desire to record their best thanks to Colonel Blowers of the Salvation Army for his willing and efficient assistance.

26. The Servants of India Society had a number of their representatives moving about the affected areas, and their assistance was requisitioned from time to time whenever available—such as Mr. Subaiya in Káthiáwár, Messrs. Joshi and Ramchandrarao in Panch Maháls and Mr. Tivary at hay-despatching stations in U. P. Mr. S. G. Gogate, who was at Bamanía in charge of the hay-despatching operations, and later on Mr. S. V. Lalit, who was at Ahmedabad, were at the disposal of this Committee, and they both rendered very useful services.

The Servants of India Society have besides procured for this Fund Rs. 16,000 as contributions, principally from parts of India outside the Bombay Presidency. The sums subscribed range from a few annas up to Rs. 5,000, being Mr. Lala Lajpatrai's first donation out of the balance in his hands of the Punjab Famine Relief Fund of 1908. The best thanks of the Managing Committee are due to Messrs. G. K. Devdhar and Krishna Prasad Kaul for this handsome collection.

27. The best thanks of the Managing Committee are also due to Mr. Ichharam Suryaram Desai, Editor and Proprietor of "the Gujarati," and the members of the Social Service League, Bombay, who procured for this Fund Rs. 19,282-3-0 and Rs. 19,025, respectively. The former started a "One Anna Fund" in the columns of "the Gujarati," and the latter very kindly organised a house-to-house visitation in Bombay in February 1912 in aid of this Fund. Total proceeds of both funds have been handed over to this Committee for distribution.

28. In Bombay Mr. Rupshanker U. Oza commenced giving very good assistance to the General Secretary from March 1912. Towards the end of June 1912 he went to Viramgám at his own expense, to try and form there a local committee to start a cattle

kitchen for cattle of Rabaries which were said to be in pressing need of help then. The arrangements made by Mr. Oza for the supervision of the cattle kitchen have worked most satisfactorily, and fully 680 heads of cattle received relief at the kitchen for nearly six weeks.

29. The Managing Committee beg to record best thanks to the Government of Bombay in the Revenue Department, for regularly supplying to this Committee the famine reports from time to time.

30. Although the actual contributions to this Fund amount to about Rs. 3,46,000, the turnover on account of this Fund exceeds rupees seven lakhs, and the satisfactory and efficient manner in which Mr. Nagindas Damoderdas has kept the accounts of this Fund deserves mention. He has refused to be paid for his labour. The Managing Committee desire to record their appreciation of his efficient handling of this Fund's cash and accounts.

31. The Managing Committee beg to thank the Council of Management of the Bombay Presidency Association for allowing free use of their spacious rooms for meetings in connection with this Fund.

32. Of the total contributions, the Managing Committee had voted out Rs. 3,45,000 as grants, holding the balance against charges of establishment of the Fund. After the setting in of rains in the affected areas, when fresh fodder was practically assured, many of the officers and individuals who had received help from this Committee returned their unspent balances, which go to make up the actual closing balance of about Rs. 19,700. Out of this closing balance a first remittance of Rs. 14,000 has been made to the Indian People's Famine Fund Trust, Calcutta, and after defraying the charges of printing of the report, etc., the balance in full will be returned to the Indian Peoples' Famine Fund Trust as a final remittance of the unspent balance of this Fund.

33. The total amount of money spent on cattle relief, human relief and for wells is approximately, Rs. 2,53,000, Rs. 71,000 and Rs. 5,300 respectively. Of the total quantity of fodder moved, *viz.*, 358,000,000, lbs. 23,600,000 lbs. have been given as cheap hay, 8,600,000 lbs. have been given at cost price and 2,750,000 lbs. as free hay. It will be seen that the major part of this Committee's help has gone to supplement the self-help of cultivators and private owners of cattle, by making available to them the hay at a rate which they could afford, the Committee bearing the difference between the market price and the selling rate out of this Fund.

The following are the names of places and the number of cattle fed at each kitchen or camp :—

Godhra	...	...	...	500
Hálol (Vada Talao)	...	...	...	523
Kálol (Vejalpur and Derol)	...	...	...	500
Viramgám	...	...	...	706
Barejadi	...	...	...	750
Sarkhej	...	...	...	1,300
Vadnagar*	...	...	...	1,175
Maliya	...	...	...	300
Pátri	...	...	...	320
Sokra	...	...	...	870
Chital	...	...	...	100

At Godhra, Hálol and Kálol, cattle camps on behalf of this Committee were organised and conducted by the local committees. At Sokra, Major Wood was responsible for the cattle kitchen on behalf of this Committee. With these exceptions the initiative for the other cattle kitchens mentioned was taken by this Committee, the management being entrusted to the local persons at each place; but these latter were opened in and after June 1912, when it was recognised that Rabaries and poor cultivators were completely unable to buy even cheap fodder.

Ten lbs. of hay was given per head of cattle as a rule, and they kept fairly well on it. The death-rate at the several camps and kitchens has been practically negligible, working out at less than half a per cent. At some cattle kitchens cotton-seed husks were given in part substitution of hay, and in several cases owners of cattle, when assured of the preservation of their cattle, treated them to cotton-seeds once a week at their own expense, to prevent them from getting very weak.

34. As said at the commencement in this Committee's appeal, the distress during this famine was keenest for the cattle. Although no full statistics of the death-rate of cattle are available, the final reports of the several Government officials show that the mortality amongst cattle in the affected areas has not been anything near to what at one time was feared. In fact from many badly affected parts in the famine districts the Committee are assured that the plough cattle have been fully saved, and even the milch cattle have not decreased much in numbers.

* Started by Mrs. Jamanabai Sakai during her tour in the affected areas.

Statement showing the accounts of the Bombay Central Famine Relief Fund as on 31st October 1912.

CREDIT.				DEBIT.			
				Rs. a. p.			
Contributions received from the Indian People's Famine Fund Trust, Calcutta							
...	...	...	...	1,50,000	0	0	
<i>Donations received from the public.</i>							
				Rs. a. p.			
General Relief	...	...	...	1,69,249	12	9	
Human Relief	...	...	...	5,412	8	0	
Cattle Relief	...	...	...	19,805	4	9	
Wells	...	...	...	1,950	0	0	
				<hr/>			
				1,96,417	9	6	
Amount remitted by Kathiawad Central Famine Relief Committee as a special refund							
...	...	...	...	1,500	0	0	
Suspense account owing by this Fund							
...	...	...	...	1,340	5	6	
				<hr/>			
Total				3,49,257	15	0	
				<hr/>			
				Rs. a. p.			
				Grants paid for Human Relief			
				...	...	...	71,394 4 7
				Grants paid for Cattle Relief			
				...	...	...	2,51,182 7 8
				Grants paid for Wells			
				...	...	...	5,502 0 0
				<hr/>			
				Total			
				...	...	...	3,28,078 12 3
				Expenses of management and sundries			
				...	...	...	2,734 14 7
				Suspense account owing to this Fund			
				...	...	...	422 7 10
				Refunded to Indian People's Famine Fund Trust, Calcutta			
				...	...	...	14,000 0 0
				<hr/>			
				Cash balance—			
				Balance at Bombay Bank			
				...	...	...	3,907 6 2
				Balance on hand			
				...	...	...	114 6 2
				<hr/>			
				Total			
				...	...	...	4,021 12 4
				<hr/>			
				Total			
				...	...	...	3,49,257 15 0
				<hr/>			
				PURSHOTAMDAS THAKURDAS,			
				Honorary General Secretary and Treasurer,			
				Bombay Central Famine Relief Fund.			
				NAGINDAS DAMODARDAS,			
				Honorary Cashier.			
				Bombay, 31st October 1912.			

NOTE.—(1) The amount spent on cattle relief includes Rs. 1,950-4-9, loss on sale of balance of hay sold off in August 1912 after good rains had fallen in the affected areas. The quantity in balance was held on account of some of the officers and Committees in the affected areas who applied for hay, but wired requesting that despatch of same may be stopped owing to fresh fodder being available locally. As this Managing Committee had a cash balance in hand they did not press for recovery of the loss from the indenting persons in view of the fact that their not taking up the hay was due to causes beyond their control.

List of grants voted from time to time by the Bombay Central Famine Relief Fund Committee :—

Panch Maháls—

Rs. 19,000	o	o	Godhra Local Famine Relief Committee (for cattle and human relief).
„ 9,750	o	o	Kálol Local Famine Relief Committee.
„ 8,000	o	o	Hálol „ „ „ „
„ 8,610	o	o	Dohad „ „ „ „
„ 500	o	o	Jhálod „ „ „ „
„ 750	o	o	Rev. J. MacNeil (for human relief).
„ 350	o	o	Mr. M. H. Kothawala of Godhra (for his cattle kitchen).
„ 2,441	8	o	Mrs. Jamnabai N. Sakai for distribution during her tour.
„ 4,000	o	o	Collector, Panch Maháls (for cheap and free bullocks to the cultivators).
<hr/>			
Rs. 53,401	8	o	

Kaira—

Rs. 22,800	o	o	Mr. A. Chuckerbutty, I. C. S. (Collector, Kaira).
„ 1,765	2	8	Col. A. R. Blowers of the Salvation Army (for Barejadi cattle kitchen).
„ 5,402	5	6	Mr. Panachand Mojilal of Mátar (for cattle and human relief).
„ 500	o	o	Nadiád Local Committee (Mr. D. K. Pandya).
„ 200	o	o	The Secretary, Nadiád Hindu Orphanage.
„ 100	o	o	The Hindu Nirashrit Fund, Nadiád.
„ 7,626	6	6	Cheap hay loss (through Mr. Monjee Mowji).
<hr/>			
Rs. 38,393	14	8	

Broach—

Rs. 6,500	o	o	Jambusar Famine Relief Committee (through Collector of Broach).
„ 3,500	o	o	Collector of Broach (for Wágá Táluka).
<hr/>			
Rs. 10,000	o	o	

Ahmednagar—

Rs. 9,000	o	o	Through the Collector.
„ 5,502	o	o	Wells grant (as per para. 13 of the report).
„ 1,000	o	o	For sundry small applications.

Ahmedabad and North Gujarát including Mahi Kántha and Rewa Kántha and Pálanpur Agencies—

Rs. 26,000	o	o	Mr. J. H. E. Tupper, I. C. S. (Tálukdári Settlement Officer, Gujarát).
„ 23,000	o	o	Pálanpur Agency (through the Political Agent, Pálanpur).
„ 22,500	o	o	Mr. H. L. Painter, I. C. S. (Collector, Ahmedabad).
„ 19,500	o	o	Mahi Kántha Agency (through the Political Agent, Mahi Kántha).
„ 2,500	o	o	For Tharád and Wao Mahajans (through the Political Agent, Pálanpur).
„ 2,500	o	o	Rewa Kántha Agency (through the Deputy Assistant Political Agent).
„ 2,000	o	o	Sarkhej Cattle Kitchen (through Mr. Chaganlal Keshavlal Trivedi).
„ 2,000	o	o	Dholka Famine Relief Committee (through Mr. Manilal, Chairman, Famine Relief Committee).

Ahmedabad and North Gujarát—continued.

Rs. 2,000	o	o	Bálásinor State (through the Administrator, Bálásinor).
" 2,000	o	o	For general relief, Cambay (through Mr. Deepchand Panachand).
" 2,000	o	o	Pálanpur State (through the Chief Kárbhári, Pálanpur).
" 2,728	14	11	Viramgám cattle kíchen (through Mr. Howbhai Vrujlal).
" 1,471	10	6	For a cattle kíchen at Vadnagar (through Mr. Vallabhram Kalidas).
" 4,101	6	o	For a cattle kíchen at Vadnagar (through Mr. Bhogilal Chakulal).
" 3,038	2	6	For cheap and free hay at Idar and surrounding villages (through Mr. Lallubhai Karunashankar).
" 1,500	o	o	For cheap grain distribution in Kaira and Ahmedabad Districts (through Col. A. R. Blowers).
" 1,000	o	o	Sarkhej Gavrakshak Committee (through Mr. Chaganlal Keshavlal Trivedi).
" 1,000	o	o	Bhal (through Mr. Mangaldas M. Munshi).
" 1,000	o	o	Ahmedabad Orphanage.
" 1,000	o	o	Mr. R. B. Ewbank, I. C. S., Registrar, Co-operative Credit Societies.
" 1,000	o	o	Rádhanpur (through the Rádhanpur Jain Mandal, Bombay).
" 695	7	o	For cattle and human relief at Ghodasar (through Mr. Damodar Laxmiram Pandya and others).
" 360	o	o	Loss on cheap hay at Cambay (through Col. A. R. Blowers).
" 350	o	o	For cattle relief (through the Thakore Shree of Varsoda).
" 350	o	o	Swami Adbhutanand of Achalgarh.

Rs. 1,25,595 8 11

Political Agents and Superintendent, Managed Estates, Káthiáwár and other Native States—

Rs. 25,561	o	o	The Káthiáwár Central Famine Relief Committee.
" 18,650	o	o	Major W. M. P. Wood (Jálávád.Pránt).
" 7,256	o	o	Captain A. S. Meek (Gohilwád Pránt).
" 2,282	2	o	Maliya Mahajan (through Thándar, Maliya).
" 1,250	o	o	Superintendent, Managed Estates (Rájkot).
" 1,000	o	o	Wadhván Ladies' Camp (through Major W. M. P. Wood).
" 150	o	o	Chuda Mahajan (through Manager, Chuda).
" 2,000	o	o	The Chief Kárbhári, Limdi.
" 1,000	o	o	Kundala Committee.
" 1,000	o	o	Mahajan, Patri (through Mr. Ramchandra Govind).
" 1,000	o	o	Mahajan, Amreli (through Mr. Jamnadas Goculdas).
" 250	o	o	Sayala cattle camp.
" 1,500	o	o	Mahajan, Mahuva (through Messrs. Vachraj Trimbak and Manjee Nathabhai and others).
" 250	o	o	Mahajan, Sihor (through Mr. Chaturbhuj Bhaichandbhai).
" 200	o	o	Mahajan, Unav.
" 100	o	o	Mahajan, Lathi (through Mr. Naranjee Rajpal).
" 50	o	o	Sawar.
" 500	o	o	The Kárbhári, Vala State.
" 500	o	o	For cattle relief to Dhorajee Mahajan (through Mr. Manjee Jivraj).

Rs.	1,000	o	o	Col. Blowers (for human relief, Jámnnagar).
"	200	o	o	For human relief to Mahajan, Jetpur (through Major Carter, Political Agent, Sorath Pránt).
"	50	o	o	For human relief at Lunsar (per Mr. Muljee Prabhashanker).
"	500	o	o	For human relief (through Bhávnagar Famine Relief Committee through Mr. Kuverjee Anandjee).
"	1,000	o	o	For human relief at Sihor (through Mr. Chaterbhuj Bhaichandbhai).
"	1,500	o	o	The Dabasang Fund, Jámnnagar, for human relief (through Mr. Hirjee Khetsey).
"	180	o	o	For human relief at Mota Charodia (through Shastri Jagjivan Kalidas) and a parcel of clothing.
"	1,000	o	o	Mahajan, Jodia (through Mr. Khimji Dayal).
"	200	o	o	For human relief at Bagasara (through Mr. Ichashanker Durgashanker).
"	229	15	10	For human relief at Jam-Jodhpur (through Mr. Vallabhdas Kuverjee).
"	881	2	6	Chital (through Kumar Shri Ranigwalla).
"	7,848	1	'9	For cheap hay at Botad and Ningala (through Mr. Rewashanker Jagjivan).
"	1,500	o	o	Mundra Pinjrapole for cattle relief.
"	1,000	o	o	Anjar Pinjrapole for cattle relief (through Mr. Tricumjee Jivandas).
"	25	o	o	Palasva Pinjrapole for cattle relief (through Mr. Kothari Sunderji Karamsey).
"	250	o	o	Durgapur Pinjrapole for cattle relief (through Mr. Ghelabhai Ganasey).
"	250	o	o	Tera Pinjrapole for cattle relief (through Mr. Karamsey Keshavji).
"	2,750	o	o	Mandvi Mahajan for cattle relief (through Mr. Kanji Dwarkadas).
"	4,150	o	o	Mr. Sakarchand Panachand (for human relief).
"	3,300	o	o	Mr. Khatau Valajee (for human relief).
"	250	o	o	Kothara Pinjrapole (through Mr. Laljee Vasanji).
"	7,500	o	o	Mr. Tricumji Jivandas (for human relief).
"	300	o	o	Tuna (through Mr. Motichand Ranchordas).
"	1,250	o	o	Nalia Mahajan (through Messrs. Vallabhdas Hirji and Mathuradas Ravji).
"	500	o	o	Lakhpat (through Mr. Mulji Pradhan).
"	250	o	o	Sankheswar Gaurakshak Sabha, Jamkhandi (through Mr. Chaturbhuj Morarji).
Rs	3,45,256	5	8	Grand Total;

*Statement showing total quantity of hay and its cost as purchased by
the Bombay Central Famine Relief Fund.*

Serial No.	Name of person or body through whom hay was bought.	Quantity.	Cost.
		Lbs.	Rs. a. p.
1	Mr. Tribhovandas Gandabhai of Umbargaon ...	28,876,775	4,69,116 7 9
2	The Conservator of Forests, Indore State	5,001,121	54,902 5 2
3	Mr. Bhikabhai Laxmidas of Bamania	591,941	7,087 4 3
4	Mr. S. G. Gogate of the Servants of India Society...	60,050	336 0 0
5	Mr. Tarachand Dhanjee (Sanvordem hay)	31,658	316 9 3
6	Servants of India Society (in U. P.)	338,128	2,976 1 8
7	Kadbi (from Bárdoli)	15,611	187 5 3
8	Mr. Devdhar (Bhopal hay)	50,000	350 0 0
9	Cotton-seed husks (from Manhar Bros.)	845,874	12,397 5 7
		35,811,158	5,47,669 6 11

*Statement showing despatches of hay to some of the important Committees,
Pinjrapoles and Native States from the Bombay Central Famine Relief Fund.*

	Lbs.
The Káthiáwár Central Famine Relief Committee (for Hálár, Gohilwád, S. M. E., etc.)	4,407,981
Administrator, Porbandar	1,567,595
Chief Kárbhári, Rájkot	1,477,750
Bhávnagar Famine Relief Committee	1,052,190
Sihore Mahajan	465,675
Morbi	327,685
Political Agent, Gohilwád	2,637,687
Political Agent, Jhálávád	2,334,692
Chief Kárbhári, Limdi	530,760
Superintendent, Managed Estates (direct)... ..	325,450
Administrator, Pálitána	196,375
Botad and Ningala (for Rabaries' cattle)	1,049,210
Bedi Bunder (for Khambalia Gaushala)	415,900
Collector, Ahmedabad	1,132,223
Patri Mahajan	273,475
Naib Dewan, Idar State	124,350
Sarkhej Mahajan	118,414
Co-operative Credit Societies	365,020
Administrator, Bálásinor	380,495
Vadnagar cattle camp	310,605
Vadnagar (Valabhram Kalidas)	195,620
Political Agent, Mahi Kántha	2,237,665
Thakor Shree Varsoda	49,725
Kárbhári, Bhadarva	119,955
Mátar (for cheap sale)	244,575
Through Mr. Monjee Mowjee... ..	901,970
Political Agent, Pálanpur	138,240
The Famine Relief Committee, Jambusar	102,625
Mauli	738,140
Collector, Kaira	5,688,239
Collector, Ahmednagar	225,618

Statement showing despatches of hay and cotton-seed husks made to the various districts by the Bombay Central Famine Relief Fund.

				Quantity in lbs.
Kaira	...	...	...	6,807,960
Mauli	...	...	...	776,580
Panch Maháls	...	...	...	842,525
Rewa Kántha	...	...	...	758,075
Mahi Kántha	...	...	...	3,315,902
Pálanpur	...	...	...	138,240
Gujarát	...	...	...	4,579,126
Káthiáwád	...	...	...	18,204,175
Ahmednagar	...	...	...	225,618
Broach	...	...	...	102,625
Cutch	...	...	...	133,600
				Total lbs. ... 35,884,426*

* Out of this total quantity lbs. 73,268 were re-booked to Ahmednagar from Viramgám, Sarkhej and Wadhán as same was not required there, and hence the total of despatches exceeds the total purchases by lbs. 73,268.

Statement of accounts relating to the grass supplied by the Bombay Central Famine Fund to the different depôts in Káthiáwár.

Serial No.	Name of the officer in charge of the depôt.	Quantity indented for.	Quantity according to invoices.	Quantity actually received.	Price at Rs. 10 per 1,000 lbs.	Cost price.	Freight paid.	Amount payable to the Bombay Central Famine Relief Fund.	Remarks.
1	2	3	4	5	6	7	8	9	10
		Lbs.	Lbs.	Lbs.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
1	Divisional Manager, Chotila	200,000	220,570	201,711	2,017 1 10	.....	255 10 0	1,761 7 10	
2	" " Paliad	200,000	199,605	183,832	1,838 5 1	.....	239 8 0	1,598 13 1	
3	" " Songadh and Vahiwatdar of Bhojawadar	175,000	195,675	187,125	1,871 4 0	.....	247 4 0	1,624 0 0	
4	" " Wadhwan	200,000	201,485	186,227	1,862 4 4	.....	171 15 0	1,690 5 4	
5	" " Babra	100,000	97,230	90,112	901 2 0	.....	140 5 0	760 13 0	
6	" " Bhoika	100,000	94,725	87,043	870 6 11	.....	90 9 0	779 13 11	
7	" " Jhinjhuwada	100,000	97,225	91,627	916 4 4	.....	86 12 0	829 8 4	
8	" " Limbda	45,000	51,015	51,015	510 3 0	.....	76 2 0	434 1 0	
9	Thandar, Babra	750,000	677,710	659,043	6,590 6 10	.....	641 4 0	5,949 2 10	
10	" Songadh	500,000	637,471	637,471	6,374 11 4	.....	699 0 0	5,675 11 4	
11	" Dhrafa	528,000	546,820	499,344	4,993 7 1	.....	851 10 0	4,141 13 1	
12	" Maliya	200,000	205,075	190,330	1,903 4 9	.....	464 7 0	1,438 13 9	
13	Superintendent, Fodder Depôt, Rajkot	975,000	975,000	890,706	8,907 1 0	.....	1,167 7 0	7,739 10 0	
	" " " "	100,000 at Rs. 15	99,510	4,199,606	3,955,586	1,538 4 10	5,131 13 0	34,424 1 6	The Rájkot fodder depôt sold grass to the residents of the Rájkot C. S., Lodhika Thána, and small tálukas in Hálár and sometimes even to the neighbouring villages of larger tálukas.
	" " " "	200,000 at Rs. 17	126,790			2,214 14 5		1,538 4 10	
								2,214 14 5	
			4,425,906					38,177 4 9	

*A Brief Report on the operations of the Bombay Central Famine Relief
Fund Committee in Kaira District by Mr. A. Chuckerbutty,
I. C. S., Collector, Kaira.*

On November 30th, 1911, Mr. G. K. Deodhar, one of the Honorary Secretaries of the Bombay Central Famine Relief Fund, sent to the Collector a printed copy of the prospectus of the Committee, and desired him to intimate the minimum amount of relief required for the Kaira District (human beings and cattle) under the heads sketched out in the prospectus. After certain negotiations the Committee voted in the first instance Rs. 1,500 for A—human relief, and Rs. 5,000 for B—cattle relief.

A—Human Relief Rs. 2,300. 2. The amount of Rs. 1,500 was distributed as under :—

Táluka.	Amount.
Thásra	Rs. 600
Kapadvanj	" 300
Mátar	" 200
Mehmedabad... ..	" 200
Nadiád	" 200
Total	<u>Rs. 1,500</u>

3. Rs. 400 more were subsequently granted for human relief, Rs. 200 each for Anand and Borsad Talukas.

4. The total number of units relieved out of this grant of Rs. 1,900 amounted to 34,489. Relief was given in 287 villages, and lasted for nearly 3 months except in Anand where relief work commenced in April and lasted till 15th June.

5. Besides this Rs. 400 were specially granted for the relief of respectable poor persons in Thásra Táluka, and 160 such persons were relieved with the help of this grant.

B—Cattle Relief. 6. The cash grant of Rs. 5,000 for the relief of cattle,
(a) Cash grant of Rs. 5,000. voted by the Committee, was distributed as under :—

Rs. 3,000	Thasra Taluka.
" 2,000	Matar Taluka.
<u>Rs. 5,000</u>	

These were the most affected parts of the district. 1,717 cattle-owners were helped out of this cash grant. The system generally adopted was to sell grass at Rs. 8 per 1,000 lbs., debiting the difference between Rs. 8 and the cost price to the Committee's cash grant. In some cases, when the grass thus sold at cheap rates happened to be very dear, the purchasers were given help of Rs. 5 to Rs. 8 per 1,000 lbs. generally to enable them to make purchases according to their buying capacities.

7. A sum of Rs. 12,500 was allotted to this district in two instalments, for the supply of cheap fodder by the Committee. To look after the prompt and proper despatch of grass to this district the services of Mr. S. G. Gogte, a member of the Servants of India Society, were made available. Mr. Gogte undertook to work hand in hand with Government officers for the relief of distress.

8. The Collector had an offer of grass of about 100 lákhs lbs. from the Conservator of Forests, Indore State. He placed this offer in the hands of Mr. Gogte, who went to Indore and secured the contract with the Collector's help. He stayed there and personally looked after the operations on the spot. These arrangements quickened the despatch of grass, and lessened anxiety as to the supply. The difficulty of transport, however, was very serious, and the Collector had to intercede with the railway authorities. After strenuous efforts the Collector succeeded in securing special grass trains for the Committee's grass.

9. The total import of this grass amounted to 5,688,239 lbs. It was sold at rates varying from Rs. 8 to Rs. 12 per 1,000 lbs., according to the condition of the recipients who numbered 6,604 in all. The cheap sale of the Committee's grass resulted in a loss of Rs. 7,162-8-5. The expenses incidental to the transport of the grass were Rs. 3,806-11-4. A sum of Rs. 1,530-12-3 thus remained unexpended with the Committee out of the allotment of Rs. 12,500 voted for this district.

10. The rains unfortunately did not set in, as usual, in the beginning of June. With the drought continuing the situation grew more serious. The Committee on being informed of the situation *at once* offered a helping hand, and placed Rs. 5,000 at the disposal of the Collector for cattle relief purposes and despatched 145,340 lbs. of grass, the cost thereof being met out of the grant of

B—Cattle Relief.
(c) Further allotment shortly before the commencement of rains.

Rs. 5,000. In the first week of July, however, good rain happily altered the situation, and the last mentioned grant was reduced by Rs. 1,000 in view of the fact that Ahmednagar then stood most in need of help.

Free distribution of seed.

11. Out of this grant of Rs. 4,000 Rs. 2,212-15-8 were saved as under:—

Rs.	a	p.	
937	3	0	Cash received from the Committee.
1,275	12	8	Sale proceeds of the Committee's grass at Rs. 12 per 1,000 lbs.
<hr/>			
2,212	15	8	

The Committee permitted the same to be utilized for free distribution of seed. 774 needy poor cultivators were served with the help of this grant.

12. During the month of March the supply of drinking water in wells ran very short. The low castes were the first to suffer; for their immediate relief the Committee sanctioned a grant of Rs. 2,000, and suggested that the work of providing kacha wells and deepening and repairing pacca wells for low caste people should be taken in hand. Rs. 1,000 were accordingly placed at the disposal of each of the two Assistant Collectors. This grant was further supplemented by Rs. 1,000 from the District Local Board Funds. Colonel Blowers of the Salvation Army was entrusted with the District Local Board grant of Rs. 1,000. Out of the Committee's grant of Rs. 2,000, 28 wells were rendered serviceable. 11 kacha wells were dug and 13 pacca wells were deepened by putting in Kathwas, two wells were cleansed, one well was repaired and one was newly constructed. All these wells were meant exclusively for low caste people such as Dheds, Bhangis, Chamars, etc.

A sum of Rs. 235-12-11 is reported to have remained unspent. It is reported that this unspent balance is required to complete the repair works. The Collector has not yet made up his mind whether this balance should be returned to the Committee or retained for expenditure during the fair season, though the latter course certainly seems to him advisable seeing that the present abnormal rains are likely to render considerable repairs necessary to the low caste wells especially.

13. The Collector begs to acknowledge most gratefully the assistance rendered to the district from time to time and for various objects by the Bombay Central Famine Relief Committee. The assistance offered by allotting Rs. 5,000 towards the end of the season and just before the commencement of the rains when the situation was becoming exceptionally critic was especially valuable.

14. Mr. S. G. Gogte, B.A., of the Servants of India Society, rendered valuable help in purchasing grass and in personally supervising the arrangements connected with the baling and despatch of grass to this district. He did this at the cost of considerable personal inconvenience and trouble, and his dealings with the Collector and all the officers under him were throughout harmonious. He kept himself fully in touch with the Collector and his officers, and offered valuable suggestions from time to time as he gained experience, and it was through his co-operation that the Collector was able to arrange for the speedy transport of grass by rail to the affected localities. His services deserve special commendation.

15. The Collector has special pleasure in acknowledging the thoroughly co-operative, harmonious and courteous spirit displayed throughout by the Honorary Secretary Mr. Purshottamdas Thakordas. He evinced a real interest in his work and a very sincere desire to meet distress, as far as it lay in his power. Specially gratifying was the readiness with which he voluntarily offered his assistance and despatched to this district nearly 1½ lakhs lbs. of grass towards the end of the season when grass from other sources was getting scarce and the situation gave rise to considerable anxiety. Mr. Purshottamdas has proved conclusively how Government and private agencies can work side by side in perfect harmony and without friction of any sort.

APPENDIX 13.

(Referred to in paragraph 55 of the Report.)

Report on the deportation of cattle to the Gir forests.

PART I.—ABSTRACT ACCOUNT.

1. The rains of 1911 failed over the northern part of Gujarát and the country was in the grip of a fodder famine. The reserve stocks of fodder in the villages were totally inadequate to meet the demand which increased in urgency every day; while it was impossible for the railways to carry sufficient fodder to the affected districts even had the quantity needed been available in the distant non-famine areas.

2. As a result of their deliberations the Indian Famine Commission of 1901 had condemned the deportation of cattle from famine-stricken areas to graze in more favoured districts.¹ But it soon became obvious that deportation on a large scale was the only means of relieving the pressure on the inadequate fodder supply of the affected areas, and thus of saving a reasonable number both of the cattle deported and of those left behind.

3. Early arrangements had been made for the deportation by Government agency of cattle to the Dángs forests in the Surat District. Bharváds had of their own accord left their villages with many thousands of their cattle, some wandering aimlessly into Káthiáwár, &c., where the conditions were but little better than those existing in Gujarát; but the majority turned their faces towards the forests of the Rájpipla State and the Dángs where it was known definitely that grass, for a time at least, was available in abundance. Unfortunately the climate of the Dángs and its neighbourhood proved so inimical to the herdsmen that many returned abandoning their cattle, and spreading rumours that prevented others from taking advantage of the facilities offered. Further exportation to the Dángs becoming impossible for this reason, and also because the number of cattle for which accommodation remained was small, another outlet had to be found for the cattle of the more remote tálukas of the Ahmedabad District where the congestion urgently required relief.

4. In the meanwhile the Junágad State had thrown open its forests in the Gir for grazing, charging a certain fee per head of cattle admitted. The grazing was pronounced ample, and the grass of good quality. Enormous numbers of cattle from Káthiáwár generally, from Cutch and even from distant Sind had arrived; and the cattle admitted to the Gir, including those of the State's own subjects, were estimated by the officials at anything from a lách to a lách and a quarter in number. But even in December the grazing in the Gir jungles was still said by the State to be practically unlimited; and here an outlet presented itself for those parts of the Ahmedabad District which were inconveniently situated with regard to the Dángs. Correspondence was entered into with the State, and their undertaking was secured to provide grazing in the Gir practically for an unlimited number of cattle on payment of a fee of Rs. 3 per head for full grown animals, and Re. 0-12-0 per head for calves. A remission of the fees on cattle dying within ten days of their arrival in the Gir was afterwards granted by the State. Cut grass was to be provided as required on the borders of the Gir. The State was prepared also to guarantee the water-supply on payment of a further fee of Rs. 2 per head of cattle; but this offer was declined on economic grounds.

5. Upri Kárkún Krishnarám Ganpatráam of the Tálukdári Département was sent to Junágad early in October to consult the officials, to visit the Gir grazing grounds, to see for himself the best way of getting the cattle to whatever grazing area might still be available, and to ascertain what arrangements would have to be made for them when they arrived. Grazing there seemed to be in plenty in the one area indicated by the State which was not already completely overrun with other cattle. The emphatic assurances of the officials themselves in this respect admitted of no question; and the quality of the grass, as the State advertised, seemed to be excellent. Having regard therefore to the length of the railway journey from Gujarát and the relative proximity of any railway station to the only grazing tracts available, the northern portion of the area indicated, on the northern border of the Junágadh Gir, was chosen. Kunkáváv, on the Bhávnagar Railway, in direct connection with the tálukas of the Ahmedabad District chiefly concerned, though 40 miles distant from the entrance to the Gir, was the nearest point on the railway, and was adopted as the detraining station for the cattle.

6. As had been anticipated, the first difficulty which presented itself was the water-supply. The Gir was primeval jungle. Of wells there were none; and what few scattered pools the rains might have left in the larger river-beds could in no way be counted on to provide the sustained supply absolutely essential. Arrangements were made at once, therefore, for the sinking of wells and the building of drinking troughs for the few thousand cattle which at that time were all that could be confidently relied upon to be forthcoming for deportation. In the meanwhile enclosures for the cattle at night were built in the vicinity of the wells which were to mark the sites of the projected cattle camps; and preliminary arrangements were made for "transit" camps on what was to be the 40 mile march from the railway to the Gir.

7. In the meanwhile also, in the Ahmedabad District, arrangements were being perfected for the collection of cattle from their villages and their muster at the entraining

stations Bhankoda and Viramgám for the Viramgám and Sánand Tálukas and part of the Dholka Táluka, and Ránpur for the Dhandhuka and the remaining part of the Dholka káváv. Special cattle trains were engaged for the conveyance of the cattle to Kunkáváv.

8. On a report from the Gir to the effect that two of the new wells were ready for use, and a third nearly ready, the first cattle train (from Viramgám) was despatched for Kunkáváv on the 13th November 1911, the first batch of cattle arriving in the Gir on the 18th November 1911. From the 13th to the 29th November three more trains were despatched; and from the 30th November onwards, without a break till the 30th December, regular daily cattle specials were despatched from one station or another. Fifty-four special cattle trains in all were received at Kunkáváv, and a few smaller batches of "charity" cattle at the end by ordinary rail.

9. It was at this juncture only, on the 4th December 1911; that, through an unfortunate delay in my relief, I was freed from my appointment in the Salt Department to take over charge of the operations at the "Gir" end of the railway.

10. A preliminary visit to Junágad to consult the State officials, followed by a dash from Kunkáváv down the line of march to the Gir, and through the Gir itself to Junágad again, prepared me to meet the Administrator at his Grass and Grazing Conference on the 13th December 1911, and to ask definitely for the allotment of a certain grazing area, the supply of a certain quantity of cut grass and so forth, and to settle, as far as might be at the time, some of the many questions calling for immediate consideration.

11. An attempt to describe in chronological order the mass of ensuing operations which had to be carried out concurrently would result in confusion. It is therefore advisable for the sake of lucidity to give a brief survey of the various departments of the work under their specific heads. The same system will be adopted in the detailed account which comprises Part II of this report.

12. (a) The recruitment of the special staff for duty in the Gir presented many difficulties.

(b) As regards the veterinary staff the services of a Veterinary Assistant of the Junágad State were obtained at first. Subsequently Veterinary Assistants of the Civil Veterinary Department were appointed as they became available.

(c) As regards the Kárkúns to be placed in immediate charge of the cattle camps, &c., there was already a heavy increase of work in the tálukas in connection with the famine, and consequently the kind of man really required was not obtainable. Apart from this, service in a "foreign" country, and more especially a country with the reputation of the Gir, was not eagerly sought; and volunteers were only obtained by inducements offered in the way of large increases in pay and the prospect of further recognition of meritorious services.

(d) Comparatively few cattle owners were willing, under the circumstances, to accompany their own animals to the Gir, and considerable difficulty was experienced in obtaining hired herdsmen to take their place. There was thus but little room for the selection of professional or other reliable herdsmen, and desertions in the Gir were consequently not infrequent.

(e) All other classes of employees, such as well-bullock drivers, cattle-guards, grass-guards, well-diggers, carpenters, masons, labourers, Dheds, &c., as well as herdsmen to fill vacancies caused by desertions, were recruited from the villages on the way to, or in the neighbourhood of, the Gir.

(f) Permanent living accommodation in the Gir there was none whatsoever. Huts for the staff had to be built of branches of trees, reeds, grass, &c.

(g) Facilities for obtaining provisions and other necessaries of life also there were none. This difficulty was surmounted by importing "banias" with their "shops" complete.

(h) The climate of the Gir, in spite of the intense cold of the nights in the winter, and the fierce heat of the days in the hot weather, was anything but inimical to human beings. The general health of the staff, which numbered at one time well over 700 souls, exclusive of families and followers, was remarkably good, quite unexpectedly so in view of the evil reputation earned for itself by the Dángs, a country of similar physical features.

13. (a) In spite of everything possible being done for cattle owners, neither trouble nor immediate expense of any kind devolving on them, but little spontaneity was met with on the part of the villagers in bringing forward their cattle for deportation. In fact, with the very present warning of the Dángs before them, and the scandalous rumours in connection with the Gir which were spread broad-cast by interested persons, it required all the local officers' efforts of persuasion to overcome the prevailing reluctance of villagers to part with their cattle. Some of the larger landlords were quick to recognize the necessity

of deportation and to appreciate the facilities offered for this purpose. Their efforts in persuading their tenantry were invaluable.

(b) Nine thousand, eight hundred and sixty-two *tálukdári*, 3,156 *khálsa* and 675 "charity" cattle, in all 13,693 head, were received from the Ahmedabad District; 34 charity cattle were obtained locally, making a grand total of 13,727 head.

(c) On arrival at Kunkáváv the cattle were on the whole, and especially with regard to the later train-loads, in poor and generally debilitated condition. Unfortunately a large proportion of them had already sunk so low as to be beyond all hope. The gradual elimination of these was inevitable, and, excluding losses through actual sickness or accident, practically the whole of the mortality of the first two or three months may be ascribed to this cause. Probably 20 per cent. were past saving when they reached the rail-head, and were merely a source of trouble and expense.

(d) An epidemic of rinderpest, traced to infection from "outside" cattle in the Ahmedabad grazing grounds, broke out in January, and swept through 15 out of the 16 camps in the Gir. Inoculation, isolation and disinfection were adopted; and the disease was not only controlled but completely eradicated, the loss attributable to this cause being 4.9 per cent. only of the cattle.

(e) Certain suspicious cases of sickness were diagnosed as anthrax and septicæmia hæmorrhagia; but these happily proved to be false alarms.

(f) Foot-and-mouth disease, also traced to "outside" cattle, appeared in several camps, but only in sporadic form. The cases admitted of individual treatment, and no serious results accrued.

(g) In consideration of the nature of the country and the circumstances generally, losses due to strayings, accidents, wild animals, &c., were remarkably few, amounting to 3.2 per cent. only.

(h) It is possible that some of the losses ascribed to "strayings" were actually due to cattle-thefts. Till certain specific cases had occurred, and a serious affray with the thieves had resulted, there was no police force or other representative of law and order in the Gir.

(i) During the winter months cotton-seed in large quantities was fed to the cattle. Again in the hot weather, on the discovery of the valuelessness as fodder of the cut grass, supplied by the Junágad State, the issue of cotton-seed had to be recommenced, and was continued till the close of the operations.

(k) Oil-cake also was tried in the winter; but the cattle as a whole did not take to it readily; and, owing to the many obstacles in the way of obtaining supplies, it was abandoned.

(l) Rock salt was supplied in the enclosures, and ordinary salt was fed to the cattle throughout by hand or with their cotton-seed or grass as occasion required.

(m) Arrangements were made for the special feeding of cows on calving, and for the calves when their mothers were incapable of providing them with the necessary nourishment.

(n) The return of the cattle to Gujarát began on the 24th April 1912, with the departure from Vaniagali (the camp of arrival in and despatch from the Gir) of the first train-load of bullocks required for cultivation purposes. The first cattle-train left Kunkáváv on the 1st May 1912; from the 1st to the 9th trains left on alternate days; and from the 9th May to the 4th June inclusive, without a break, a train was despatched daily either to Ránpur or Virangám. Owners were informed in advance of the date of arrival of their cattle and called to the railway stations to claim them. The "charity" cattle were detained till later to avoid the expense of keeping them in the home *tálukas* for a prolonged period pending distribution. The 35th and final train left Kunkáváv on the 26th June 1912.

(o) Of the 13,727 cattle received, 6,896, exclusive of 188 calves born in the Gir, were returned, *i. e.*, 50.2 per cent. The general average condition of the cattle on their return to Gujarát was far better than that of those received.

14. (a) In the Gir itself 16 separate cattle camps were established, 14 for privately owned, and 2 for "charity" cattle, and, on the line of march between the railway and the Gir, 6 separate "transit" and 2 special temporary camps. The latter were occupied by the "charity" cattle on their removal from the Gir. Each camp in the Gir comprised staff's quarters, cattle enclosures, well and drinking troughs, grass stacks, "Dhedváda", &c., and was staffed permanently with a *Kárkún* in charge and the necessary herdsmen, cattle-guards, grass-guards, labourers, "Dheds", &c., while veterinary officers, well-diggers, carpenters, masons, &c., visited each in turn or as necessity arose.

(b) A regular routine was laid down for the general conduct of the camps. Particular attention was paid to sanitation; but the Junágad State was entitled to the hides and bones

of cattle dying within its limits, and the disposal of the carcasses of animals dying in the camps was unfortunately beyond my control.

15. (a) At the time when cattle began to pour into the Gir in regular daily train-loads, two wells only had been completed and were giving water for the time to less than a thousand head each. At the third well, reported to have been nearly ready some time previously, the contractor had failed, and it was not actually ready till several weeks later. Skilled well contractors, arranged for in Junágad, also failed to put in an appearance, and the mobs of cattle arriving daily had to be diverted to camps where there was temporarily a sufficient natural supply of water, but some of which were not favourably situated for grazing purposes. Contracts for fresh wells were placed, and the work hurried through with the utmost despatch. In the meanwhile exploration led to the discovery of further natural supplies of water which were temporarily ample. With the completion of the wells required for immediate use anxiety as regards the water-supply, which was at first the main preoccupation, was at an end.

(b) Eighteen separate wells in all were actually completed. Blasting with gelignite was employed in several as the only means of negotiating the solid black rock encountered and of working under water. To each well was attached a large masonry drinking trough.

(c) The natural water-supply failed, even in the few spots where it had existed previously, by the end of February; but the supply created artificially proved of excellent quality, and not only ample for drinking purposes but sufficient to make small buffalo-wallows and to give the buffaloes a daily shower bath in the hot weather.

16. (a) A specific area was granted by the Administrator, Junágad, as a "grazing reserve" for the Ahmedabad cattle. But it was discovered that nearly half this area contained no grazing, and that large tracts in the remaining portion were already exhausted by "outside" cattle, or were inaccessible owing to the ruggedness of the country. Certain fresh areas were granted but of utility so doubtful that they were never occupied. The grazing reserve as finally defined comprised an area which, as the outcome proved, contained grazing for less than half the number of cattle for which it had been intended.

(b) The Administrator had undertaken to protect the grazing by ejecting "outside" cattle on receiving information as to any such encroaching on, or being already in, the Ahmedabad reserve. Unfortunately a large amount of the grazing (which was already insufficient for the Ahmedabad cattle) was consumed and destroyed by "outside" cattle, herds of which continued to infest the reserve in varying numbers till the very end.

(c) A great deal of damage also was done by unlicensed grass-cutters who entered the reserve and cut and carried away grass to their villages on the borders of the Gir.

(d) Several forest fires, some extensive, occurred in the neighbourhood. But in the reserve itself one or two small fires only originated, while one or two more spread from outside just over the borders. The grazing itself escaped, happily, with damage so inconsiderable as to be of no account.

(e) As indicated above the grazing was extremely limited in quantity, and it is certain that, even at its best, it was not as rich as regards nourishment as had been expected. As time passed it naturally grew poorer in quality; and by the end of March was commenced the issue of the cut grass which had been provided to feed the cattle when the grazing should have become exhausted or valueless as fodder.

17. (a) In all 166 lákhs pounds of cut grass were ordered, and the State had been persuaded to supply it inside, instead of beyond, the limits of the Gir as originally intended. Of this, 62 lákhs pounds of loose grass and half-a-lákh of baled grass were supplied for consumption at the several grazing camps; and 9½ lákhs pounds of loose grass at Sáp Nes to be pressed for export to the "transit" camps on the line of march or to Gujarát. The total quantity of loose grass nominally supplied was 99 lákhs pounds. But frauds which had been perpetrated were not discovered till after delivery, and the actual total amounted to 71½ lákhs pounds only. The loose grass was charged for at the rate of Rs. 6 per 1,000 lbs.

(b) Five lákhs pounds of baled grass were delivered at Sáp Nes, the central depôt, for export as above; 8½ lákhs pounds at the "transit" and temporary camps on the "line", and 18½ lákhs were railed to Gujarát direct to feed the cattle which had to be returned a month earlier than had been intended. The baled grass was charged for at Rs. 7-8-0 per 1,000 lbs. in the Gir, and at higher rates varying with the cost of cartage, &c., at the other depôts supplied.

(c) The total quantity of grass delivered was thus 104 lákhs of pounds, that is a shortage of 62 lákhs pounds on the quantity originally ordered.

(d) There was fatal delay in the delivery of the grass. It was not possible to begin the issue of the loose grass in several of the camps till the cattle were almost starving for want of it; while baling and carting operations were hampered to such an extent by late and short

delivery at Sáp Nes that, in the absence of grass, it was necessary to abandon the plans made for removing the cattle from the Gir in the hot weather. The intention had been to establish them in temporary camps in the plains till it should be time for their return to Gujarát. The Gir is notoriously unfit for cattle after the end of March, and their detention in the Gir during April and part of May resulted in a loss calculated at 1,000 to 1,500 head.

18. (a) Of a total of 1,337 "charity" cattle, *i. e.*, the cattle purchased by means of charitable subscriptions for distribution to deserving villagers who lost cattle in the Gir, 709 were sent to the Gir in the same way as the privately owned cattle, 628 being kept at a camp in Ahmedabad. Those sent to the Gir were removed into special camps in the plains as soon after the setting in of the hot weather as the delivery of grass by the Junágad State allowed. The cows were kept in this manner for more than a month, and the buffaloes for nearly two months, before being returned to Gujarát. The immediate and enormous decrease in the mortality amongst them indicates the results that might have been attained had it been possible to move all the cattle out of the Gir in the hot weather as intended.

(b) The distribution of the "charity" cattle began as soon as the rains gave promise of a sufficient fodder crop to feed them, and was complete on 24th July 1912, 1,182 head in all (exclusive of eleven calves born in the Gir) *i. e.*, 88·4 per cent. having been saved.

19. Thus ended what may be termed the active part of the operations. The settlement of accounts, compilation of statistics reports and so forth still remained to be completed. A detailed account of the operations touching on most points of importance or general interest is given in Part II following.

PART II.—DETAILED ACCOUNT.

SECTION I.—THE STAFF.

The Permanent Staff.

20. *The recruitment.*—(a) The collection of the cattle from their villages, marching them to and mustering them at their entraining stations, and their actual despatch, as also detraining them on their return, distributing them to their owners, and the organization of temporary camps for those which were not claimed immediately on arrival and for the "charity" cattle, were carried out by the Mámlatdárs and their Aval Kárkúns, and by the Deputy Managers of the several talukas under the orders of the Tálukdári Settlement Officer. The Special Debt Settlement Officer and the Head Surveyor of the Tálukdári Estates and, in their own talukas, Circle Inspectors, Bandh Kárkúns and Talátis were deputed specially to collect the cattle and despatch them from their villages. The supervision and the responsibility for arrangements in detail devolved on the higher officers in addition to their own ordinary duties. Apart from the heavy pressure of the extra work, therefore, there was no real difficulty as regards the staff so far as concerned the operations at what may be called the "home" end of the railway.

(b) The recruitment of the special staff for the work at the "Gir" end, which, for all but a few, meant work in the Gir itself, was a matter of the very greatest difficulty. The unwillingness of all who could command a living wage in their own country to leave their homes and accept service of an utterly strange kind (as far as the kárkúns were concerned) in an utterly strange country, and under utterly strange conditions was but natural. But add to this the terror of service in the heart of a primeval jungle devoid of human habitation, and infested (as they believed) with wild beasts and outlaws, and it becomes little short of amazing that the staff, even such as it was, recruited at all.

21. *Head-quarters Staff.*—(a) The Special Duty Famine Officer with his office staff, English and Vernacular, made his head-quarters at Chhodavadi—not precisely the most central point in the grazing reserve as finally defined, but the most convenient as being the local head-quarters of the State officials.

(b) Attached to head-quarters was an Upri Kárkún who was required to tour the whole grazing reserve and the line of march, visiting and inspecting the camps in turn, to concern himself particularly with the detailed checking of all camp accounts of cotton-seed, grass, &c., and, acting as a travelling pay-master, to disburse the pay of the staff at the camps as remitted to him from Head-quarters.

(c) Besides the above the regularly employed staff consisted of:—

1. Veterinary officers;
2. Kárkúns from Gujarát with their patáválás;
3. Kárkúns employed locally;
4. Herdsmen from Gujarát;
5. Herdsmen employed locally;

- | | | |
|--|---|-------------------|
| 6. "Koshias" (drivers of well-bullocks); | } | Employed locally. |
| 7. Cattle-guards; | | |
| 8. Grass-guards; | | |
| 9. Well-diggers; | | |
| 10. Carpenters; | | |
| 11. Masons; | | |
| 12. Mochis; | | |
| 13. Permanent labourers; | | |
| 14. "Dheds" (the sanitary staff) | | |

22. *The Veterinary Staff.*—(a) The possibility, even the probability, of an outbreak amongst the cattle of infectious or contagious disease in one form or another had been realised from the beginning; and it had been realised also that such a contingency was one well worth insuring against as far as possible. Apart from this, with camps of famine-stricken cattle scattered about in the jungle at some days' journey from civilization, there could be no question as to the necessity of having veterinary advice on the spot.

(b) The work of the Civil Veterinary Department was greatly increased by the famine conditions prevailing in Northern Gujarát generally; and members of the Department were not easily made available for duty in the Gir. It was to the interest of the Junágad State to exclude cattle disease from the Gir, and to control or eradicate any that might appear; and, this being represented to the Administrator, provisional arrangements were made for the loan of the services of one of his own Veterinary officers pending the appointment of Government Veterinary Assistants. This officer was present most fortunately on the first detection of rinderpest; and it is doubtless due to the immediate action taken and precautions adopted under his advice that its spread was controlled so successfully.

(c) Shortly afterwards two Veterinary Assistants of the Civil Veterinary Department were despatched to the Gir; and, except for a period of a month when one of them was removed, they remained in veterinary charge, one of the Northern and the other of the Southern circle of camps, till the operations drew to a close. Each was furnished with a separate dispensary at his head-quarters; his duties being to tour his circle of camps attending his cattle as required, to meet his colleague of the other circle in consultation in connection with suspicious cases of sickness, to help him with inoculation work when necessary, and to offer professional advice as occasion might require.

(d) I had also the benefit of an occasional visit from one or another of the higher officers of the Department. Mr. Jagannáth K. Bhat, Veterinary Inspector, Northern Division, paid flying visits and was indefatigable. It was thanks to Lieutenant-Colonel Maxwell himself, who visited the Gir early in April, that the bad quality of the cut grass was definitely ascertained in time to permit of the importation of cotton-seed before overwhelming disaster ensued.

(e) The work of the Veterinary staff on the spot was arduous in the extreme; and, the Assistants moving continually from camp to camp as it was essential for them to do, it involved exceptional discomfort and hardship.

(f) A *précis* of the work of the veterinary staff shows:—

1. Each camp in the Gir visited and inspected once in five days on the average.
2. Twenty-one inspections of camps of "outside" cattle in, or in the immediate vicinity of, the Ahmedabad reserve to ascertain the existence of, or their freedom from, disease.
3. Seven samples of drinking water taken and sent to Poona for analysis.
4. Thirteen samples of grass taken and sent to Poona for analysis;
5. Nine thousand, six hundred and thirty-four inoculations against rinderpest.
6. Four *post-mortem* examinations.
7. Four skin samples taken from suspicious cases and sent to Bombay for microscopic examination.
8. Nine blood smears taken from suspicious cases and sent to Bombay for microscopic examination.
9. General treatment of and attendance on cases of sickness (apart from rinderpest anthrax, septicæmia hæmorrhagia and foot-and-mouth disease actual or suspected,) accidents, &c., so numerous as to be beyond detailed description, but some idea of the variety of which may be gathered from a reference to the 24 separate heads under which the deaths amongst the cattle have been tabulated in Annexure V.

(g) My keen appreciation of the work of the Veterinary staff generally has been placed on record separately. It was shared by all denominations; for instance, the herdsmen

petitioned for free medical treatment of their ailments at the hands of the Veterinary officers!

23. *Kárkúns.*—(a) As regards the kárkúns from Gujarát, good men of the kind really needed could not be spared on account of the already heavy famine and other work in their own districts. Nothing but the promise of a large special allowance, which amounted to 60 per cent. of their pay, and the hope of gaining special credit by their enterprise would induce those who did volunteer to accept service in the Gir. With but few exceptions, these found, themselves saddled with charges which were too large and responsibilities which were too heavy for them. But, in consideration of the novel and arduous nature of the work they were called upon to do, and the superlatively strange conditions under which they were called upon to do it, with but few exceptions they acquitted themselves in a manner which does them the greatest credit. Taking the operations as a whole, the degree of success ultimately attained was due in no small measure to the kárkúns' loyal co-operation with me, especially on the part of my own office staff, in the most trying circumstances. The names of those whose services I have pleasure in mentioning as worthy of special recognition have been reported separately.

(b) The kárkúns engaged locally were of much the same stamp as those sent from Ahmedabad. Men of the energy, capability and reliability really required were unobtainable or would have accepted employment only at a prohibitive rate of pay.

24. *Herdsmen.*—(a) The greatest difficulty was experienced by the Mámlatdárs in recruiting the herdsmen required, although it was a famine year, and although as much as Rs. 10 per mensem was being offered to ordinary herdsmen.

(b) Head-herdsmen were employed, one to each camp, to be responsible immediately for the "outdoor" work and to act generally as the camp Kárkún's right-hand man. But even Rs. 20 per mensem was not enough to attract the kind of man required; and many of those sent from Gujarát were not only illiterate but could not even count their cattle.

(c) The number of cattle accompanied by their owners was negligible. Of the 431 herdsmen on the muster-roll on 31st March 1912, there were three only not receiving pay from Government. Rabáris, Bharváds and other professional herdsmen, who were really what were needed, had, apparently, cattle of their own to look after in Gujarát; and this, apart from all other considerations, was sufficient to prevent them from going to the Gir to look after the cattle of others. The result was that it would be hard to find a more heterogeneous body of herdsmen than the Gir boasted, comprising as it did Rabáris, Bharváds, Káthis, Girásias, Bráhmíns, Patháns, Borás, Ghánchís, Baniás, Bávás, Bárots, Mális, Kolís, Barbers, Blacksmiths, Butchers and Dheds.

(d) Not only were very many of the herdsmen unskilled, but they were hirelings, pure and simple, without any personal interest in the welfare of the cattle of which they were placed in charge.

(e) Compliance, had it been practicable, with the Tálukdári Settlement Officer's standing orders to attach to each herd of cattle herdsmen from the village to which the cattle belonged would have saved an infinity of trouble and probably not a few lives.

(f) Many of the hirelings had, it is true, a few of their own or their relations cattle with them; but they were placed in charge of, and paid for looking after, a number of others as necessity arose at the entraining stations; and the fact that they had just a few in which they were interested naturally did not predispose them to bestow on those belonging to strangers the impartial care which was their due. For instance, whereas a Rabári was capable of taking his own cattle out grazing at night when the heat was so intense during the day, and was not afraid to do so, the hireling could not graze his cattle at night even if he would. Again, the keenest watch had to be kept continually to see that a herdsman did not give his own cow an extra allowance of cotton-seed at the expense perhaps of some one else's starving buffalo for which it was intended.

(g) Desertions and resignations, though many before the men had time to settle down amongst their strange surroundings, were not nearly as frequent as might under the circumstances have been expected. Towards the close of the operations the intense heat of April, coupled with the setting in of the cultivating season at their homes, led to quite a small epidemic of desertion among the herdsmen. But the number of the cattle in each camp being then largely reduced, and all having been properly branded, the resulting shortage and temporary confusion due to redistribution was not serious.

(h) Fines as punishments for neglect of duty, etc., were to a great extent impracticable, since every man was immediately dependent on his individual pay for his very existence; and the fact that dismissal with permission to return to Gujarát was regarded as a boon rather than a punishment rendered the exaction of the best work and the maintenance of discipline in the camps a matter of some difficulty.

(j) To fill up the vacancies caused by desertion, etc., "local" herdsmen were employed as far as possible. Herdsmen for employment actually in the Gir there were none. But those from villages in the vicinity proved more equal to adapting themselves to circumstances than

their *confrères* from Gujarát; and, although the demand for employment was not large enough to admit of any real selection, and one had not the same hold over them, their work on the whole was quite as satisfactory as that of the herdsmen from Gujarát.

25. *Other Classes of Employees.*—(a) "Koshias" and employees of all the remaining classes mentioned in paragraph 21 (c) were recruited from the villages in the vicinity, and neither they nor their functions require any description beyond what is given in the "General Information and Instructions for Kárkúns" (Annexure I).

(b) In view of the fact that, as with the local herdsmen so with all other local employees, the demand for employment in the Gir on any terms was not such as to allow anything but the most superficial selection amongst candidates, they performed their duties on the whole in a most satisfactory manner.

The Temporary Staff.

26. (a) For the sinking and deepening of wells and the construction of drinking troughs, for the building of cattle enclosures and quarters for the staff, for the supply and for the distribution amongst the camps of cotton-seed and other stores, for stacking the cut grass, for the building of grass "gamáns" (feeding racks) for the cattle, for the pressing and for the carting of the baled grass, for making and repairing roads and for a host of other minor purposes, I was entirely dependent on "outside" contractors or casual labour as the case might be.

(b) The labour supply throughout was precarious in the extreme, and some of the most formidable situations encountered during the whole course of the operations were due to the difficulty of obtaining casual, much less permanent, labour for the Gir, and of keeping it there when obtained. The local contractors themselves met with precisely the same difficulties. Payment on the spot, and high payment for everything done, was indispensable to the command, even in the slightest degree, of casual labour. The State officials, though they had their own villages all round the borders of the Gir, seemed to experience even greater difficulties in getting and keeping labour than my own staff and contractors.

(c) It would be unjust not to record appreciation of the services of those on whom, although not members of the permanent staff, the carrying out of so many projects devolved. Under the peculiarly informal systems, which in so many respects was the only possible way of getting things done at all in the Gir, the expression of a wish was often likely to be more potent than the issue of an order. Those who complied so often and so readily with what frequently must have seemed to them inordinately exacting "wishes" have been granted the testimonials they deserved.

27. *Strength and Pay.*—(a) With the extension of the operations in the Gir, the staff was increased as necessary; and the services of individuals were dispensed with when no longer required as the operations drew to a close. The final closing of the operations at the Gir end of the railway was arranged to coincide with the departure of the last train-load of cattle; and the whole of such staff as remained was despatched from Kunkáváv with the cattle-special of the 26th June 1912.

(b) The muster-rolls of the staff in the Gir may at the first glance appear to be somewhat long. But when it is realised that nearly 14,000 head of famine-stricken cattle were being detained at Kunkáváv, marched to, and tended in, the heart of a previously uninhabited jungle in foreign territory in regularly organized cattle camps, 40 to 60 miles from the railway, it may appear, as indeed was the case, that a staff more numerous and more highly paid, (had it been practicable to obtain it) would have made for increased efficiency and would have proved an actual saving in the end.

(c) On the 31st March 1912, the whole staff consisted of 733 employees of all classes (exclusive of casual labour) drawing pay in a body at the rate of Rs.7,117 per mensem. For details *vide* Part V, Annexure II.

(d) The monthly disbursement of the pay of the staff was a matter attended with considerable difficulty, and led inevitably to a great deal of complicated work in connection with accounts. It was impracticable to call in the whole staff to Chhodavadi, or wherever the head-quarters office might be, to receive their money. It was equally impracticable to remit lump sums to each camp for disbursement by the camp Kárkúns who, with a very few exceptions, were found to be incapable of making out correctly the pay bills even of their own staff, and had no experience whatever of account keeping. A system of disbursement through a travelling pay-master was therefore adopted. This inevitably caused a certain delay in completing payments, and necessitated the regular issue of orders on the "Banias" for the supply of provisions, &c., to the staff on credit. But this delay was by no means without advantage to the working of the staff as a whole. Employees of inferior grades, if paid up-to-date, were very apt to find that the Gir no longer held any attraction for them and to disappear accordingly.

28. *Accommodation.*—(a) Of permanent habitation there was absolutely none; and the best accommodation that could be provided was of the most primitive description, *viz.*, rude huts built of branches of trees, reeds and grass. None the less it was surprising how comfortable some of the staff, when they had once settled down, managed to make themselves; and, if the

open sky was the roof which many of the herdsmen, &c., seemed to prefer to one of the leaves and grass (even in the cold weather), their preference seemed at least to do them no harm.

(b) The chief drawback to such accommodation as the above was its extreme inflammability. In spite of all precautions fires occurred in the camps on three occasions. In one case the conflagration spread, in spite of the efforts of the whole camp and a large gang of labourers present, to the "sick-cattle" enclosure, and hastened the end of the ten already doomed animals it unfortunately contained.

29. *Provisions, &c.*—(a) The Gir providing nothing, uninhabited jungle as it was literally all provisions for human consumption had to be imported. It was impracticable for the staff to leave their camps for the nearest village outside the Gir boasting a "bazaar" every time they were in need of supplies; and two shops were established, therefore, one at Sap Nes and one at Chhodavadi, where all ordinary native stores and provisions could be bought. Shopkeepers were no exception to the general rule. Nothing but the certainty of substantial profits was sufficient to induce them to undertake business in the Gir, and the very necessary convenience they afforded had to be dearly paid for. The shopkeepers naturally objected to dealing with foreigners and complete strangers on any terms but "cash down", a demand which it was often impossible for the staff to meet. Add to these considerations the enormous cost of transport (even when obtainable) in the Gir, and the abnormal dearth of everything is explained. Confidence was gradually established, however, by the certainty of payment which was guaranteed for all purchases by the Government staff. A regular "nirakh" rate was fixed from time to time with reference to the prices ruling outside the Gir; and, with constant supervision, a very fair quality of supplies was maintained. But, in spite of the competition which might have been expected to arise as the population increased and other "Modis" ventured to exploit the Gir, all prices ruled abnormally high throughout.

(b) Amongst the herdsmen there was the inevitable sprinkling of opium-eaters, and a license for the possession and sale of opium had been asked of the State as early as 13th December 1911. The State authorities promised to make the necessary arrangements; but unfortunately, or perhaps fortunately, no license was received till the middle of May when the whole operations in the Gir were drawing to a close. It can only be hoped that the privation suffered by those who needed the opium operated for their good.

(c) A special point was made of trying to comply with all the State's revenue regulations, even in purely formal matters; and licenses for the sale of salt by the "Modis" were asked for and promised by the State on the 13th December 1911. No licenses, however, were received, and the staff accordingly had the benefit of salt supplied free from the Government stock.

30. *General Health.*—(a) The general condition of health maintained by the staff was excellent.

(b) The Gir has apparently one great advantage as compared with the Dāngs (a locality comprising grazing grounds of similar physical features) in the climate which was found to be healthy and bracing, as far as human beings are concerned, and free from malaria. This was fortunate, since the nearest medical dispensary with which it would have been practicable to keep in regular communication was at Bagasra, 36 miles away even from Chhodavadi, the central camp.

(c) The quality of the drinking water from the wells was universally excellent. The open outdoor life which was the sole portion of the majority, and the magnificently fresh air which, even in the cold weather, try as they might to make their grass-built huts airtight, none could avoid, acted as a tonic. Even the sickening emanations from the "Dhedwada", which an inconsiderate wind would carry through a camp, all too often produced no permanent ill-effects. There were few who did not return to Gujarāt stronger and more robust than when they left.

(d) A few common medicines such as quinine, purgatives and snake-bite remedies were supplied to each camp; but, except for the first named, they were hardly needed.

(e) It was inevitable that amongst so large a staff there should have been a few pre-disposed to fever; but actual prostration was remarkably rare.

(f) A few cases of small-pox occurred, caught from the neighbouring villages of Dalkhania where during March there was an epidemic. But immediate isolation and deportation happily prevented any spread amongst the camps.

(g) Of serious accidents there were none. Occasional quarrels amongst the herdsmen and others resulted only in insignificant injuries.

(h) Two deaths only during the whole course of the operations have to be recorded.—one that of a herdsman of Jodia camp from dysentery, and the other that of a baby, the child of one of the herdsmen at Chuladi camp, from decline after surviving an attack of small-pox.

SECTION II.—THE CATTLE.

31. *Collection from villages.*—(a) As mentioned under paragraph 20, the whole of the work at the home end of the railway was carried out by the Mámlatdárs and the Deputy Officer.

(b) Practically the whole Tálukdári staff was, for weeks together, engaged in visiting the villages, and preaching the necessity of deporting some of the cattle in order to leave sufficient fodder in the villages to save the rest. Particularly good work in this respect was done by Mr. Mohanlal, the Special Debt Settlement Officer. Great reluctance was encountered, except where cattle were already dying from lack of fodder. It was a super-human task to induce the villagers to look one or two months ahead. Even where the pinch of scarcity was felt most severely, it was generally the least valuable and most debilitated cattle only that the villagers were prepared to tender for deportation. The primitive instinct not to allow any property of value to pass out of reach of the owner's hand proved almost insuperable, except where the larger and more enlightened tálukdárs and landlords themselves took an active part in persuading their tenants of the advantages of deportation.

(c) It was recognised that the ill-success of similar experiments in the famine of 1899-1900 gave grounds for this reluctance, and that cattle of the highest value could not be expected to be sent out of the affected areas till confidence was restored. The distrust of deportation learnt from the experience of previous famines was reinforced by rumours from the Dángs where a considerable number of cattle had been transported within the past few weeks. Stories, mostly unfounded, were circulating that cattle and herdsmen in the Dángs were dead or dying, and reluctance to send cattle to the Gir was thereby increased. Concerning the Gir itself all kinds of scandalous rumours were afloat; and they were only dispelled partially by sending representatives from the villages to see the arrangements in the Gir for themselves. These men came back with glowing accounts, but they never succeeded in overtaking the lies which had gained currency.

32. *Muster at entraining stations.*—(a) To facilitate the transport of cattle to the entraining stations, routes were laid down through the affected areas, grass depôts and facilities for watering being provided at easy stages. The country was by this time absolutely bare of grazing, and it was only by such means that cattle could be marched to the railway. The strictest orders were issued by the Tálukdári Settlement Officer to reject aged, valueless or very debilitated cattle; but, when once they had left their village for the entraining stations, it was almost impossible to turn them back. Veterinary inspection was possible at the entraining stations only, and was found to be of little value owing, probably, to the natural reluctance of all concerned to turn back cattle which had come so far on their journey. The supply of grass was so short that it was impossible to keep a number of cattle at the entraining stations sufficiently large to afford a fair field for selection; and the local officers were faced with the alternative of despatching the trains only partially filled, or of including unfit cattle in the train-load. Also, in view of the reluctance encountered, they were compelled to consider the effect which would be produced by sending back to the villages cattle which had already reached the entraining station. Uncertainty would be created in the minds of the villagers whether cattle which they elected to send might not be returned on their hands; and the task of the collecting officers would be rendered yet more difficult. But, when full weight is given to these considerations, there was still a large number of cattle entrained which should never have left Gujarát. Enquiries made in some instances showed that cattle rejected at the stations by the veterinary officers were smuggled into the train subsequently without their knowledge.

(b) As an instance of the extent to which initial reluctance was overcome in some cases may be mentioned the fact that a village near one entraining station, learning that a batch of cattle intended for a particular train was delayed on the road, marched up their own cattle and got them entrained before the belated contingent appeared, to the great disgust of the latter.

33. *Particulars of cattle deported.*—(a) The total number of cattle to be sent to the Gir was an unknown quantity from the beginning, and remained so practically till the last animal was despatched. This uncertainty added immensely to the difficulties of making the necessary arrangements for them beforehand. In one respect it was fortunate, since it resulted in applications for larger grazing areas and orders for more cut grass than would have been the case if it had been known that the total number would not exceed 14,000. The contraction of the grazing area and the short and late delivery of the cut grass, disastrous as they were, with the restricted number of cattle to be dealt with, would have been yet more fatal if the number of cattle had reached the full total of 20,000 contemplated.

(b) At one time some thousands of cattle were expected from the Kaira District, and it seemed quite probable that the full 20,000 head might well be reached. The Kaira cattle, however, did not materialise.

(c) In all 9,862 tálukdári, 3,156 khálsa, and 675 "charity" cattle, making a total of 13,693 head, were received at Kunkávav. Thirty-four "charity" cattle were obtained locally making a grand total of 13,727 head.

(d) Of the 13,018 tálukdári and khálsa cattle, the Viramgám Táluka produced 4,022, the Dholka Táluka 3,511, the Dhandhuka Táluka 3,119, and the Sánand Táluka 2,366. These cattle came from 341 different villages in the four tálukas, and from no less than 8,806 different owners in those villages.

34. *Despatch and journey to Kunkávav.*—(a) Special trains were engaged for the conveyance of the cattle from Bhankoda, Viramgám and Ránpur, the three most central stations for the tálukas concerned, to Kunkávav, the nearest station to that part of the Gir assigned to the Gujarát cattle. The first train (from Viramgám) left on the 13th November 1911; and from the 30th November a daily cattle special ran from one station or another, without a break of a single day, till the 30th December, 7,475 head of cattle being received at Kunkávav during this period alone. During January the trains ran on alternate days only. In all 54 special cattle trains were despatched from Gujarát, *i. e.*, 24 from Viramgám, 22 from Ránpur and 8 from Bhankoda. A few smaller batches of "charity" cattle at the end were sent by ordinary rail.

(b) To the credit of those of the Gir staff who were immediately responsible for the entraining of the cattle on their return to Gujarát, it must be said that the entrainment at the táluka stations was not carried out with anything approaching the despatch which characterized it at Kunkávav.

(c) The Railway Company afforded such facilities as lay in their power in connection with the operations. But it is a matter for regret that they were unable to provide properly ventilated cattle waggons, or to ventilate those provided (a task within the capacity of any competent mechanic) and to accelerate the specials running from Viramgám and Bhankoda to Kunkávav.

(d) The want of ventilation in the cattle waggons was felt less in December and January, when the weather was cooler, than in March when the last few trains arrived. But it was in May and June when the cattle were returning that they suffered most severely from the stifling heat of the closed iron waggons. It was soon found that the cattle were apt to suffer through being entrained, or allowed to travel during the heat of the day even in the cold weather; and thenceforward it was arranged, as far as possible, to entrain them during the latter part of the afternoon and evening, and to despatch them at once so that they might travel during the night and be detrained at their destination before the heat of the day.

35. *Detrainment at Kunkávav.*—(a) The detrainment at Kunkávav was carried out systematically, immediately on the arrival of the trains. The Railway Company at first found it convenient to run the specials into Kunkávav during the night, and demanded that the cattle should be unloaded at once in order to free the waggons for their return. To detrain the cattle and march them from the station to their camp in the village by night was both difficult and dangerous. The night arrivals were therefore stopped, and the Railway kindly arranged thenceforward that the specials should arrive at Kunkávav in the early morning.

(b) A considerable number of cattle, frightened or excited by their journey and the novelty of their surroundings on the platform of a railway station, resisted all control, and bolted into the open country the moment they were free of their waggons. But, with a very few exceptions, all were recovered sooner or later.

36. *The march to the Gir.*—(a) The entrance to the Junágadh Gir was 40 miles from Kunkávav, the nearest railway station. "Transit" camps had to be established, therefore, at intervals, along the line of march, to allow the cattle to halt for rest, and to provide them with fodder and water. The following villages, as being the most convenient with regard to distances and the resources they afforded, were chosen for transit camps:—

(i) Kunkávav (Káthiáwár Agency), camp of arrival from Gujarát, 1½ miles from the railway station, and 38½ from Vaniagali, the camp of arrival in the Gir;

(ii) Bagasra (Káthiáwár Agency), with the nearest telegraph office, the nearest "bazaar" and the only business centre within reach, 12½ miles from Kunkávav, and 26 from Vaniagali;

(iii) Bhader (Baroda State), 8½ miles from Bagasra, and 17½ from Vaniagali;

(iv) Dalkhania (Baroda State), 11 miles from Bhader, and 6½ from Vaniagali.

(b) The arrangements for marching the cattle to the Gir and the general routine, &c., of the transit camps are described under "General Information and Instructions for Kárkúns," Annexure I.

(c) 828,190 lbs. of grass, kadbi, &c., were purchased for the transit camps at a total cost of Rs. 7,893-12-9.

(d) Of the 13,727 cattle received, 62 were returned to Gujarát immediately, 38 were kept in the plains, and 12,949 reached the Gir. Details of casualties are given in Annexure IV.

37. *In the Gir.*—The following paragraphs describe the management and care of the cattle and the general routine followed at the camps in the Gir.

38. *Identification and registration.*—(a) Particulars of the cattle deported have been shown under paragraph 33 (c) and (d) above. The difficulty of identifying individuals of such a large and curiously constituted mob for official purposes is obvious. An insignificant few of the cattle were accompanied by their owners, or by others capable of recognizing them definitely as belonging to any particular person in any particular village. In spite of the Tálukdári Settlement Officer's most explicit orders it was found impossible, apparently, to mark them properly, even temporarily, before despatch from the tálukas; and very few arrived in the Gir legibly marked. The cattle were as strange to the herdsmen as the herdsmen were to them, and their identification and registration for correct return to each owner and for the compilation of statistics, etc., presented a very difficult problem.

(b) The cattle were distributed so that, with one or two exceptions only, all in one camp belonged to the same táluka. A consolidated list for each camp was compiled from the village lists received from the tálukas with each train-load. These consolidated lists showed, amongst other details, the villages from which the cattle came, and the names of their owners and of the herdsmen nominally in charge of them, and were kept as the general cattle registers of the camps.

(c) An attempt was made to mark the cattle with numbers corresponding to serial numbers which were given them in these registers. But it only served to show how few could be identified more closely than as having come by the special train of such-and-such a date, and it had to be abandoned. Matters were not simplified by the fact that several of the trains contained cattle from more than one táluka. The only practicable course was to mark them according to the serial numbers of the 54 special trains by which they arrived.

(d) Branding was the only satisfactory means of marking; and brands showing the initial letters of the several tálukas were supplied by the Tálukdári Settlement Officer. The cattle were then branded with the initial of the táluka to which they belonged, a separate spot on the body being assigned to each train-load, or part train-load, from the four tálukas respectively. The position of the brand (*vide* "Key to Cattle Brands") showed at a glance with which particular train-load an animal arrived; while the dates of departure of the several train-loads, and the villages from which the cattle of each came were already accurately recorded. Thus the system of branding by train-loads (the only one possible under the circumstances) served not only as a means of identification when the cattle were in the Gir itself, but made it possible to restore animals, which had been despatched unmarked, to the táluka to which they belonged, with evidence to show that they were the property of one of a small number of villages whose cattle were despatched by a particular train on a particular day. The village lists received from the tálukas showed the number and description of animals sent by each owner, so that when the cattle returned to Gujarát it was a simple matter to call to the detraining stations the owners concerned with the arrivals of any particular date; and the cattle were identified with surprisingly little difficulty or dispute.

(e) The branding was not carried out without some difficulty. Each camp kárkún had to be taught the significance of the positions of the brands on the cattle of the several train-loads in his own particular camp. At each camp some one possessed of sufficient intelligence had to be taught how to do the actual branding; and an obstreperous bullock, for instance, was not a model of patient submission to the application of a red hot iron to the index part of its body.

39. *General condition of the cattle.*—(a) For reasons already explained, the large majority of the cattle were in very poor condition on arrival at Kunkávav. No further evidence of this is necessary than the fact that, owing purely and simply to initial debility, agedness, etc., of the 13,693 cattle received from Gujarát 358 never got further than Kunkávav, their detraining station, 224 more never reached the Gir, and 379 died within ten days of arrival there.

(b) The general condition of the cattle showed a distinct improvement for some two months after the first arrivals in the Gir. There was, concurrently with this improvement, a heavy mortality; but this represents merely the inevitable elimination of animals which were fore-doomed, and which, in most cases, were economically valueless.

(c) From the beginning of March till about the middle of April there was a noticeable falling off in general condition; and despite all efforts to check it, the mortality percentage increased in an ominous manner. The Veterinary Assistants could offer no satisfactory explanation; and it was only when Lieutenant-Colonel Maxwell, Superintendent, Civil Veterinary Department, arrived on the scene that it was found that the fault lay where it was least expected, *viz.*, in the quality of the grazing and of the cut-grass. Grazing near the camps was exhausted, and the quality of the grass at a distance had deteriorated to such an extent that it did not afford enough nutrition to replace the strength expended by the cattle in marching between camp and grazing ground. Cut grass supplied by the State had lost all nutritive value owing to late cutting. There was no disease; but the cattle were dying of sheer debility.

(d) As soon as this was realized every nerve was strained to import cotton-seed to supplement the grass feeding. Marching cattle to grazing was promptly stopped so as to avoid fatigue. They were given instead all the cut grass they could eat, and were stimulated to eat all they possibly could by sprinkling it with salt in solution. The cut grass was, however, relied on henceforward to supply bulk only, and nutrition was afforded by feeding cotton-seed which was imported with the least possible delay, and issued without interruption till the day the cattle were returned to their owners in Gujarát. The effect was visible immediately. Cattle continued to die in large numbers as was inevitable at this time when the Gir is notoriously unhealthy for cattle (and when, if arrangements had not been dislocated by the late delivery of grass, they would have been out of the Gir); but, concurrently, the general condition steadily improved and continued to improve with the result that survivors reached their villages in far better condition than when they left them. It was the cotton-seed, and nothing but the cotton-seed, that saved them.

(e) The casualty figures for the return journey form an interesting comparison with those of the march to the Gir. The losses on the outward march amounted to 4·3 per cent.; on the return journey, excluding those due directly to the floods in June, 1·5 per cent. only.

Sickness and Disease.

40. *Rinderpest.*—(a) From inquiries and common report it was learnt on arrival in the Gir in December that both rinderpest and foot-and-mouth diseases were rampant in the neighbourhood of Lila Pani, a tract outside, but in the vicinity of, the Ahmedabad grazing area. There was no rinderpest either in any of the home districts from which the cattle were being sent, or in the villages on the line of march to the Gir. But it was to be prepared as far as possible for emergencies that the services of one of the State veterinary officers were obtained in the first instance.

(b) A case of sickness suspected to be rinderpest was reported from Dungarphadi camp on the night of the 5th January 1912, and was confirmed as such the following morning. This camp had been inspected by the Junágadh veterinary officer only two days, and by the Veterinary Inspector, N. D., only eight days previously; and it was at least satisfactory to feel that no time had been lost in the detection of the out-break. Immediate isolation of actual and suspected cases, the isolation of the camp as a whole, and thorough disinfection of the cattle enclosures were adopted, while staff and apparatus for inoculation were wired for from Ahmedabad. Delay was reduced to a minimum owing to the fact that the Tálukdári Settlement Officer had previously warned the Veterinary Inspector, N. D., to hold inoculators and serum ready to send to the Gir in the event of emergency.

(c) Bharthi camp close to Dungarphadi (the cattle from which had been drinking and grazing in the immediate vicinity of the Dungarphadi cattle) and Rampuri camp adjoining Bharthi, were thoroughly disinfected also, the cattle being kept strictly to their own side of the river bed which separated them from the other camps.

(d) Assistants of the Civil Veterinary Department with instruments and apparatus arrived, and inoculation began at Dungarphadi on the 14th January 1912. The supply of serum was limited at first and insufficient to inoculate immediately (as it was feared would prove necessary) the cattle at Bharthi and Rampuri, in addition to those of Dungarphadi, nearly 4,000 head in all. It was quite impracticable to create the irreparable confusion which at that time would have resulted from separating (as would have been desirable from a purely veterinary point of view) the "good," "indifferent" and "bad" cattle in any one camp for inoculation in turn as time and the supply of serum might allow. It was equally impracticable to collect them, each class from the several camps and turn them into whole camps of "good," "indifferent" and "bad" cattle for inoculation in the same manner. The whole camp (Dungarphadi), therefore, was inoculated at once, the work being completed on the 15th January; and fortunately the supplies of serum available from time to time were sufficient to allow of the whole of the cattle in a camp being inoculated at once as required.

(e) From Dungarphadi the infection spread, as was practically inevitable, to Bharthi and thence, one after another, to 12 out of the 14 camps which had been opened by the beginning of February. But in every case, with perhaps a single exception, when there was only one Veterinary Assistant on duty in the Gir, the out-break was detected while the cases were still in the suspected stage. Prompt isolation and disinfection, close observation and immediate inoculation of a whole camp on suspicion being confirmed, the holding up of train-loads of cattle in transit, and, in the case of transit camps, the transfer of the whole camp to clear the way for incoming cattle, not only controlled but completely, for the time, eradicated the disease.

(f) The "charity" cattle, as a precaution, were inoculated on their arrival in the Gir in March before being sent to the camps specially established for them, but to reach which they had to pass through infected areas.

(g) The general inoculation, which had been going on intermittently since the commencement of the epidemic at Dungarphadi, had hardly ceased, after the arrival of the "charity" cattle, when rinderpest, caught directly from "outside" cattle in the vicinity broke out at Jodia, one of the only two camps which hitherto had escaped infection. This was particularly

unfortunate as, at the very time of the outbreak, the bullocks in this camp were under orders for return to Gujarát, and the whole camp was to have been one of the first to be abandoned. It was a moot question whether the after-effects of inoculation were likely to cause greater loss amongst the more than usually debilitated cattle in this camp than leaving the disease to follow its own course checked, as far as possible, by isolation and disinfection only. It was decided to carry out the inoculation as usual; but the moving of the whole camp was delayed for nearly a month.

(h) At Bharthi and Sudavo camps the herdsmen, in my absence, refused to allow the Veterinary Assistants to inoculate their cattle. But after a personal visit they were persuaded of the folly of opposition, and no serious delay was caused.

(j) In all 9,634 cattle were inoculated against rinderpest. The mortality registers of the several camps show that 410 animals died of the disease or of the reaction after inoculation. But how many succumbed to rinderpest or the reaction as a result of debility it is, unfortunately, impossible to say.

(k) There can be no doubt that the outbreak of rinderpest was due to the "outside" cattle in the vicinity of, or actually in, the Ahmedabad area. One of the higher veterinary officers of the Junágadh State visited the reserve and some of the neighbouring tracts early in March, and informed me personally that he had been unable to find a trace of rinderpest amongst the "outside" cattle in the Gir. But, (1) as mentioned above, the home districts and the villages on the line of march were free, while my own earliest inquiries had elicited the information (unofficial but fully corroborated subsequently) that rinderpest was raging in the neighbourhood. (2) A high official of the State who had just passed through the neighbourhood in question informed me personally that cattle were said to be "dying there like flies." (3) The local cattle owners accounted for the comparative immunity of their own cattle during the current year by an epidemic of rinderpest having swept through the Gir the previous year. (4) Certain "outside" cattle owners at Mahuda Nes, who had denied the existence of any sickness amongst their cattle when I first visited their camp in company with the local officer in charge, confessed to me, when I visited them a second time alone, that they had only recently lost a fourth part of their cattle from rinderpest. (5) Definite cases on two or three separate occasions were found by my own Veterinary Assistants amongst the "outside" cattle at Dabhala village in the immediate vicinity of Jodia camp; and (6) at the time of the outbreak at Jodia I myself saw at least one dead animal from these "outside" herds which obviously, and as the owners themselves frankly admitted, had just died of rinderpest.

(l) One fact which may be of particular interest from a veterinary point of view emerges from the history of rinderpest in the Gir. The period of immunity from the disease afforded by inoculation is said to be three weeks only. Inoculation was proceeding intermittently at one camp or another from the 14th January till the 22nd April. There was constant inter-camp communication, opening the way, in spite of all possible precautions, to the spread of any infection existing; and on their return there was the inevitable intermingling of the cattle from one camp with those from another. Yet, up to the middle of July, when the return of the Gir cattle to their villages was complete, no single instance of recurrence of the disease occurred.

41. *Anthrax*.—What was believed, from certain suspicious symptoms and as the result of *post-mortem* examinations of otherwise unaccountable cases of death, to be an outbreak of anthrax occurred at Dungarphadi camp in January. This was attributed to the water which, up to that time, had been drawn from the natural supply in the river bed. Such precautions as were possible were taken at once. The standing pools were fenced off so as to confine the cattle to the water still running, and immediate steps were taken to sink a well and build a drinking trough, and to move the camp to high ground on the far side of the river. The well with its trough, the cattle enclosures, quarters, store-room, etc., completed, the whole camp was transferred bodily to the new site. But the Senior Veterinary Assistant, N. D., on visiting the camp a few days afterwards, found no traces whatever of anthrax; and cultivations made from samples of skin sent to the Veterinary College, Bombay, for the purpose produced negative results. It may be concluded, therefore, that the reputed anthrax was a false alarm.

42. *Septicæmia Hæmorrhagia*.—Certain cases of what was suspected to be septicæmia hæmorrhagia occurred also at Dungarphadi camp, and the most stringent precautions as regards isolation were taken as usual. But, although the above occurred on two separate occasions, there was no spread or final and unquestionable development of the symptoms; and, except for the anxiety caused, there is nothing definite to record as attributable to this disease.

43. *Foot-and-mouth disease*.—Foot-and-mouth disease was discovered amongst the cattle at Rámpuri camp on the 7th January 1912, and subsequently in several of the other camps. The strictest isolation possible was adopted, and the epidemic never assumed really serious proportions. In fact the disease appeared in but little more than sporadic form, and, the cases admitting of individual treatment, it was finally eradicated. Eight losses only, debility being a contributory cause, are recorded under this head.

44. *Miscellaneous.*—(a) Dungarphadi was an unlucky camp. At the very time, when it had been intended to begin transferring the cattle to fresh camps with the object of abolishing it altogether as soon as possible, owing to its immediate proximity to Bharthi (which caused overcrowding on the grazing grounds), the outbreak of rinderpest occurred, and all plans in this connection were necessarily abandoned for the time. Dungarphadi was the only camp which contracted the reputed anthrax, the only camp visited by the alleged septicæmia hæmorrhagia, more deadly still, and the only scene of a mysterious visitation which has defied diagnosis altogether.

(b) During the early part of January mortality amongst the cattle, which were in fair condition generally, rose steadily. The stricken animals presented no specific symptoms, and no definite cause of death could be assigned. But one night some "Dheds" (employed by the State as grass labourers), who had recently camped in the vicinity, were detected by the camp night-watchmen throwing into the water (from which the camp drew its whole supply) a certain powder made from the bark of the "ingora" tree, by means of the alleged blinding and stupefying effect of which they urged that they were in the habit of catching fish. By that time it was commonly known that the State's "Dheds" had a personal interest in the accumulation of hides. The herdsmen, losing their cattle daily, and powerless from their very ignorance of the cause to do anything to save them, were in no mood to be trifled with. Serious trouble was narrowly averted, and further fish-catching by such means was stopped. An analysis of the powder by the Chemical Analyser to Government produced only an assurance that it contained nothing apparently injurious to human or animal life. The nature of the mysterious sickness amongst the cattle was never discovered. But not the least curious part of the episode is that, coincident with the discovery of the fish-loving "Dheds", the mortality in the camp steadily decreased till it reached a normal rate once more.

(c) A certain number of cattle, especially young male buffaloes, died from what was realised afterwards to be indigestion. They arrived in the Gir in a more or less emaciated condition. In the early days, before the grazing in the vicinity of the camps became exhausted, they were in a position to eat as much as they liked, and (as was discovered later), by reason of the bad quality of the grass, ate far more than was good for them. The result was impaction of the rumen and death.

(d) In some of the camps lice appeared as a result, probably, of close herding in the cold weather before systematic cleaning of the cattle enclosures could be enforced. The Veterinary Assistants were untiring in their efforts to eradicate them, teaching the herdsmen the application of carbolic oil and of phenyle which was supplied to all the camps in unlimited quantities as a general disinfectant. Though some of the weaker and already doomed cattle may have suffered, it is probable that no healthy animal was seriously affected.

(e) The general debility of the cattle on arrival from Gujarát, but principally their exhaustion due to shortage and bad quality of the grass in the Gir, coupled with the long marches backwards and forwards between camp and grazing ground were the causes of the great majority of deaths. The sum total of losses from all other causes put together is comparatively trifling (*vide* Annexure IV in which losses from all causes are tabulated).

Special Feeding.

45. *Cotton-seed.*—(a) It was the object of the operations to demonstrate that the cattle could be sent back to Gujarát and returned to their owners, not merely alive, but fat and well and in better condition generally than when they were sent away. To achieve this end no effort was spared; and, plentiful and nourishing as it was believed in the beginning the grazing would prove, it was decided to supplement it with special feeding during the cold weather. It was confidently expected that, having carried the cattle through the winter, the grazing alone would suffice for the few weeks which would elapse before it was intended to begin the issue of cut grass; and it was taken for granted that the liberal allowance of cut grass arranged for would fulfil the function of the previous concentrated feeding, *viz.*, the fattening of the cattle.

(b) The choice of foods rested practically between oil-cake and cotton-seed. The former was the more suitable food for the cold weather. But, whereas it was not obtainable in large quantities anywhere in the neighbourhood, local contractors for the supply of all the cotton-seed required were soon forthcoming. Feeding at the "transit" camps was begun at once, but stopped shortly afterwards by the advice of the Veterinary Inspector, N. D., and some 600 maunds only of cotton-seed were consumed by the cattle on their way to the Gir. The first contracts for delivery in the Gir were given out on the 22nd December 1911. The first consignment arrived at Sap Nes on the 28th December 1911, and the feeding began forthwith. One pound per head of cattle per day was allowed to begin with; but, as stocks increased and the weather grew colder, this was increased to as much as 3 lbs. per head in the camps where the cattle were in poorer condition and more in need of it.

(c) The contractors were as strange to the Gir and all concerning it as was everyone else connected with the operations; and it was only by dint of constant effort that they were held approximately to the terms of their contracts. They made their deliveries, however, as punctually as could be expected on the whole, and, with strict supervision, kept the quality

of their supplies up to that of the contract samples. The quality on the whole was excellent. It was not realised at the time, but there can be little doubt, in the light of subsequent knowledge of the inferior quality of the grazing, that the salvation of thousands of cattle which returned to Gujarát was due to this cotton-seed feeding during the earlier days of their stay in the Gir.

(d) In the Gir, "gamans" of timber lined with bagging were made for feeding the cotton-seed to the cattle. At the camps outside, the usual earthen "gamans" were adopted. Small or weak cattle were fed separately by hand, or apart from the main herds.

(e) Economy and common sense demanded a policy of strict selection in the special feeding of the cattle; but in practice, more especially in the earlier days, it was a sheer impossibility to separate out the apparently valueless and already doomed cattle, to rob them even of their fighting chance of life by denying them their cotton-seed, and to allow them to die off in their hundreds without even an effort to save them. Cotton-seed was therefore fed to all the cattle except those which were quite obviously beyond all hope, special care being taken that small or weakly cattle obtained their full share of all that was issued.

(f) In this way 14,000 maunds of cotton-seed were consumed. With the break of the cold weather the daily allowances were reduced; and what was intended to be a final order for 2,000 maunds was placed with the object of having in stock sufficient to last till the end of the operations for calving cows and other cattle needing special feeding through sickness or debility.

(g) It was now believed that cotton-seed generally was finished with, and the transport arrangements made for its distribution were closed down. In the beginning of April came the discovery that the cut grass was mere rubbish. The Superintendent, Civil Veterinary Department, on visiting the camps in person, expressed the opinion that not more than 10 per cent. of the cattle could be expected to survive if left to depend on the cut grass and on what remained of the grazing alone. Fresh contracts had to be placed with the least possible delay; higher rates, apart from the increased cost of the cotton-seed itself, had to be paid in order to obtain the early delivery which was now so urgent; and, what was far more difficult still, higher rates offered or not, the transport arrangements (which had actually been closed down) for distributing the cotton-seed from the stores amongst the camps had to be reorganized. Most fortunately, however, one or two contractors were induced, for a substantial consideration, to undertake the delivery of their supplies direct to the camps as required. This added to the responsibility of the camp kárkúns in a manner which only the critical situation could justify, but much valuable time was saved. Six days only after the Superintendent, Civil Veterinary Department's disquieting verdict on the quality of the grass, practically every camp was again on a daily allowance of 1 lb. per head of cattle; a few days later $1\frac{1}{2}$ lbs., a few days later still 2 lbs., and at a few camps where the cattle were in particularly poor condition this was increased to $2\frac{1}{2}$ lbs., as necessary and possible. The daily allowance of 2 lbs. was maintained from then onwards in the grazing, the temporary, the transit and the táluka camps till the very end of the operations.

(h) No less than 13,000 maunds (in addition to the 16,000 above-mentioned) at the Gir end of the railway, and 1,400 maunds at the home end respectively, representing additional and totally unforeseen expenses amounting to Rs. 26,044-7-1 were consumed in this way. In all 29,085 maunds of cotton-seed were consumed in the Gir and on the line of march, costing Rs 54,986-7-8, *i. e.*, a total consumption of 30,513 maunds at a total cost of Rs. 57,486-7-8.

46. *Oil-cake.*—(a) "Sarsav" oil-cake was recommended by the veterinary staff as being the best for the cattle. But the nearest source of supply was hundreds of miles away in the north of the Viramgám Táluka; and, although contracts were attempted, the obstacles in the way of raiiling it down to Kunkávav and thence carting it to the Gir were never satisfactorily surmounted. On one occasion it required no less than six weeks for a contractor to deliver at Sap Nes a consignment of a mere 400 maunds; and by the time it arrived it had become too hot for the cattle to need it.

(b) The "Sarsav" oil-cake was curiously unpopular even amongst the Rabáris and Bharwáds, who might have been expected to know what was good for their cattle; and the cattle themselves, though some of them took greedily to "tal" oil-cake, were indifferent to the "sarsav."

(c) Only 793 maunds of "sarsav" oil-cake were supplied to the camps in the Gir at a cost of Rs. 1,432.

47. *Salt.*—(a) It was anticipated that the Gir grass, on account of what was believed to be its peculiar sweetness, would prove to some extent unpalatable to cattle from Gujarát in general and those from the salt impregnated Bhal tracts of the Dhandhuka and Dholka Tálukas in particular. A preliminary consignment of salt, therefore, was ordered at once from Junágadh, and permission to import rock salt in anticipation of the issue of the salt licenses asked for and promised was obtained on the 13th December 1911. At the same time the State, on account of its own salt revenue regulations, undertook to supply all the ordinary salt required.

(b) Rock salt was imported from Ahmedabad and distributed amongst the camps, lumps being placed in each enclosure for the cattle to lick at will. It was appreciated to some extent; but, in view of the large number of cattle, it was consumed very slowly, and, on the completion of the 50 maunds first supplied at a cost of Rs. 115, it was not thought worth while to import more.

(c) At the same time, however, ordinary salt was being fed to the cattle with their cotton-seed, and, when the cotton-seed was stopped, it was fed to them by hand or given, when they would take it, in their water. This unquestionably did them a great deal of good, and they might have benefited more still but for the shortage of stock consequent on the failure of the State to supply salt as required and as promised.

(d) During March, in daily expectation of the arrival of the long overdue supplies from the State salt depôts, the balance had been allowed to fall very low, and the allowances had to be largely reduced. Consequently, when in the beginning of April the Superintendent, Civil Veterinary Department, urged the absolute necessity of giving the cattle as much salt as they could consume (on account of the bad quality of the cut grass on which they were then dependent), the supplies immediately available were inadequate. Under these circumstances it was impossible to wait longer for the State depôt to comply with the long outstanding orders, and large quantities of salt were imported direct, again in anticipation of the long looked-for license. In a few days the cattle were having as much salt as they could be made to take; and this was continued either with the grass or the cotton-seed till the end of the operation, $2\frac{1}{2}$ to 3 tolas per day being consumed by the healthier animals.

(e) In all 624½ maunds of ordinary salt were consumed in the Gir, and 66½ maunds on the line of march; that is 691 maunds in all, costing Rs. 326-8-6.

48. *Miscellaneous.*—(a) A regular scale of special feeding at the camps was laid down for cows and buffaloes after calving and pending the visit of the veterinary officer who would then prescribe definitely anything specially needed. The "Baniyas" at Sap Nes and Chhodavadi were required to stock oil, ghee, molasses, bajri, etc., for this purpose.

(b) Calves were frequently nursed by hand after losing their mothers, or if their mothers were incapable of performing their maternal functions. Even goats were called into requisition, when no other method of nursing seemed satisfactory or feasible; and more than one healthy young animal found its way to Gujarât when, but for its obliging foster-mother, it certainly would never have left the Gir.

(c) Sick cattle of the slightest value were specially fed, as long as there seemed to be the remotest chance of their recovery. The success which in many cases rewarded the treatment of invalids proved that the loss of cattle, which have once sunk so low as to need assistance in getting on to their legs, is not always inevitable as is generally supposed.

The return.

49. *Muster in the Gir and despatch to the railway.*—(a) Had it been feasible, it would, from an economic point of view, have been desirable to keep the cattle in the Gir till, with the advent of the rains, there should be a sufficient crop of fresh fodder for them in Gujarât. But this for various reasons, notably the unhealthiness of the Gir for cattle after March, was impracticable. It was decided, therefore, to remove the whole scene of operations after March from the Gir itself to a series of temporary camps in the plains on the way back to the railway, and to keep the cattle there until their owners should be ready for them. Provisional arrangements for the accommodation of the cattle in or close to convenient villages, for deepening wells in cases of a shortage of water, and for building new, or extending existing, drinking-troughs were made accordingly. It was impossible, however, to move the cattle into the plains owing to the failure of the Junágadh State to deliver the cut grass by the time specified. Baling and carting operations were hopelessly retarded by late delivery; and without the cut grass there was nothing for the cattle to live on in the projected camps.

(b) Under these circumstances the idea of camps in the plains had to be abandoned, except for a small number of cattle. With the deletion of this phase of the operations from the programme, coupled with the inadvisability of keeping cattle a day longer than was necessary in the now unhealthy Gir, the only course was to return them to Gujarât a month earlier than had been intended. However, that they might not starve in their villages after return, it was arranged to send with the cattle as much of the overdue grass as the State could deliver. The State guaranteed to send a minimum quantity by a given date. Unfortunately the time was exceeded and, even so, not even the guaranteed minimum was reached, *vide* paragraph 78 (b) (8).

(c) It had been unknown how many bullocks ordinarily used for agricultural purposes would be forthcoming for despatch to the Gir; but it was recognized from the beginning that such as there might be would probably be wanted back in their villages before the rest of the cattle. Arrangements for grass (which owing to failure of the State fell through) to pass them down to the railway had been made therefore as far back as December. The bullocks were collected from all the camps to begin with, and the first train-load was despatched from Vaniagali on the 24th April, the first train leaving Kunkávav station on the 1st May.

(d) The cattle being branded so as to be capable of identification only as belonging to a certain táluka, and as having been despatched for the Gir from a certain station on a certain date, it was necessary to make up each train-load so that definite information could be sent to the Mámálatdárs of the several tálukas in time for them to warn their villagers of the arrival of cattle belonging to certain villages on a certain date. Again, without causing endless confusion in the tálukas, it was impossible to split up the despatch train-loads to make up a return load into finer sub-divisions than "black" and "white" cattle, *i.e.*, buffaloes and cows, the bullocks having been despatched already. But, for the convenience of owners who might have sent both "black" and "white" cattle, it was undesirable to do even this. Thus to make up full but not overfull train-loads, to arrange without confusion in the Gir and on the transit line for the abandonment of camps on the exhaustion of the cut grass stock, etc., and to leave what surplus grass there might be at camps only where it would be likely to be saleable, to have the cattle and all the cattle, but no more than those required for a given date (perhaps from different camps 40 to 60 miles away), ready at Kunkávav for despatch on that date on a programme made out ten days or a fortnight in advance, was a matter of delicate organization. The cattle were mustered from the camps in the interior, and their brand marks checked at Vaniagali before being sent off down the transit line; and, to the credit of the staff immediately concerned, it may be said that the collection, transit and despatch operations were carried through from the beginning to the end without a single hitch of the slightest importance.

(e) In order to relieve the cattle of the two more lengthy marches, which they had been able to accomplish without difficulty on their journey to the Gir in the cooler weather of the winter months, two new transit camps were established for the return journey, one at Malsika (Junágadh State), 12½ miles from Vaniagali and 26 from Kunkávav, and the other at Hadala (Káthiáwár Agency), 31 miles from Vaniagali and 7½ from Kunkávav. These camps were worked on precisely the same lines as the original transit camps.

(f) Such cattle as were weak or otherwise unable to travel with the main herds were collected in advance from all the camps and specially nursed at Vaniagali. These were sent down the transit line by very easy stages, and a special train-load of them was made up and despatched on the 10th June 1912.

(g) Calves born in the Gir, and too young to march with the main herds, were carried from camp to camp in carts regularly employed for the purpose.

(h) No cattle were left in the Gir through being too weak to travel; and two only were left behind altogether, they, apparently, having become so fond of the Gir that nothing would induce them to accompany the herds to which they belonged. Eleven cattle had to be left behind at the transit camps, nine of which belonged to the last three train-loads (*vide* Part IV, Charity Cattle), their collapse being due to exposure to the premature rains and floods from which it had been impossible to save them.

(i) The "charity" cattle in their special camps in the plains were detained as long as practicable, in order to save the greater expense of keeping them in tálukas for a lengthy period pending their distribution. These were despatched by three train-loads on the 20th, 22nd and 26th June; and the despatch of the last train closed the active part of the operations, as far as the Gir end of the railway was concerned.

50. *Entrainment and journey to Gujardt.*—(a) Special cattle trains were employed for the return journey as at the time of despatch. The entrainment was arranged to take place during the latter part of the afternoon and the evening, the trains leaving soon after sunset and travelling during the cool of the night.

(b) From the 24th April to the 2nd May 1912, five train-loads of cattle were despatched from Vaniagali on alternate days; and thence onwards till the 29th May, a train-load daily. Six days were occupied by the road journey from Vaniagali, and nine days from the more distant camps in the interior, the actual despatch by rail taking place on the day after the arrival at Kunkávav. Eighteen whole and 3 part special trains for Viramgám, 13 whole and 3 part trains for Ranpur, and one whole train for Bhankoda, 35 specials in all, were despatched from Kunkávav.

(c) Again, to the credit of the staff immediately concerned, it may be said that the entrainment of the cattle and their despatch from Kunkávav was carried out in the most satisfactory manner. The Railway Company had been persuaded to enlarge the usual goods platform to a convenient size; the labour engaged for the entraining, finding daily and well paid employment, became experts at handling the cattle with the help of the herdsmen; and what must have been something very nearly approaching records in cattle entrainment were created. The entraining of 200 cattle or more was always completed within two to three hours.

(d) The journey to Ranpur was easily accomplished during the night, the cattle being detrained at day break. As regards the specials for Viramgám, however, the railway arrangements were less satisfactory than they might have been, the specials usually not arriving till after the sun was high enough to make the waggons, with their deficient ventilation, cruelly hot for the bovine passengers.

51. *Distribution to Owners.*—(a) The Mámálatdárs of the several tálukas, being warned seven days or more in advance of the arrival of specified cattle by the train of a given date, summoned the owners to the stations to meet and claim their animals on arrival. Owing to want of watering facilities at Bhankoda, the cattle despatched from this station were, with the exception of one train-load, returned to and distributed at Viramgám.

(b) The Mukhis and Talátis of the various villages were called to the stations together with the villagers concerned, and quarrels or disagreements as to ownership were very rare. But it is an interesting and a suggestive fact that 106 cattle were never claimed at all. It is almost needless to say that, with a very few exceptions, the unclaimed animals represented the "refuse" of the cattle generally. These were the relics of the useless, valueless animals, which the deportation to the Gir, in spite of all vicissitudes and contrary to all expectation, had succeeded in saving after all. They were distributed in the same manner as the "charity" cattle.

(c) Of the 12,949 cattle received at Vaniagali, 6,923 (exclusive of 188 newly born calves) left the Gir. Of the total 13,727 head, 6,896 (excluding calves) were returned to Gujarát, *i. e.*, 50.2 per cent. Details of casualties, of which no less than 20.5 per cent. of those on the return journey were due directly to the sudden and almost unparalleled floods which overtook the "charity" cattle, the last three train-loads, just before their despatch from Kunkávay, are included in Annexure IV.

SECTION III.—THE CAMPS IN THE GIR.

52. *General constitution and conduct.*—In the Gir itself there were sixteen separate cattle camps in all, divided for convenience sake into a "Northern" and a "Southern Circle" (*vide* Annexure I, Preliminary), most of which were designed originally to hold about a thousand head of cattle. The camps were all laid out on the same general lines, differing only in detail of plan as the exigencies of the situation of each might require. Each camp comprised:—

(i) The quarters, including office, of the kárkún in charge, a store-room for cotton-seed, etc., and a rest-room for visiting officers.

(ii) The accommodation of the general staff of the camps, which was placed outside and apart from the main cattle enclosure chiefly as a precaution against the spread to the enclosure itself of any fire occurring through an accident during cooking, etc.

(iii) The main cattle enclosure fenced in with a high, thick hedge of branches of trees, thorns, etc. This enclosure was divided into sections according to the number of train-loads of cattle in the camp, with a separate entrance to each division, the main divisions being subdivided again to keep the cattle from different villages separate as far as possible. A separate part of the enclosure was kept specially for the use of cattle suffering merely from debility, etc., and was covered in to provide the necessary shade where natural shade was not available.

(iv) A separate 'hospital' enclosure apart, and at a distance from the above, for cattle suffering from any infectious or contagious disease.

(v) The well, situated when practicable in the vicinity of shade giving trees.

(vi) The drinking trough, divided into sections so that any one section could be emptied out and cleaned or repaired, or fenced off for the use of cattle suffering, or suspected to be suffering, from disease, without interfering with the others.

(vii) Properly cleared spaces outside the cattle enclosures for the night watch fires.

(viii) The grass stacks with their "gamans" (racks) for feeding the grass to the cattle, their fire lines, and the watchmen with their "manchadas" in the trees and their apparatus for sounding fire alarms.

(ix) Buffalo-wallow when needed.

(x) Regularly made roads leading by slopes as gradual as practicable from the enclosures down to the wells or upto the grass stacks, etc., fenced in when leading along ledges where accidents might occur.

(xi) The "Dhedwada" at a distance from the camp proper in the direction towards which the prevailing wind was found to blow.

53. *Sanitation.*—Under the precautions taken, the explicit orders issued, and the untiring supervision of the veterinary staff in connection with this most important matter, the general sanitation of the camps was carried on in the most completely satisfactory manner, except in the one important respect in which it was dependent on the State, *viz.*, the disposal of the carcasses of cattle. The difficulties experienced in this respect are explained in the following paragraph.

54. *Hides, horns and bones.*—(a) The Junágadh State was entitled to the hides, horns and bones of all cattle dying within its limits. It was confidently expected that, in the abnormal conditions prevailing, the State would extend some concession to the owners of famine-stricken cattle who were drawn from the poorest classes of Gujarát cultivators. The State, however, declined on the ground of anticipated prejudice to its sovereign rights. More generous treatment was experienced at the hands of the owners of certain small estates in whose limits the transit camps were situated. These estates, no less tenacious of their rights than the Junágadh State, recognised that the circumstances were exceptional, and readily agreed to refund a large part of the profits realized by them on hides, horns, and bones as a voluntary contribution towards the preservation of the cattle. Much resentment was caused against the Junágadh State among the owners and herdsmen of the Gujarát cattle, by the insistence of the State on its full rights in this respect.

(b) The grievance was kept constantly and most unpleasantly in evidence by the failure of the State contractors to remove carcasses before putrefaction. Appeals to the local officials who could have stopped the nuisance were sterile. Indeed on one occasion the Local Officer in Charge induced "Dheds" (the sanitary staff) to leave me for grass-carrying work under him. A personal appeal to higher authorities had no effect, and it was necessary to take a matter within the competence of the lowest official to the supreme authority of the State. The Administrator readily accorded permission to dispose of carcasses as I might think fit; but this intimation, unfortunately, took nearly a month to reach me; and when it arrived it was impracticable to take advantage of it, since it was as impossible to get the lessee's "Dheds" to burn his hides as it was to import other "Dheds" to do it for them.

(c) Taking the value of hides, horns and bones at so low a figure as Rs. 3 for each animal, it appears that the State and its lessees realised some Rs. 17,000 from this source

SECTION IV.—THE WATER SUPPLY.

55. *Preliminary.*—This was the one point on which in the beginning, in fact until the newly created water-supply was assured, the success or failure of the whole scheme was believed to turn. Grazing in the Gir was stated to be "practically unlimited," and no difficulty was anticipated by the State in supplying even 20,000,000 lbs. of cut grass for the cattle "subject to water-supply". The Administrator, Junágadh, was willing to guarantee the water-supply on payment of a fee of Rs. 2 per head of cattle, which, for the 12,949 cattle passed into the Gir, would have amounted to Rs. 25,898. In view of the ill-success of the State in meeting its engagements in connection with the grass and grazing, it is a matter for congratulation that the offer was not accepted. The assumption of the whole responsibility by the Tálukdári Settlement Officer resulted in an excellent and ample supply at a net cost of Rs. 3,036-15-2, which, deducting Rs. 1,669-13-5 to be recovered from the State as half the cost of the wells, effected a saving of nearly Rs. 23,000.

56. *On the line of march between the railway and the Gir.*—(a) With the single exception of Dalkhanía, arrangements for watering the cattle on the line of march between the railway and the Gir presented no difficulties. The ordinary sources of supply in the villages chosen as "transit" camps were sufficient to meet the occasion. A charge was made by some villages for the water required. The total cost of the water-supply on the 40 mile line of march, however, amounted to Rs. 62 only.

(b) Provisional arrangements were made for deepening the wells and building fresh troughs or extending the existing accommodation, should a failure of water on the return of the cattle in the hot weather appear likely. But the precaution happily proved unnecessary.

(c) At Dalkhanía, a village of the Baroda State, at the time of the return of the cattle there was no actual shortage of water; but the villagers, apparently fearing the possibility, placed various obstacles in the way of the staff there in connection with the use of the water required. The local Baroda officials had informed me personally that the well, which, it was said might fail, was to be deepened by them before the hot weather; but, nothing having been done, I sent some of my own well-diggers from the Gir to deepen it, free of all costs to the village. The villagers refused them permission to touch the well. Fortunately a personal visit to the village removed their objections; more fortunately still the shortage feared did not actually occur.

57. *The natural supply in the Gir.*—(a) The natural water-supply in the Gir consisted of a series of pools left by the rains at intervals along the beds of the Hardak, the Singora and the Machhundri rivers. At the commencement of the operations, many of these pools were connected by streamlets running one into the other with a flow just sufficient to keep the water clean; and the percolation through the gravel and the interstices of the rock in the river beds served to keep up for a time the supply of pools which had no surface inlet.

(b) Meagre as was this supply, it lasted until, as the result of strenuous effort, the wells were sunk and a permanent supply assured. Dungarphadi, Bharthi, Rampuri, Chhodavadi, Banej, Dabhala and Jodia camps all depended at first on the natural supply, early advantage having been taken of that at the first three-named camps by Upri Kárkón Krishnaram.

(c) The local officials were very ill-informed as to the resources of the locality in which they were stationed, and were able to give me nothing but the vaguest information as to where water might possibly be found. But for my fortunate discoveries in the river beds at Jodia and Dabhala on the 25th December 1911, and at Chhodavadi and Banej a few days later, the cattle trains must inevitably have been stopped; and the trains once stopped, the operations, as far as concerned the collection and despatch of the cattle from Gujarát, would inevitably have come to a final stand-still. I am indebted to Mr. A. S. Tambe, Huzúr Assistant, Junágadh, for obtaining for my immediate use a map (which I had earnestly pressed for on my first visit to Junágadh), without which my search for water would have been even more difficult.

(d) The relief, however, was purely temporary. Both pools and streamlets were drying rapidly; and the water, becoming stagnant, quickly became foul and unfit for drinking purposes. At each of the above-mentioned camps (with the single exception of Jodia), one after another as necessity arose, the natural supply was abandoned; and by the end of February each camp had its well of pure water and its drinking trough, and the pools were converted into buffalo-wallows. In a short while, however, many even of these dried up altogether or became so shallow, mere mud-puddles in fact, that, with the fierce heat of the sun overhead and the want of shade, the buffaloes showed no inclination to use them.

(e) At Jodia the water was fouled by the large number of "outside" cattle, which, in spite of all promises on the part of the State, and all protests on mine, were allowed to settle in the immediate vicinity. The flow of the water diminished to the merest trickle; but the natural supply, inferior though it was to the artificial supply yielded by the wells at the other camps, lasted to the end.

The artificial supply in the Gir.

58. *The Wells.*—(a) The whole question of the water-supply was fraught at the beginning with the greatest difficulty. There had never been a real well sunk in the Gir before. There was absolutely nothing but the superficial aspect of the country to guide one in selecting sites for wells, sites which necessarily had to be chosen with regard to other considerations, such as grazing. There was hardly the remotest possibility of finding water anywhere but in the larger river beds. Even in these it was the purest chance whether one would strike solid rock at a depth of 5 feet or at 15—in some cases one did not have to go even 5 feet deep. With scarcely a camp excepted, the river beds were accessible only by paths which a goat perhaps might not have cavilled at, but which to essentially plain-bred cattle were a novelty to which they could never have adapted themselves. There was little to suggest that the quality of the water, if and when found, would not be excellent, and such it proved in every case. But there were no local data of any kind by which to anticipate the fall of the sub-soil water level, and thus to gauge the duration of the most abundant supply even when obtained; and the behaviour of the water in some of the wells was eccentric to a degree, necessitating unceasing attention.

(b) I had expressed an opinion in the early days that with regular boring plant an overflow might be obtained at no very great depth wherever I had, or proposed to have, a well; but from subsequent experience I was led to modify this opinion to the extent that, although an overflow might so be obtained, it would probably be a temporary one only.

(c) The preliminary difficulty was the finding of contractors to undertake the sinking of wells in the Gir, and the getting and keeping of labour in the Gir to sink them. As a stranger in a strange country, for overcoming this difficulty in the first instance and for breaking down some of the barriers of superstitious fear with which the very name of the Gir was hedged, the greatest credit is due to Upri Kárkún Krishnaram. Bagasra was the nearest town with which it was feasible to establish regular communication, and where contractors with tools, &c., might be found. And Bagasra was nearly 30 miles away from the nearest well, and 40 to 45 miles from the more distant ones. Distance in mere miles, incidentally, conveys little in a country where the conditions of transport are not only primitive but almost prohibitive.

(d) The work on the first well, for Vaniagali camp, was begun on the 27th October 1911, and that for Biliad camp on the 2nd November 1911. In the former rock was very soon encountered; but it was successfully negotiated with gun-powder, and a good supply of water (temporarily) was soon obtained. The building of the drinking troughs was proceeded with simultaneously. The contract for a third well at Chuladi camp had been given out, and it had been reported that this well also was nearly ready. But the futility of relying on the completion of any work in the Gir, according either to formal contract or informal promise, had not been learnt in those days; and, when I arrived in the Gir on the 9th December 1911, I found the well at Chuladi still in its infancy.

(e) My first inspection of the well-work then in hand convinced me of the precariousness of relying on the means hitherto employed for the creation of the water-supply; and, when in Junágadh on the 13th December, I made arrangements with the Huzúr Assistant in person for the immediate despatch to the scene of my operations of professional well-diggers with plant and labour of their own complete. I believed that with regular labour under professional supervision, accustomed to the rock wells of the neighbourhood, subjects of the State and supplied by the State, I might rely, even in the Gir, on getting something done. But this proved the first of many disappointments. The well-contractors did not arrive at Sap Nes till nearly two months later (the 8th February 1912). Of labour they had brought none, and their plant, &c., was still at Visavdar a two days' journey distant. Although offered immediate work, practically on their own terms, and promised more provisionally, they made their apology and their bow, and betook themselves with their plant back to Junágadh. It was "the Gir".

(f) It was on the 19th December 1911 that the situation assumed a critical aspect, and it was not till two months later that I felt that I had it fairly in hand. On that date I

learnt at Ranpur that my Junágadh well-contractors (whom I fondly imagined to be already at work in accordance with orders) had not even arrived, and that the third well, "nearly ready" three weeks ago was still dry. A train-load of cattle was pouring into the Gir every day; and dislocation of arrangements which would have been fatal to further deportation.

(g) On the 20th December, 1911, I succeeded in putting out fresh well contracts in Bagasra. On the 22nd the work on the first well was actually begun; and two days later the work on five separate wells was in progress. It was then a race to get the wells through and the troughs built to keep pace with the incoming cattle. I was compelled before long to dispense with two of my contractors who proved unequal to their undertakings. All efforts failed in Bagasra and elsewhere to obtain others without delay, and their places were taken by non-contract labour on daily or monthly pay. An expert well-digger had in the meanwhile been sent down specially from Dhandhuka. Unfortunately he arrived without tools and appliances, and more delay ensued.

(h) The first of the new wells, at Bharthi camp, was finished, masonry trough and all, and was in use in twelve days. But solid rock had already been encountered at some of the others, and it soon became obvious that I was more likely than not to meet with it at every well already begun or projected.

59. *The Blasting Operations.*—(a) Boring plant had been proposed as soon as it was found that there was hard rock to be dealt with. But the obstacles in the way of getting even one set of plant to, and setting it up in, such a country, in time to be of any use, were practically insurmountable. I was already using common gun-powder; but my efforts with this and the only implements obtainable locally would have been laughable but for the urgency with which I was faced.

(b) Recourse was had, therefore, to scientific blasting; and after an incredible amount of trouble, the services of apparently the only available blasting expert in India were obtained by the Tálukdári Settlement Officer. But the expert arrived on the scene without tools, and all hopes centred in him were frustrated for the moment. Boring bars to suit his own requirements were sent for from Bombay, and when they arrived—a 24 hours' journey by rail alone—it was believed that something really would be done. Disappointment again! The bars were not tempered, and turned on the work like lead. Attempts were made to temper them on the spot, but without success. A blacksmith with his "shop" complete was then imported into the Gir; and forthwith it was discovered that the bars were of soft steel and incapable of taking temper.

(c) In the meanwhile also the expert who, incidentally, could neither speak nor understand the local language, had discovered that the only labour I could provide was not sufficiently "skilled" for him to work with; and again from Bombay were obtained specially for him, by the Tálukdári Settlement Officer, men with whom he was used to work. To utilise the boring bars steel was obtained, and each was tipped laboriously with a few inches of it. The tips were then tempered, and work actually began on the Vaniagali well some eight days after the expert had arrived in the Gir.

(d) Gelignite was the explosive used, the charges being fired in the ordinary way with fuse and detonator.

(e) The Vaniagali well, the most important throughout the whole system of camps, gave the most trouble, blasting being carried on intermittently almost until the close of the operations. Recourse was had to blasting in the wells at Chuladi, Ambaliali, Biliad, Rampuri, Chhodavadi and Vanka Jambura also.

(f) The worry, trouble and expense of these special blasting operations was great; but, if it cannot be said that they were an unqualified success, it is certain that success would have been impossible without them. Messrs. Ewart Latham & Co., as Bombay Agents for the Nobel's Explosives Company, offered to demonstrate the use of explosives in the deepening of the wells; and it was this firm which recommended and supplied gelignite and obtained the services of the blasting expert, kindly putting themselves to a great deal of trouble over the matter generally. Whatever the cause, however, the operations, though they succeeded, did not do all that was expected of them, the only manifest virtue of gelignite being that it is unaffected by water and can be used in a "wet" well where ordinary gun-powder would be impossible. Misfires were too frequent, and the results of explosions were often disappointing. The reason for the latter may lie, possibly, in the extreme hardness of the rock.

60. *The Drinking-troughs.*—(a) With a thousand head of cattle in a camp requiring water at the same time of the day, and one pair of "kos" bullocks unable to cope with the immediate demand at watering time (even if a well should be giving a practically inexhaustible supply of water), it was necessary to construct the drinking-troughs on a generous scale so as to provide accommodation for a large number of cattle at a time, and storage for the large quantity of water required.

(b) The troughs were built of rough masonry, and so constructed as to form several sections, each independent of the rest. Any one section could then be filled direct from the

well, or could be run out for cleaning purposes or for repairs, or could be fenced off for the use of disease-infected cattle, without in any way interfering with the others. This arrangement proved most valuable, and was used continually to the greatest advantage in one respect or another at every camp.

61. *General.*—(a) The wells, even after a water-supply had been obtained so abundant temporarily that deepening was impracticable; required unceasing attention owing to the continued fall of the sub-soil water-level and the suddenness with which it was liable to subside.

(b) Apart from the contractors engaged in actually sinking the wells two gangs of well-diggers were kept continually at work, going round from camp to camp as required, deepening the wells already sunk; and occasionally even this labour had to be supplemented by the levy of a gang of amateur well-diggers from amongst the herdsmen, &c., of a camp.

(c) Throughout the whole of the hot weather, at every camp where there were buffaloes but no natural pools of water in the river beds for them to wallow in, the wells and storage troughs provided not only ample water for all to drink, but so much to spare that the buffaloes were given a daily shower bath at the drinking troughs and provided with small artificial wallows. Not only this, but unlimited water was provided for the hundreds of cart bullocks which, from time to time, were employed in the reserve on the State's grass work. Even the Gir lions were not too proud to avail themselves of the convenience offered by the cattle troughs.

(d) In all 18 separate wells were sunk, each (with one exception) with its masonry trough complete; of these, 17 were actually used, one being abandoned owing to the grazing in its vicinity having been exhausted by "outside" cattle, despite all protests, while it was actually in course of construction. Of the 17 wells two had to be abandoned finally owing to the complete failure of what was at first an ample supply of water. Three other wells were attempted, but had to be abandoned owing to the intractability of the rock encountered or to failure to find sufficient water. In two or three places "kacha" wells were sunk to save cattle a long march for water back to their camps and out again to the grazing in the hot weather.

(e) Eighteen separate masonry drinking troughs were built, divided into 52 sections in all, with a storage capacity in the aggregate of some 55,000 gallons of water.

(f) The Administrator having realised that the wells to be sunk would be of great and permanent value to the State, an arrangement was concluded under which he undertook to pay half the cost of such as would be of subsequent use to him. The sites were chosen, therefore, in consultation with the Local Officer in Charge when he was present. This officer gave me to understand also that the State would pay half the cost of the drinking troughs without which the wells would be of very restricted utility, and that he was authorised to approve of their positions, &c., on behalf of the State. He apparently misinterpreted his instructions, since the State declined to pay any part of the cost of the troughs except one of those at Vaniagali which the Administrator himself had an opportunity of seeing. A considerable amount of trouble and a certain amount of money was wasted through planning the troughs to meet the approval of the Local Officer in Charge.

(g) The total cost of wells and troughs in the Gir, together with the expenses of working them, amounted to Rs. 6,292-13-9. This, with the contribution towards their cost promised by the State, is reduced to Rs. 4,623-0-4, that is Re. 0-5-9 per head of cattle sent, and only Re. 0-10-9 per head of those returned.

(h) The most shameless and absolutely unfounded rumours were circulated in the home districts that the Ahmedabad cattle were dying in numbers for want of water. The natural supply did fail, it is true, as every one knew it must fail. And it is believed that cattle imported by others, who did not create an artificial supply, perished in large numbers in consequence. But it may be asserted emphatically that, of the Ahmedabad cattle in the Ahmedabad reserve, not one single animal died from want of water, and that in not one single instance of death was want of water even a contributory cause. Water caused much anxiety at the beginning but no loss at any time.

SECTION V.—THE GRAZING GROUNDS.

General Features of the Country.

62. *Physical features.*—(a) The whole country is a wildly confused jumble of hills, large and small, sometimes undulating but more often abounding and even culminating in precipitous crags. Hills of volcanic origin, consisting chiefly, to appearance, of a peculiarly intractable species of hard black rock, covered generally with a thin layer of soil from which protrude outcrops of bare rock interspersed with loose stones and boulders. Hills intersected with a tangled network of water-courses sometimes hardly traceable to their sources, verging into rivers cutting their way through gorge and ravine of real scenic beauty, even grandeur, and in places of a sheer perpendicularity which gives the impression that it is but a step from solid earth to empty space.

(b) Of really level ground there is practically none though the lower hills and slopes are easily accessible.

(c) The hills generally are clothed with grass of various kinds and a few scanty trees. In the valleys the growth, augmented by large stretches of a very high close jungle grass (reeds) which extends also well up the hill sides in places, is thicker but seldom so dense as to be impenetrable on foot.

(d) Shade-giving trees of any size are few and far between, except along the beds of the larger rivers. At every cattle camp but three, shade had to be provided artificially in the enclosures in the hot weather; while ground with sufficient shade to pitch even small tents was almost non-existent.

(e) The main and, by courtesy, the "metalled" road from Dhari to Korinar, roughly bisecting the grazing ground as shown on the map, was practically impassable for any wheeled conveyance but the ubiquitous country bullock-carts; and its condition of disrepair was such that in places it was literally untraceable. The tracks from camp to camp were at first so rough that a man on foot could travel them considerably faster than a pony. There was not a single camp out of the sixteen in the Gir at which a certain amount of road-mending and of rough levelling and clearing was not necessary. In most cases whole gangs of labourers were employed for days together in making the wells accessible from the cattle enclosures, and the enclosures accessible from the grazing grounds and grass stacks. At Sudavo camp, thanks to the repairs which had to be carried out for the sake of the cattle, the State had the satisfaction of being able to use for its grass carts a section of the main road, which through disrepair had long been closed and had necessitated a detour of several miles.

63. *Climate.*—(a) The climate, from the point of view of debilitated famine-stricken cattle new to the country, had certain disadvantages. During the winter the nights, especially in the one or two lower lying camps, were damp and often bitterly cold. The coldest weather set in suddenly at the very end of January, the lowest temperature registered being one of 38° in the early morning of February 1st, after which it steadily rose again. Another cold spell, longer but less severe, occurred soon after the middle of the month, the thermometer falling to 43° on the 19th February. This was the winter's last effort, and soon after the beginning of March the heat set in in earnest.

(b) The days were hotter throughout than the night temperatures would have led one to anticipate. During the latter half of March and at intervals throughout April and in the beginning of May, the heat, abnormal as it was throughout the Presidency, was intense. The highest temperature registered in deep shade almost in the bed of a river with no rock in the immediate vicinity, was only 117° ; but the thermometer indicated 110° or more for three days out of four on the average for nearly six weeks.

(c) Dense formations of cloud, with conditions generally presaging a break in the weather, culminated on April 28th in a heavy cyclonic storm of rain.

(d) Soon after the beginning of May, however, the winds heralding the approach of the monsoon set in steadily, bringing clouds with them and a blessed relief to man and beast from the fierce heat of the sun. The south-westerly winds brought damp with them as well, however; and, although the maximum temperatures were considerably lower (generally below 100°), the heat was almost as trying as before. Even as in the cold weather the days had been hotter than the nights would seem to have warranted, so during the hot weather the nights were unexpectedly cool.

(e) Till practically the end of April the atmosphere was dry on the whole, but heavy dews at night were the rule.

(f) During April particularly some extreme ranges of temperatures were experienced, on the 15th the minimum temperature was 61° and the maximum 111° .

(g) With alternations of temperatures so large and so rapid it was not surprising, with very debilitated cattle, to find that some succumbed to cold and others collapsed on account of heat in the course of the same 24 hours. Climatic disadvantages, however, were not so serious that this could not be counteracted on a future occasion with the experience now gained and the co-operation of the Junágadh State. Generally speaking, the Gir cannot be considered unhealthy for cattle till the end of March, after which they should be removed to the plains.

64. *Extent, etc., of the grazing area.*—(a) A description of the grazing, which, although hardly justified at the beginning, became as time went on by no means inept, is suggested by the question put by every new arrival in the Gir, *vis.*, "Well, where is the grazing?" But this is anticipating.

(b) My first rapid passage through the Gir from Sap Nes to Sasan (the head-quarters of the Gir Forest Department) in December 1911, was invaluable as giving me a personal understanding of the general features of the country and a rough idea of the grazing. The

main factors for consideration in estimating the extent of the grazing reserve required were:—

(i) That large areas of grazing were, for all practical purposes, inaccessible to cattle of any kind;

(ii) That still larger areas would be inaccessible to the plain-bred cattle of Gujarát, unless they should develop the climbing capacities of mountain sheep; and

(iii) That large areas of what obviously had been the very cream of the grazing had already been exhausted by "outside" cattle or cut by the State.

(c) Under these circumstances it was obvious that the grazing reserve would need to be of liberal surface measurements. As a rough basis of calculation five acres (on the map) per head of cattle was considered the minimum that would suffice, although for the last three months the grazing was to be supplemented or replaced by a liberal allowance of cut grass, and it was recognised that there would necessarily be a certain percentage of mortality. The State officials opined that, in view of the reputed richness of the grazing, this estimate was unnecessarily high. But, to be on the safe side, even the estimate of five acres per head was exceeded; and at the conference at Junágadh on the 13th December 1911, in anticipation of the arrival of 13,000 cattle, a reserve comprising an area of some 125 square miles was asked for and granted by the Administrator.

(d) The northern boundary of this area was the line of demarcation between the territories of the Junágadh and Baroda States respectively. The southern and eastern boundaries were Latitude parallel 21° N, and Longitude meridian 71° E, respectively. The western boundary was not easily settled. The Administrator wished to limit the grazing area on the west by the course of the Hardak and its continuation, the Singora river. But he was persuaded that his own undertaking to protect the grazing grounds from intrusion by "outside" cattle would be rendered the easier by having as a boundary the summit of a range of hills rather than the bed of one of the very few rivers in the Gir in which there was still the irresistible attraction of water. The possible communication of infectious disease by "outside" to Ahmedabad cattle grazing over the same areas and using the same water was another question of the utmost importance; and he consented eventually to waive his objections to the inclusion in the reserve of the stretch of grazing lying between the Hardak-Singora river and the hills on the west, these hills being considered then as the western boundary. How irresistible the attraction of water did prove to the owners of "outside" cattle, how complete a failure was a river bed as a boundary, and how rinderpest actually was communicated to the Ahmedabad cattle by "outside" cattle using the same water, the event showed.

(e) On the 15th December 1911, in anticipation of the arrival of a further 3,000 cattle from the Kaira District, a further area comprising some 30 square miles to the south-west of the original area was asked for, and this also was granted. Special personal inquiries had been made at Sasan with regard to this locality, and assurances had been received that it actually was relatively flat as it appeared on the map (a feature of special importance for Gujarát cattle) and suitable for grazing. This brought the area of the whole reserve up to 155 square miles, enough, at the rate of five acres per head, for nearly 20,000 cattle. What was said to be the richest grazing in the whole Gir was included in this area, and so far all appeared to be satisfactory.

(f) Immediately on my return to the Gir, however, an alarming situation began to discover itself. The extent to which the area assigned had already been exhausted was revealed only on personal inspection of the various localities. The whole of what had promised to be the best grazing in the original reserve, *viz.*, that in the neighbourhood of and stretching away to the north of Karda Pani, was found to have been absolutely exhausted. The next discovery was that the area assigned round Karda Pani comprised village lands, was not within the Gir at all, and thus was not available for Ahmedabad cattle. Then the local officials informed me definitely that there was no grazing whatever in the south and south-east portions of the original reserve. They informed me very wrongly, it is true; but, accepting their assurance, I did not discover their mistake until some time later; and 40 square miles of the area originally assigned had to be abandoned. But the greatest blow was the discovery that the 30 square miles of additional area assigned on the 16th December 1911, consisted entirely of village lands, was outside the Gir altogether, and was not available for Ahmedabad cattle. Here was an area of 155 square miles reduced to 85; and this reduced area was found to have been denuded already to an extent wholly unexpected. The local officers assured me that there was no other grazing to be had, and at the same time information was received from Ahmedabad that still more cattle might be expected, bringing the total up to 20,000 head. Urgent letters and telegrams were addressed to the Administrator, asking for the assignment of new areas and for permission to extend the original reserve as necessary. No reply was received from Junágadh till the 11th January, nearly three weeks later. Such was the Gir.

(g) When the reply was received it was learnt that areas amounting to less than 8 square miles (Bhuatith, Bagoria and Lila Pani) were assigned in place of more than 80 withdrawn. In my anxious search for more grazing I had already visited certain portions

of the newly assigned area, only to discover that in parts there was no grazing worth considering. The Administrator's intimation that the whole area, as then defined by him, contained sufficient grazing for 20,000 cattle was, as the result proved, a sad miscalculation. The grazing was not enough for 10,000 cattle. As an example of the extraordinary over-estimate of the grazing given to the Administrator by his subordinates it may be mentioned that at the Grass Conference on the 13th December 1911 the Local Officer in Charge assured the Administrator that in and about the area then assigned there was grazing for 40,000 head of cattle over and above the 13,000 then expected from Gujarát.

(h) When towards the beginning of March, a fresh batch of cattle was definitely expected, a last attempt was made to obtain an extension of the grazing area, an adjoining tract having been discovered which had not been entirely denuded by other cattle. A special messenger was sent right through to Junágadh, some 60 miles away, in the hope of an immediate reply (which indeed was promised) by the same agency. The Administrator's reply reached me seven weeks later through the Dead Letter Office, Bombay. An extension of 4 or 5 square miles (Kasoria) was granted provisionally; but by that time, although I had actually sunk a well and built a "pucca" trough in anticipation, the whole tract had been swept so clean by "outside" herds that the intention of sending Ahmedabad cattle there had to be abandoned. In another tract (Khodiar) a well and a drinking-trough were started. But the whole area was swept clean by "outside" cattle and had to be abandoned.

(j) The possibility of misunderstanding having been realised, the Administrator had been asked in the beginning for a map of the Gir grazing grounds, with the area allotted to the Tálukdári Settlement Officer clearly marked thereon. But no map was forthcoming; and, as regards the inroads of "outside" cattle, matters were unduly complicated, especially at Jodia camp and at Khodiar, by boundaries not being fixed beyond possibility of dispute.

(k) It was the usual custom for the local cattle owners to carry their cattle through the three months or so preceding the rains by supplementing the grazing, which by that time became practically valueless, by foliage cut from the trees. With the advent of the spring the leaves were expected to appear. But, whether or not on account of the relatively scanty rainfall of the preceding monsoon, the spring came and the spring went, but the leaves did not appear. Hundreds of axes were made specially, and distributed to the cattle camps to be ready for use immediately the trees should bear any edible leaves. But, except for the "khakhra" (inedible), the Gir was practically as bare of foliage at the beginning of June as it had been at the beginning of January. It remained only to record another disappointment.

Protection of the grazing from damage.

65. "Outside" cattle.—(a) The preservation of the grazing in the reserve for the Ahmedabad cattle, the risk of infectious disease being communicated to them by others grazing over the same grounds and using the same water, and the risk of loss through their becoming mixed with and being carried off with other herds, had all formed the subject of early and anxious consideration.

(b) It had been found that there were large numbers of "outside" cattle in the areas occupied, or to be occupied, by the Ahmedabad cattle. At the Conference at Junágadh on 13th December 1911, the Administrator undertook to eject outsiders already in the reserve when informed definitely as to their whereabouts, and any subsequent intruders on receiving the same information. On the 17th December, he issued definite orders to his Forest staff that no cattle other than Ahmedabad cattle should be allowed in the Ahmedabad reserve. The reserve, however, despite unceasing complaints and protests, was never free of "outside" cattle and cattle in large numbers, from first to last.

(c) When I first visited the Gir in the beginning of December 1911, I had come across various herds of cattle. But I gathered that they were local cattle belonging to the State's own subjects living temporarily in the Gir. I was left to discover later that the very large majority of them were foreign cattle from Káthiáwar, etc., admitted to the Gir for grazing in the same way and on the same fees as the Ahmedabad cattle. On the 23rd December and the following days, I was able to point out in person to the Local Officer in Charge herd after herd of "outside" cattle in the reserve. The Administrator had asked me specially to bring all such matters direct to the notice of this officer, who was authorised to deal with them on the spot. This was done accordingly, the Administrator also being informed by letter. The ejection of the "outside" cattle, however, resolved itself into a farce. The cattle owners might be told to go elsewhere and might promise compliance. But it was frankly admitted by the local officials that, if they did not choose to go, there was no power in the Gir to make them. At one place (Rampuri) foreign owners who had received definite and repeated orders to move remained camped on the same spot for more than two months. By that time, the accessible grazing being exhausted, they condescended to move to new pastures.

(d) As a typical incident in this connection may be quoted the occasion on which, on my arrival at an "outside" cattle camp (my visit being expected owing to a case of suspected rinderpest), I found the owners all busy in the very act of loading their belongings on to their buffaloes, ostensibly to move at last, and some of their buffaloes already loaded and on the

way to their alleged destination. What more could be needed to show that they really were going this time? But, directly my back was turned, they drove in their buffaloes, calmly unloaded again, and settled down comfortably once more.

(e) The fact was that, as time advanced, the local officials had nowhere to send the "outside" cattle, the grazing everywhere being practically exhausted, and the scarcity of water everywhere (except in the Ahmedabad reserve with its artificial supply) being a more serious matter still. In spite of terrible mortality the owners of "outside" cattle had not sufficient grazing even for the scanty remnant of their beasts. A painful experience was the long series of piteous appeals to me to help them and their cattle in their distress. They knew I had plenty of water, and I could, and gladly would, have afforded them relief in this respect had it been possible. But admission to the reserve on any pretext whatever meant inevitably the consumption of the grazing, from the scarcity of which my own cattle were literally starving already. In common justice to those for whose cattle I was directly responsible it was impossible.

(f) It would be tedious to enter into details of the endless complaints I was compelled to make in connection with the "outside" cattle, and of the subterfuges employed by their owners to escape ejection. It may be recorded in brief here that these "outside" cattle were responsible (1) for the consumption of grazing, (2) for the destruction of grazing, (3) for the fouling of water, and (4) for the communication and spread of rinderpest; all of which, combined with the original inadequacy of the grazing, caused the loss of many hundreds of Ahmedabad cattle.

66. *Unlicensed grass-cutters.*—(a) Great as was the loss of grazing due to "outside" cattle, they were not the only source of trouble. The Administrator had recognised the possibility of his having to recommence grass-cutting. He had intimated that, should this be necessary, he proposed to cut grass from the higher hill-tops where the cattle could not go to graze, and this concession was readily granted. Apparently harmless as it was at the time it proved costly in the end. Large areas in the reserve were overrun with grass cutters, apparently without supervision of any kind by the State. Cutting was supposed to be confined to the hill-tops, but the grass-cutters naturally preferred the level, and swept whole areas clean.

(b) On one occasion the Administrator in person expressly forbade the cutting of any grass at all on a certain area; but in a little while this very locality was the scene of the daily operations of a hundred or more grass-cutters.

67. *Fire.*—(a) It was not till the first forest fire or two had occurred that one made the disquieting discovery (from local report) that it was the usual thing for practically the whole Gir to be burnt right out by the end of December. With the cattle wholly and solely dependent on the grazing at the time, and with the undelivered cut grass (on which they would be dependent later) lying loose about the camps or in the jungle, it was appalling to contemplate the only possible result of an extensive fire or fires in the grazing reserve, *viz.*, a holocaust.

(b) The first fire, one of the most serious and the forerunner of a series of fires in the neighbourhood, occurred on the 30th January. Fortunately, though close, it did not spread to the Ahmedabad reserve. Its extinction, like that of the other fires which occurred, was due to the presence of large gangs of grass labourers reinforced by every available member of the staff from the cattle camps.

(c) The strictest orders were issued and every practicable precaution taken, to prevent an outbreak of fire in the reserve itself and to fight one should it occur. On three occasions only did a fire spread into, or occur in the reserve. Twice in the neighbourhood of Bharthi, Dungalphadi and Chhodavadi a certain amount of grazing was destroyed; but fortunately it was mainly inaccessible grazing that suffered, and the loss was not serious. The third occasion was that of a fire, the last of any extent, which occurred on the 3rd April 1912, in the neighbourhood of Chhodavadi and Khodiar. Again the loss of grazing was, fortunately, immaterial, the area burnt having already been swept practically clean by large herds of Sindhi cattle.

(d) It is eminently satisfactory to be able to record that, whether or not as a result of the elaborate precautions taken, the grazing suffered no harm from fire; and not a single accident occurred to the cut grass, when it was once in charge of the Ahmedabad staff, from the beginning to the end of the operations.

SECTION VI.—GRAZING FEES.

68. Grazing fees were levied by the Junágadh State on cattle admitted to the Gir for grazing, at the rate of Rs. 3 per head of full grown animals, and annas 12 per head of calves (not suckling). Of the 12,949 cattle which arrived in the Gir, 8,224 were charged at Rs. 3 per head, and 3,185 at annas 12 per head, making a total of Rs. 27,075-12-0 as grazing fees. 1,535 young calves were admitted free. The State conceded a remission of the fees on cattle dying within ten days of arrival, and, a sum of Rs. 913-8-0 being remitted on this account, the net charge for grazing fees amounted to Rs. 26,162-4-0.

SECTION VII.—THE GRASS OPERATIONS.

69. *General.*—(a) From the inception of the scheme, and before it was known that the Gir was unfit for live-stock after March, it was understood that the cattle would not be able to exist solely on what might remain of the natural grazing after the end of that month. It was not anticipated that the natural grazing would be exhausted entirely; but it was expected (1) that the standing grass would become tough, and (2) that what the cattle might pick up would not alone contain sufficient nourishment for them. It was decided, therefore, to supplement the natural grazing with a daily allowance of cut grass when necessary; and, as a working estimate, an average of 10 lbs. per head of cattle per day, from the end of March till the beginning of July, say 100 days, was allowed.

(b) The original difficulty in this connection was to form a conjecture of the number of cattle for which provision had to be made. The Tálukdári Settlement Officer felt sure of 8,000 head from tálukdári villages, and in fact his estimate was exceeded; but neither the Collector of Ahmedabad nor the Collector of Kaira could give any idea of the number of cattle they might require to send. To meet with this situation, arrangements were made with the Collector of Ahmedabad under which he undertook to take over any surplus of cut or baled grass at cost price; and on the 13th December 1911 in anticipation of the arrival of some 13,000 cattle, cut grass to the extent of 13,000,000 lbs. was definitely ordered, and the order accepted.

(c) Correspondence with the Administrator, Junágadh, in this connection, originating in a State Circular notifying the public that Junágadh was prepared to supply "good quality baled grass to any extent," etc., had been in progress since the beginning of November; and it had been intimated that as much as 20,000,000 lbs. might be required. The chief difficulty which then presented itself was the Administrator's objection to supplying and stacking the grass inside the limits of the Gir owing to the risk of fire. Fortunately, however, on my second visit to Junágadh I was able to explain to the Administrator that at some of my camps there were large open spaces, innocent of either grass or tree, where the cut grass might be stacked in perfect safety as far as the jungle was concerned; and that at others, with ordinary precautions such as the cutting and clearing of fire lines, the jungle would be in no more danger of fire from an accident to the stacks than the stacks from a fire in the jungle. On the 13th December the Administrator agreed to supply the grass at the several camps, and to have it stacked at spots selected by me in consultation with his own local officers.

(d) This, however, did not quite close the matter. The Administrator intimated later that he would supply the grass at 5 only of the 15 camps then opened or contemplated, as it would not be possible to make a large number of small stacks at various centres. His adherence to this decision would have upset completely plans for the hot weather which were then already well advanced. It was explained to the Administrator that, to convey all the grass to the five intended centres only, would necessitate the conveyance of a great part of it right past the very camps, where it was wanted, to reach a centre where it would be superfluous; and he agreed finally to supply the grass as required at the 15 various camps.

(e) As stated above a definite order for 13,000,000 lbs. was placed with the State on the 13th December 1911 at the Grass and Grazing Conference held at Junágadh. It had already been intimated to the Administrator that as much as 10,000,000 lbs. might be required in bales, and on the 13th December it was stipulated that one quarter of the 13,000,000 lbs. should, if required, be delivered in pressed bales for convenience of export. On the 15th December a further 3,000,000 lbs. were ordered; and on the same date a separate order was placed for 600,000 lbs. more, intended primarily as a precaution against a failure of the grass supply on the line of march between the railway and the Gir, both orders being duly accepted. This was the final order for cut grass, and brought the total quantity required to 166 lákhs of pounds.

(f) From this stage onwards the course of the grass operations may be recorded conveniently under two heads, *viz.*, "loose grass" and "baled grass".

The loose grass.

70. *Delivery at grazing camps.*—(a) At the time of the Conference on 13th December 1911, the Administrator's information was that there were 10,000,000 lbs. already cut and lying in the reserve assigned to the Ahmedabad cattle, and that further large quantities were lying already cut in the immediate vicinity. From an early date, as I became familiar with the locality, I had occasion to suspect that the amount of grass said to be cut was largely over-estimated. I expressed my fears repeatedly to the Local Officer in Charge and to the Administrator, but by the former they were ridiculed. The event proved they were only too well founded.

(b) The first real cloud on the horizon of the grass operations appeared in the form of complaints from the local officers to the effect that the Ahmedabad cattle were damaging the small grass heaps into which the cutters gathered their grass as they cut it, and which were lying dotted all over the grazing area entirely unprotected. I myself brought the matter to

the Administrator's notice at Junágadh on the 13th December 1911; and he then and there gave orders that the grass in the vicinity of the cattle camps should be carried and delivered before other grass was removed, and with the least possible delay. The matter was again brought to his notice by the Tálukdári Settlement Officer in the course of correspondence; but removal, even as far as delivery at the grazing camps was concerned, was not completed till April. The State had intimated that one herdsman to every 75,100 cattle would suffice; but it was obviously impracticable to prevent cattle tended by even 3 or 4 herdsmen to a 100 head from touching unprotected grass heaps lying scattered throughout their grazing grounds. Everything possible was done to assist the State to protect its grass. The strictest orders were issued and herdsmen found disobeying them were heavily fined and otherwise punished. The cattle were kept expressly out of some of the best stretches of grazing at the special request of the Local Officer in Charge, on his promising to have the cut grass therein removed within a few days; but, in the meanwhile, I had the mortification of finding "outside" cattle grazing over these very areas, and causing damage to the grass heaps which the State officials insisted on attributing to the Ahmedabad cattle. I offered to appoint special kárkúns to go round with the local officers to check the damage, but my offer was not accepted.

(c) The damage done was estimated by the State at 3 or 4 lákhs pounds at the beginning of January, *i. e.*, nearly three weeks after the Administrator had given orders in person as regards the removal of the grass, and a month and a half after the first Ahmedabad cattle had actually been admitted to the grazing reserve. The damage was regrettable but absolutely unpreventable. It is necessary to note the State's own computation of the amount of grass damaged, because this damage was subsequently advanced by the officials as a cause of their failure to deliver the 166 lákhs of lbs agreed upon.

(d) On the 23rd December 1911, sites for the grass stacks were selected at Sap Nes, it being here that grass was then most urgently required in anticipation of failure of the grass supply at the transit camps on the line of march from the railway to the Gir. Immediately afterwards sites for grass stacks at certain of the grazing camps were indicated. A definite order for 6,100,000 lbs. at the camps in the Gir was given to the Local Officer in Charge on 25th December 1911, in order to enable him to have something definite to work on in arranging for delivery. It was clearly understood, however, that, as the number of cattle to be provided for and the number of camps to be opened were still quite uncertain, the amounts indicated for the several grazing camps respectively were only provisional.

(e) No grass was delivered at Sap Nes (where, as mentioned above, the grass was at first most urgently required) till 13th January 1912, when the regular daily cattle trains had already stopped running, and grass was no longer immediately required for transport to the transit camps. It was fortunate that, although grass was obtained only with the greatest difficulty and the cost rose accordingly, the supplies at the transit camps did not fail altogether. At Kunkávav the supply did actually fail; and the situation was only saved by the Tálukdári Settlement Officer railing grass from Gujarát.

(f) The delivery of grass at the grazing camps was not completed till 12th April 1912 at Abut Chhinchhri camp; and this was accomplished only as a result of the large reductions made in the quantities originally ordered, and by my refusing to accept further grass for the time at Sap Nes where the local officers persisted in delivering it despite all protests, though it was no longer so urgently required there as at the grazing camps.

(g) 6,181,640 lbs. of loose grass in all were delivered at the grazing camps in the Gir.

(h) The grass was brought into the various camps either by head-load or cart. It was not without some little trouble that the method by which the quantity delivered should be calculated was agreed to; and it was not without more trouble that the State's subordinates were compelled to observe in some measure the method eventually settled upon. Various suggestions as to counting the grass heaps as they lay in the jungle and so forth were made by the State officials. But it was necessary to decline to accept any calculations made elsewhere than on the spot where the grass was to be delivered; and finally it was settled (1) as regards the head-loads, to weigh each load and dispense with counting the bundles, and (2) as regards the carts to count the bundles of grass, to take the weight of 25 drawn at random from the whole number, and to calculate the weight of the whole cart-load accordingly. This appeared at the time a practical solution of the difficulty which would minimise delay and safeguard the interests of Government. In view of the great shortage which was subsequently found to have occurred, I regret that I did not insist on the weighing of every bundle in spite of the loss of time and inconvenience to the State officials it would have caused.

(j) As it was, however, my kárkúns were persistently harassed by charges of delaying weighing and delivery of grass. Not a single charge was proved; and, as *prima facie* evidence of the inherent improbability of such charges having any foundation in fact, it may suffice to record (1) that there was an Ahmedabad kárkún permanently stationed at every one of the cattle camps always ready and waiting to receive grass; (2) that the State never at any time had on the spot half the number of kárkúns who were available at the Ahmedabad camps; and (3) that Junágadh kárkúns were despatched, carrying their weighing apparatus with them, from one camp to another weighing grass here on one day, there on another,

and nowhere at all on the third ; and that, over and over again, grass was brought in and lay unweighed at a camp for days together for no other reason than that there was nobody on behalf of the State to weigh it.

(k) The effect of these incessant complaints and of the strict instructions given to my kárkúns to avoid the slightest delay, combined with the terrorism of the Sindhi cart-men (who were paid by the State on the weights alleged to have been delivered) was to cause my kárkúns to shut their eyes to short delivery which was carried to the most serious lengths. Threats were usually sufficient to frighten the timid Gujaráti kárkún into acquiescence ; but, if they failed, resort was had to actual violence ; the result is shown by the enormous shortage discovered in the loose grass at Sap Nes when it came to be baled and accurately weighed.

71. *Delivery at main depót, Sap Nes.*—(a) A Survey Department kárkún of some twenty years' standing, with a second kárkún to assist him, was placed in charge of the weighing, etc., at Sap Nes. The delivery, which was made entirely by cart-load, began on the 13th January. On the following day I visited Sap Nes myself, specially in connection with the grass ; and, having given explicit and detailed orders as to weighing and counting the contents of the carts in accordance with the arrangement explained in the preceding paragraph, I believed that the work would proceed smoothly and satisfactorily.

(b) I paid repeated visits to Sap Nes up to the 9th March (when I stopped taking delivery of loose grass there), and suspicions as to the quantity said to have been delivered were suggested by the look of the grass. But it was impossible to form any reliable estimate of loose grass scattered over a widely extended area, wherever the cartmen chose to dump it. Accounts appeared in order, and my repeated inquiries led to assurances that all was well, assurances so positive and satisfying that I was prone to accept them.

(c) On the 9th March 1912 when I visited Sap Nes, my suspicions, though I did not suspect the enormous shortage that was eventually disclosed, had developed into something as nearly approaching conviction as was possible without absolute proof. Partly on this account, therefore, partly because I had as much loose grass at Sap Nes as I could hope to press and bale myself for some time to come, partly because Junágadh had undertaken to deliver pressed and baled grass at Sap Nes (not loose grass), and lastly, but chiefly, because I was urgently in need of the loose grass still undelivered at some of the grazing camps, I stopped the delivery of loose grass at Sap Nes myself. The local officers would not take the responsibility, and in the Gir it was useless to calculate on an immediate reply to any urgent letter despatched to the Administrator.

(d) I was compelled to take this responsibility and to refuse to accept more loose grass at Sap Nes for the time, in order to divert it to the grazing camps where it was already overdue, and where the cattle were almost starving for want of it. It is necessary to make this clear, because the Junágadh grass officers tried to make capital of this refusal at a later date in order to excuse their late delivery.

(e) Baling and weighing of one heap at Sap Nes revealed the enormous extent of the shortage, and the Administrator was at once informed. Information was given also to the police, who by that time had been stationed in the reserve. In round figures 35 lákhs lbs. were supposed to have been delivered ; while the accounts, after allowing a percentage for wastage, etc., actually greater than that suggested by the State, show that 11 lákhs only were actually delivered. Of this 8½ lákhs lbs. were actually pressed and baled and weighed after being baled.

(f) It remains to explain how this enormous shortage came about. Suspicion of collusion between the Ahmedabad kárkúns and the Junágadh staff naturally suggests itself. But the colossal magnitude of the fraud and the certainty of detection are against this theory. Assuming that there were collusion, the guilty parties were faced with certain detection of the fraud unless they took steps, steps which could so easily have been taken, to prevent discovery by the simple expedient of firing the grass. That this was not done or attempted affords strong grounds for the presumption that there was no collusion, and that the Ahmedabad staff had no illicit gains to hide. Besides this, the repeated complaints by the Junágadh staff against the Ahmedabad kárkúns are indicative of anything but collusion.

(g) The real cause of my kárkún at Sap Nes failing to carry out his orders, and of his passing receipts for alleged, instead of for actual, quantities of grass received was abject terror of the cartmen and fear of the bodily harm to himself which he was convinced (and not without very good reason) would result, had he insisted on counting and weighing the grass as ordered, or had they even suspected him of reporting to me that they were terrorizing him and compelling him to give receipts for grass which he had never received. Let it be realised :—

- (1) that my staff of timid Gujarátis was set down in foreign territory, in the heart of a jungle the very name of which was sufficient to inspire terror,
- (2) that they were surrounded in a strange place by strange conditions and strange men, many even of their own subordinates being foreigners to them,
- (3) that there actually was no local representative of the law, nor a police force of any kind whatever anywhere in the vicinity,

(4) that my own camp was some ten miles distant through the jungle,
 (5) that the cartmen numbered at times well over a hundred Sindhis, Waghers, etc., of a disposition notoriously truculent,

(6) that these cartmen were camped at night in the immediate vicinity of the kárkúns' own quarters, the application of a lighted match to which would have reduced them and everything they contained to ashes in a few minutes, and

(7) that violence had actually been offered to kárkúns of the Ahmedabad staff by these very same cartmen in connection with the grass.

(h) When these circumstances are given due weight, nothing further is required to explain why the kárkún in charge, a responsible officer of twenty years' service, failed to weigh and count the grass according to orders, and passed receipts for weights alleged by the cartmen to be delivered, and why he dared not enlighten me as to the fraud. It may be observed that it was not to the interest of the Junágadh kárkúns to see that my kárkúns received full weight. On the contrary, if the amount of cut grass in the hands of the Junágadh officials was far less than was reported to have been cut and paid for, the Junágadh staff was only less interested than the cartmen themselves (who were paid by the amount delivered) in showing inflated deliveries which would help to cover the deficiency of their stocks.

(i) It may be mere coincidence, but it is curiously suggestive, that carts never came into Sap Nes while I was present there myself and might have taken test weighments on any of my frequent visits between the 14th January and the 9th March, although I several times left Sap Nes so late in the evening that it was long after dark before I reached my camp at Chhodavadi. If it be not mere coincidence, it is suggestive also that, on occasions when I asked for the Junágadh kárkún and his spring balance to take test weighments of grass already delivered, either he was absent himself or occupied, or his balance had been sent elsewhere, etc. It is a significant fact that, when the Junágadh kárkún at Sap Nes was requested to weigh out some cart-loads of grass in the presence of the Tálukdári Settlement Officer himself in order to afford really reliable test weighments, he refused, urging that he had orders from his superiors not to do so. It is a suggestive fact also that the Local Officer in Charge, when asked to appoint responsible officials to accompany me personally to some of the camps to take test weighments of the grass, flatly refused my request.

(k) Even apart from the actual weighment of the grass, when pressed and baled, which was made at Sap Nes, the amounts alleged to have been delivered and for which receipts were exacted from my kárkúns are impossible, because they could not have been carried in the number of cart-loads alleged to have been delivered. 3,466,270 lbs. of loose grass are alleged to have been delivered at Sap Nes in 3,317 cart-loads, *i.e.*, 1,045 lbs. to each cart. The ascertained capacity of an average cart carrying *loose* grass in the Gir, as put by the State officials themselves, was 571 lbs; and the larger carts carrying *baled* grass on the far better roads between Sap Nes and the plains only averaged 758 lbs. each. The delivery of the alleged amount (even if the number of cart-loads be not exaggerated) is therefore as impossible as its clandestine removal had it been delivered.

(l) 6,751,795 lbs. of loose grass is alleged by the State to have been delivered in the Gir in 6,992 cart-loads. 6,992 cart-loads at 571 lbs. per cart gives 3,992,432 lbs. only, *i.e.*, a total shortage of 2,759,363 lbs. Of this, from actual weighment of the grass when pressed and baled at Sap Nes, 2,384,573 represents the shortage at Sap Nes itself.

72. *Cost—(a)* The price, as originally quoted by the State, for loose grass was to be from Rs. 5 to Rs. 7 per 1,000 pounds, but a fair price was to be fixed after inquiry. This was to be the price for loose grass stacked at convenient centres round the boundary of the Gir, and it was confidently anticipated that a substantial reduction would be made for grass supplied, instead *inside* the Gir, in the very areas on which it had been cut and where it was then actually lying.

(b) The revised arrangement (delivery in the Gir) effected a great saving of expense to the Junágadh State, since a great part of the grass to be supplied was cut in the very heart of the jungle where carrying even by head-load was a matter of the greatest difficulty and carting an impossibility. The camps were situated in the middle of some of the cut areas, in fact parts of the cut areas actually formed part of the Ahmedabad grazing reserve. The cost of conveyance of the grass was thus reduced to the minimum. Under these circumstances the Administrator's decision at the Conference to charge Rs. 6 per thousand pounds, though qualified by a promise to reduce this price should he be able to do so, was disappointing.

(c) As mentioned above the price of Rs. 6 per thousand pounds was for loose grass stacked and thatched. The State's estimate being as follows:—

Cost price per 1,000 lbs. of:—					Rs.
Cutting	...	...	...	...	2
Carrying	...	...	...	...	2
Stacking and thatching	...	...	...	...	1
Supervision	...	...	...	...	1
Total					6

Stacking and thatching by the State were dispensed with, yet the State insisted on maintaining the full price of Rs. 6 per 1,000 lbs. Consequently the Ahmedabad cattle owners derived no benefit either from the cost saved by the State in carriage or from foregoing stacking and thatching. And, what was more disappointing still, no reduction could be obtained on account of the bad quality of the grass.

(d) 6,181,640 lbs. in all of loose grass were supplied to the grazing camps in the Gir, and 956,697 lbs. for pressing and baling at Sap Nes, total 7,138,337 of loose grass, at a cost of Rs. 42,830-0-4, i.e., Rs. 6 per 1,000 lbs. The market value of the grass in the Gir in December may be gauged by what it realised in May five months later, when Káthiáwár was clamouring for grass, and the scarcity of fodder was greatly intensified. The price realised averaged Rs. 3-7-6 only per 1,000 lbs.

73. *Quality.*—(a) It was understood in the beginning, and advertised by the State, that the general quality of the Gir grass was good; unfortunately, as events proved, no particular date was specified before which the grass should be cut, and late cutting was the main cause, it is believed, of the inferior quality. Orders to cut 3,000,000 lbs. to meet the full demand were only issued from Junágadh shortly before Christmas, and a considerable quantity of the grass was, apparently, cut as late as January.

(b) Some of the very best grass supplied was pronounced by the Superintendent, Civil Veterinary Department, who inspected it on the spot, to be such that it was physically impossible for the cattle to eat enough of it to maintain life.

(c) The opinion of the Principal, Agricultural College, Poona, based on analysis of a sample of grass of apparently good quality sent to him, is:—

“The grass is exceedingly poor feeding material * * * . The material will, so far as I am able to judge, require almost all the energy it gives to the animal to digest it, and hence be of little feeding value at all”.

74. *Stacking.*—(a) It was agreed originally that the loose grass should be stacked and thatched by the State, and Re. 1 per 1,000 lbs. was added to the price of the grass as the estimated cost. It became apparent, however, that what the State was doing for Re. 1 per 1,000 lbs. could be done equally well without the help of the State and at a cost of perhaps one-sixth of that which the State was charging. Stacking and thatching by the State were, therefore, dispensed with, and, in the expectation that the Administrator would reduce the price of the grass accordingly, some of the expense already incurred on account of labour for such stacking as had been done was actually refunded to the Local Officer in Charge. No reduction, however, was obtained.

(b) Stacking at the grazing camps was carried out with considerable difficulty owing to the lateness and uncertainty of delivery of the grass which made it impracticable to keep labour economically employed.

75. *Guarding.*—(a) The grass at each camp was divided up systematically into separate stacks, each containing not more than 200,000 lbs. as a maximum, and each separated from the others by a distance of at least 200 paces. This was done primarily as a precaution against fire, so that in the event of an accident to any one stack at a camp the others would stand at least a fair chance of being saved. Incidentally it facilitated the regular feeding of the grass to the cattle, as separate herds could be assigned to separate stacks. The smaller and weaker cattle at a camp were kept together at their own stack, and so saved from being crowded out of their rightful share of grass by the larger or stronger animals.

(b) As a further precaution, also against fire, the stacks were all placed in the most open and elevated positions conveniently situated with regard to the camp. All grass and dead timber in the immediate vicinity of the stacks was cut down and used or removed; and the ground immediately round the stacks was systematically swept till it was as clean of wind-driven or refuse grass as the sea-beach. Each stack had its grass guard (or guards as circumstances might require) with his look-out post in a tree close at hand, and his apparatus for sounding a fire-alarm. Trees in the vicinity bearing leaves were carefully preserved for the use of beaters in case of fire. With the fire lines thus created and guarded, it would have taken something more than an ordinary forest fire to do anything but test the efficacy of the precautionary measures taken.

(c) It was the duty of the grass-guards also to protect their stacks from theft and from depredation by cattle. One single instance only of pilfering was brought to light from the beginning to the end of the operations.

76. *Consumption.*—(a) It was a matter of no small difficulty to arrange for the systematic and proper feeding of the grass to the cattle; to see that the smaller and weaker animals got their shares as well as the larger and stronger ones; to see that the whole of the day's allowance was issued and that no grass was wasted, and so on.

(b) It would have been interesting to have been able to compile absolutely accurate statistics of the exact amount of grass consumed per head of cattle per day. But with loose, not baled, grass to deal with, with the very limited staff at my disposal, and that almost wholly illiterate, I was compelled to abandon the idea of daily weighments and to resort to a

somewhat rough and ready method, *vis.*, pegging out the stacks into so many equal parts, calculating the quantity of grass in each from the quantity in the whole stack, and then allowing a part or so many parts a day for such-and-such a number of cattle. Rude as this method was, it proved none too simple for some of the karkuns. A more accurate and consequently complicated system of keeping the daily grass accounts would inevitably have resulted in failure. That adopted possessed one very distinct advantage, *vis.*, that without reference to the exact number of cattle in a camp, or to the exact quantity of grass each was consuming on the average, it could be seen at a glance for how many days at the current rate of consumption the grass in stock would last the camp. The system worked most satisfactorily, and, when the time came for the disposal of surplus grass, it was useful again in enabling intending purchasers to calculate for themselves the quantities offered for sale.

(c) Regularly built stalls or racks, for feeding the grass to the cattle being out of the question, I planned to make long "gamans" of roughly cut timber. I had early asked the Administrator's permission to cut dead and useless timber in the vicinity of the stacks (primarily to form fire lines), intending to use this timber also to make the "gamans." On the 7th February 1912, I had his personal assurance that he had already issued orders granting my request. In this matter, however, I met with much obstruction on the part of the local officials. They refused to allow my labourers to cut down a single tree, threatening them; so it was reported to me, with arrest, imprisonment, etc., if they dared to do so, the felling of green trees being apparently the main objection. Many of my labourers fearing the consequences of what little cutting they had already done under my personal supervision deserted on the spot, and I was faced with the problem of replacing them. I wrote at once to the Administrator, again asking for permission to cut down any trees in the vicinity of the stacks.

(d) The Administrator's original orders, though dated 5th February 1912, did not reach me till the 20th; and even then my second attempt to begin the "gamans" met with a blank and, from their point of view, not unreasonable, refusal on the part of my labourers to touch a single tree in my absence owing to fear of consequences at the hands of the local officials. So the days passed and nothing could be done. Then on the 29th March 1912, there reached me a copy of a circular from the Administrator to his Forest Staff informing them definitely that he had given me permission to cut down any trees near the grass stacks, and directing them not to obstruct me. But, incredible as it seems, even this was not accepted by the local officers, and again my labourers, once more collected for the purpose, were stopped in the very act of carrying out my orders. It was only when I demanded a written explanation of the repeated obstruction that the officials, albeit without replying to my letter, condescended to intimate verbally to some of my office staff that they would at last cease from troubling. But by this time a whole month had passed since I first tried to get to work on the "gamans." The cattle were already badly in need of the grass, the labour supply was as precarious as ever, and to save time I was forced to abandon my original idea of making "gamans" so constructed that the cattle would feed from both sides. A long line of low bars, therefore was run round two or more sides of the stacks, as circumstances might necessitate, in the form of a rough "gaman" one-sided only, the grass being placed on the inside or stack side, and the cattle ranged round on the outside. The labourers were hurried from camp to camp, sometimes beginning the "gamans" before even the delivery and stacking were finished, and at others, owing to non-delivery of the grass or to some urgent demand elsewhere, leaving a camp half finished and having to be sent back to it later on. As a matter of fact the cattle (they were little more difficult to teach than the herdsmen themselves) soon learnt that the place for the grass was inside and their place outside, and their one-sided "gamans" proved quite successful.

(e) Jodia camp, which had opened most promisingly, was perhaps in the worst straits of all for grass, owing to the State's inability to control the "outside" cattle at Dabhala village close by, and to prevent them encroaching on the Jodia grazing area. Dabhala camp, owing to the encroachments of the same "outside" cattle, was in a condition but little better. The issue of grass began at these two camps on the 23rd March 1912, at Ghhodavadi on the 25th March, and at all the other camps immediately the supply of the grass and the stacking and the building of the "gamans" allowed. So pressing was the need for cut grass before, owing to the late delivery, I could complete my preparations, that at Vakumbha, Vanka Jambura, Chuladi and Abut Chhinchhri (the delivery at the last named camp not being completed till 12th April 1912) I was compelled to begin the issue without waiting either to get the grass stacked or the "gamans" made, a very wasteful process.

(f) It had long since become obvious that, owing to the State's failure to deliver the grass at Sap Nes in time, the abandonment of the plan to move the cattle out of the Gir in this unhealthy season into the plains was inevitable. This meant that the grass, the quantity of which for each camp had been reduced in view of the plan now abandoned, had to be husbanded most carefully in order to last till the beginning of June. It was therefore impossible, solely as the cattle at practically every camp were in need of it, to begin giving them their full allowance of 10 lbs. a day at once. In some cases, according to the "gaman" accommodation prepared, the weaker cattle only were fed at first; in others, half the camp would receive grass on one day, and the other half the next day, or the whole camp would be

fed half in the morning and half in the afternoon with about half their full daily allowance, going out to graze when not feeding at the stack. Day by day, however, in the most ominous manner the mortality from sheer debility, and the number of cattle on the sick lists from inability to march backwards and forwards to their grazing, increased. At the risk of the grass stock failing, I was compelled to give the cattle at several camps a complete rest from grazing of a week to ten days, and to allow them cut grass as much as they could eat, hoping there would be a general recovery of strength sufficient to enable them to exist on a reduced allowance again later, supplemented by the natural grazing and the anxiously awaited edible foliage which it was still hoped the spring would produce on the trees.

(g) But on the 26th April 1912, with the decision to send all the cattle back to their homes as fast as the trains could carry them, the grazing was stopped altogether, and the cattle were fed day and night on as much cut grass as they could possibly consume. It was obvious now that, owing to the enforced change of programme, the stock, at some of the camps at least, would outlast the stay of the cattle; and it, therefore, remained to arrange as far as possible so that the grass at the more inaccessible camps should be finished altogether, and that whatever surplus there might be should remain where it could be got at most easily for export, or where the demand by possible purchasers was likely to be greatest. Eventually the grass at all the camps but Bharthi, Chhodavadi, Sudavo, Vakumbha, Banej and Jodia was wholly consumed.

77. *Disposal of surplus.*—(a) As soon as it became obvious that there would be a certain amount of grass left at a few of the camps, information that such would be the case was spread far and wide. It was intimated generally that the grass would be sold by public auction; but would be purchasers were invited to make offers beforehand, and informed that no reasonable offer would be refused.

(b) As the State claimed to have supplied grass to the Ahmedabad cattle at less than market price, it was expected that it would be glad to buy the surplus or part of it which lay close to its own presses and within a stone's throw of the road by which it was carting grass out of the Gir. The State, however, refused to buy back at the price charged despite the increased scarcity of grass, and did not even make an offer. This was the more remarkable since the grass was of better quality than the State's remaining grass which was cut later.

(c) The State kindly guaranteed that no obstacle should be placed in the way of removal of the grass from the Gir by purchasers. The fact that, even with this guarantee, it was impossible in spite of all efforts to obtain anything approaching the cost price of the grass, suggests that the State had greatly overvalued the market rate.

(d) 606,179 lbs. in all of loose grass were offered for sale; and after much advertisement and bargaining, a sum total of Rs. 2,093-7-6 was realised, i.e., Rs. 3-7-0 per 1,000 lbs., in May as against Rs. 6 paid by Government to the State five months earlier.

The Baled Grass.

78. *The delivery.*—(a) On the 11th December 1911, it was intimated to the Administrator that as much as 10,000,000 lbs. grass might be required in bales. On the 13th December 1911, when the first definite order for grass was given, it was stipulated that a fourth part of the 13,000,000 lbs. then ordered should be delivered in pressed bales if required; and the Administrator was asked to quote the rate per lakh of pounds he would charge for pressing and baling. It was, therefore, surprising to be informed on the 3rd April 1912, as an explanation of failure to deliver punctually, that the demand for baled grass was flung upon the State four months after the commencement of the operations.

(b) The delivery is, unfortunately, an uninterrupted record of disappointment. The State's arrangements broke down at every point as the following account of events in chronological order shows:

(1) Six lakhs pounds of grass were ordered on the 15th December 1911, for the use of cattle in transit from the railway to the Gir, it being explained that the supply on the transit line was failing. The order was accepted there and then. Further, the State intimated definitely on 31st January 1912 (by which time, incidentally, the regular cattle trains had already stopped running) that this grass would be pressed; and that endeavour would be made to cart it to the camps at which it was required. Yet on the 2nd, and again, on the 5th April 1912, the Local Officers in Charge solemnly asseverated that they had the most positive orders not to supply a single pound of baled grass, and not until the 14th April, when arrangements were already being made for the return of the cattle (the grass was ordered for their arrival), was a single bale of grass supplied.

(2) On the 25th February 1912, the Administrator made an offer to supply baled grass at Sap Nes at Rs. 7-8-0 per thousand lbs., and this offer was definitely accepted. Offer and acceptance appeared to be absolutely plain but it subsequently transpired that the Administrator's offer was not intended in the sense which the words appear to convey, and that the Talukdari Settlement Officer's acceptance, plain as it appeared to be, was also misunderstood. The result was fatal delay in delivery.

(3) The Administrator was asked definitely to complete delivery of the grass at Sap Nes in pressed bales by the end of March. This was the latest date that could possibly be allowed if the State were to undertake none of the carting to Kunkávav and the transit camps. The Administrator replied that he would try to arrange for the whole stock to be at Sap Nes by the middle of April. But up to the middle of April not a single bale of grass had been delivered at Sap Nes or elsewhere; and, out of the round crore of pounds in all (baled and unbaled) due at Sap Nes by that time, the State did not profess to have delivered more than 35 lákhs, and had in fact delivered only 11.

(4) On the 2nd April 1912, the Administrator promised that "grass will now be delivered in large quantities". During the whole of April, 11½ lákhs only, loose as well as baled grass, were delivered.

(5) The Superintendent of Police, Junágadh, arrived in the Gir on the 7th April 1912, in connection with the delay in grass operations. Having inspected the stocks of grass still available in or near the reserve he gave an undertaking that, at the very least, 10 lákhs lbs. of baled grass, probably 15 lákhs or even more, should be delivered at Sap Nes by the end of the month. By the end of the month 5 lákhs only had been delivered at Sap Nes.

(6) The Administrator's programme of the beginning of March provided for the pressing of 50 lákhs lbs. of grass by the middle of May. Again, under his programme of the beginning of April, he promised 55 lákhs in bales at Sap Nes "as soon as possible." Yet again, under his programme of the middle of April, the delivery of 55 lákhs was promised at Sap Nes "easily" by the middle of May. And yet again, a few days later, he offered to deliver 50 lákhs lbs. at Sap Nes within about a fortnight. The total quantity received, after these promises, at Sap Nes and all the other depôts at which, in accordance with his own subsequent proposals, he delivered grass, was 32½ lákhs lbs. only; and the delivery even of this amount was not completed till the middle of June.

(7) On the 29th April the Administrator, on the last day of his stay at Sap Nes discovered that arrangements for delivery at Sap Nes were bound to fail, and that he had certain stocks of baled grass at his disposal, and available at places situated very much more conveniently for delivery at the transit camps on the way to the railway than at Sap Nes itself. This would save much of the expense of carting. Accordingly on the same day, 29th April 1912, an agreement was made and reduced to writing under which the Administrator undertook to supply 10 lákhs lbs. direct to the transit camps where it was wanted at once for the cattle which were already being moved down to Kunkávav. By the middle of May 4½ lákhs lbs. only had been delivered, and the next 3½ lákhs could still not be promised definitely before the beginning of June, by which time three-quarters of the cattle would actually have left for Gujarát. It was useless to calculate at all on the remaining 2 lákhs due.

(8) On the 29th April 1912, also, a second agreement was made and reduced to writing, under which the Administrator undertook to supply 20 lákhs as a minimum, but "as much more as possible" at Bhilkha or other railway stations by the 10th June 1912 to be railed direct to the Ahmedabad District in order to feed the cattle which had to be returned to their villages a month earlier than was intended owing to the State's failure in delivery. On the 10th June 1912, even the minimum of 20 lákhs was still short by 3 lákhs, and only 18½ lákhs lbs. was supplied altogether by the 13th June after which the Administrator intimated that no more grass was available.

(9) Of the total quantity of 166 lákhs lbs. of grass ordered, even according to the State's own figures, only 132 lákhs were supplied, *i.e.*, 34 lákhs short; 27½ lákhs of the 132 lákhs were never delivered as shown previously (para. 71 (k) and (l)). The shortage, admitted or proved, was thus 62 lákhs, and it was really considerably larger. Not only was the delivery short by over one-third of the amount ordered, but it was fatally late. Short and late delivery wrecked the whole original scheme of operations and was the direct cause of very heavy mortality.

79. *Cost*—(a) For baled grass the price was not quoted definitely at the Conference on the 13th December 1911, as the cost of pressing and baling was not definitely known. But it was estimated at Re. 1-8-0 per 1,000 lbs. which, added to Rs. 6—the cost price of the loose grass gave Rs. 7-8-0 per 1,000 lbs. The Administrator promised to charge cost price only for pressing and baling, and Rs. 7-8-0 per 1,000 lbs. was the price actually charged.

(b) 861,028 lbs. of grass delivered loose were pressed at Sap Nes by private contractors at a total cost of Rs. 1,138-8-2 or Rs. 1-6-0 per 1,000 lbs.; 571,310 lbs. of baled grass were delivered at Sap Nes by the State at a cost of Rs. 4,284-13-3, *i.e.*, Rs. 7-8-0 per 1,000 lbs.; 832,300 lbs. at the temporary and transit camps on the line of march to the railway, at a total cost of Rs. 8,462-5-0, *i.e.*, Rs. 10-2-7 per 1,000 lbs. on the average; and 1,868,148 lbs. at Bhilkha, at a cost of Rs. 22,417-12-5, *i.e.*, Rs. 12 per 1,000 lbs. In all, 3,271,758 lbs. of baled grass were supplied at a total cost of Rs. 35,164-14-8.

80. *Quality*—(a) The quality of the loose grass supplied had been bad, and that of the baled grass was but little better. How poor the quality of the loose grass was may be inferred from the fact that the baled grass supplied by the State did actually contain a far

higher percentage of dry leaves and rubbish. All rubbish was included in the analysis; yet the quality of the baled grass, rubbish included, was actually higher than that of the loose grass. One small incident in this connection is significant. The grass cartmen were given a liberal allowance of grass from broken bales for the use of their bullocks free of all cost. After a little experience of it they regularly brought in their own grass from their villages, and displayed no anxiety to take away the grass which was given to them.

(b) Two bales, one taken at random from a number of others as appearing outwardly to be of the average inferior quality, and another selected by a "panch" specially called for the purpose as appearing outwardly to consist of the very best grass supplied, were sent to Poona for analysis. The Principal, Agricultural College, Poona, describes the grass in the following terms: "Both samples are slightly better in value than some hay previously obtained from the Gir forest in May last, as there is less fibre and more soluble or digestible carbohydrates. The selected sample is distinctly better than the other, but the difference is not very great. Both are very fibrous and their feeding value is low".

81. *Pressing and baling.*—(a) It was hoped that the State would undertake the pressing and baling of as much of the loose grass ordered as might be required in bales. But after personal consultation with the Administrator early in February, it became obvious that the State could not be depended on for this. It, therefore, devolved on me to make arrangements for pressing as much as possible of the loose grass which was delivered at Sap Nes. In this I was heavily handicapped by the local officials' inability to undertake to deliver any given quantity of grass by any given date. Thus, in my turn, I was unable to guarantee my would-be contractors any definite quantity of grass for their presses within any definite period. They, in their turn, were of course unable to contract for any specific number of presses or any specific outturn of baled grass. Under these circumstances it is satisfactory to be able to record that contracts of any kind were negotiated, and that the contractors were induced to bring their presses from places as far distant as Rájkot and Bombay, while the Junágadh State was experiencing the greatest difficulty in getting its own contractors to enter the Gir at all. The rate paid was Rs 1-6-0 per 1,000 lbs. with wire, bales to average not less than 160 lbs. in weight. Not only was the pressing better done than the State's, but it was done at a cheaper rate than the State was paying.

(b) In all twelve hand-presses were obtained at Sap Nes, the work actually beginning on the 1st March 1912. But with the limited quantity of grass available the stock was soon practically exhausted. It was satisfactory, when the situation owing to the delay in the delivery of the grass had become critical, and when a number of the State's own presses were lying idle at Sap Nes and elsewhere for want of baling wire and labour, to be able to hand over to the local officials five of my own presses to help them with their work.

(c) 861,028 lbs. grass delivered loose at Sap Nes were pressed and baled and accurately weighed. An allowance of 10 per cent. for wastage and driage was made, which, with 125,000 lbs. consumed at Vaniagali, the adjoining cattle camp, brings the total of loose grass actually delivered at Sap Nes to 1,081,697 lbs.

82. *Carting.*—(a) As with the pressing, so with the conveyance of the baled grass from Sap Nes to the transit camps, the State had given reason to expect that it would undertake part at least of the cartage. But it became obvious that, if the carting were to begin in time, the necessary arrangements for this also would devolve on me. Just as the pressing work had been handicapped by the inability of the State to guarantee a definite supply of grass within a definite period, so was I handicapped in making definite arrangements for carting. Cart contractors could not be expected to collect large numbers of carts from places distant, perhaps, a hundred miles or more, unless they were certain of a supply of grass to cart.

(b) Inquiries in the very early days, in view of possible eventualities, had elicited the information that carts were scarce in the neighbourhood and would be difficult to obtain in any case, more especially for work in, or even in connection with, the Gir. From the beginning it was clear that without the aid of the State or of contractors it would be impossible to collect the large number of carts required. But, as the village agricultural stock generally became weaker with the prolongation of famine conditions, and as the season for the pre-monsoon cultivation of the village lands approached, the original difficulties were increased ten-fold.

(c) One small contract was negotiated, the terms of which are sufficient to show what might have been done had it been possible to begin, say, two months earlier.

(d) In the absence of contractors, commission agents were sent out to scour the villages far and wide for carts, and high rates were offered. Carting actually began on the 17th March 1912, but, in comparison with the large quantity of grass which was due from the State, the progress made at first was insignificant.

(e) The Political Agent, Sorath Pránt, and the Baroda Durbár, under one or the other of whom most of the villages in the neighbourhood fell, were appealed to to induce their villagers to take up the work for the generous remuneration offered, but with scant success.

(f) In view of the State's repeated promises to help or to try to help, and because the State's delay in delivery had made it impossible for all the grass ordered to be carted away without their assistance, the State was asked to hand over to me as many of their carts as, with my own, would enable my export to keep pace with their delivery. They were informed that the amount of grass of which I could take delivery was limited by the amount which I could cart; but, beyond offering some Sindhi carts at prohibitive rates, the State rendered no assistance. The State was short of grass and had other large contracts to fulfil.

(g) In the meantime the Debt Settlement Officer was placed on special duty by the Tálukdári Settlement Officer for the collection of carts. Owing to the length of the journey from Sap Nes to Kunkávav station (40 miles), many carts were unable to carry their loads the whole distance, and arrangements had to be made for a temporary depôt at Bagasra transit camp where such carts were unloaded and the grass transferred to others to complete the journey. But carting proceeded steadily, and all anxiety as to being unable to get enough grass to the transit camps merely to pass the returning cattle through to the railway was speedily at an end. There remained the question of carting some half crore of pounds, which it was still hoped the State would supply. But the number of carts steadily increased till at one time some 300 were actually at work. On one day alone, the 30th April (when delivery by the State was actually being stopped), 129 carts were despatched from Sap Nes with 86,117 lbs. of grass in the aggregate.

(h) It was at this juncture, when it seemed possible that after all the export might keep pace with the State's belated delivery, that the Administrator found his existing arrangements were bound to break down, and suggested delivery of baled grass at other centres and from other sources. Disappointing as it was to have had the enormous trouble of organizing a huge cart transport for practically nothing, and hard as it was on the cartmen, there was no choice but to close with the Administrator's offer, since it promised at least 30 lákhs of grass where it was now most needed, more quickly and at a cheaper rate than by delivery at Sap Nes. There was also the very grave doubt, in view of continual failure on their part, whether the State would be able to deliver at Sap Nes even 30 lákhs in time for it to be carted. Regular delivery at Sap Nes, therefore, was discontinued from the 1st May, the State's final delivery taking place on the 4th. Carting from Sap Nes was stopped on the same day (the 4th), when the grass remaining was sufficient only for consumption at Vaniagali, the adjoining cattle camp, and for provision against accident.

(i) By the time half the returning cattle had passed through Vaniagali, it became obvious that the balance anticipated would be exceeded. The cattle were unable to eat their full daily allowance owing, it is believed, to the wretched quality of the grass. As time passed the danger of accidents diminished, and by the middle of May it was safe to begin the removal of the anticipated surplus.

(k) Difficulties in obtaining carts were now intensified by the increasing lateness of the season, and by the work having once been actually stopped. Interested persons, themselves in need of grass, made deliberate endeavours to prevent carts going to Sap Nes in order to compel the sale for a trifle of grass which could not be removed. But the country was scoured again, and carts beaten up by one means or another. On the 4th June the last cart-load was despatched from Sap Nes, and not a single bale of grass was either sold or abandoned in the Gir.

(l) There now remained a surplus at the temporary and some of the transit camps. And these being beyond the Gir no great difficulty in carting was anticipated. But by this time the surplus was being disposed of by sale also, and from these camps 128,469 lbs. only of grass were carted to Kunkávav.

(m) From the Gir 1,306,808 lbs. of baled grass were exported by cart, and from the temporary and transit camps, including the transfer depôt at Bagasra, 329,565 lbs. were carted to Kunkávav. As indicated above, the rates demanded for the cartage to the various depôts had been high from the beginning; but they were greatly enhanced by the lateness of the season when practically the whole of the carting was done. This was due to the late delivery by the State at Sap Nes; and the additional cost of the cartage estimated at the moderate rate Re. 0-12-0 only per 1,000 lbs. corresponds to the value of 2 lákhs of pounds of grass. It is satisfactory to note that even the maximum rates paid were considerably lower than those which the Junágadh State was paying for the same work.

(n) Every bale was weighed before despatch from Sap Nes as well as on arrival at its destination. It was found that, owing to this precaution, the wastage due to the carting was so small, a mere 3.6 per cent., as to be practically negligible. Even this waste would have been less, but for the execrable condition of the bales delivered by the State, which special labour was employed to repair.

83. *Consumption.*—(a) At the transit camps on the return journey and at the temporary camps at Mevasa and Bhutnath baled grass only was supplied. When once the poor value of the cut grass as fodder had been definitely determined, practically no limit was placed on the daily rate of consumption per head of cattle in the Gir. In the case of the baled grass, that delivered ready pressed by the State was no better than that which had been pressed at

Sap Nes ; and not only was an unlimited allowance issued, but the cattle were systematically encouraged in every way, almost compelled, to eat as much as they possibly could. In spite of this the average consumption per head, including wastage, was barely 15½ lbs. per day. Even in the case of the special camp at Bhutnath, containing nothing but full grown buffaloes and enjoying the happiest conditions of a cattle camp, the daily consumption was only 17½ lbs. per head. This is attributable to the poor quality of the grass as fodder.

(b) In all 1,277,189 lbs. of baled grass were consumed at the nine separate camps to which it was supplied.

84. *Consignment to Gujarat.*—(a) If the Junágadh State had been able to keep its engagements (though too late for the cattle to be camped in the plains in April and May), there would still have been some 85 lákhs of pounds available for the Collector of Ahmedabad in May and June in accordance with the arrangement agreed upon. The loss of this grass was very severely felt, since the imports into the district from Government forests practically ceased just when the need of grass was most acute. Owing to the failure of the State, there was nothing to spare for the Collector of Ahmedabad, the 20 lákhs due from Bhilkha being insufficient for the cattle from the Gir alone.

(b) 608,569 lbs. in all from Sap Nes, etc., were railed from Kunkávav either to Ranpur or Viramgám, grass wagons being attached to each cattle special according to the number of cattle wagons required and the capacity of the rake. Spare cattle wagons also were loaded with grass.

(c) To save time, trouble and expense, the Tálukdári Settlement Officer arranged with the Collector of Ahmedabad for him to take over 10 lákhs of the 20 due from Bhilkha for khalsa villages in the Viramgám and Dhankhuka Tálukas, and to give in exchange 10 lákhs of his grass for the tálukdári villages of the Sánand and Dholka Tálukas.

(d) One peculiar circumstance in connection with the railing of grass was that, coincident with the most serious delays on the railway for want of wagons to move the grass lying ready at the stations, large quantities were being exported from *Káthiáwár to Gujarat*, while other large quantities were being imported from places hundreds of miles distant right *through Gujarat into Káthiáwár*. The grass trains actually passed one another on the line. Again to save time, trouble and expense, and to relieve pressure on the railway, the Tálukdári Settlement Officer entered into correspondence with the importers to get them to take over Junágadh grass in Káthiáwár in exchange for an equivalent quantity of their grass in Gujarat. But negotiations failed.

85. *Disposal of surplus.*—(a) To each temporary and transit camp more grass, than it was anticipated would be required for actual consumption, was supplied to provide against possible accidents through fire, etc. This, increased to some extent by the non-consumption of the full quantity allowed, remained to be disposed of when the transit of the cattle was complete.

(b) With the expectation of early rains the price of grass in Gujarat showed signs of falling, and the small surplus in the transit camps could not be carted to Kunkávav and railed to the Ahmedabad District except at a cost higher than its market value. It was therefore decided to sell it locally if possible. Here, as in the Gir, attempts were made to compel the abandonment of the grass. But stacking, as though in preparation to keep it indefinitely, was commenced, and the would-be beneficiaries, convinced that there would be no abandonment, then came forward to buy at considerably higher rates than those tentatively offered and refused a fortnight earlier.

(c) 239,166 lbs. surplus grass at Mevasa, Malsika and Bhader, the only three camps out of the nine at which any grass remained, were sold finally without difficulty, a total of Rs 1,687 being realised by the sale. The average price realised by the sale of the grass supplied direct by Junágadh was Rs. 8-12-0 as against Rs. 8-15-0 the average cost price, the small increase being sufficient to cover wastage and the cost of grazing, stacking, etc.

SECTION VIII.—THE STORES—SAP NES.

86. *General.*—The Gir itself being primeval jungle, and the indigenous products of the Ahmedabad reserve being limited to grass, trees, rock, etc., it was necessary to create a centre for the receipt and distribution of the innumerable requisites which had to be imported for the organization and maintenance of the sixteen separate cattle camps in the Gir. Sap Nes at the entrance of the Junágadh Gir and on the main road, the direct line of communication with the railway, which practically the whole of the traffic with the outer world followed, was the most convenient place. Here accordingly the stores were established, and here everything, from thousands of tons of grass and hundreds of tons of cotton-seed for the cattle to needles and thread and packets of pills for the camp kárkúns, was received and distributed. Branch stores were established at Chhodavadi, the most central camp of those forming the Southern Circle, to deal with cotton-seed received from Kodinár and elsewhere to the southward of the Gir.

87. *Distribution of stores, etc., to camps.*—(a) After getting consignments of stores, etc., delivered at Sap Nes, the most formidable obstacle to their distribution to the camps was transport within the Gir itself. Contractors would bring their cotton-seed as far as Sap Nes or Chhodavadi, but undertake to deliver it at the camps in the interior they would not; and a complete system of interior transport had to be organised.

(b) Carting, except to two or three of the camps, was an impossibility even had carts been obtainable; and recourse was had, therefore, to conveyance by donkey, donkeys being *par excellence* the transport animals capable of negotiating the tracks over the hills and through the jungles. The surrounding country was scoured far and wide for donkeys, some being obtained from more than 60 miles away. But as with the labour so with the donkeys. The trouble was only half surmounted when they were got to enter the Gir. It was equally difficult to keep them there. A week's work between the Stores and the camps, with such poor and scanty grazing as they could pick up, was more than enough for many of them; and the service was maintained only with the greatest difficulty. At one period over 300 donkeys were at work at one and the same time. But in case of emergency quadrupeds of all descriptions were requisitioned; and a heterogeneous company of heavily laden donkeys, ponies, buffaloes, cows and camels would be met with, winding their patient way over the hills to the camp anxiously awaiting their arrival.

(c) The service once allowed to lapse on what was intended to be the conclusion of the cotton-seed distribution could never be satisfactorily re-established. When the discovery as to the valuelessness of the cut grass as fodder was made, and it became imperative to recommence the issue of cotton-seed to the cattle, but few donkey-owners responded to the urgent calls made on them; and the few, who did, demanded and had to be paid nearly double the rates they had received before. Fortunately, however, a large contractor in whom familiarity with the Gir had by that time bred the germs of enterprise was induced to undertake delivery direct at several of the camps, and the regular delivery of supplies was not seriously hampered.

88. *Disposal of dead stock, etc.*—(a) On the abandonment of the camps one by one all articles of dead stock, etc., were returned to the store. Such as were not worth carrying away were sold by public auction at Sap Nes, the bulk of the articles being carted to Bagasra where a higher price was to be obtained for them. The supplies of cotton-seed, etc., had been regulated so that there should be no balance in stock on the closing of a camp; and, except for a quantity of oil-cake, which had arrived too late to be consumed [*vide* para. 46 (a)], and for the loss on which the contractor had been made to pay, no surplus stores remained to be disposed of. At Bagasra a two days' public auction was held, and everything was sold but a few articles of some value for which there was no local demand. The remaining articles were finally disposed of in Ahmedabad.

(b) All veterinary instruments and medicines remaining on hand were presented to the Veterinary Hospital, Ahmedabad, as a small token of appreciation of the services which the veterinary officers had rendered freely in connection with the "charity" cattle camp in Ahmedabad.

SECTION IX.—LAW AND ORDER IN THE GIR.

89. *Assistance of local officials.*—(a) The State was not expected to concern itself with the maintenance of order amongst the Ahmedabad staff. But it was taken for granted that its precautions for the preservation of law and order amongst its own subjects and employees within its own boundaries would be adequate.

(b) At ordinary times the Gir was entirely unprotected. But it was presumed that it would not be left so when an army of grass-cutters and cartmen were imported; and it was not anticipated that Mianas, whose reputation for lawlessness is unrivalled, would be let loose in the Gir. The Local Forest Staff and the staff specially deputed to the Gir in connection with the State's grass operations appeared to be vested with certain police authority in so far as the protection of the State's own interests was concerned. But in matters touching the interests of the Ahmedabad staff and their cattle, they were powerless to give any but purely unofficial assistance. It was not until after very serious trouble had occurred [*vide* para. 91 (d) *et seq.*] that any police arrangements were made.

90. *Petty offences.*—The occasional quarrels, etc., which took place amongst the herdsmen, also any offences affecting the State's interests, whether committed by members of the staff from Gujarát or others in my employment, were dealt with by me summarily on the spot. After the appointment of the police force (*vide* para. 92) at the Administrator's special request, and in formal recognition of the State's legal authority over all within its limits, a case in which knives came into play was handed over to the police. It was handed back to me for disposal.

(b) Petty thefts were more or less numerous; and it is hardly a matter for surprise that no stolen property was ever recovered by the police or otherwise.

(c) There were occasional raids of gangs of thieves at night. But they seemed to have a special "pendant" for the "Dhedwadas" and the hides (which were not Government property). A universal uneasiness as to what might take their fancy next was, of course,

created, and special night-watchmen had to be engaged to reinforce the usual guard on the stores, etc. Publicity was given to the fact that a fresh supply of ammunition, specially for the night-watchmen's guns, had been obtained, and exemption from the attentions of these gangs was secured.

91. *Cattle stealing.*—(a) The possibility of cattle stealing had suggested itself in the very early days. This was the only form of serious crime which was anticipated; but personal inquiries of the State officials in Junágadh on the 5th December 1911, elicited assurances that there was absolutely nothing to be feared from cattle thieves in the Gir. The Gir, however, possessed a unique reputation as the strong-hold of outlawry in Káthiáwár in past, but quite recent, years; and numbers of the very tribes responsible for this outlawry had been admitted to the Gir with their cattle or for employment on the State's grass work. Cattle thieves simply had to hide their stolen cattle in the Gir till the rains—a very easy matter—and the confidence of the State that cattle lifting was a contingency too remote to provide against seemed hardly justified.

(b) Large numbers of Mianas, Sindhis, and Waghers, reformed robbers and outlaws, had brought their cattle to the Gir where they were dying by thousands. It would indeed have been surprising if amongst them there had not been some to whom the temptation of compensating themselves to some extent for their losses by the convenient acquisition of other people's cattle had not proved too strong. It would have been almost as surprising if, amongst so many herdsmen engaged to look after the Ahmedabad cattle, some had not discovered the ease with which cattle could be "lost in the jungle", and if a few at least were not predisposed to take advantage of this discovery.

(c) It was not long before reports were received of disappearances of cattle which straying in the jungle would not satisfactorily explain. In the one or two cases of alleged cattle-theft, which were brought to light definitely, the cattle were recovered and the matter disposed of on the spot in the absence of a police force. But, when it came to herdsmen and others in the possession of their cattle being actually assaulted by cattle thieves, drastic and instant action was necessary. Unfortunately, when matters assumed this critical aspect, there was no State official (except a kárkún or two) in the reserve, much less one with police authority; and the chance of finding the nearest police officer at his distant station was remote.

(a) Matters reached a crisis when, on the 20th February 1912, a cow was stolen and seriously injured by the thieves in trying to drive it away. The cow was recovered, but the thieves escaped. On the 24th February at the same camp (Dabhala) a second theft was attempted; and the herdsmen and others following up the thieves were ambushed and attacked with sticks and stones, one herdsman and a cattle-guard being severely injured. Certain of the cattle thieves were recognised by some of my own local employees as belonging to a camp of the State's grass labourers at Pithdi Bela close by, and were said to be—of all dread names—Mianas. Urgent information was sent to where the Local Officer in Charge was supposed to be, also to a Jamádár on grass duty who was believed to be a policeman, but without any apparent result. The one man of the State's subordinates on the spot with local knowledge and influence, if not jurisdiction, was a Jamádár of the Forest Department. He openly scoffed at the fears of my men, and at the mere idea of its being possible for the grass labourers' camp in question to harbour cattle thieves. He declined to believe that cattle thefts had been attempted at all, and flatly refused to accompany me to the camp to make inquiries. In the meanwhile a visit to my own camp at Dabhala showed unmistakably that for once the peaceful and law abiding Gujaráti herdsmen had reached the limit of patient endurance. Their cattle were being mutilated and stolen, and they were being beaten and stoned. They saw that in a foreign State their own superiors were powerless, apparently, to help and protect either them or their cattle. With panic in the air and spreading from camp to camp it was obvious that inaction would result inevitably in wholesale desertion and disaster.

(e) On the evening of the day following the last disturbance, nothing having resulted still from my urgent messages sent to the local officials, I visited the grass labourers' camp to make enquiries myself accompanied by some of my herdsmen to identify the cattle thieves. Here I was met with the fairest assurances and the most deliberate deception on the part of the Junágadh kárkún in charge. He produced a false muster-roll of the camp to prove to me that the cattle thieves did not belong to it, apparently the whole camp being satisfactorily accounted for and not containing the thieves. But the absolute conviction of the herdsmen, sullen in their apparently abortive confidence that their assailants did indeed belong to this camp, was not to be ignored. Then men were seen approaching the camp, who bolted into the jungle the moment they saw strangers, and before they were close enough to be recognised. Later, in the gathering dusk, figures were seen stealthily approaching the camp obviously with the object of watching proceedings while remaining concealed themselves. But in spite of all this, the Junágadh kárkún and such of his camp as were present continued so emphatic and apparently so frank in their denial of all knowledge of any one even connected with their camp, save those mentioned in the muster roll, that, but for the evidence of one's own senses, one might well have been completely deceived.

(f) It was now abundantly plain that not only connivance with the thieves on the part of the Junágadh local staff and their associates, but active though veiled hostility to their

detection had to be contended with. It was equally obvious that nothing short of my own personal evidence would suffice to convince the higher authorities of the true state of affairs, and that continued inaction would be absolutely fatal to my hold over my own staff and consequently to the cattle and the operations as a whole. Convinced, therefore, that a deliberate attempt was being made to deceive me and to cover the crimes which had been committed, I visited the camp again the following morning at dawn as being the most likely time to find all belonging to it present. This was my only chance of getting some or all of the cattle thieves identified, or, failing this, of obtaining personally positive proof that there were persons actually at the camp concerned to conceal their presence from me and avoid recognition by my herdsmen. In this latter respect I was successful. But detection led to a most serious affray, in the course of which three members of the party with me and I myself were injured. Full details of the case are supplied by the record of the Police Court proceedings.

(g) The end desired had been attained, though not, it is true, precisely in the manner intended. The atmosphere, as far as my own staff was concerned, was cleared as by the breaking of a thunder cloud, and the State seemed to awake to a sense of its responsibilities. Some of those concerned in the affray or their confederates escaped with the most damning evidence against them, and those concerned in the preceding assault and cattle thefts escaped also and were never detected. But the nine men (Mianas and others) arrested with their families, and other Mianas with their cattle from a camp in the vicinity were removed from the Gir; and a general clearance was made till it was said that all Mianas, except those in the Junágadh jail, had not only been ejected from the Gir but had been deported from Junágadh territory back to their own country.

92. *Police arrangements.*—(a) After this affray the State provided a police force for the area comprising the grazing reserve, with a camp guard and personal escort for myself, in charge of an Inspector.

(b) The personal escort, however, for a month after the affair consisted of one man unarmed, ununiformed and unmounted, and physically unfit for his duty. It was only when it was proposed to bring Ahmedabad Police to the Gir and a party was ordered to hold itself in readiness, that an escort of six mounted police was forthcoming.

(c) After the appointment of the police, complaints as to cattle-stealing, encroachments by "outside" cattle, unlicensed grass cutting, etc., were made to them direct. Such complaints were so numerous that to detail even the most important is out of the question. In one instance of actual detection of an offender concerned in cattle stealing, the Police Inspector had, apparently, no choice but to commit the case to a Magistrate forty miles away, and to absent himself from his station to conduct the proceedings, leaving no one but a constable in charge of the Gir. The files do not record a single satisfactory issue to any one of the innumerable complaints to the police.

SECTION X.—WILD ANIMALS.

93. (a) Lions and panthers were the only animals which caused any trouble. The actual damage resulting to the cattle was slight, but the moral effect on the nerves on the staff was incalculable and militated, more perhaps than any other cause, against recruiting. The lions did not adhere to their conventional programme. They were out and about before dark and after dawn, and were seen, on one occasion, seven in less than an hour, within a stone's throw in the middle of the day. They were never deliberately aggressive; but an earth-shaking roar close at hand would send a herd of cattle crashing head-long from grazing ground to camp, or stampede them into the depths of the jungle from which it was no easy matter to retrieve them. The greatest danger was at night when a stampede might well have disastrous consequences. The enclosure fences would go down like match-wood before the charge of a phalanx of buffaloes, and some few animals at least would disappear in the jungle where they might find their way to other camps, but might, on the other hand, be annexed by thieves. Usually a few handfuls of dry chips to set the watch fires blazing, and the report of the cattle-guard's gun were sufficient to keep these visitors at a distance; but, as their tracks showed, they would sometimes prowl round a camp all night, and were sophisticated enough to appreciate the well water in the cattle troughs.

(b) Panthers too gave some trouble, but had not the same effect on the nerves of the staff.

(c) Reports were received from time to time of tigers reaching through the fences of the enclosures at night and clawing the backs of cattle lying down inside. Many a cow, which returned to Gujarát with sides and back deeply scored as the result of a fall amongst the jagged rocks, or a slip and a roll down a hill-side over the loose sharp stones, will carry in its peaceful village the proud insignia of "tigers' claws" to its dying day.

SECTION XI.—COMMUNICATIONS.

94. (a) In order to keep in constant touch with the sixteen cattle camps in the Gir it was necessary to organise a private postal service; and, the nearest postal and telegraph

offices on the line of communication with the outside world being at Bagasra, 35 miles distant from Chhodavadi, the centre of operations in the Gir itself, it was necessary to extend the private service to the rail-head at Kunkávav. Each camp received its daily delivery from, and made its daily despatch to, head-quarters. A post camel was attached to head-quarters for the conveyance of urgent messages.

(b) The total length of the lines of inter-communication with head-quarters and the several camps traversed by post runners amounted to 180 miles a day. The runners proved themselves trustworthy and reliable, and the service worked admirably.

(c) In view, however, of emergencies as diverse as they were sudden, special messengers in addition to the regular post often had to be used. After dark never less than two together could be sent; but, even so, there was always an element of uncertainty in getting a message through at night owing to real or imaginary lions in the path.

(d) Letters sent by ordinary post could generally be relied on to reach me ultimately through the Dead Letter Office, Bombay; but since the time taken in transit was anything up to seven weeks, they were sometimes of prehistoric interest when received.

(e) Though Bagasra was the nearest village on the transit line at which a telegram could be received or despatched, Dhari, off the transit line, but some ten miles nearer the Gir boasted a telegraph office. Every receipt or despatch at Dhari required a special messenger; but, when even hours were of importance, the use of this office effected a considerable saving of time.

SECTION XII.—CORRESPONDENCE AND RECORDS.

95. (a) The volume of correspondence may at the first glance appear enormous in view of the limited period occupied by the active operations. But it is less surprising when it is realised—

(i) that owing to delay in my deputation the arrears of organising work which had to be undertaken were enormous;

(ii) that apart from the six transit and two temporary camps on the line, the Stores and the grass operations, there were 16 separate cattle camps in the Gir alone; and

(iii) that not a single individual of the clerical staff had ever had anything to do with cattle or grass work before, and all required the fullest instructions possible in writing.

(b) In view of these considerations it is remarkable that the files are not heavier. They were kept to their present dimensions only—

(i) by the mass of instructions given verbally and by practical demonstration;

(ii) by the exclusion from correspondence of work in connection with the practical side of the sinking of wells and building of drinking troughs, the building of cattle enclosures and accommodation for the staff, the branding of the cattle and the system of identification, the systematic stacking of the grass, the pegging out of the stacks, and so on;

(iii) by the inability of the kárkúns to keep correctly any but the simplest statistical reports; and

(iv) the naive request of the Local Officer in Charge not to write to him in connection with matters affecting the State, but to send him verbal messages or to arrange to confer with him instead. With a view to promoting and maintaining harmonious relations with the State officials this request was acceded to as far as possible, but it introduced an element of uncertainty which I had occasion to regret.

(c) In the Gir nearly 90 per cent. of correspondence alone, and the whole of the camp records were in the vernacular, owing to the fact that none of the 39 kárkúns at one time or another in charge of cattle camps, grass work, etc., could either write, speak or understand English. For the month of March alone the Vernacular Register shows 1,215 numbers, and the English Register 78 inward, and 82 outward numbers. For the seven months from December to June inclusive the total numbers are English inward 358 and outward 478; while the vernacular numbers run to upwards of 5,000. In addition to this there is a large volume of demi-official correspondence, and huge files of cattle papers (registers, casualty returns, train papers, etc.) muster rolls, pay bills and accounts of cash, grass, cotton-seed, etc. The cash accounts only, comprising an expenditure on the spot of a lách and a quarter of rupees, show the submission of no less than 3,000 vouchers. The weight of the records of the offices at the Gir end of the railway alone is nearly 3 cwt.

(d) During the same period (December to June) 302 telegrams were sent and 170 received.

(e) Bulky the files may appear, but it is no small satisfaction to feel that every figure and every fact now presented can be checked and substantiated by reference to the actual records of the operations kept at the time and on the spot.

SECTION XIII.—EXPENDITURE AND ACCOUNTS.

96. (a) Operations which, as far as the Gir end of the railway was concerned, had begun with the expenditure of little that could not be incorporated in a petty cash account, speedily developed proportions requiring an elaborate system of account keeping. With headquarters at Chhodavadi, and the impossibility of keeping large sums in cash in a grass-built hut in the jungle, it was absolutely necessary to establish an agency for the receipt, exchange and safe custody of remittances from Ahmedabad. There were daily and hourly demands for cash 50 miles away and at every office on the line of March from the railway. Thus it was necessary for every kárkún in charge of a camp, where miscellaneous expenses had to be incurred in anticipation and moneys disbursed to payees on the spot, to be supplied with funds in advance and to keep an entirely separate cash account. Consequently nine separate sub-treasuries were necessary.

(b) Bagasra was the one "town" with which it was practicable to keep in regular communication, and where cash to the amount required was to be found. Unfortunately a system of direct exchange of "hundis" (the only practicable means of receiving remittances from Ahmedabad) was impossible owing to the fact that Bagasra had no direct commercial communication with Bombay, on which place alone it was practicable to get "hundis" drawn to the required amounts. This difficulty was, however, solved by the enterprize of one of Bagasra's leading inhabitants. He undertook, as my agent, to receive "hundis" and to arrange for their exchange in Bombay, advancing cash in the meanwhile to the amount of their face value and holding it to my demand. He also frequently advanced on his own account, and without any security, large sums in cash when money was urgently needed and remittances from Gujarát were unavoidably delayed. For this he was paid a modest commission amounting to $\frac{3}{4}$ per cent. on the face value of the hundis tendered. Large sums in cash were required regularly in the Gir itself, the pay bills alone of the staff for March amounting to over Rs. 7,000, and the conveyance of treasure to the Gir, and more still its safe keeping there pending disbursement (necessarily a slow process) was never free from hazard especially during a famine year. The arrangement above described saved an infinity of trouble, and continual anxiety for the safety of the large sums of money handled; and it was the only way of transacting business which could be conducted on a "cash down" basis alone.

(c) As regards the keeping of accounts the situation was not simplified by the fact that none of the kárkúns, who had to be placed in charge of the nine sub-treasuries, had any previous experience in cash account keeping, except on a small scale and by the usual country methods which would have rendered impossible all rapid, and at the same time efficient, checking. A system of account keeping in vernacular, but based on Western methods and providing from day to day a complete record of every detail of receipt and expenditure, was therefore inaugurated. The kárkúns without exception rapidly mastered it. And, although the office of an Accountant General might perhaps have found points to cavil at, it proved admirably suited to the peculiar circumstances.

(d) The total cost of the operations at the Gir end of the railway, excluding that of the special trains for the returning cattle, and items included in the State's bill was Rs. 1,23,782. The net cost after crediting Rs. 7,577 realized by charitable subscriptions and the sale of surplus grass, etc., was Rs. 1,16,205. The total cost of the operations at the home end of the railway, including that of all the cattle-trains and the State's bill, was Rs. 1,63,089. The net cost at the home end of the railway after crediting Rs. 1,835 realised by sale of grass, etc., was Rs. 1,61,254. The grand total at both ends was Rs. 2,86,871. Thus the 6,344 privately owned cattle (with 188 newly born calves) were returned to their owners, and the 1,181 charity cattle (with 11 newly born calves) were maintained until their distribution to the donees, at a net cost of Rs. 2,77,459. Of this, Rs. 39,426 is debitable to the "charity cattle alone, leaving Rs. 2,38,033 for the privately owned cattle, which amounts to Rs. 18-4-7 per head of those deported.

PART III.—THE CHARITY CATTLE.

97. The cattle referred to in the report as "charity" cattle were purchased by the Tálukdári Settlement Officer with subscriptions received from the Committee of the Bombay Central Famine Relief Fund and others for distribution free of cost (except the actual expenses incurred in keeping them) to deserving cultivators and others who had been enterprising enough to send valuable cattle to the Gir and who might have the misfortune to lose them there. The cost of maintenance has been borne by Government, and will be recovered from the recipients as "takávi" in the ordinary instalments.

98. The famine conditions prevailing made it possible to buy cattle at rates so low that, with the advent of the rains, they would be worth two or three times the purchase price or even more. Subscriptions amounting to Rs. 30,553 in all (Rs. 25,000 from the Bombay Central Famine Relief Fund) were received, with which 1,337 cattle in Ahmedabad and elsewhere were purchased. Of these, 709 bought in March (including 34 obtained in villages on the line of march from the railway) were sent to the Gir. The rest were purchased later on, as the Bombay Famine Relief Fund was not able to raise subscriptions immediately. By the time purchase was complete it had become certain that the Junágadh State would be unable to deliver its grass according to engagement. It was deemed inadvisable,

therefore, to send the later batch to the Gir; and they were kept instead in a special cattle camp on the banks of the Sábarmati river opposite Ahmedabad City. Twelve bulls were included in the herds, so that cows might be covered and their value thereby be enhanced. Efforts were made also to buy up cattle from the large herds belonging to Sindhis and others at various places in the Gir. But in spite, or perhaps because, of the enormous losses they had already suffered, they were reluctant to part with any animals which were still in fair condition. None, consequently, were purchased in the Gir.

99. The first 675 cattle purchased were chosen specially by veterinary officers as the pick of some 10,000 offered for selection. The condition, to which cattle generally had been reduced by the fodder famine, may be inferred from the fact that of the above 675 selected animals, 54 did not live to reach the Gir.

100. In the Gir the "charity" cattle were tended in precisely the same manner as the cattle of private owners, but were kept entirely separate—all the buffaloes in one camp, Abut Chhinchhri, and all the cows in another, Jamvali, specially established for them. They, like the other cattle, would have been removed from the Gir earlier and before it became unhealthy, or would never have been brought actually into the Gir itself, but for the inability of the Junágadh State to deliver grass in time to feed them in the plains between the Gir and the railway.

101. The buffaloes were of necessity kept in the Gir, in a tract which had the makings of an ideal camp, but where unfortunately the grazing was rapidly exhausted by unauthorised cattle which the State was unable to eject from the Ahmedabad reserve. Unfortunately also, the issue of cut grass to these cattle was delayed by the failure of the State to deliver it for more than a fortnight after it was brought to the camp. The cows had to be kept at Jamvali, in a tract where the grazing, such as it was in April, was ample, but which was the most rugged part of the whole grazing reserve. Under these circumstances the mortality was necessarily far heavier than it would otherwise have been.

102. As soon as a sufficient supply of grass in the plains was assured, the buffaloes were moved out to a special camp at Bhutnath (Bagasra), and kept there during the whole of May and until their despatch to Gujarát, which was completed on the 26th June.

103. Another special camp arranged for the cows at Mevasa in the sub-Gir plains could not be utilised till later, owing to the State's inability to deliver the grass promised there. There was no cut grass available for Jamvali camp, and the State's kind offer to cut grass in April and deliver it there was declined, as grass cut at this late period is entirely devoid of nutritive value. Towards the end of April, therefore, the cows were transferred from Jamvali to Abut Chhinchhri then vacated by the buffaloes. There they remained till towards the middle of May, when the stock of cut grass was exhausted. By that time the State had delivered sufficient grass at their camp in the sub-Gir, and they were moved to Mevasa, where they were kept till their return to Gujarát with the buffaloes in June.

104. Some very significant conclusions emerge from the facts and figures recorded in connection with these "charity" cattle. The cows were kept during the latter part of March and for the whole of April at Jamvali camp, where for grazing they depended entirely on the standing grass. At every other camp, at most of them from the beginning, at all from the middle of April, a liberal and, in many cases, an unlimited supply of cut grass was being issued. Yet the mortality at Jamvali during April was lower than that of any other camp in the Gir. The inference is that, if there had been sufficient grazing at the other camps as there was at Jamvali, the whole expensive supply of cut grass at the grazing camps might have been dispensed with, not only without detriment to the cattle but with positive benefit to them. The grazing, if there were enough of it within reasonable distance, apparently afforded as much nourishment as the cut grass even at this late date.

105. But the most significant fact is the sudden decrease in the rate of mortality from the time the cattle were moved out of the Gir to the plains. The registers exhibit a fall of 66 per cent. At this same rate some 1,200 to 1,500 more cattle might have been saved, if the failure of the Junágadh State to deliver grass in time had not prevented the cattle being moved out of the Gir to the plains in March and April.

106. Just before the return to Gujarát of the "charity" cattle a disastrous calamity occurred. On the very night preceding the departure of the first train-load from Kunkávav a perfect tempest of rain and wind, followed by intermittent storms during the next 24 hours broke over the locality, causing sudden and almost unprecedented floods and an immense amount of damage and distress to man and beast in the surrounding villages. It was the irony of fate that cattle saved at so much trouble and expense from the effects of a failure of the rains, should, on the eve of their return to Gujarát, have been victims to rain, storm and flood.

107. As a matter of ordinary precaution prompted by the mere proximity of the rains the buffaloes at Bhutnath camp had been moved from their enclosure on the bank of the river to higher ground. But for this precaution they must have been swept away in a body. As it was, the tale of disaster was not complete till 26 valuable cattle had succumbed directly or indirectly to the exposure from which the most strenuous efforts failed to save them. Men were working all night, all the next day, and far into the following night again, digging them out of the mud in which they were embedded. The despatch of the last train was postponed

for two days, in order to nurse the more stricken animals and to give them time to recover before the ordeal of the railway journey. The departure of the final special on the 26th June marked the close of the active operations at the Gir end of the railway.

108. The "charity" cattle from the Gir were divided and allotted to the Viramgám and Dhandhuka talukas in proportion to the losses sustained in the Gir amongst the cattle of these talukas respectively. They were railed accordingly to Viramgám and Ranpur (for the Dhandhuka taluka) where they were kept in specially prepared camps pending distribution. The Ahmedabad "charity" cattle were allotted in the same manner to the Dholka and Sánand talukas.

109. It was necessary to keep the cattle at Ahmedabad, Viramgám and Ranpur, respectively, for some three weeks longer than was anticipated, owing to the late inception of the monsoon. The cost of maintenance was increased on this account by Rs. 6 to Rs. 7 per head.

110. Provisional lists of donees were drawn up by the Mámlatdárs and the Deputy Managers of the Tálukdári Department in consultation, each for their own taluka. All claims were minutely scrutinised, special consideration being given to the circumstances of the candidates and the value of the cattle they had lost.

111. As soon as the rains had assured a sufficient fodder crop to keep the cattle, dates were arranged for their distribution in the respective talukas. The Gir-returned cattle apportioned to the Viramgám and Dhandhuka talukas were distributed first at Viramgám and Ranpur respectively. The cattle in camp at Ahmedabad apportioned to the Dholka and Sánand talukas were marched to Dholka and Sánand for distribution, which was completed on the 24th July, the date which marks the close of the active part of the cattle operations as a whole.

112. Very numerous applications for "charity" cattle were received, which, owing to the limited number available for distribution, it was unfortunately impossible to grant. The cattle, on the whole and in consideration of the famine through which they had been successfully carried, were in excellent condition owing largely to the liberal allowance of concentrated food given in addition to their grass.

113. 1,337 cattle in all, comprising 49 bullocks, 439 buffaloes, 12 bulls and 837 cows were purchased at a total cost of Rs. 30,500, i. e., Rs. 23 per head on the average. 1,182 in all (excluding 11 calves born in the Gir) representing 88.4 per cent. were saved to be distributed in accordance with the pre-arranged scheme.

114. The net result of the contributions of the Bombay Central Famine Relief Fund and other generous donors (whose donations are recorded in the margin), supplemented by the assistance of Government in maintaining the cattle prior to distribution, is that 1,182 cattle, which otherwise would have had a very slender chance of survival, were saved to the poorer agriculturists, of the district. These cattle, purchased at an average of	
	Rs.
The Bombay Central Famine Relief Fund... ..	25,000
Sardár Sir Chinubhai Madhavlal	1,200
Seth Mansukhbhai Bhagubhai and Seth Jamnabhai Bhagubhai .	1,200
Sardár Seth Lalbhai Dalpatbhai, Seth Manibhai Dalpatbhai	
and Seth Jagabhai Dalpatbhai	1,000
Seth Ambalal Sarabhai	1,000
Khán Bahádúr Sardár Rustamji Jehangirji	600
Honourable Mr. Navrojee Pestonji Vakil... ..	500
Miscellaneous subscriptions	53
Total	<u>30,553</u>

on the average Rs. 70 per head. The recipients have to pay, not immediately but in ordinary "takávi" instalments, Rs. 29 per head for the cost of maintenance after purchase.

115. Despite the unexpected difficulties encountered, the charitable donors could hardly have found a more profitable investment for their donation. For Rs. 30,553 contributed, cattle to the value of more than Rs. 80,000 reached the poorest and most deserving cultivators, who themselves will have to pay to Government a sum of Rs. 29 only by easy instalments.

116. A scheme under which every hundred rupees of charity money invested is converted, with the help of Government, into two to three hundred rupees worth of cattle in the course of a few months, offers an investment for charity funds that is enormously profitable without being speculative. It has the additional advantage of avoiding the danger of pauperising those whom it benefits, since the beneficiaries have ultimately to contribute as cost of upkeep about half the value of the cattle received.

Purchase money	Rs.
Cost of maintenance	30,500
	<u>39,500</u>
Total	70,000
Present value of cattle	80,000
Profit	<u>10,000</u>

117. The estimated profit on the sum of Rs. 30,500 invested in the scheme was, even on the present occasion, Rs. 10,000 in round figures. This sum, realised in a period of 4 months only, represents a profit of 100 per cent. per annum.

PART IV.—CONCLUDING REMARKS AND RECOMMENDATIONS.

118. *General recommendations.*—(a) The following remarks and recommendations, read in conjunction with the "General Information and Instructions for Kárkúns", Annexure I are intended to summarise the experience gained in the Gir for the convenience of officers who at any future time may have to organise the deportation of cattle on a large scale. It is not attempted to argue from the case of the Gir operations to cattle deportation universally. The recommendations relate specifically to deportation from the Ahmedabad District to the Gir; but, *mutatis mutandis*, they may be found valuable in connection with deportation under similar conditions to similar localities. Throughout the report comparatively small notice has been taken of the operations at the home end of the railway, since, with all the resources of civilization immediately at hand, emergencies may be met and difficulties surmounted with comparative ease.

(b) From my own, perhaps unique, experience, I see no reason why at least 80 per cent., and perhaps 90 per cent., of cattle deported should not be saved, if selection of suitable animals proves feasible, and if timely arrangements can be made and adhered to for the provision of good water, good grazing, good cut-grass and supplementary fodder in the localities to which deportation is directed.

(c) The first condition of success is to begin early. The area to which deportation is to take place should be thoroughly explored in September, and the nucleus of the staff (apart from the herdsmen) should be engaged and deported to the scene of operations during the same month, in order that they may accustom themselves to strange conditions and receive preliminary instructions as to their duties.

(d) Orders for at least a large portion of the cut grass required should be placed by the middle of September at the latest, so that cutting may begin before the end of the month. Grass cut in September has twice the nutritive value of grass cut in October, and October-cut grass has twice the value of that cut in November. Grass cut later than November must necessarily be inferior.

(e) Deportation should begin immediately preparations for the reception of the cattle are complete, so that they may arrive before they have lost condition entirely, and before the grazing has begun to deteriorate. Daily specials on a metre gauge railway will carry over 20,000 head in three months, October, November and December, and deportation should not continue later than December.

(f) The initial difficulty is to persuade owners to let their cattle go before they are seriously emaciated. This may, to some extent, be overcome by early announcement that "takávi" grass will be given first to those who have deported part of their cattle. This is both politic and fair. It is sound policy to relieve the pressure on the local supply of fodder by stimulating deportation, and it is only fair that those who show the greatest readiness to help themselves by enterprise in deportation should have a prior claim on the assistance of Government in the shape of "takávi". It is most important to enlist the active assistance of large land-owners in persuading tenants to deport cattle.

(g) The heat during the past hot weather was abnormal throughout the Presidency; and in the Gir it was intensified by the rock with which the locality abounds. But it may be accepted that, even in a normal year, all cattle, and more especially buffaloes, should be removed from the Gir by the end of March, and then kept in camps in the plains till their return to Gujarát.

DETAILED RECOMMENDATIONS.

119. *The Staff.*—(a) It is absolutely necessary, as was done in the present case, to have an officer on the spot in supreme control at the Gir end of the railway, subject to the authority controlling the operations as a whole, but free to act on his own initiative in all matters calling for prompt decision and immediate action.

(b) It is essential for the officer in local charge to be conversant with the language of his own subordinate staff, and of the local officials and inhabitants, if any. It is desirable that he should be familiar with the districts from and to which the deportation is taking place.

(c) Besides his office staff, English and vernacular proportionate to the work in hand, the officer in local charge requires at least one thoroughly practical and reliable assistant, capable of acting as his deputy as necessity may arise.

(d) Too much importance cannot be attached to the early and permanent appointment of a competent and entirely reliable veterinary staff, fully equipped for all ordinary emergencies. Difficulties of communication and transport demand that each veterinary officer should be equipped with his own dispensary, and thus be able to work independently.

(e) A kárkún is required to hold immediate charge of each cattle camp. Practical resourceful men, physically robust, will cost more, but will save their cost many times over by the economies they will effect and the cattle they will save, in short, by the efficient conduct of their camps.

(f) With a large number of camps, one or two spare kárkúns should always be available to act in case of sudden illness or other emergency.

(g) A head herdsman, a reliable professional man, to superintend under his kárkún the "out-door" work of the camp, literate if possible, but capable at least of counting his cattle accurately and controlling his herdsmen properly, is an invaluable assistant to the kárkún.

(h) None but Bharwads, Rabaris, others who actually have personal experience of cattle-tending on a large scale, and the actual owners of cattle or their representatives should be enrolled as herdsmen. Owners who cannot accompany their cattle should, as far as possible, choose herdsmen from their own villages and hold them personally responsible for the cattle they place in their charge. This need not debar them from receiving remuneration from Government. The mere hiring is to be avoided.

(j) With strange cattle under strange conditions in a strange country at least six herds men are required on the average to every hundred head. More, to provide against desertions will not be superfluous to begin with. No limit need be placed if the owners of the cattle are themselves their herdsmen. As the forest tracts become worn and the cattle begin to know their way about, as both man and beast settle down in their novel surroundings, the above number may with safety be reduced to 5 or even 4. This does not include herdsmen for cattle requiring special attendance.

(k) All other classes of employees, permanent as well as temporary, may, with a view to economy, be engaged locally if reliable men can be found. In this the assistance of the local officials should be of the greatest value. But, if good men with merely the usual domestic experience of cattle, and especially if they belong to the villages from which the cattle are sent, can be obtained in the home districts, they may with advantage be engaged as cattle-guards, grass-guards, etc., ready to act as herdsmen in case of emergency.

(l) Well-diggers for sinking and deepening wells, masons for building and repairing drinking troughs, carpenters for making and repairing "kos" structures, cattle enclosure, gates, etc., a "Mochi" for repairing the leather "kos", labourers for miscellaneous work and "Dheds" are indispensable and may be engaged locally.

(m) There is no necessity for anything more elaborate in the way of accommodation than can be made with the material on the spot. The most stringent precautions against fire are essential.

(n) The wholesale purchase of provisions, etc., officially by contract, and their retail by kárkúns placed in charge of regular shops in conjunction with the main stores, would be a more satisfactory way of meeting a very real difficulty than relying on "Banias" who have no interests but their own to consider. A settlement equal in population to a large-sized village is established, and the more self-contained and independent of casual outside agency it can be made, the better it will be in every way.

(o) With proper precautions as regards sanitation, and the provision of a few common medicines, etc., to each camp the general health of the staff in the Gir should cause no anxiety.

120. *The cattle.*—(a) As many owners as possible or persons with a private interest in their well-being should accompany the cattle. Herdsmen with cattle of their own, or in which they have a personal interest, should not be placed in charge of other cattle in which they have no interest if this can be avoided.

(b) Preparations for cattle, which *may* come, must necessarily be made in advance, and for the officer in charge locally to know definitely the number of cattle to expect will be a saving of time, trouble and money.

(c) The proper ventilation of cattle waggons is of the first importance, even if the cattle are not to travel during the day. The iron-built, closed-in waggon provided on this occasion was unsuitable. The upper as well as the lower halves of the doors had to be kept closed to prevent the cattle jumping out, and in the hot weather the heat and stench were intolerable. The utility for cattle of the usual cross-bars for horses, even if fitted, is doubtful. The open-side pattern of wagon approaches the other extreme, when railing cattle by night in the cold weather. It is a simple matter to arrange for removeable iron bars inside the upper halves of the door, which can then be left open at will while the waggon takes its full complement of cattle in safety. The drop-flap pattern of door is preferable to the side-hinge. It provides a ready connection between platform and wagon, and so saves risk of accident and loss of time when entraining and detraining cattle. The wooden waggon properly cleaned is preferable to the iron both in the hot and the cold weather.

(d) The Railway should be able to pass a cattle special through at least as fast as an ordinary passenger train, since it does not have to stop at all intermediate stations. This would save cattle having to travel in the heat of the day even from the most distant station, Bhankoda, and no arrangements for feeding and watering *en route* would be necessary.

(e) Either entraining or detraining cattle at night under ordinary circumstances is a difficult and dangerous operation. Losses and accidents are almost inevitable. Ordinarily, entrainment should be completed before dark, and detraining begun at day-break.

(f) With cattle in fair condition, there is no reason why they should not march 15 miles or so a day for a few consecutive days even in the hot weather. Arrangements for them to cover half the distance in the morning, to water, feed and rest at noon, and to finish their day's march in the evening are all that is necessary.

(g) In order to provide for identification and registration, the systematic marking of the cattle is absolutely necessary. With cattle being collected from various districts and despatched from various railway stations the adoption of any system of permanent marking before despatch presents many obstacles. Systematic marking at the detraining station by an officer specially deputed for the purpose will be found the most, if not the only, satisfactory method. Time and trouble spent will be amply repaid. Branding is the most satisfactory means of marking the cattle. Paint marks are frequently illegible to all but the marker, and the constant renewal necessary is a source of endless trouble; but tar, or white paint for buffaloes, may be used before the cattle are branded. An animal can be marked with a brand in any one of twenty different places, the precise position of each mark carrying its own significance. But branding irons are cheap, and it would be infinitely more satisfactory to brand all animals in the same place using twenty different brand marks.

(h) A letter to indicate a táluka or any arbitrary division of a táluka, with the serial number of the animal in the general registers as belonging to that táluka or division, the brands being placed thus, D-673, on the left shoulder of the animal, will be found a simple and most effective method of official marking for identification. Four-inch brands are unnecessarily large. They are difficult to apply properly, especially to small cattle, and cause the animals unnecessary pain. $2\frac{1}{4}$ " brands for the index letter, and 2" (square) for figures, are large enough for general use.

(j) None but cattle of some value and in at least fair condition should be deported ✓ Owners who accompany their own animals may be trusted to take none which are not worth saving; and it only remains to be seen that their condition is not so poor as to handicap them too seriously from the beginning. Other cattle offered should be subjected to individual scrutiny by veterinary officers at the entraining stations, and the valueless should be rejected. Animals of less than two or more than eight years of age should, generally speaking, be rejected. But hard-and-fast age-limits are neither necessary nor desirable.

(k) Security from the outbreak of infectious or contagious disease cannot be assured. But, with standing orders for the immediate isolation of suspected cases, and with preparations made in advance for fighting an outbreak, should one occur, not only may the spread of infection be controlled but the disease itself may be completely eradicated.

(l) Concentrated feeding in the winter, even with good and plentiful grazing available, is to be recommended. The food chosen, failing any local fodder of special value, should be, as far as practicable, what the cattle themselves are used to, and the allowance should be regulated as occasion may require. Individual feeding is desirable to ensure each animal its full share. Sick or debilitated cattle must be fed individually. A regular supply of specially strengthening foods for sick cattle, for cows on calving, etc., must be kept in stock.

(m) The rearing of calves by hand by others than their owners is precarious. Goats may be used with complete success.

(n) A plentiful supply of rock salt should be kept inside the enclosures, and ordinary salt mixed with cotton-seed or sprinkled in solution over the cut grass should be fed to the cattle as necessary.

(o) With the cattle branded as recommended above, their muster and the formation of train-loads for the return present no difficulty. For convenience sake all cattle belonging to one village should be returned at one and the same time, whether they arrived together or not.

(p) The system of branding recommended precludes dispute at the time of distribution to owners.

121. *The Camps in the Gir.*—(a) Grazing camps should be limited to about 500 head of cattle each. Camps of 1,000 head rapidly consume the grazing within easy reach, and cattle have to travel long distances to and from the grazing grounds. Moreover, with any but an exceptionally good kárkún, a camp of more than 500 head is liable to become unwieldy in the Gir. Either Bharthi or Dungarphadi camp should be dropped altogether, the former if a buffalo camp is required; if not, the latter.

(b) The staffs' quarters, office, store and rest-room should be outside, and not adjoining, the cattle enclosures. With the inflammable material of which all must be built there is an ever-present danger of fire; and a stampede from any cause amongst the cattle at night may have the most serious consequences, if the men's quarters adjoin the enclosure.

(c) Thirty square feet per head on the average is sufficient space for the cattle in an enclosure. In cold weather they may be kept closer. The enclosure fences require to be well lined with thorns on the inside as well as the outside.

(d) The enclosures should be so planned as to take advantage of natural shade if available. This applies especially to the sick cattle sections and the isolation enclosures, which cattle may

have to occupy throughout the day. High ground is preferable to low for the enclosures, especially during the winter, and clear open spaces are required about the entrances.

(e) The isolation enclosure should be on that side of the camp towards which the prevailing wind blows, and not less than 150 yards from the main enclosure. If circumstances allow it may with advantage be twice as far. But the isolated cattle, unless the number is too large to allow it, must be watered by hand, and its distance from the well must not be overlooked.

(f) Cattle in charge of their owners, etc., as distinct from those in charge of hired herdsmen, should be kept, if not in entirely separate camps, at least in a separate part of the same camp. The cattle in one camp should belong to one neighbourhood only.

(g) Buffaloes and cows should be sent separate if possible; if not so sent, they should be separated as far as practicable after arrival and kept in separate camps. An owner accompanying his own cattle need not be required to keep his buffaloes in one camp and his cows in another. Natural water, shade and relative levelness of the grazing grounds should be the chief considerations in the choice of the buffalo camps.

(h) The cattle need protection from the cold and damp of the nights during the winter. Owners should bring with them their own "jhuls," or should be provided with rough covers made from bags to cover their cattle with at night. For other cattle roofed shelter should be provided, if possible.

(j) Trees providing natural shade in the day time do not add appreciably to the warmth of an enclosure at night, except when there is an absence of wind. Proper roofing is impracticable, and branches of trees, grass, etc., become dry in a few days and dangerously inflammable. Bagging can be used for roofing, and can be so arranged as to be easily removable at intervals of a few days for the enclosures to obtain the benefit of the sanitary effect of the sunshine.

(k) As regards grazing and watering routine generally, owners may be trusted to do what is best for their own cattle; but they must at the same time be subject to the general methodical conduct of a camp. They, as well as the hired herdsmen, must be compelled to graze in the directions indicated by the camp kárkún. They should never take the cattle further than necessary from their camp, and wanton destruction of grazing by allowing cattle to trample it down should be prevented. When cattle of their own accord begin to seek shade on the grazing grounds it is time to bring them back to camp. Cattle may be grazed at night in the hot weather, if properly herded, with little danger of their straying or being attacked by wild beasts.

(l) If in a buffalo camp the natural water-supply should fail completely, a regular shower bath at the drinking trough in the afternoon and an artificial wallow made with the well water will give considerable relief.

(m) The night watchfires should be kept burning *outside* the cattle enclosure, with a stock of small wood at each ready to make a bright blaze at any moment on the approach of wild beasts.

(n) Clear spaces with plenty of shade are required in the vicinity of the wells. The paths leading up and down steep inclines will need frequent repairs.

(o) The cut grass, if any, should be stacked on open, elevated spaces, the stacks being widely separated and ringed with regular fire lines, if necessary.

(p) Special labour should be employed to clean out the cattle enclosures and to preserve the general cleanliness of the camp. Disinfectants should be supplied to the camps in practically unlimited quantities, and their use encouraged by every means. Ordinary lime for the cattle enclosures and "phenyle" for general use are effective, easy to use and cheap.

(q) The "Dheds" engaged to remove and skin carcasses and preserve hides should be under the orders of the camp kárkún. The State or the State's lessee, if the "Dheds" are employed by either, should be asked to remit their pay to the officer in local charge for disbursement, and to authorise him to consider them as members of his own staff. Unless this is done, the camps cannot be kept in a sanitary condition. The carcasses of cattle should be buried or burnt systematically. The danger of the spread of disease is increased enormously by the scattering broadcast of the bones, flesh, etc., of diseased carcasses by animals and birds. The "Dheds," if they have any personal interest in the accumulation of hides, should be watched very carefully to see that they do nothing to communicate or spread the infection of any disease. They require bullocks to enable them to cope with the heavy work which falls on them in case of an epidemic.

122. *The water-supply.*—(a) A water-supply at each camp, not only sufficient for drinking purposes, but super-abundant in readiness for emergencies, is a necessity.

(b) Unless a natural water-supply comprises running water, it is liable to become foul and unfit for drinking purposes in a very short while.

(c) With the removal of the cattle to the plains in March and April, the question of the artificial water-supply becomes immensely simplified. But, even after the wells have been sunk and have produced an ample supply, regular well-diggers should be kept available to deepen them if the water should begin to fall.

(d) The usual country methods of well sinking are not sufficient when hard rock is encountered, and especially when the well is wet. Rock is to be expected sooner or later in any well sunk in the Gir. The setting up of boring plant would be a most difficult and expensive operation. Gelignite, or some other explosive not affected by water, in the hands of a blasting expert answers all requirements.

(e) "Kacha" drinking troughs are liable to serious damage at any time, and stand continually in need of repairs. With all the material (except cement) at hand the cost of rough masonry troughs is small, while their advantages are immense.

(f) The troughs should be divided into sections any one of which, independently of the others, can be filled direct from the well, or run out for cleaning or repairs, or fenced off for the use of infected cattle. Troughs should be cleaned out regularly every few days, and disinfected when they have been used by diseased cattle.

(g) Spare bullocks, ready to take the place of the regular "kos" bullocks in case of emergency should be kept available on the spot.

123. *The grazing grounds.*—(a) Having regard to the vast areas which, even if they carry grass, are inaccessible, 8 acres (on the map) per head of cattle is not too much to allow for six months' grazing unsupplemented by cut grass. An allowance of 10 acres per head, if obtainable, will provide a small but very necessary reserve in case of emergency, e. g., a forest fire. It is impossible to assure immunity from loss from such a contingency.

(b) A clearly defined area should be acquired as a grazing reserve as early as possible; and the State officials, who alone have jurisdiction, should be required to take effective measures to protect this area from encroachment by "outside" cattle and from unlicensed grass-cutters.

(c) The most stringent precautions against fire are necessary. Standing orders in detail, comprising a regular system of fire alarms and instructions for immediate action, should be issued to every camp. Every member of the staff should know exactly what is required of him in case of a fire.

124. *Grazing fees.*—As was done in the present case, arrangements should be made for the payment of grazing fees in a lump sum on the conclusion of operations, instead of in cash on the spot on the arrival of the cattle at the grazing grounds.

125. *The grass operations.*—(a) The whole question of the supply of cut grass resolves itself into two main considerations—(1) that the grass be cut by a certain date so as to preserve its nutritive qualities, and (2) that it be delivered how, when and where required.

(b) It should be stipulated definitely that no grass cut later than November should be supplied. The supplying agency should be bound to make periodical deliveries, either baled or loose, and where required, commencing and terminating by given dates.

(c) Presupposing that the cattle are to be removed to the plains in March, and that ample natural grazing has been secured, no cut grass will be required at the grazing camps except a small quantity for feeding cattle which for any reason cannot go out to graze.

(d) Fraud is practically inevitable in the delivery of loose grass by cart-men or labourers, if they are paid according to the weight of the grass they are supposed to carry; and it can only be prevented from reaching colossal proportions by the active co-operation of the agency which employs them. Opportunities for fraud will be restricted if only baled grass, which is easily weighed, is ordered for the camps in the plains after March.

(e) Pressing contractors, whether they contract for payment by bale or by weight, need constant and the closest supervision.

(f) Ten lbs. of fair quality grass per head per day on the average may be considered as the minimum on which cattle can be kept. If it is required to keep them in good condition, this must be increased considerably or supplemented by concentrated feeding.

126. *The stores.*—(a) A central depôt for the receipt and distribution of stores, etc., with a capable and absolutely reliable kárkún as storekeeper is an absolute necessity.

(b) The delivery of cotton-seed, etc., direct to the camps by the contractor places temptation in the way of both camp kárkún and contractor, renders checking difficult and complicates accounts. If efficient interior transport can be organized, delivery of everything at the stores and distribution by the storekeeper can be carried on more cheaply and is more satisfactory in every way.

127. *Law and order.*—(a) Petty offences amongst the staff can be dealt with summarily by the officer in local charge.

(b) A comparatively small, efficient force of police on the spot, with an officer in charge empowered to deal summarily with offences such as cattle stealing, is an absolute necessity. This, with the local forest staff specially invested with police jurisdiction, would be sufficient probably to maintain law and order generally.

128. *Wild animals.*—Fires round the enclosures, with at least one cattle guard to each camp armed with a gun (blank ammunition), will protect the camps from wild animals at night. While grazing, and especially at night, the cattle in each herd should be kept as close together as possible.

129. *Communications.*—With reliability and despatch, the main *desiderata*, there is no choice but to establish a private system of inter-camp communication even where, as on the line of march, the official post may be available.

130. *Correspondence and records.*—With a system of cattle camps hurriedly organized in the heart of a jungle under an untrained staff it is necessary to forego certain official niceties in the conduct of correspondence and the keeping of records. The fulness and detail of the records beyond what is absolutely necessary must depend on the ability of the staff as a whole, and the time that can be found for work which is not absolutely essential.

131. *Accounts.*—In account-keeping everything but strict accuracy coupled with facility for rapid and effective checking should be subordinated to simplicity.

132. *Conclusion.*—In this report, somewhat lengthy in itself, it has been impossible to touch on more than a fraction of the incident and episode, of supreme interest at least to those immediately concerned, of which the deportation from first to last was so surprisingly prolific. But with the foregoing remarks and recommendations the "Report on the Ahmedabad Gir Cattle Operations, 1911-12," may be brought appropriately to a close.

Ahmedabad, 31st August 1912.

L. H. BARFORD,
Special Duty Famine Officer,
Ahmedabad Gir Cattle Operations.

PART V.—APPENDICES.

ANNEXURE I.

General Information and Instructions for Kárkúns in charge of the Cattle Camps under the Special Duty Famine Officer, Ahmedabad Gir Cattle Operations.

I.—PRELIMINARY.

1. The following are the names, etc., of the several cattle camps, the figures against each showing its distance in miles from the railway :—

A.—Grazing camps in the Gir :—

Northern Circle—

1. Vaniagali, camp of arrival in, and departure from, the Gir, "transit" camp for all camps in the interior as well as a grazing camp and Veterinary Assistant's head-quarters—40.
2. Chuladi—42.
3. Jamvali—46.
4. Ambaliali—44.
5. Biliad—42.
6. Dungarphadi—45.
7. Bharthi—44.
8. Rampuri—44.

Southern Circle—

9. Chhodavadi, "transit" camp for all camps beyond, as well as a grazing camp, head-quarters of the Special Duty Famine Officer, Upri Kárkún, Veterinary Assistant, Police and Local State Officers, and Branch Stores—50.
10. Sudavo, "transit" camp for all other camps in the Southern Circle, as well as a grazing camp—46.
11. Vakumbha—49.
12. Vanka Jambura—53.
13. Banej—55.
14. Abut Chhinchhri—53.
15. Jodia—56.
16. Dabala—54.

B.—Temporary camps in the Sub-Gir :—

17. Mevasa—28.
18. Bhutnath—14.

C.—Transit camps on the line of march between the railway and the Gir :—

19. Kunkávav, camp of arrival from, and despatch for, Gujarát—the railway—1½
20. Hadala—9.
21. Bagasra, Post and Telegraph Offices, Agencies and Bazaar, 36 miles from Chhodavadi—14.
22. Bhader—22.
23. Malsika—27.
24. Dalkhanía—33.

D.—25. Sap Ncs. The stores and main grass depót—39½.

2. Every camp will be visited at frequent intervals by the Special Duty Famine Officer, also by his Upri Kárkún whose orders must be considered as coming from the Special Duty Famine Officer direct. Whenever possible, all matters requiring attention should be brought to their notice personally.

3. It must be borne in mind continually that every member of the staff from Ahmedabad is a foreigner in foreign territory. Every effort must be made to work harmoniously with and assist the local staff and employees of the Junágadh State in all matters connected with the cattle operations. They in their turn are expected by their higher officers to assist the Ahmedabad staff in every possible way, and all cause of friction should be carefully avoided. Any matter of genuine complaint should be reported at once to the Special Duty Famine Officer.

II.—GRAZING CAMPS

.—Staff.

The staff attached to each camp consists of:—

- (a) a kárkún in charge with his patavala;
- (b) a head herdsman;
- (c) the herdsmen individually in charge of the cattle;
- (d) a "kos" driver;
- (e) cattle guards;
- (g) labourers;
- (h) "Dheds".

2. (a) The kárkún is in immediate charge of the whole camp, both "outdoor" and "office" work, and his patavala works under him as usual. No kárkún is authorised to absent himself from his camp without permission except in case of emergency.

(b) The head herdsman works immediately under the kárkún, and is responsible under him for the "outdoor" work of the camp. His principal duties are to supervise the grazing and the watering of the cattle, the issue of cotton-seed, oil-cake, cut-grass, etc., and the sanitation of the camp, and to control the herdsmen generally.

(c) The herdsmen are immediately responsible for the particular cattle of which they are placed in charge, and for the cleanliness of their respective enclosures. It is their duty to report to the kárkún immediately any sickness, loss or death amongst their cattle. At least four herdsmen are required on the average to every hundred head of cattle.

(d) It is the duty of the "kos" driver to keep an ample supply of clean water in his trough, and to report to the kárkún immediately any actual or anticipated shortage of water in his well.

(e) The principal duty of the cattle guards is to watch the camp, and to keep the fires burning at night. Of these guards one or more at each camp is armed with gun and ammunition. An armed guard is personally responsible for the cleaning and good order of his gun, and should present it invariably for the inspection of the Special Duty Famine Officer when he visits the camp. It is also the duty of the cattle-guards to act as guides to the herdsmen to grazing or on transfer to another camp, and to act as messengers as necessity may arise. Under no circumstances should less than two guards be present at a camp at night.

(f) The principal duties of the grass guards are to guard the grass stacks both day and night, and to keep their fire lines clear, to help the kárkún in the weighment when the grass is being delivered, and in the issue later on. The chief danger to be guarded against, especially during the hot weather, is that of fire, and of secondary importance to this only is the guarding of the grass against depredation by cattle and against theft. Any grass guard found smoking or allowing smoking or a fire of any description in the vicinity of his grass is liable to immediate dismissal.

(g) The "Dheds", though actually supplied by the lessee of the right to the hides, or the horns and bones, as the case may be, of dead cattle, are paid by the Special Duty Famine Officer direct, and are subordinate to the kárkún in charge. It is their primary duty to remove immediately the carcasses of cattle, and to keep the hides at a distance from the camp in the opposite direction to that from which the prevailing wind blows. Carcasses must be buried or burnt, if necessary. The carcasses of animals dying on or near roads or paths must be moved to a distance and out of sight. A pair of bullocks for the use of the "Dheds" is attached to each camp, or can be had on application to an adjoining camp. It must be thoroughly understood and carefully borne in mind that the "Dheds" have a very personal interest in the accumulation of hides and bones. The whole staff must be continually and keenly on the alert to see that nothing is done by them to communicate or spread the infection of any disease, or otherwise to cause sickness and death amongst the cattle. The cattle should never be allowed to graze or stray in the vicinity of the "Dhedwada".

(h) The chief duties of the camp labourers are to clean out the drinking troughs and, when necessary, the cattle enclosures, to feed and water sick cattle, to keep roads, etc., in good order and enclosures fences, etc., in repair. They will also cut fire-wood, help with the weighment, etc., of stores, and perform all the ordinary labour of the camp. Trustworthy men should be used as messengers instead of cattle guards, when practicable.

3. The kárkún is authorised in case of emergency to employ suitable candidates, if obtainable, in anticipation of sanction, as herdsmen, cattle guards, grass guards, labourers, or "Dheds"; but in every case he must submit his report immediately to the Special Duty Famine Officer.

4. The kárkún is authorized ordinarily to grant to his immediate subordinates leave of absence for not more than two days at a time, and then only if he is satisfied that the services of an applicant can be spared. In case of emergency he must use his own discretion, reporting his action immediately to the Special Duty Famine Officer.

5. Absence without leave, desertions, etc., should be reported immediately.

6. In addition to the above permanent staff at each camp, well-diggers for deepening wells, masons for repairing drinking troughs, etc., a "Mochi" for repairing the "kos", carpenters for repairing the "kos" structures, etc., and labourers for general work are attached to the Special Duty Famine Officer's head-quarters at Chhodavadi. They will visit each camp periodically or as necessary, and their services should be applied for as required. Each party or individual will carry its own, or his own, diary which should be filled in and signed by the kárkúns showing the time of arrival at their camps respectively, the work performed and the time of departure. The kárkún, at whichever camp the week (7th, 15th, 22nd and last day of the month) may be completed, should submit such diaries to the Special Duty Famine Officer.

2.—Accommodation.

1. At each camp accommodation is provided for the kárkún and his patavala, and for the head herdsman, a store for storing cotton-seed, etc., and a rest-room for the use of visiting officers. The kárkún will be held personally responsible that the rest-room is always kept clean and in order, and that it is used by nobody except those for whom it is intended.

2. Herdsmen and other employees of the camp will provide themselves with such accommodation as they need.

3. All huts and shelters constructed should be built and placed in an ordinary manner *outside* and *not* adjoining the cattle enclosures, and, with their compounds, should be kept clean at all times.

3.—Provisions, etc.

1. All provisions, etc., ordinarily required can be brought from the shops temporarily established at Sap Nes and Chhodavadi. A regular "nirakh" rate is fixed from time to time; and complaints as to the quality, etc., of anything supplied should be made to the Special Duty Famine Officer. A sample of any article complained of should always accompany a complaint.

2. Opium can be obtained only by application in writing to the Special Duty Famine Officer.

4.—Illness, etc., amongst the staff.

Quinine, purgative medicines, etc. are supplied to each camp to be administered by the kárkún as required. Anything more than a merely temporary indisposition or a slight accident such as can be dealt with at the camp should be reported to the Special Duty Famine Officer at once, the kárkún using his own discretion in case of emergency.

5.—Office and records.

1. Each kárkún is supplied from the Stores, Sap Nes, with everything necessary for his office.

2. The following permanent files and records are to be kept at each camp:—

- (a) Inward and Outward Registers.
- (b) Muster Roll of the whole staff in the usual form, each class of employee to be shown separately.
- (c) The following pay bills of the staff in the form prescribed:—

- 1. Kárkúns on the permanent establishment of the Tálukdári Settlement Officer, to submit their own and their patavala's bills as usual. Those being paid by the Special Duty Famine Officer, whether from Ahmedabad or employed locally, to submit their own and their patavalas' presence reports only.

To be submitted to the Special Duty Famine Officer monthly.

2. Herdsmen from Ahmedabad.
3. Herdsmen, if any, employed locally.
4. "Kos" drivers.
5. Cattle-guards and grass-guards.
6. Labourers.
7. "Dheds."

To be submitted to the Special Duty Famine Officer monthly.

- (d) Cattle Register, in the form prescribed.
- (e) Sick Cattle Register, in the form prescribed.
- (f) Mortality Register, in the form prescribed.
- (g) Birth Register, in the form prescribed.
- (h) Cut-grass, cotton-seed, oil-cake, salt and other accounts, if any. Accounts to be balanced daily and signed by the kárkún and head herdsman. Summaries only to be submitted
- (j) Record of work performed by camp labourers.
- (k) Record of work performed by visiting carpenters, masons, labourers, etc.
- (l) Report on the general working of the camp, mentioning particularly the state of the water-supply, any suspicious increase in the mortality amongst the cattle, and any other matter of special importance or interest.
- (m) The permanent General Cattle Register of the camp.
- (n) Circular and General Order File.
- (o) Miscellaneous Correspondence File.
- (p) Dead Stock List.

To be submitted to the Special Duty Famine Officer weekly, *i. e.*, on the 7th, 15th, 22nd and last day of the month

3. The degree of care and accuracy with which a kárkún keeps his records, and the punctuality with which he submits his papers will form most important factors in the Special Duty Famine Officer's judgment of his efficiency.

6.—Identification and registration.

1. The camps are, as far as possible, so arranged, that the cattle constituting one camp belong to one táluka only.

2. The permanent General Cattle Register of each camp is compiled from the original registers sent from the tálukas and passed direct to the camps with each train-load of cattle, all original papers being submitted to the Special Duty Famine Officer as soon as the necessary copies have been made.

3. All cattle are branded with a letter indicating the táluka to which they belong; and the positions of the brands indicate the serial numbers of the trains by which they were despatched to the Gir. The cattle of each separate táluka, as far as actual ownership can be definitely ascertained, are also numbered serially from one upwards in the order in which they arrived in the Gir. These are the serial numbers entered in the original cattle registers on arrival in the Gir. They are indicated by a tin label attached to the horns, etc, and a corresponding number is painted on the quarter of each animal. In addition to this, as far as practicable, a letter, or letters, indicating the village to which each animal belongs will be painted on the back. All paint marks will require to be renewed from time to time.

4. Owners or others arriving at a camp to identify cattle should be given every assistance possible.

7.—Cattle enclosures.

1. The main cattle enclosure is sub-divided according to the number of train-loads of cattle in the camp. These sub-divisions should be divided again by the herdsmen to keep the cattle from different villages separate as far as practicable.

2. A special part of the main enclosure should be kept for cattle requiring special attendance through being simply debilitated, etc. But a special enclosure at a distance from the main enclosure is kept for the isolation of cattle suffering from, or suspected to be suffering from, any infectious or contagious disease. When there are not sufficient trees, artificial shade as necessary is provided and must be maintained in these enclosures.

3. In the case of "transit" camps a separate enclosure altogether is kept for the accommodation of cattle in transit.

4. All enclosures in use must be thoroughly cleaned out daily, the dung being carried to a distance, and from time to time disinfected under the orders of the visiting veterinary officer. Disinfectants can be had in unlimited quantities on application.

8.—Wells and drinking-troughs.

1. The water-supply is of the utmost importance and must be watched with the very greatest care. If there appears to be the slightest likelihood of the water level falling so low that the well will not provide sufficient water for the camp, a report must be made at once to the Special Duty Famine Officer.

2. The troughs are built in sections so that any one part can be cleaned out without interfering with the water in the others. The water must be run out and they must be thoroughly cleaned as often as possible, but never less than once in four days. The divisions in the troughs also allow any one section to be fenced off and isolated from the others for the use of cattle suffering, or suspected to be suffering, from any infectious or contagious disease.

3. The watering of the cattle should be arranged systematically, *i. e.*, the several herds coming in order one after the other, so that the whole camp does not arrive, all the cattle wanting water at one and the same time. The head herdsman should always be present at watering time to see that small or weakly cattle are properly watered, and that the troughs are not damaged.

4. Spare "kos" with all portable parts complete and ready for immediate use are kept, one at the Stores, Sap Nes, and another at Chhodavadi, and may be had in case of emergency by application direct to the kárkún in charge. Spare portable parts of the "mandan," etc., of the well are kept at each camp ready for immediate use in case of accident, and new parts can be had on application.

5. The embankment or fence round the mouth of a well which is not protected by a masonry wall should be kept carefully in repair. A report should be made at once to the Special Duty Famine Officer, if any trough, etc., becomes so badly damaged as to stand in need of immediate repairs.

9.—Fires in camp.

1. At all times and under all circumstances the greatest possible precautions must be taken with fires of every kind whatsoever. Even the smallest fire may spread to the jungle and cause incalculable damage, *vide* "14.—Forest Fires."

2. The nightwatch fires must be kept burning on properly cleaned spaces outside the cattle enclosures. Fires *outside* will keep wild animals at a safe distance at night; but to have a fire burning inside is simply to allow, and even encourage, them to come close enough to frighten and cause a stampede amongst the cattle.

3. *No fires of any kind whatsoever, or even smoking, can be allowed anywhere in the vicinity of the grass stacks, and for this the kárkún in charge must hold himself personally responsible.*

4. All water-tins, buckets, etc., in the camp should be filled systematically when not being actually used, and kept ready for immediate use in case of accident.

10.—Roads, footpaths, etc.

1. All roads and footpaths in the vicinity of the camp, particularly those leading up and down steep inclines, should be kept in repair, it being borne in mind always that the cattle are absolutely unused to climbing of any kind.

2. Open spaces used by the cattle in the vicinity of wells and enclosures should be kept clear and cleaned from time to time. Stumps of trees only just projecting should be cut down level with the ground and loose logs, rocks and stones removed.

11.—Tools, implements, etc.

Each camp is provided with utensils, tools and implements for tending sick animals, and for cleaning, clearing and keeping in repair enclosures, roads, paths, etc. Additional implements, etc., for temporary use when necessary may be had on application.

12.—Grazing.

The grazing must be economised as much as possible, and this is a matter to which the head herdsman must pay special attention. The herdsmen should never take their cattle further from the camp than necessary. They should be made to understand that by doing so

they simply tread down and destroy good grass which might and ought to be used for grazing; and that they themselves will be in need later of the very grazing they destroy by neglect of this precaution.

13.—“Foreign” cattle and grass-cutters.

The presence in the reserve of any “foreign,” *i. e.*, other than Ahmedabad, cattle, or of labourers cutting grass either with or without the alleged permission of the State, should be reported at once to the Special Duty Famine Officer. The fullest particulars obtainable as to the number of cattle, the names of their owners or of grass-cutters, and the localities to which they belong should always be included in the reports.

14.—Forest fires.

1. Amongst the dry grass, leaves and dead timber with which the Gir abounds, a forest fire is liable to spread over an enormous area with incredible rapidity, and to baffle all efforts to extinguish it until it has practically exhausted itself from want of further fuel to consume. The cattle are now absolutely dependent on the local resources; and the loss of grass, whether “grazing” or “cut” grass, means the inevitable loss of the cattle dependent on it.

2. All herdsmen, etc., should be impressed repeatedly with the great danger of fire caused by smoking amongst the grass, etc., on the grazing grounds; and they are strictly forbidden to smoke anywhere where there is the slightest danger of setting fire to the jungle. Any one found either returning from, or going to, the grazing grounds with even a match in his possession will be considered to have been guilty of, or to have contemplated, smoking in direct disobedience to these orders, and is liable to the severest punishment.

3. The grass stacks are all placed in more or less elevated and open positions, and the grass-guards from their “manchadas” in the trees have the best view of the surrounding country. The guards at each camp are provided with a drum to be beaten as a warning to all within hearing on a fire being observed. The beating of a drum is to be considered as *the* fire alarm, and no other beating of drums of any kind is to be allowed in the camps.

4. On receiving information as to, or on observing a forest fire anywhere within reach of his camp, the kárkún must send off immediately every member of his staff available to help in extinguishing it, and at the same time send warning to the adjoining camp or camps as to the locality, etc., of the fire. The first observer of a fire should send information immediately to the Special Duty Famine Officer direct.

5. Axes are required with each party of beaters for cutting branches of trees.

6. The camp nearest to the fire, or to any part of it, should send tins of drinking water for the use of the beaters.

7. The scene of a fire must never be left until there is no probability of a fresh outbreak; and a systematic watch on it must be kept as long as smoke can be seen rising from smouldering timber, etc.

8. Trees in the vicinity of a camp bearing or which will bear leaves should be carefully preserved. The branches may be required at any time for fighting a fire.

15.—Cut grass.

1. A limited quantity of cut grass will be supplied to each camp for use when the natural grazing becomes exhausted or of no nutritious value.

2. Special detailed orders will be issued as to the weighing, stacking and thatching of the grass, its protection from depredation, etc., and its issue later, and as to the formation and upkeep of fire-lines round the stacks.

3. *No fires of any kind or even smoking can be allowed anywhere in the vicinity of the grass stacks,* and for this the kárkún in charge must hold himself personally responsible.

16.—Cotton-seed, oil-cake, salt, etc.

1. Cotton-seed, oil-cake, etc., are to be issued as per detailed orders received from time to time.

2. It is one of the special duties of the kárkún and his head herdsman to see that small or weakly animals get their full share daily of everything supplied.

3. All accounts must be kept most carefully, balanced and signed daily by the kárkún and the head herdsman, the weekly summary being submitted punctually to the Special Duty Famine Officer.

17.—*Rock salt.*

Rock salt is supplied to each camp, and at least one large lump, to be renewed as necessary, should be kept in each separate enclosure, raised from the ground on stones, or as circumstances may suggest.

18.—*Disease, etc., amongst the cattle.*

1. Disinfectants and such common medicines and remedies as the herdsmen can themselves administer or apply to their cattle are supplied to each camp for immediate use as necessary.

2. The camp will be visited periodically by a veterinary officer, and his directions in veterinary matters must be considered as coming direct from the Special Duty Famine Officer. All assistance should be given in his inspection of the cattle, etc., and every effort made to comply promptly with his wishes.

19.—*Sanitation.*

1. The general sanitary condition of the camp is of the utmost importance to the health of the staff as well as to that of the cattle; and to this the kárkún, and under him, the head herdsman, must pay the closest personal attention. The chief objects of their watchfulness should be:—

- (a) the proper disposal of carcasses and of the hides of dead cattle;
- (b) the protection of the water-supply from pollution of any kind;
- (c) the general cleanliness of the cattle enclosures, the staffs' quarters, etc.; and
- (d) the prevention of the commission of nuisances by the staff anywhere in the vicinity of the camp.

2. The general cleanliness and orderliness of a camp and its immediate vicinity will form a most important factor, in the Special Duty Famine Officer's judgment, of a kárkún's efficiency.

20.—*General routine.*

1. The kárkún accompanied by his head herdsman should make a systematic and thorough daily inspection of the whole camp. He should visit the grass stacks as often as possible, to see that the guards are present and on the alert, and should make an occasional round of his camp at night.

2. The kárkún assisted by his head herdsman should count the cattle in his camp as often as possible. This must be done with absolute accuracy at least once a week to see that the totals of the "mortality" and the "birth" registers applied to the total number of cattle originally in the camp plus or minus such additions or deductions as may have been made by transfer, etc., give correctly the total number of cattle actually in the camp on the date of counting.

3. Night watch fires should be lighted as soon as it is dark, and should be extinguished carefully as soon as it begins to get light.

4. The cleaning of enclosures and water troughs, etc., should be carried out systematically while the cattle are away grazing.

5. Cotton-seed and oil-cake should be given to the cattle ordinarily in the evening, but may be issued during the day as occasion may require, *vide* special orders issued from time to time.

6. During the winter months the cattle should leave for grazing in the morning at or soon after sunrise, and return for watering during the day; leave for grazing again, and return for the night at sunset. By the time the hot weather sets in the grazing in the vicinity of most of the camps will have been exhausted and the cattle will have long distances to travel to their grazing grounds. What grazing does remain will be of but little nutritious value, and the leaves they may obtain from trees will not be sufficient to feed them properly. The cattle should then leave for grazing as early as possible in the morning and return for watering as soon as it becomes too hot for them to remain out in the open. In the afternoon and evening they should be fed at the camp with their daily allowance of cut grass and watered again as necessary. In the hot weather the buffaloes in the camps which have no natural water-supply must be given a daily shower-bath from the drinking troughs at the time of the afternoon watering. In such camps also artificial "buffalo-wallows" will be made. The wells must be worked to their fullest capacity, and all surplus water, *e. g.*, when running out a trough for cleaning purposes, utilized to maintain them. For the issue and the feeding of the cut grass, *vide* special detailed orders to be issued later.

7. It must be borne in mind continually that, with but a few exceptions, the herdsmen are not the owners, nor have they any personal interest in the well-being of the cattle of which they are placed in charge. In many cases a herdsman has a few cattle of his own but

is placed in charge of, and paid by Government for looking after, a large number of others. The kárkún and his head herdsman must be on the alert continually to see that the hired herdsmen do actually perform the work required of them, that they tend their cattle properly, and that they do not neglect those entrusted to them in favour of their own animals.

21.—*The Stores, Sáp Nes.*

1. All indents for anything whatsoever should ordinarily be submitted to the Special Duty Famine Officer; but in case of emergency a kárkún may indent on the Stores direct, (reporting his having done so immediately) and the Store-keeper is authorised to comply with such indents in anticipation of sanction.
2. Indents for fresh supplies of stores such as cotton-seed, etc., should be submitted several days in advance of actual requirements, special care being taken to report how long the current stock will last.
3. An indent for anything not supplied as in the ordinary course should be accompanied invariably by an explanation as to the necessity for whatever may be indented for.
4. Receipts for everything supplied are to be passed to the Store-keeper direct and without delay.
5. Special detailed orders are issued for the guidance of the Store-keeper.

22.—*Communications.*

1. The Head Quarters of the Special Duty Famine Officer in the Gir are at Chhodavadi. At Sap Nes, the local as well as the "through" posts will be received at, and despatched from, the office of the Store-keeper.

2. The following are the lines of communication traversed daily by post-runners:—

- A. Chhodavadi *viá* Sudavo, Biliad and Vaniagali to Sap Nes; and
- B. back by the same route.
- C. Sap Nes *viá* Dalkhania, Mevasa, Melsika, Bhader, and Bagasra to Kunkávav; and
- D. back by the same route.
- E. Chhodavadi *viá* Dungarphadi, Bharthi and Rampuri to Sap Nes.
- F. Chhodavadi *viá* Dabhala to Jodia; thence *viá* Abut Chhinchhri to Banej; and back to Chhodavadi direct.
- G. Sudavo *viá* Vakumbha, Vanka Jambura and Ambaliali to Sap Nes.
- H. Sap Nes *viá* Chuladi to Jamvali and back.

3. "A" leaves Chhodavadi in the early morning. He connects at Sudavo with "G", and at Sap Nes with "C", who takes the "through" post down the line to Kunkávav.

"B" connects at Sap Nes with "D", who brings the "through" post from Kunkávav, and carries it on together with the local post delivered there by "E", "G" and "H" to Chhodavadi.

"C" connects with, and leaves Sap Nes immediately on the arrival of "A".

"D" leaves Kunkávav immediately on the arrival of the post from Ahmedabad, connecting at Sap Nes with "B".

"E" leaves Chhodavadi in the early morning and arrives at Sap Nes in time to connect with "B".

"F" leaves Chhodavadi in the early morning making his circuit and returning to Chhodavadi by the time of the arrival of the "through" post.

"G" leaves Sudavo on the arrival there of "A", and himself arrives at Sap Nes in time to connect with "B".

"H" leaves Sap Nes immediately on the arrival of "A" and returns in time to connect with "B".

4. On no account must a post-runner be diverted from his legitimate route as laid down above, nor must he be delayed in executing his round. Each runner will arrive at each camp at approximately the same hour each day. Every kárkún should have his post for the day ready and waiting for despatch, detaining the runner not a moment longer than necessary to open the post delivered, and to despatch his reply to anything in connection with which he is specially directed to reply by the bearer. To delay a runner at any camp may mean not only the delay of some urgent communication for some other camp, but the dislocation of the whole system of connections by which each camp is in direct communication with the Special Duty Famine Officer each day.

5. The post-book is to be filled in carefully and initialled by the kárkún for each delivery and despatch.
6. Any communication of such urgency that it cannot be held for despatch by the daily post should be sent by special messenger.
7. No package or article of such a nature as to delay the post should be sent by runner.
8. The kárkún should invariably bring to the notice of the Special Duty Famine Officer or the Uprí Kárkún when he visits a camp any matter requiring his attention whether a written report concerning it has already been submitted or not.

III.—TEMPORARY CAMPS IN THE SUB-GIR.

For the guidance of the kárkúns to be placed in charge of temporary camps such supplementary instructions as may be necessary will be issued later.

IV.—TRANSIT CAMPS.

1. The foregoing applies, as far as applicable, to all "transit" as well as "grazing" camps. The following applies specially to the "transit" camps on the line of march between the railway and the Gir, and, as far as applicable, to the "transit" camps in the Gir.
 2. Local conditions and circumstances differ as regards each camp, and separate detailed instructions are issued to meet each case; but the general routine to be observed in each camp is the same and as follows:—
 - (a) The cattle invariably to be counted immediately on their arrival and immediately before their departure, and the Transit Slips in the prescribed form filled in accordingly.
 - (b) The herdsmen to be mustered on arrival and before departure and their names checked with the list sent with the cattle papers.
 - (c) The cattle to be despatched from the camp of departure ordinarily as early in the day as practicable.
 - (d) A cattle-guard to be sent from camp to camp with each train-load of cattle, and all papers relating to the cattle, etc., in his charge to be entrusted to him for delivery at his destination.
 - (e) The cattle to be watered on arrival, as necessary before departure, and *en route* under the guidance of the cattle-guard.
 - (f) Cattle remaining behind through weakness, etc., to be marked with the serial number of the train-load to which they belong, and forwarded, if and when practicable, in accordance with the special orders issued. The marking to be done legibly, and the necessary entries most carefully made in the Transit Slips to enable such cattle, if they survive, to be identified and sent to the herds to which they belong.
 - (g) The grass supply for the day, working on an average of 250 head of cattle per train, to be weighed out and ready for issue before the arrival of the cattle. Any necessary increase or reduction in this quantity can then be made easily and without delay. Part of the grass to be issued as soon as practicable after the arrival of the cattle, and the remainder in the evening before dark. Bundles of grass to be unbound when being fed to the cattle.
 - (h) Tenders from contractors for the supply of grass, etc., to be obtained and submitted to the Special Duty Famine Officer for sanction well in advance of immediate requirements, special care being taken to report always the quantity of grass, etc., remaining for supply under the current contract.
 - (j) The grass and other accounts to be kept most carefully in the forms prescribed, signed daily by the kárkún and submitted weekly to the Special Duty Famine Officer.
 - (k) The cash account in the form prescribed to be kept with the utmost care, balanced and signed by the kárkún daily, and submitted weekly, with all vouchers duly attested to the Special Duty Famine Officer.

V.—CONCLUSION.

It should be borne in mind at all times that every kárkún in charge of a camp is placed in a position of altogether novel and peculiar responsibility. He has a far larger field than he has ever had before for the display of energy initiative, resource and general ability; and the manner in which he acquits himself will be recorded permanently in his favour or otherwise according to his merits.

ANNEXURE II.

Strength and pay of the permanent subordinate staff in the Gir on 31st March 1912.

Class.	From Gujarát.			Employed locally.		Total.	
	No.	Rate of pay.	Special Gir allowance.	No.	Rate of pay.	No.	Amount of pay.
1	2	3	4	5	6	7	8
		Rs. a. p.	Rs. a. p.		Rs. a. p.		Rs. a. p.
<i>Special Deputy Famine Officer's Office.</i>							
Shirestdár	1	40 0 0	30 0 0	...	.....	1	70 0 0
Uprí Kárkún	1	35 0 0	25 0 0	...	.....	1	60 0 0
English Kárkún	1	30 0 0	21 0 0	...	.....	1	51 0 0
Kárkúns	1	25 0 0	8 8 0	1	15 0 0	2	48 8 0
Total ... ..		.....	.....		.....	5	229 8 0
<i>General.</i>							
Veterinary Assistants	2	30 0 0	21 0 0	...	.....	2	102 0 0
Storekeeper	1	25 0 0	17 0 0	...	.....	1	42 0 0
Camp Kárkúns	19	10 0 0 to 25 0 0	7 0 0 to 17 0 0	6	10 0 0 to 15 0 0	25	571 0 0
Peons	9	5 0 0 to 7 0 0	3 0 0 to 5 0 0	21	7 0 0 to 10 0 0	30	271 0 0
Head Herdsmen	13	15 0 0 to 20 0 0	.....	1	15 0 0	14	255 0 0
Herdsmen	353	8 0 0 to 10 0 0	.....	64	8 0 0	417	3,989 0 0
Well bullock drivers ... ..	...	.....	.....	15	10 0 0 to 17 0 0	15	241 0 0
Cattle-guards ... ..	...	.....	.....	49	7 8 0 to 10 0 0	49	400 8 0
Grass-guards ... ..	...	.....	.....	49	7 0 0 to 8 0 0	49	391 0 0
Well-diggers	1	30 0 0	.....	10	7 0 0 to 9 8 0	11	122 8 0
Carpenters ... ..	...	.....	.....	1	25 0 0	1	25 0 0
Post Runners ... ..	...	.....	.....	10	8 0 0 to 9 0 0	10	84 0 0
Permanent Labourers ... ..	...	.....	.....	63	3 0 0 to 9 0 0	63	393 8 0
" Dheds " ... ..	...	.....	.....	41	.....	41	*.....
Grand Total ... ..		.....	.....		.....	733	7,117 0 0

* " Dheds " were paid by the Hide Lessee.

ANNEXURE III.

Táluka statement of cattle sent to and returned from the Gir.

Name of the Táluka.	Sent to the Gir.				Lost.				Returned to Gujarát.			
	Bullocks.	Buffaloes (male and female).	Cows and bulls.	Total.	Bullocks.	Buffaloes (male and female).	Cows and bulls.	Total.	Bullocks.	Buffaloes (male and female).	Cows and bulls.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13
Virangám ...	738	2,417	867	4,022	382	1,542	306	2,230	356	875	561	1,792
Percentage ...	...	...	...	...	51.8	63.8	35.3	55.5	48.2	36.2	64.7	44.5
Sánand ...	408	1,007	951	2,366	254	645	353	1,252	154	362	598	1,114
Percentage ...	...	...	...	...	62.3	64.1	37.2	52.9	37.7	35.9	62.8	47.1
Dholka ...	936	925	1,650	3,511	398	535	638	1,571	538	390	1,012	1,940
Percentage ...	...	...	...	...	42.5	57.9	38.7	41.9	57.5	42.1	61.3	58.1
Dhandhuka ...	1,000	1,021	1,098	3,119	639	596	386	1,621	361	425	712	1,498
Percentage ...	...	...	...	...	63.9	58.4	35.2	51.9	36.1	41.6	64.8	48.1
Total ...	3,082	5,370	4,566	13,018	1,673	3,318	1,683	6,674	1,409	2,052	2,883	6,344
Percentage ...	...	...	...	...	54.3	61.8	36.9	51.3	45.7	38.2	63.1	48.7
Charity Cattle ...	...	358	351	709	...	92	65	157	...	226	286	512
Percentage ...	...	...	...	...	...	25.7	18.5	22.1	...	74.3	81.5	77.9
Grand Total ...	3,082	5,728	4,917	13,727	1,673	3,410	1,748	6,831	1,409	2,318	3,169	6,856
Percentage ...	...	...	...	...	54.3	59.5	34.9	49.7	45.7	40.5	63.1	50.2

* Including 62 cattle returned without having reached the Gir.

† Exclusive of 188 calves born in the Gir.

‡ Includes 34 obtained locally.

§ Exclusive of 15 calves born in the Gir.

ANNEXURE IV.

Statement of cattle lost in, and on line of march from, the Gir.

No.	Causes of Loss.	In the Gir.				On line of march.				Total.			
		Bullocks.	Buffaloes (male and female).	Cows and bulls.	Total.	Bullocks.	Buffaloes (male and female).	Cows and bulls.	Total.	Bullocks.	Buffaloes (male and female).	Cows and bulls.	Total.
1	General Debility ...	1,220	2,441	1,195	4,856	139	199	150	488	1,359	2,640	1,345	5,344
2	Rinderpest ...	129	437	108	674	...	...	...	...	129	437	108	674
3	Foot and mouth disease.	1	7	...	8	...	...	...	...	1	7	...	8
4	Foul of the foot ...	62	44	31	137	...	...	...	...	62	44	31	137
5	Cancer of the horn ...	1	...	...	1	...	...	...	...	1	...	...	1
6	Tumour ...	1	...	...	1	...	...	...	...	1	...	...	1
7	Parasites ...	...	1	1	2	...	...	...	...	...	1	1	2
8	Sun-stroke ...	...	7	3	10	...	...	...	...	...	7	3	10
9	Epilepsy ...	...	2	...	2	...	...	...	...	...	2	...	2
10	Convulsions ...	...	...	1	1	...	...	...	...	...	...	1	1
11	Tympany ...	4	6	3	13	...	...	...	...	4	6	3	13
12	Catarrh ...	...	1	...	1	...	...	...	...	...	1	...	1
13	Asthma ...	...	2	...	2	...	...	...	...	...	2	...	2
14	Abortion ...	...	5	8	13	...	...	...	...	6	5	2	13
15	Premature delivery ...	5	4	6	15	...	...	...	...	5	4	6	15
16	Prolapsus Uteri ...	...	...	6	6	...	...	...	...	...	...	6	6
17	Falls from hills, etc. ...	42	107	38	187	...	...	...	...	42	107	38	187
18	Wild beasts ...	22	20	12	54	...	...	...	...	22	20	12	54
19	Injuries from other cattle.	2	4	4	10	...	...	...	...	2	4	4	10
20	Rabies ...	2	2	5	9	...	...	...	...	2	2	5	9
21	Poison ...	1	...	...	1	...	...	...	...	1	...	...	1
22	Snake-bite ...	3	3	1	7	...	...	...	...	3	3	1	7
23	Burns ...	4	2	4	10	...	...	...	...	4	2	4	10
24	Want of maternal nourishment.	7	4	10	21	...	...	...	...	7	4	10	21
25	Strayed ...	...	77	92	169	2	20	52	74	2	97	144	243
26	Sold* ...	...	2	...	2	13	10	5	28	13	12	5	30
27	Handed over to Mahajan.*	...	1	6	7	5	1	16	22	5	2	22	29
	Total ...	1,512	3,179	1,528	6,219	159	230	223	612	1,671	3,409	1,751	6,831

* Debilitated and valueless.

ANNEXURE V.

Taluka statement of calves born in the Gir

Name of the Taluka.	Born.			Died.			Sent to Gujarat.		
	Buffaloes (male and female).	Steers and heifers.	Total.	Buffaloes (male and female).	Steers and heifers.	Total.	Buffaloes (male and female.)	Steers and heifers.	Total.
1	2	3	4	5	6	7	8	9	10
1. Viramgam ...	12	33	45	8	9	17	4	24	28
2. Sanand ...	1	59	60	1	23	24	...	36	36
3. Dholka ...	...	111	111	...	42	42	...	69	69
4. Dhandhuka ...	9	44	53	9	4	13	...	40	40
Total ...	22	247	269	18	78	96	4	169	173
Percentage ...	...	...	...	81.8	31.6	35.7	18.2	68.4	64.3
5. Charity Cattle ...	4	15	19	3	1	4	1	14	15
Percentage ...	...	...	...	75.0	6.6	21.05	2.5	93.4	78.96
Grand Total ...	26	262	288	21	79	100	5	183	188
Percentage ...	...	...	...	80.8	30.2	34.7	19.2	68.8	65.3

The high mortality is due mainly to the majority of the mothers, owing to their poor condition, dying on giving birth, or when surviving, being unable to suckle their young, 40 per cent. of the calves born in the Gir were reared either with the help of foster-mothers or entirely by hand.

ANNEXURE VI.

Summary of the Gir grass accounts.

Camps and depôts.	Credit.				Debit.									
	Retail purchase.	Supplied by State.	Transmitted from Sap Nes, etc.	Total.	Consumed.	Supplied for cart-bullocks.	Transmitted.	Railed to Gujarât.	Sold.	Presented to Mahajan.	Samples.	Stolen.	Wastage, driage, etc.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
Gir camps ... ..	.....	6,241,622	.....	6,241,622	5,445,090	...	.....	.....	615,410	...	...	...	181,122	6,241,622
Temporary camps	2,320	500,142	64,410	566,872	340,800	4,820	96,843	.....	123,593	...	269	220	327	566,872
Transit camps	825,870	155,925	1,183,986	2,165,781	1,699,957	8,980	*301,092	.....	115,573	† 3,769	...	...	36,410	2,165,781
Sap Nes depôt ... ..	.....	1,468,025	.....	1,468,025	.....	59,317	1,306,808	.....	6,231	...	...	...	‡ 95,669	1,468,025
Kunkáván depôt ... ..	.....	176,233	455,907	632,140	.....	...	.....	608,569	...	...	159	...	23,412	632,140
Bilkha depôt ... ..	.....	1,868,148	.....	1,868,148	.....	...	.....	1,803,322	...	...	...	...	64,826	1,868,148
Total	828,190	10,410,095	1,704,303	.....	7,485,847	73,117	1,704,743	2,411,891	860,807	3,769	428	220	401,766	.....

* Includes 201,096 lbs. transmitted through Bagasra to Kunkáván Depôt.

† Presented to Mahajan of Bagasra (transit camp) in recognition of valuable services rendered in connection with cattle.

‡ Ten per cent. wastage and driage allowed on loose grass (delivered by State) baled at Sap Nes.

ANNEXURE VII.

Summary of cash accounts (Expenditure).

Heads of Expenditure.				Rs.	a.	p.
Staff (pay, travelling allowance, etc.)	...	...	...	30,290	0	0
Offices (dead stock, stationery, contingent articles, etc.)	...	...	...	825	0	0
Communications (postal service, telegrams, etc.)	...	...	...	1,535	0	0
Staff accommodation, cattle enclosures, etc.	...	...	...	3,805	0	0
Water-supply (wells, drinking troughs, etc.)	...	...	...	6,307	0	0
Grass, grass cartage, stacking, etc.	...	...	...	39,418	0	0
Minor casualties amongst cattle, births, etc.	...	...	...	1,860	0	0
Veterinary instruments, medicines, etc.	...	...	...	841	0	0
The stores staff, stores distribution, etc.	...	...	...	1,825	0	0
Cotton-seed, feeding troughs, etc.	...	...	...	61,840	0	0
Salt	...	...	...	565	0	0
Oil-cake	...	...	...	1,455	0	0
Railway charges for cattle-trains	...	...	...	50,864	0	0
Grazing fees, cut grass, etc. (paid to Junágadh State)	...	...	...	80,000	0	0
Miscellaneous	...	...	...	5,441	0	0
Total				2,86,871	0	0
Deduct realizations from charitable subscriptions, sale of surplus grass, dead stock, etc.				9,412	0	0
Net total expenditure				2,77,459	0	0

APPENDIX 14.

(Referred to in paragraph 56 of the Report.)

Report on the working of the cattle-kitchens in the Ahmedabad District.

Letter No. F.—1653, dated 28th August 1912, from the Collector of Ahmedabad to the Commissioner, N. D.

Sir,

I have the honour to forward herewith the report of the Ahmedabad Famine Charitable Relief Committee, together with the report of Mr. J. K. Bhatt on the working of the cattle-kitchens from a veterinary point of view. In forwarding these reports I beg to offer the following remarks.

2. This famine, for it was nothing less, which we have just passed through was pre-eminently a fodder famine. Not that there were any crops; these (except where irrigation could be resorted to) were scarcely less of an utter failure than in the *Chhapania*, as the great famine of 1899-1900 is termed in Gujarát. But, for reasons which it is not for me to dilate on here, human beings were comparatively slightly affected and the main problem was not to keep the people, but the cattle, alive. That this was going to be the case was recognized at an early stage, and this Committee's efforts have been entirely directed to cattle preservation by methods subsidiary and complementary to the measures of Government taken to the same end.

3. At the public meeting held on the 1st November last (it had originally been convened for a day in September but a false promise, early in that month, of good late rains caused its postponement), when this Committee was appointed, it was decided to adopt the cattle-kitchen system of relief, a system which has never been tried or, apparently, thought of before. It is now so well understood that I need not say more concerning it than that it is one by which selected cattle are accommodated and fed in enclosures, the food being provided by charity but the animals remaining on the spot in charge of their owners, or of their owners' servants, whose duty it is to groom, water and exercise them, as well as to serve them with the fodder provided free. The chief advantages claimed for the system are first, economy and second, efficiency: economy mainly because, under adequate supervision, practically no paid staff is necessary; and efficiency because cattle are better tended by their owner than by any one else. But the most important point is that only *selected* cattle are taken in: selection is of two kinds, firstly, with reference to the poverty of the owner and, secondly, with reference to the economic value of the animal; the former enquiry was, in the case of this district, conducted with official assistance, which was indispensable, in the village to which the cattle belonged, and the latter by veterinary experts, whose services were kindly lent by Government at the kitchen gates.

4. This Committee made it a rule not to admit buffaloes, which are more or less luxuries, and eat a great deal more than cows or bullocks, and to accept no animal of less than two or more than eight years of age, and these only when passed by the veterinary officers as sound, healthy and capable of preservation. A good many animals had unfortunately to be turned back from the gates because starvation had already brought them to a stage where no amount of care or feeding could have prevented their succumbing within a couple of weeks.

5. To put it concisely, the Committee has aimed at bringing about the survival of as large a number of the fittest as its finances would permit, and it has steadfastly refused to allow itself to be swayed from this purpose by sentimental or other considerations. Its object has been to ensure practical good, not to acquire merit.

6. I venture to think that this object has in a large measure been achieved. Out of 5,281 animals received into the kitchens 5,253 were preserved (this is efficiency) and at a cost which cannot be considered otherwise than extraordinarily small. We thought Rs. 8 per mensem would if anything be rather too low an estimate, but the average monthly cost per head has worked out to Rs. 6-6-0 only. (This is economy.) Many of the cattle remained in the kitchens for five or six months, few for less than three. In May many bullocks were taken away for field work and 227 of these were readmitted after the work was done and remained until the kitchens were finally disbanded on the last day of June. 141 calves were born on the premises, so that our deaths (28) were far exceeded by our births, and it may also be mentioned that our figures of inmates are exclusive of 139 very young animals admitted with their mothers. There was no casualty among these. No one visiting these kitchens occasionally can have failed to see for himself the improvement in condition of the horned inmates, but I am sorry to say that although there can be no complaint of illiberality in the matter of subscribing there have been extraordinarily few visitors to the places where the money subscribed was being spent, even among the committee members themselves, with, I hasten to add, several most honourable exceptions. The best test, under the circumstances, is the satisfaction or otherwise of the owners of the cattle we preserved, and I have received spontaneous letters from some of them which can

leave no doubt on the point, should there be any inclination to scepticism. At first there was much distrust and animals were brought slowly, but by April this had disappeared: all six kitchens were full and we had to refuse admission to over 1,200. There was one kitchen for each taluka and cattle were brought from villages 60 miles or more away. The grouping of all the kitchens in a central situation was indispensable for proper control, and although it was at one time a question whether there should not be branches in different parts of the district, the idea was soon abandoned for this very reason.

7. The Committee had of course to find all the funds for the execution of its scheme, and a large proportion of the total amount collected was obtained through the personal efforts of some of its members, and by other helpers, who not only worked but who to beg were not ashamed. The names of those who brought most to our funds have been specially mentioned in our report. The subscriptions received have been periodically acknowledged in the principal newspapers, published locally and in Bombay. From Ahmedabad residents the total subscribed was a little over Rs. 37,000, while about Rs. 13,000 were sent by private individuals residing in other places. Generous assistance was afforded by the Bombay Central Famine Relief Fund, who gave us grass and cash amounting in all to Rs. 22,500, and from the Sheriff of Bombay's Fund, which sent us Rs. 5,500. The Trustees of the Wadia Charities originally promised 22 lakhs of free fodder for the kitchens but, through no fault of their own, were unable to fulfil more than a third of their promise and of what they did send nearly one-half was coarse kadbi which the cattle refused to touch and which had to be left out of account for all practical purposes, though Rs. 300 was realized by the sale of a part of it: the remainder was distributed free to buffaloes in neighbouring villages. Excluding the receipts from the Talukdári Settlement Officer's charity cattle camp, which we supplied with fodder as a matter of courtesy, and from the sale of surplus grass after the closing of the kitchens, the net assets of the Committee amounted roughly to Rs. 86,400, of which Rs. 84,800 were spent on the kitchens, leaving a saving of nearly Rs. 1,600. I beg to invite especial attention to the fact that only about 1 per cent. of the whole expenditure was on account of establishment, and that only half of this was for clerks.

8. On behalf of the Committee I must express our high appreciation of the services, gratuitously rendered, of the late Ráo Bahádur Krishnalál Ochhavráam, whose lamentable and sudden death in February deprived us of our prime practical organizer, of Mr. Lalsbankar Umiashankar, who, until illness incapacitated him in the hot weather, managed the financial affairs of the Committee and a certain amount of the practical business also; and of Mr. V. G. Sant, on whom the mantle of both the gentlemen just named descended. Most of all we are beholden to Mr. J. K. Bhatt, whose energy and tact in dissipating the rumours which militated against the kitchens in the beginning were by themselves a great asset to us, whose experience and judgment as a veterinary officer were invaluable and whose constant practical organization of and supervision over the kitchens has been the prime factor in their happy immunity from contagious disease, by no means a small danger when it is remembered that rinderpest was at one time rampant in the neighbourhood. Our acknowledgments are also due to Dr. A. M. Mansuri and Mr. S. D. Dalál, who supplied a large quantity of the Committee's fodder at rates which brought them little profit and at times when there was danger of a total collapse for want of it, and who also assisted us in other ways. Other gentlemen have also rendered good service by periodically inspecting different kitchens assigned to them. Lastly, I must allude to the good work done with one exception by the veterinary assistants lent by Government and by all the kitchen clerks in our own employ; the Committee has decided to offer to each of them a bonus equivalent to one month's pay from the savings which we have at our disposal, and I hope Government will permit the acceptance of the same by the two veterinary assistants concerned.

9. The kitchens were very near to an utter break down on two occasions. On one of these we were reduced to three days' supply of fodder: the money then subscribed had run out and we were depending on promises which, through no fault of their own, those who had promised could not fulfil at the time and were ultimately able to fulfil only very partially. It was a serious situation: nearly 5,000 cattle, three or more months to run, no money and only three days' supply of fodder! I need not explain how, largely by good fortune, we escaped disaster, for escape we did, on both occasions, never so much as curtailing the rations; but the strain of procuring and putting the necessary fodder into the kitchens was, for weeks afterwards, a continuous and daily one, our requirements being over half a lakh of pounds, that is, five or six full railway truck loads, a day. But catastrophe from such causes might very conceivably *not* be avoided on a future occasion. The safeguard is, clearly, funds ready in advance, fodder bought and stacked in advance, in a word preparedness. The money must be available first, for without it we cannot have the fodder. Given the money we can consider whether it should be laid out on fodder, to be sold in ordinary years at market rates and replaced by fresh stock, but to be used for cattle relief in famine years, or whether we should merely purchase fodder with it *at a very early stage*, when famine appears imminent. Anyhow, the money must be there before we can even consider the best way of applying it. The question of founding a permanent Charitable Cattle Relief Fund is now under consideration by charitably disposed

gentlemen in Ahmedabad and I hope that it may take practical shape before the lessons of the past twelve months have been forgotten.

Letter No. 265, dated 11th August 1912, from Mr. J. K. Bhatt, Veterinary Inspector, Northern Division, to the Collector and President, Ahmedabad Charitable Famine Relief Fund Committee.

Sir,

I have the honour to submit the report of the organization and running of the Ahmedabad cattle kitchens started during the fodder famine of 1911-12 for the favour of your information.

I.—Organization.

2. As per your arrangements we received forest-wood and bamboos from the Panch Maháls forests with which the racks for the cattle and gigantic enclosures for the safety of cattle and hay-stacks were made at each kitchen. A few rafters and bamboos had to be purchased locally before we got them from the forest.

3. Our object was (a) that the cattle of the Ahmedabad District only and (b) that those out of them that belonged to persons in need of assistance should find admission. So we first of all requested Mr. A. F. Dalál, the then Mámíatdár of Daskroi, to collect cattle for our selection at the most convenient centres of the Daskroi Táluka. Accordingly Mr. Dalál informed villagers from ten to fifteen villages at the time, and during the first half of the month of November 1911, we, in the company of Mr. Dalál, visited Khodial and Barejdi, where to our astonishment we found villagers collected in a large number but no cattle. I then explained to them the principles on which the cattle kitchens were to work; but to our disappointment no one showed his willingness to bring cattle for admission. We then went to Medra where we experienced the same thing. We were then induced to inquire why the villagers did not come forward with their cattle. On an enquiry we at last came to know that there were several rumours floating among them some of which were to the effect that they would be afterwards charged for the keep of their cattle and that we were to collect and then to select cattle for the requirements of the Military Department. In order to suppress such rumours we found it necessary to draft out a notice in vernacular and read it to them; and the result was that more than one-half of the villagers came forward to bring their cattle for admission. Printed copies of this notice under the signature of the Mámíatdár were freely circulated throughout the Daskroi Táluka which had a good effect and we had to open kitchen No. I for the Daskroi Táluka on the 22nd November 1911.

4. Then we requested the Mámíatdár of Sánand to collect cattle for our selection; and in his company we visited four different centres in the Sánand Táluka. At the very first centre we found the same sort of difficulties as in Daskroi Táluka; but we had in our hand the remedy and on the circulation of the printed copies of notices under the signature of the Mámíatdár, many villagers came forward with their cattle for admission, and kitchen No. II came into existence.

5. We then directed our attention to Dholka Táluka and in the company of the Mámíatdár we visited two centres. Here we were fortunate enough to have cattle for selection very easily; for kitchen No. I which was situated close to the Ellis Bridge and Ellis Bridge Station served as a practical demonstration to all the passers-by of the Daskroi, Sánand and Dholka Tálukas and inspired them with so much confidence as to trust us with their cattle; and so we could open cattle kitchen No. III.

6. (a) I organised kitchens Nos. IV, V and VI for Viramgám, Dhandhuka and Parántij (including Modása) Tálukas, respectively, and localized them with cattle. Extensions to kitchens Nos. I, II and III too had to be made.

(b) By this time those persons who needed assistance for their cattle brought them for admission of their own accord, with a *chit* either from the revenue patel of their village or from the Mámíatdár of their táluka; as the age of the cattle to be admitted was fixed at from 2 to 8, many persons had to take back those of their cattle that were either under or over age. Sometimes more than half the number had to be rejected. In spite of the strictness observed in selection, weak cattle of the standard age that were of good breed were freely admitted.

In spite of the strictness of admissions a few exceptions were made such as the following:—

(i) In the early beginning, few cattle of under or over age were admitted into kitchen No. I and that was with a view to create confidence in the minds of the villagers.

(ii) A few cattle of under or over age were admitted at times in different kitchens and that was on account of their best breed and quality. Fourteen cows of the best breed and quality were admitted in kitchen No. IV in spite of their under age.

7. The following table will show the number, date of opening, number of cattle admitted and the species of each:—

Kitchen No.	Táluka.	Place of kitchen.	Date of opening.	Number of cattle admitted.	Species.				
					Bullocks.	Male calves.	Cows.	Heifers.	Bulls.
I	Daskroi	Madalpur	22nd November 1911.	1,048	550	287	115	74	22
II	Sánand	Maktámpur	11th January 1912	1,167	443	182	363	163	16
III	Dholka	Do.	4th February 1912	1,058	157	103	515	248	35
IV	Viramgám	Navrangpur	25th February 1912	984	573	91	193	102	25
V	Dhandhuka	Usmápur	24th March 1912	172	10	37	70	53	•
VI	Parántij and Modása.	Do.	16th March 1912	852	313	116	258	117	48
Total				5,281	2,046	816	1,514	757	148

8. On the 10th April 1912, and thereafter, admissions in kitchens Nos. I, II and III (except for the Bhál only) and No. VI were under your order stopped; and so 1,229 cattle were refused admission, the number refused in each being the following:—

Kitchen No. I	...	...	367
" " II	...	...	331
" " III	...	...	146
" " VI	...	...	385

Total ... 1,229

And admissions into kitchens Nos. IV and V were stopped by the end of April 1912.

9. Each and every animal selected for admission was at each kitchen registered with (a) the name of the owner, (b) his residence, (c) description of animal (colour, sex, age and horns), (d) the date of admission, and (e) the keeper's name. It was also branded on the left shoulder with the first letter of the district, and the number of its kitchen such as A/1, A/2 and so on.

10. In each kitchen there was a sufficient number of racks. Each rack was 100 feet in length, 2 feet in height and 2 feet in breadth, with 25 pegs on either side so as to accommodate 50 cattle. There was kept between each two racks a distance of 25 to 30 feet. As a general custom, the *bona fide* cattle-breeders such as Rabáris and Bharváds never keep their cows tied, but in order that cleanliness might be preserved and fodder and food might be served regularly and systematically, we had all the cows tied up and no difficulty was experienced. The racks were cleared at least once in a fortnight as they ought to be.

11. There were, near the kitchens, stack-yards prepared. In such stack 100 bales were ordinarily piled up and between each two stacks a distance of 20 to 30 feet was kept; there were tin-cases filled with water kept ready all round to guard against the accident of fire. A sufficient number of bales had been thatched at each kitchen as a provision against the rainy season.

12. There were also three carts purchased, which were worked by the kitchen-bullocks for drawing bales of fodder from one kitchen to another when wanted.

13. Sufficient light was provided by placing at each kitchen a Kitson lamp for the safety of the cattle and the stack-yard, and as to keeping watch at night, the owners of the cattle had made their own arrangements.

14. There were at each kitchen three paid servants engaged, a clerk on Rs. 10 to Rs. 15, a mukádam on Rs. 8 and a sweeper on Rs. 5 per month. The sweeper who was in the beginning a bhangi and the mukádam who was a Thákarda proved troublesome, so a Rabári (grazier) and his wife were employed as the mukádam and the sweeper, respectively, and the arrangement proved successful. There were also two more clerks employed on Rs. 15 each per month, one to purchase different articles from the local market and to attend the railway station, and the other to receive from contractors concentrated food and to distribute it to all the kitchens.

15. The cattle in each kitchen were in charge of keepers who were the owners of the cattle themselves or persons of their villages employed by them. They were provided with temporary lodging within the kitchen enclosures, but they had to cook their food outside them. They had to remove the dung to the manure heap, to sweep clean the space used

by their respective cattle early in the morning, to serve them with fodder and food, to take them for watering and exercise, to bring them back at the appointed time and to take due care of them in other respects. Those, who were the owners of the cattle, did their work very carefully, but those who were employees required to be constantly watched.

16. There was in the beginning only one veterinary assistant to supervise the arrangement of feeding, watering, exercise-giving, etc. As the kitchens were located in three lots, and as the work went on increasing very much, it was hardly possible for one to cope with the work; I had therefore to request Colonel Maxwell, the Superintendent, Civil Veterinary Department, Bombay Presidency, to supply me with two more veterinary assistants, and I am highly indebted to him that he granted my request.

II.—Feeding.

17. Hay was served to the cattle twice, ordinarily from 7 to 8 in the morning and from 4 to 6 in the evening.

18. Kadbi was in the very beginning given to each cattle in one bundle (two seers) every second day, as the stock was limited. But when it was sufficient in stock, two bundles were given daily to each cattle.

Change of fodder is essential for the sake of preserving the health of the cattle.

The kadbi received from Wadia Bequest was very thick and long like bamboos. In order to get it chaffed five chaff-cutters were purchased from Bombay. But the cattle refused even this chaffed kadbi, it being very old and insipid. A little of it was therefore sold and the remaining was distributed as free fodder for buffaloes to the cultivators of the villages surrounding the kitchens.

The average consumption of fodder per head per day was about ten pounds.

19. The fodder remaining in the racks uneaten was ordinarily dried up in the heat of the sun and served a second time, after being salted. The refuse thereafter was sold.

20. The food given to the cattle consisted of oil-cake, cotton-seed, gram and pulse (*tur ddi*); in winter oil-cake from $\frac{1}{2}$ lb. to 1 lb. was given only to weak cattle with cotton-seed from $\frac{1}{2}$ lb. to 2 lbs. per day. From 6th of March to the middle of May, cotton-seed, gram or pulse was given to all the cattle from $\frac{1}{2}$ lb. to 2 lbs. per day according to size and condition; thereafter only the weak ones used to get food daily till they are found quite fit. But on the day of leaving the kitchens each and every animal was given a full ration of food as a last meal.

Pulse was especially selected, as it was less expensive and suitable nutritious diet.

Grain-food was soaked in wooden tubs from one to two hours before giving and it was given in iron pans either in the morning or the evening, rack after rack.

The cattle can never keep up condition in summer unless they are given concentrated food.

21. Rock-salt in big pieces was in the beginning placed at convenient places that the cattle might lick it. But it was found expensive and hence common salt was substituted. It was given mixed with food and its solution in water was also sprinkled over the hay, in the rack, in the afternoon. In a famine, hay has to be imported from forests and other provinces; that the cattle may take the appropriate daily allowance of such hay, it is necessary that liberal allowance of salt should be given.

22. The cattle were watered at the river Sabarmati. In winter they were watered only once at noon; and in summer they were watered twice at about 10-30 in the morning and at about 5 in the evening. After watering they used to rest under the shade of trees on the bank of the river.

23. No bath was given to the cattle in winter. When the summer set in, it was found that although they received their regular allowance of food and fodder yet they did not thrive. I found that they perspired, that the dust blown by high wind fell on their bodies, that it mixed with the perspiration, and choked up the holes on the skin, and that the skin could not therefore perform its function properly. I therefore thought it advisable to give them a bath in the river once a week, which proved quite beneficial to them.

Some lazy keepers neglected to give bath to their cattle but when they were compelled to give it, a distinct change was evidenced.

24. Moderate exercise being quite essential for the cattle to keep up their health, watering places for the cattle of different kitchens were so chosen as to give them regular exercise of three to four miles a day.

25. Among the calves, those that were sucking were not registered at the time of admission; and some were newly born in the kitchens.

Suitable enclosures with shelters were provided for the calves at convenient places in each kitchen. They were watered in buckets at the kitchens.

There was not a single death among the calves. Those cows that calved were given for four to six days two pounds of bajri and half a pound of molasses every day.

That the calves may suck their mothers to their satisfaction, their owners were prohibited from milking them; some of them, however, milked them at odd times.

There were several suitable breeding-bulls at each kitchen; and the cows in heat were covered by them.

26. In the first half of May last, some cultivators began to remove their cattle for the sake of ploughing and manuring their fields. At the time of removal, they were clearly given to understand that if they brought them back within a fortnight, they would be readmitted. Accordingly 227, almost all bullocks, were brought for readmission and they were as under:—

Kitchen No.	Number readmitted.
I ...	40
II ...	167
IV ...	20
Total ...	227

Bringing cattle for readmission from a distance of 30 to 40 miles shows the great success of the kitchens.

27. (a) Most fortunately, there was not a single outbreak of any contagious disease among the cattle except that two suspicious cases of rinderpest were found at kitchen No. II which were immediately isolated and returned to their owners.

(b) There was an outbreak of rinderpest among the cattle belonging to two graziers residing at Madálpur, which were at once inoculated against rinderpest. This outbreak was, however, threatening to the cattle of the kitchen No. I, as it was quite close to the village, only a main road intervening between. So, as preventive measures, all the communication between men and cattle was strictly cut off and the cattle of the kitchen were watered at a place quite safe.

(c) There was also an outbreak of rinderpest among the cattle of the Tálukdári cattle camp. All the contact cattle were inoculated at once; but the cattle of kitchens Nos. I, IV, V and VI were not, however, regarded as safe; for the watering place for the cattle of kitchen No. I was only 300 yards away from the scene of the outbreak and kitchens Nos. IV, V and VI were situated only at a distance of 500 to 700 yards away from it. Here also the communication between men and cattle was strictly prohibited. The watering place for the cattle of the kitchen No. I was changed to Ellis Bridge and the affected and contact cattle that drink water with the cattle of the kitchen No. VI were immediately ordered to be watered at the place where the cattle of the kitchen No. I were formerly watered. Thus there was kept a safe distance of over one mile up and down between the watering places of the healthy and affected and contact cattle and the danger was effectually avoided.

28. It is interesting to note that in all 149 villages and 1,290 cattle-owners took advantage of the kitchens which is shown as under:—

Number of kitchen.	Villages.	Cattle-owners.
I ...	53	450
II ...	35	135
III ...	25	127
IV ...	18	273
V ...	3	53
VI ...	15	252
Total ...	149	1,290

29. As the keepers of cattle from Bavla (No. III) and Muktipura (No. I) were constantly noticed to be careless and troublesome, their cattle were, under your order, discharged.

30. The kitchen clerks had to submit a daily report countersigned by the veterinary assistant in charge, showing the number of cattle admitted, discharged and in balance together with the accounts of food and fodder received, expended and at hand in stock.

31. Each kitchen clerk was provided with a bill book. He prepared bills for expenditure made under my instruction which were countersigned by me and thereafter paid up.

32. I think that the cattle saved by the Ahmedabad cattle kitchens may be valued at Rs. 5,26,420.

33. The owners of the cattle were allowed to remove them on obtaining a chit from the Mámálatdár of their táluka. It rained on the 18th June 1912, when there was a regular rush for the removal of the cattle. All of them were removed before the 30th June 1912 when all the kitchens were closed.

34. All the materials and manure within the kitchens were sold.

APPENDIX 15.

(Referred to in paragraph 57 of the Report.)

Statement showing the amount of expenditure incurred in the cattle-camps opened in the Panch Mahals District.

Name of Camp.	Date of opening.	Date of closing.	Number of cattle relieved.			Casualty among cattle.	Expenditure incurred.						Percentage of cost.		Remarks.
			Minimum a day.	Maximum a day.	Total units relieved.		Grass.	Grain.	Establishment.	Erecting sheds.	Miscellaneous.	Total.	Establishment.	Erecting sheds.	
							Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.			
Ambali ...	20th March 1912.	21st June 1912.	23	198	10,022	...	1,679 0 0	410 11 9	127 6 5	13 6 3	2,230 8 5 0 3 8	5'65	...	Figures in block type show cost per unit relieved.
Orwada ...	27th March 1912.	20th June 1912.	17	289	15,834	...	2,370 3 8	510 11 7	269 8 3	92 12 0	22 6 8	3,265 9 6 0 3 3	8'23	2'81	
Dumelao ...	9th May 1912.	19th June 1912.	53	229	7,671	...	2,217 14 3	349 13 3	110 3 5	100 2 0	15 15 0	2,793 15 11 0 5 9	3'92	3'57	
Vejalpur ...	11th April 1912.	30th June 1912.	43	500	28,756	7	3,541 10 9	4 12 0	344 7 4	632 0 0	29 5 2	4,552 3 3 0 2 8	5'37	13'88	
Derol ...	18th April 1912.	Do. ...	32	518	24,205	4	2,773 12 0	30 2 6	390 0 10	423 14 6	83 11 4	3,701 9 2 0 2 5	10'53	11'42	
Wada-Talao ...	22nd April 1912.	27th June 1912.	40	523	27,515	...	2,759 0 3	117 15 0	170 4 0	266 0 0	52 10 9	3,365 14 0 0 1 11	5'05	79	
Total	114,003	11	15,341 8 11	1,424 2 1	1,411 14 3	1,514 12 6	217 6 6	19,909 12 3 0 2 9	7'09	76	