

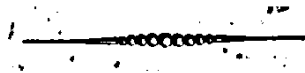
ANNUAL REPORT

OF THE

DIRECTOR, LAND RECORDS AND
AGRICULTURE,

BOMBAY PRESIDENCY.

FOR THE YEAR 1890-91



Bombay:
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1892.

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No. 1043 of 1892.

FROM

E. L. CAPPEL, ESQUIRE, C. S.,
 Director, Land Records and Agriculture,
 Bombay;

TO

THE CHIEF SECRETARY TO GOVERNMENT,
 Revenue Department,
 Bombay,

Poona, 9th May 1892.

SIR,

I have the honour to submit the **eighth** Annual Report of the Department of Land Records and Agriculture, for the year ending 31st October 1891.

2. The office of the Director was held as under:—

Name of Officer.	From and to what date.	Total period.	
		M.	d.
Mr. E. C. Ozanne	1st November 1890 to 7th April 1891	5	7
Dr. T. Cooke	8th April to 31st May 1891... ..	1	23
Mr. E. L. Cappel	1st June to 31st October 1891	5	0
		12	0

Mr. Ozanne visited Dhárwár, Belgaum and Sholápur in November, and Bijápur, Kánara and Ratnágiri in January and February, to discuss with the Collectors measures for the accommodation of Survey Records. In March he again visited Dhárwár and Belgaum to complete arrangements for the introduction and re-distribution of Circle Inspector staff and for the transfer of Survey Records. From November to March, Mr. Ozanne visited Bombay eight times: once under Government orders to confer with Mr. Hallen, the General Superintendent of Horse-breeding Operations, and Mr. Morgan: twice on business connected with the experimental dairy and at other times to confer with the officers concerned on matters relating to the winding up of the Survey, the establishment of a Civil Veterinary Department and the transfer to Poona of the Compiling Branch of the Trade Statistical Office. He also attended a meeting of the Chamber of Commerce at which Mr. James' proposals for the regulation of the cotton trade were discussed. Mr. Ozanne paid one visit to the Bhadgaon Farm in January, and two visits to Nadiád in December, and in that month was in camp in the Poona District for purposes of special enquiry. Dr. Cooke visited Mahábaleshvar twice; in April to confer with Government and in May to attend the Horticultural Show. In May he also made a short tour of inspection in Belgaum and Dhárwár. I inspected the Bhadgaon Farm with the Superintendent of Farms in August and went to Belgaum in October to discuss with the Collector matters regarding the gradation of Circle Inspectors in the district.

3. Mr. Mollison took charge as Superintendent of Government Farms in November. He paid occasional visits to Bhadgaon and Nadiád and has been constantly present on the Poona Farm. His time has necessarily been largely taken up in study of the Agriculture of the Presidency and of Native live-stock. In December he made with the sanction of Government an extended tour in Upper India in company with Mr. Hallen, visiting Ulwár, Hansi, Bábugarh Meerut, Delhi, Ajmere and Khándwa. He also visited Ahmedabad and Cutch to attend the local Shows.

4. For the administration of the Agricultural staff in the Southern Division, I have had since May the assistance of an experienced Survey officer. The first appointment as Divisional Inspector, Land Records and Agriculture, Southern Division, was held by Mr. Francis and, on his transfer to Berár, Mr. Lushington was appointed, Mr. R. T. Wingate holding charge for an interval of $2\frac{1}{2}$ months. Owing to these changes no tour of inspection was made by the officers named and they were fully occupied at head-quarters in organizing the new staff.

I.—ORGANIZATION AND MAINTENANCE OF VILLAGE RECORDS.

5. As described in the last report, paragraphs 5—7, the inspecting staff has been introduced into the districts of the Southern Division, except Kolába, where owing to the non-completion of the revision survey the records will not be ripe for transfer to the Collector's charge until 1893. The staff was established in the other districts in April except in Ratnágiri, where its introduction was deferred till August. The number of Circle Inspectors now fixed in consultation with the Commissioner, for the five districts in which the staff has been introduced, is shown below :—

District.	Former Number of Bhág Kárkúna.	NUMBER OF CIRCLE INSPECTORS.			Number of old Bhág Kárkúna now left for Mámíatdára' Office Staff (column 2 — column 3).
		Bhág Kárkúna utilized as Circle Inspectors.	Additional hands.	Total Number.	
1	2	3	4	5	6
Dhárwár	28	6	23	29	22
Bijápur	25	9	16	25	16
Belgaum	21	7	18	25	14
Kánara	33	9	15	24	24
Ratnágiri	29	...	27	27	29*
Total	136	31	99	130	105

* Proposals have been made to reduce the number from 29 to 27 as recommended by the Committee of July 1890.

Out of the men under column 4, 80 per cent. have under the orders of Government been selected as far as possible from the Survey Department; where this number has not been available the vacancies have been filled up temporarily. The number of Circle Inspectors was reduced under the revised scheme from 39 to 29 in Dhárwár, and from 40 to 25 in Bijápur. Their duties are strictly prescribed under rules, now issued. Many of these duties were formerly assigned to Bhág Kárkúna, and the relief of these officers from out-door inspection is completed by recent orders directing that in districts where the Circle Inspector staff is established they should not be called upon to examine rayats' receipt books. The Bhág Kárkúna will henceforth be used as full-time men for the strengthening of the Mámíatdára's head-quarter establishment.

6. One Circle Inspector has been attached to each District Inspector as a general-duty classer and to assist in checking measurement work.

7. The Collectors of Ratnágiri and Kánara remark as follows on the Circle Inspector staff in their districts :—

Ratnágiri.—"The Circle Inspector establishment is, as you know, a weak one in this district, being only about 3 to each táluka * * *. The absence of village officers, the extraordinary ruggedness of the country, and the fact that cultivation, poor as it may be, completely covers the whole country, make it necessary that Ratnágiri should have a strong Circle Inspector staff. But while we cannot rest content with what we have got, it is a great thing to have made a beginning, and in a year or two we shall be able to say from experience how many additional hands we require."

Kánara.—"The men chosen are of course as yet ignorant of measurement and other survey details. They will no doubt gradually learn this important preliminary to effective work. Most of them were chosen for their ability and previous good work."

and they have all had experience of Bhág Kárkún's duties. They cannot be said to be contented in their new position as they consider that the increased amount of work that they will now have to perform, and the greater responsibilities of their new duties, should have been accompanied by an increase of pay. At the same time I do not suppose that they will be wanting in activity and energy."

As regards Ratnágiri, detailed proposals for the re-organization and strengthening of the village staff are under consideration of Government. The circumstances of the district are peculiar and some modification of the general scheme may be necessary. In Kánara the proportion of non-Survey men is temporarily somewhat large, for the reason that Survey subordinates could not hitherto be spared, but in 1892-93 the disbandment of the Survey will make men available.

8. In all the equipped districts a Survey class was formed during the year to train the unskilled men, and an examination was held in the following subjects:—

- (1). The Circle Inspector's revised Rules.
- (2). The Revenue Manual (so far as it concerns the work of Circle Inspectors).
- (3). Rules as to maintenance and repairs of boundary-marks.
- (4). Simple measurement including sub-division of numbers in the fields and preparation of field books and plotting on the map.

A class for practical instruction in Survey work for all men not recruited from the Survey Department, was formed at each District head-quarters during September—October before the examination under the supervision of the District Inspector.

9. The old rules prescribed for Circle Inspectors in Dhárwár and Bijápur have been carefully revised and brought up to date and have received the sanction of Government. To suit the special circumstances of the Ratnágiri District they require considerable modification, and special rules for this district are being drafted. Rules for the guidance of the Divisional and District Inspectors and of the District Survey head-quarter office, have also been drawn up.

10. *District Offices and District Inspectors.*—Each district is equipped with a head-quarter office of the strength noted, for the correction and maintenance of Survey Records. This staff works directly under the District Inspector (pay Rs. 100 — 150). The District Inspector also compiles and reviews for the Collector the Annual District Returns of Agricultural Statistics. He is required to travel for about 8 months during the year, to take tests of Circle Inspectors' work. The supervision of the Circle Inspector staff and the systematic test of their inspection work remains, however, a primary duty of Mámlatdárs and Sub-Divisional officers.

Two of the District Inspectors are graduates who have qualified in the Revenue Department for a Mámlat. Two were transferred from the Survey Department. In Belgaum the post is held by a passed Agricultural Student of the College of Science, who had previously served for 6 years as Assistant District Inspector.

11. *Divisional Inspector.*—The duties of this office were described in paragraph 6 of last year's report. While for administrative purposes a Divisional Officer, the Divisional Inspector is, for the maintenance of the Survey Record and in all technical matters, an assistant to the Collectors, and the scheme has worked so far well and without friction.

12. *Subordination.*—The inspecting staff from the District Inspector down to Circle Inspectors is now directly subordinated to the Collector. But as the Director is held responsible for the correction and maintenance of maps and Survey Records and for the maintenance of the standard of efficiency among Circle Inspectors, new appointments of Circle Inspectors are made by Collectors in consultation with the Director. As regards the technical staff (District Inspector, Head-quarter Assistant, Record-keeper and general-duty classers), the Divisional Inspector has been empowered to make the selection subject to the Collector's confirmation.

13. *Survey Records.*—For the accommodation of the Survey Records transferred to the Collectors' charge, quarters have been provided in Belgaum and Kánara at a cost of Rs. 4,531 and Rs. 6,237. In Ratnágiri the Records are at present in temporary quarters. In Dhárwár and Bijápur accommodation has been provided without additional cost. To guard against accidents by fire the Records are housed in detached compartments, one containing originals and the other duplicates.

14. *Inspection.*—I now turn to the inspection work done during the year. The routine of the Inspector's duties is carried out under the heads noted below, a few changes having been made from last year:—

November to February.—Crop, waste and boundary-mark inspection.

March to May.—Complete boundary-mark inspection.

June.—Compilation in Mámlatdár's Office of Táluka Forms Nos. 33, 35, 36, 36A, circle by circle, and then for the táluka.

July.—Test census and check of vital statistics.

August.—Compilation at the táluka of Táluka Form No. 34 and of the Inspection Returns.

September and October.—Ledgering of village statistics and miscellaneous duties under the orders of the Mámlatdár.

Note.—Measurement and classification work and partitions will be carried out during the field season as prescribed in the Rules.

15. *Crop and Waste Inspection and Examination of Boundary Marks.*—This corresponds to the test of Village Forms 2 to 4 by táluka kárkuns (general duty) in districts not equipped with the Circle Inspector staff, with the exception that under special sanction Circle Inspectors examine the boundary marks of those numbers only of which they make the crop or waste inspection.

Statement showing percentages.

District.	Year.	Villages inspected, per cent.	CROP INSPECTION.		WASTE INSPECTION.
			Occupied Lands, Percentage inspected.		Unoccupied Lands, Survey Numbers inspected per cent.
			On Survey Numbers.	On Area.	
Dhárwár	Last ...	97	7.73	5.63	27.17
	Present ...	86	7.42	5.19	28.30
Bijápur...	Last ...	95	10.09	8.39	36.77
	Present ...	76	8.41	7.46	35.60

There is some falling off in the amount of work done as compared with last year. But most of the Circle Inspectors were employed in connection with the general census for a large part of the inspection period; in Dhárwár sickness was a hindrance; and heavy rain in Bijápur hindered operations for a fortnight. But the figures prove the need of more supervision, which has now been supplied in the appointment of the Divisional Inspector, and the responsibility of Táluka and Sub-Divisional Officers for the check of work done will, it is hoped, be better appreciated henceforth. The percentage of waste numbers inspected is satisfactory.

The inspection of waste brought to light 11 encroachments in Dhárwár and 4 in Bijápur, of which 1 only was detected by the village officers. The apparent improvement in Bijápur (where 54 cases were discovered last year) is probably not real. The cultivation of boundary strips, a common cause of check, appears this year to have been disregarded, and the matter is under enquiry.

Village crop registration by kulkarnis shows as yet no improvement in

District.	CROP INSPECTION.		BOUNDARY MARK INSPECTION.		
	Entries found correct, per cent.	Corrected per cent.	Shown in Village Form III as in disrepair.	Omit- ted.	Wrongly shown as in repair.
Dhárwár. { Present ...	42	38	12	49	89
{ Last... ..	41	41	8	61	81
Bijápur... { Present ...	30	46	17	28	57
{ Last	32	50	21	48	81

Bijápur and very little in Dhárwár. The number of entries found blank and filled in by Inspectors is greater than last year, nor is any improvement noticeable in the village officers' boundary mark inspection.

It is satisfactory that absentee kulkarnis fell from 19 to 10 and from 5 to 4 in the two districts respectively.

16. The superior check exercised by the District and Assistant District Inspectors is exhibited as follows in percentages :—

District.	CROP INSPECTION.		WASTE INSPECTION.		BOUNDARY MARK INSPECTION.	
	Extent.	Quality.	Extent.	Quality.	Extent.	Quality.
Dhárwár. { Present ...	3.5	90	3.9	99	3.5	98
{ Last	3.3	85	3.1	95	3.2	95
Bijápur . { Present ...	5.1	78	4.6	99	5.3	91
{ Last	3.0	65	4.1	99	3.2	92

In Dhárwár four circles were not visited and the number of Survey numbers tested was less by 50 than last year. This was because the District Inspector and his Assistant were both for some weeks on special duty. The percentage check is greater in both districts. The figures of quality show an improvement in Circle Inspector's work.

The Collectors' remarks on the Circle and District Inspectors' work are shown below :—

Dhárwár.—"The test work done by them appears to be sufficient."

Bijápur.—"The amount of work done by the Inspectors is much less than was the case last year; but that is fully accounted for by the fact that it was necessary to utilize the Circle Inspectors on census duty for nearly four months out of the travelling season. * * * The personal work done by Mr. Náik (District Inspector) and his Assistant has been good, and the undersigned concurs with his predecessor, Mr. Fleet, that since Mr. Náik came to the district the working of the department has gone much smoother, and for that Mr. Náik is undoubtedly entitled to the credit."

17. As regards the supervision and test of Circle Inspectors' work by the Sub-Divisional Officers, the Collector of Dhárwár has forwarded a statement of tests taken by the 1st Assistant Collector and the District Deputy Collector, no tests by the 2nd Assistant Collector being reported. The 1st Assistant Collector took tests in 82 villages and the District Deputy Collector in 65 villages, in connection with crop and boundary-mark inspection and the census check. But the extent of the test and its nature are not reported. The only remark as to quality made by the District Deputy Collector is that the Circle Inspectors' work was good. A report has been received from the District Deputy Collector only in Bijápur. He tested crop and boundary-mark inspection in 46 Survey numbers of seven villages, and complete boundary-mark inspection in one village. With a few exceptions the work was found satisfactory. Check census was also tested in three villages. Until a prescribed form for these reports is sanctioned the value of these tests must be in great measure lost.

18. *Check Census of Population and Live-stock.*—The check census period is now reduced to one month (July). Under the old rules every village was to be visited for this test, but by the revised Rules each circle is divided into two to four divisions according to the number of villages in the circle, population, and means of locomotion, and one division is to be visited annually. This year, as last, delay in commencement of the test work arose from the detention of Circle Inspectors at the taluka head-quarters for compilation work and in Dhárwár the absence of Kulkarnis at the date of inspection was also an impeding

cause. The tests extended over 398 villages in Dhárwár and 317 villages in Bijápur and were made in accordance with rule.

Out of the total number of entries checked in Dhárwár and Bijápur, 79 and 81 per cent. (against 77 and 70 per cent.) were found correct. No tests were taken by District Inspectors. Though the responsibility of supervision and test primarily rests on Mámlatdárs and Sub-Divisional Officers, the District Inspectors should take casual tests of the census work during July, and instructions to this effect have been issued.

19. *Check of Village Sanitary Forms.*—Circle Inspectors are required to make a regular test of Forms XIV and XIV-A.D., along with the census check, the revised rules now providing for report of omissions and errors in Village Form XIV. The statements received show 66 and 173 omissions of births and 19 and 27 omissions of deaths in Dhárwár and Bijápur. In 31 cases for Dhárwár and in one in Bijápur, the cause of death was omitted, and in six cases for each district it was wrongly shown. These inaccuracies are communicated through Mámlatdárs direct to the Deputy Sanitary Commissioner. Government, while reviewing the last Annual Report of the Sanitary Commissioner, remarked on the improvement to be effected in the Village Sanitary Returns by the organization of the Circle Inspector staff, and the returns will now receive a regular examination supplying information of a precise kind which must eventually lead to better results.

20. *Complete Boundary Mark Inspection.*—This inspection was carried on from March to May in 104 villages in Dhárwár and 85 in Bijápur, bringing the total of villages inspected to date to 418 in Dhárwár and 530 in Bijápur. The completion of the inspection of the whole district in about 10 years, as estimated in last year's report, may, it is hoped, still be carried out, though the reduction of the Circle Inspector Staff from 39 to 29 and from 40 to 25 has necessarily diminished the rate of progress.

The number of marks found out of repair have decreased by 7 per cent. in Dhárwár, but have increased by 4 in Bijápur. Of the marks re-inspected, 70 per cent. in Dhárwár and 84 per cent. in Bijápur were repaired. Positions of 1,653 and 366 marks in each district were fixed by measurement, and 125 and 37 cases of encroachment were detected. Re-inspection in arrears has been partly but not completely brought up to date.

Statement showing measurement and classing work done by Circle Inspectors.

No.	Classes of Cases.	DHÁRWÁR.			BIJÁPUR.				
		Arrears on 31st July 1890.	New cases.	Disposed of.	Arrears on 31st July 1891.	Arrears on 31st July 1890.	New cases.	Disposed of.	Arrears on 31st July 1891.
1	Partitions of land under decree of Court ...	2	74	73	3	3	20	21	2
2	Sub-division on application of occupants duly sanctioned ...	13	31	32	12	3	10	9	4
3	Disputes necessitating re-measurement of fields ...	32	57	55	34	8	34	32	10
4	Disputes requiring fixing of marks by the field books ...	154	188	163	179	143	278	282	139
5	Encroachments ...	91	206	229	68	67	237	240	64
6	Measurement of alterations caused by alluvion and diluvion ...	40	43	47	36	38	95	96	37
7	Measurement of land required for public purposes—								
	(a) Extramural burial grounds ...	9	88	59	38	15	24	29	10
	(b) Tanks ...	2	3	4	1	...	2	2	...
	(c) Roads ...	17	21	21	17	7	20	21	6
	(d) Dharmshalás and other public buildings ...	3	13	13	3	...	3	3	...
8	Measurement of land for building sites ...	58	209	210	57	37	206	195	48
9	Re-classification of survey numbers ...	1	5	4	2	2	3	4	1
10	Miscellaneous ...	65	200	186	79	124	430	418	136
	Total ...	487	1,138	1,096	529	447	1,362	1,352	457
11	Non-Survey cases prescribed by the rules...	640	3,014	2,836	818	123	592	582	133
12	Not prescribed by the rules ...	40	337	348	29	3	123	113	13
	Total ...	680	3,351	3,184	847	126	715	695	146
	Grand Total ...	1,167	4,489	4,280	1,376	573	2,077	2,047	603

21. New cases in classes 1-10 very slightly decreased from last year. The increase in classes 1-3 and the decrease in class 5 are the natural effect of the new system, which greatly facilitates the division of land, the correction of marks and the check of encroachments. Classes 11 and 12 now no longer occur, the duties involved being carried out by the reinforced Mámílatdár's staff. Cases disposed of (classes 1-10) fell slightly in Bijápur, but considerably in Dhárwár, which is attributed to the reduced number of Inspectors (39 to 29) and their employment on census duty, but this will be remedied under stricter supervision, and meanwhile arrears have not appreciably increased.

22. The usual statement of Head-quarter office work is appended to show the correction accomplished :—

District.	Number of Cases received necessitating corrections in Survey Record.	NUMBER OF AKARBANDS.		Number of maps and field books corrected.	Number of extracts from Survey books supplied to Revenue Officers and petitioners.	Number of extracts from field books sent to Circle Inspectors.	Number of maps supplied to Village Officers.
		Corrected.	Remaining for correction on 1st October.				
1	2	3	4	5	6	7	8
Dhárwár .	73	143	6	483	144	858	121
Bijápur ...	119	60	53	494	4	575	98

As regards the heavy arrears in Bijápur it is reported that all the Akarbands in column 4 were received as late as July last, and 20 of them were corrected by 1st October, but not copied fair in the Survey Record. Extracts from 591 Survey numbers out of classer's books were made in Bijápur to complete the duplicate Survey Record.

II.—ANALYSIS OF DISTRICTS WITH REFERENCE TO SECURITY FROM FAMINE.

23. The form of the Circle Book noticed in paragraph 19 of the last year's report is under consideration with reference to the directions of the Government of India issued with Government Resolution No. 7134, dated 16th October 1891.

III.—COLLECTION OF REVENUE AND RENTAL IN PRE-CARIOUS TRACTS.

24. During the year no special measures have been called for under Chapter VI of the Bombay Famine Relief Code.

IV.—MEASURES OF PROTECTION, including—

- (1) *Fodder Reserves and Arboriculture.*
- (2) *Extension of Communication.*
- (3) *Irrigation.*

25. No applications were received for Bábhul plantations on remission of assessment, and no new departure has been made under this head.

V.—AGRICULTURAL EXPERIMENTS INCLUDING FARMS.

A.—*Experimental Farms.*

26. A detailed scheme has been submitted to Government for the extension of Experimental Farms, for a Cattle and Sheep Farm, and for the improvement of the Poona Farm.

Mr. Mollison, the Superintendent of Farms, joined his appointment during the year, and his movements are referred to in paragraph 3 of this report. His assistance in the practical management of the Poona and Bhadgaon Farms and of the Model Dairy has been invaluable, and although it is too early to speak of results, I may confidently say that his appointment has been more than justified

in the improved supervision and working of the institutions in his charge. Mr. Mollison has used his opportunities to study the agricultural conditions of the Presidency with great zeal and success, and I expect in next year's report to be able to refer to distinct advances in more than one direction made with his assistance. For two months in the year he lectures to the Agricultural classes at the College of Science and is now engaged on the preparation of a much-needed text book for their use.

Bhadgaon Farm.

27. The rainfall (29 inches) though much above that of the previous year was not well distributed. The greater part fell by the first week in August, and the result was that both the principal crops, cotton and jowári, suffered. The former, especially the American variety, was injured by the heavy fall in early August, and the latter by deficient rain at the time of flowering. Irrigation had to be resorted to for all rabi crops, but the Jámda Canal went dry before they were harvested. The indifferent season and low prices have led to a comparatively poor financial result. The net profit per acre was about Rs. 4 as against Rs. 10 in the previous year. Besides the Superintendent's pay (Rs. 3,000), the net cost of the farm was Rs. 6,827 as against Rs. 743 in the previous year. Nearly half of this loss was debited to live-stock, which depreciated in value by Rs. 1,000 through an epidemic of rinderpest and was maintained at a loss of Rs. 3,015. I have, however, considerably reduced the Mysore herd which was being maintained at a cost disproportionate to its value.

General Cultivation.

Jowári.—Besides the local variety, the Jalálpur (Surat) and Jabálpur (Central Provinces) varieties were grown. The Jabálpur millet seems not to differ from the common sort. The Jalálpur also has not proved itself better than the Khándesh variety. On the whole, the outturn was fair, but prices were so low that but for its fodder value the crop would not have paid for cultivation.

Bájri.—Nadiád "bajro," a giant variety, formerly unknown in Khándesh, was sown on a plot and attracted much attention owing to the large size of its ears and the sweetness of the grain. The experiment is being continued.

Wheat and Gram.—The wheat and gram area was irrigated. A wheat crop sown in rows 8" apart was found to yield better than one sown according to custom at distances of 12 inches.

Experimental Area.

As in the previous year the most interesting experiments were in cotton and wheat.

Cotton.—Broach cotton was tried on the farm for the first time and was not found to succeed. Samples of the varieties previously grown were submitted to the Chamber of Commerce, but the result is inconclusive as, owing to their proximity to a field which was irrigated throughout the season, the plots of Varádi, Dhárwádi, Bani and Jari got sufficient moisture, while the other cotton plots were withering for want of it. The American varieties, (except Upland), grown in experimental plots and richly manured, yielded poorly. Jari cotton introduced last year from the Central Provinces gave an extraordinary crop and ripened in November instead of in February, its normal season. This goes, as the Superintendent observes, to confirm Dr. Watt's hybridization theory. The local Varádi has in a single year's contact shortened the staple and reduced the period of maturity, and has assimilated the new variety to itself also in quantity of outturn. The experiment with Sea Island Cotton has been abandoned; the plants which are perennial, dying the year after planting.

The second series of experiments to test the changes in the colour and consistency of wheat was commenced. Contrary to past experience the new seed produced better results in its first year than the local seed. This may partly be due to some accidental advantage; and hard white, which gave the best results, is not a stranger to this district. A small plot was sown with the valuable

Muzafarnagar soft white with most satisfactory results. Again no change in colour or consistency was noticed, and it may be taken that these outside wheats are stable when grown in the Deccan.

Sugarcane.—The two Cuban varieties of sugarcane (Lahona and Lohina) obtained from Saháranpur, which last year compared unfavourably with the local white variety, tillered well and have shown valuable qualities, which will be further tested at the Poona Farm.

Other experiments.—The Kademi or Kabuli gram from Cawnpore and the huskless barley from Saháranpur yielded fairly well. Potatoes were tried but not with success. The seed was from the Poona District, where fungoid disease has prevailed during the last four years and the crop was attacked by this blight.

Manures.—A large number of manures were tried but with irregular results, and all that can be deduced at present is that farm-yard manure and oilcake as commonly applied by cultivators are more profitable than chemical and other expensive fertilizers. Green manuring is being tried with success. The “patent silicate manure” was tried at the request of the Bombay Chamber of Commerce and was applied to irrigated wheat at the rate of 5 cwt. per acre. It did not appear to benefit the crop either in appearance or in yield.

Fodder Crops.—Jowári, Rheana Luxurians and lucerne were grown experimentally. Lucerne weight for weight showed a great superiority to jowári and the Rheana Luxurians, an African plant, now first introduced, promises well and will be more largely tested next year.

Ensilage.—A new feature was introduced by the trial of stack silage, but it was found that the wastage was so heavy as to counterbalance its advantages over the pit system in facility of construction and in superior sweetness of fodder.

Cattle.—During the year 27 bull-calves averaging 18 months were sold for the satisfactory sum of Rs. 1,080. The Mysore herd has been thinned by weeding out, with great advantage. The goat herd has been largely increased by additions from the best Native and Arabian breeds, and besides being a source of profit it is hoped to effect a good deal in the way of improving the local strain.

Poona Farm.

28. The cultivated area of the farm is $34\frac{1}{2}$ acres, of which 3 acres are devoted to experiment. The farm was maintained at a net cost of Rs. 3,754 of which Rs. 95 were debited to the dairy herd.

Among other experiments one with sugarcane has been conducted on this farm with the objects (1) to test how long it can be grown without replanting, with proper tillage and manure; (2) to ascertain which of the manures ordinarily applied gives the best results; and (3) to show what crops can profitably be rotated with cane. The plots however have been found to be too uneven in quality to give certain results. The whole scheme of experiment will now be reorganized under Mr. Mollison's care. A fairly good area for the purpose has been found, and special attention will be paid to newly introduced plants, to manures, and to fodder crops at this farm.

Dairy Herd.

The farm is now well stocked, the present strength being 55 head. The dairy is being worked at a profit with the improved European appliances and has furnished a model for similar establishments in other parts of India. It meets the whole of the Commissariat demands for milk products and has given a decided impetus to the adoption of scientific dairy methods. As some details of the dairy operations may be usefully published, I follow the example of last year's report in printing an appendix (A) dealing with this subject.

The Ganeshkhind gardens worked at a net profit of Rs. 54. The year was a poor one for mangoes and only Rs. 85 were realized. Rs. 87 were realized by the sale of mango grafts.

Nadiád Farm.

29. There is not much new to report about this farm except that, at the instance of Mr. Ozanne, an agricultural passed student has been appointed to

take charge of the farm and that the seed depôt, hitherto kept up at a loss, has now succeeded in attracting customers. The Superintendent of Farms has drawn up a cropping scheme for six years for this farm. It was cultivated at a loss of Rs. 11½ per acre, the cultivated area being only 7 acres and 26 gunthas.

The Sind Farm (Hyderabad.)

30. The Hyderabad Farm, under the charge of the Local Board, was worked at a loss of Rs. 524. The future of this farm, which the District Board no longer desires to keep, is under consideration.

Empress Gardens.

31. The gardens were worked at a cost of Rs. 3,022 or Rs. 400 less than in the previous year. The gross expenditure amounted to Rs. 9,052, being Rs. 338 under the budget grant, and the gross receipts rose from Rs. 5,592 to Rs. 6,030.

The large sales of seeds of vegetables and forage plants are a particularly satisfactory feature in connection with these gardens, and under the new management better results both in this respect and as regards the floral management may be confidently looked for. The gardens have efficiently fulfilled their object of supplying seeds to soldiers and of affording a recreation and botanical garden.

B.—Experiments on various Indigenous and Exotic Products.

1. Wheat.

32. The distribution of selected Muzaffarnagar seed was continued in the Nára Valley of the Thar and Párkar District, 339 maunds of fresh seed being purchased with the Government grant of Rs. 1,000, and the sum allotted by the District Local Board. The area under the introduced variety fell from 4,107 acres to 3,166 acres or by 23 per cent., but has maintained its proportion to the total area under wheat. A low inundation and the prevalence in parts of mildew reduced the acre rate of produce from 392 to 259 lbs. The following table gives the details:—

Kind of Seed.	Area.		Seed.		Outturn.	
	A.	g.	Mds.	s.	Mds.	s.
New seed imported by Government ...	252	35	338	39	1,019	14
Acclimatized seed being Government share of previous year's produce ...	477	5	623	8	1,858	20
Acclimatized seed being Zamindárs' share ...	2,436	19	2,764	8	6,856	21
Add—Reapers' share ...	.....	.....	.....	.....	523	2
Total ...	3,166	19	3,726	15	10,257	17
Average per acre ...	.....	.....	.....	47.0	.....	129.5

Note.—1 Maund = 80 lbs.

Government have sanctioned a further grant of Rs. 1,000 and the experiment will be continued next season. Experience has shown that the Mithrau is better suited to wheat cultivation than the Khipra Canal and the cultivation of the introduced variety will next season be confined to the former.

2. Cotton.

33. Twenty lbs. of hand-ginned Dhárwár-American obtained through this department was sown on specially selected virgin land near Umarkot. The crop is reported to be very promising, but was not gathered at the time of report. The acclimatized American seed was also sown in a few small plots and is reported to have yielded fairly.

3. Arrowroot.

34. Mr. Gogte of Dápoli (Ratnágiri) planted, as last year, 10 acres with arrowroot. The Commissariat demand has been very short (only 12 lbs.), and though he has been able to sell some to the public, the bulk of the stock remains on hand.

4. Coffee.

35. Mr. Gogte is experimenting also with coffee. He has a plantation of about 300 bearing trees, which produced on an average 2 lbs. of berries per tree. Mr. Gogte's experience is that in the Konkan the tree flourishes on reddish sandy soil four miles from the sea with water at from 12 to 15 feet from the surface. The trees require shade, and Mr. Gogte has dotted his plantation with jack-trees. A compost of pounded sesame straw, prickly-pear (*Euphorbia neriifolia*) and waste water from the arrowroot manufacture is said to form a good dressing.

5. Borneo Tobacco.

36. The Borneo Tobacco seed received in April 1890 from the Government of India was distributed for experimental cultivation on the Bhadgaon, Hyderabad and Nadiád Farms. Only at Nadiád was a crop obtained, but the cost of cultivation was greater than the value. On the Bhadgaon Farm, owing to the unsuitability of the soil, the plants died after transplantation. At Hyderabad the plants grew vigorously throwing out good sized leaves until they were injured by wet in December and January. Damp further damaged the leaves in curing and rendered them unfit for use.

6. Strawberry.

37. The Saháranpur strawberry plants grown at Mahábaleshvar are reported to be in a flourishing condition and this year's produce, exhibited in the local Horticultural Show, carried off a first prize. Some English strawberry plants have been obtained and distributed to local Mális and Dhávads.

7. Indigo.

38. Indigo was persevered with in Junágad only, where owing to deficiency of rain, the outturn was smaller than in the previous year, 28 acres producing 4 maunds of the dye.

8. Date-Palm.

39. From the reports received, the 1888-89 plantations are doing well, with plants 2 to 5 feet high everywhere, except in Porbandar, where hot winds killed many of the young palms. Seedlings from seed distributed in 1889-90 are healthy and about a foot high. This year again about 80 lbs. of seed and 50 offsets were distributed. Except where sowing was retarded owing to late rain, the seed has sprouted well and seedlings are thriving. The offsets have also done well. A number of these are in the Ganeshkhind garden.

The large Sind plantations from Djereed seed are making good progress. Out of the seedlings raised in the Karáchi Municipal gardens 824 have been planted out with varying success. Seedlings have been planted in the Burns gardens to replace dead plants from the original plantation of Persian date, but in this plantation the nature of the soil is brackish and unfavourable. Roadside plantations have also been made, and others in good soil with water facilities. Dr. Kaka, the Acting Secretary, takes much interest in the experiment, and the results of these plantations under varying conditions of soil, situation and water, will be valuable as a guide for future plantations in Sind.

In some tálukas of Karáchi the seed has not germinated. In Hyderabad, Shikárpur and Khairpur, the plantations have lost many seedlings, but a good proportion have established themselves. Whether these trees will prove of use except for shade and ornament cannot be predicted for some years to come.

9. Divi-divi.

40. The Bhadgaon Farm produce was sold locally for Rs. 90; this is an advance on the profit of last year and there are good hopes of an industry being established as the trees grow and their value becomes known.

10. Potato Disease.

41. A potato disease has made its appearance for 4 or 5 years past in the Khed and Junnar tálukás and was brought to notice by me when Assistant Collector in the Poona District. It appears to be rapidly spreading and to have its origin in the exhaustion of the soil consequent upon long continued cultivation of this profitable crop. Many fields were this year an entire loss and the supply of locally grown potatoes has fallen off both in quality and quantity.

The disease, from a ring-like appearance on section of the tuber, is known to natives as the "Bāngadi" or bangle disease. Its symptoms consist in arrested growth of the tuber and withering of the green top. It is often to be detected *outside* an apparently sound potato by a small livid spot. Later in its growth the potato rots away. Sometimes the disease appears in patches of the field, but more commonly all over it, sound plants and unsound being mixed together.

The nature of the blight is obscure. The cultivators have tried fresh seed from Poona, and selected local seed without doing much good. It is doubtful whether measures of a curative nature, such as the application of sulphate of copper and lime solutions in the form of spray, which have been satisfactorily adopted in France and Germany, can be adopted with success in this country. The introduction of sound seed potatoes grown in a distant soil untainted by the disease and of hardy constitution offers a possible remedy of a temporary nature. Such seed often shows powers of resistance, which for some years at least, may combat the evil.

Potato seed to the value of Rs. 300 has been imported from Sāharanpur, Mahābaleshvar, Bangalore and Ootacamund and is being distributed to cultivators on the following conditions:—

(a) Re-payment of the seed *in kind* after harvest.

(b) The seed to be sown *unmixed with other seed* and the result to be reported for the information of this Department through the Māmlatdār.

Potato seed of approved varieties purchased from Messrs. Sutton and Sons of Reading has been planted on the Poona Farm. The potatoes grown from this will come in for distribution next year as seed for the affected district.

C.—Utilization of Bones for manure.

42. The export of bones from the port of Bombay during the year under report amounted to 13,653 tons valued at Rs. 8,23,584, a decrease of about 16 per cent. Of the total, the United Kingdom took 85 per cent., and the rest was taken by Belgium, France and Germany, the last two markets being new ones.

Messrs. Croft and Wells of Bombay furnished 2½ tons of their No. 5 bone meal for experimental purposes. It was tried both at the Bhadgaon and the Poona Farms, at the former on irrigated wheat and at the latter on sugarcane. The results have been inconclusive, but in future bone manure will be prepared at the farms, the price of the meal being higher than ordinary agriculturists can afford. The question will then be how bones compare in cost and as a fertilizer with the oil-cake and other manures in common use:

D.—Takāvi Advances.

Division.	1889-90.			1890-91.		
	Act XIX of 1883.	Act XII of 1884.	Total.	Act XIX of 1883.	Act XII of 1884.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Sind	12,095	32,438	44,533	12,350	49,595	61,945
Gujarāt	11,135	615	11,750	7,775	6,922	14,697
Deccan	11,255	13,940	25,195	17,730	13,646	31,376
Karnātak	41,305	800	42,105	1,33,445	175	1,33,620
Konkan	600	50	650	4,200	253	4,453
Total	76,390	47,843	1,24,233	1,75,500	70,591	2,46,091

43. The total advances are nearly double those of the previous year, and the increase is observable notably in the Karnātak, where the rise is 217 per cent. In the Konkan the increase is still higher, but the total amount is comparatively insignificant and is almost wholly confined to one district—Kānara. In Sind more than ¼ths of the advances are for the purchase of seed and cattle.

Although some of the district reports explain the absence of applications for Takávi by the fact that the cultivators are well-to-do, there are many other causes at work. In Bijápur, one of the poorest districts, the advances have fallen off, while in Belgaum and Dhárwár enormous strides have been made, much of the money going for such operations as the clearing of prickly-pear and the eradication of deep-rooted grasses. Many reasons for this difference suggest themselves, but none can be stated with any certainty, till an equal effort at popularization has been made in all the districts. In Belgaum, no increase would have occurred but for the vigorous initiation of the Collector. He reports that there is reason to believe that one result of the extension of Takávi has been that the Sowkars "have materially lowered their exorbitant rates of interest."

In the Konkan there seems to be little prospect of extending loans. Thána and Kolába, Mr. Sinclair thinks, are in the hands of capitalists and other persons to whom advances would be useless, and, in the opinion of Mr. Cumine, the tenures of Ratnágiri are against this system. In Kánara the Collector effected a considerable increase in the amount taken up, and here and throughout the Karnátak and Deccan the extension may be expected to continue. Poona took no advances this year.

In Gujarát several districts have made sudden demands. The increase here also is probably due to more complete publication assisted by the simplified rules.

E.—Locust attacks of the year.

44. Large flights of locusts appeared in November—December, and traversed various parts of Gujarát and Káthiáwár. Some penetrated from North-West India across the Central Provinces and passed over portions of Khándesh, Násik, Ahmednagar, Poona, Sholápur, Bijápur, Kolhápúr and Dhárwár; and a few crossed over to Kolába, Ratnágiri and Kánara in the Konkan. The flights passed rapidly from place to place, so that the total damage was spread over too wide an area to be much felt in any one district. All these belonged to the species *Acridium Peregrinum*. The locusts again appeared in May—June in parts of Khándesh, Gujarát, Káthiáwár and Ratnágiri, feeding on leaves mainly, as there was scarcely any cultivation at this time. In Sind they infested Karáchi, Thar and Párkar and Frontier Districts, lingering longest in the last district.

The specimens of locusts received from the District Officers were as last year forwarded to the Indian Museum for identification. This has resulted in the detection of a new locust enemy in the shape of a parasite. The specimen from Pálitána (Káthiáwár) was on dissection found to contain two grubs of a dipterous insect lodged in the cavity and muscles of the thorax. The grubs found were so large and were lodged so deep in the tissues that they would certainly have killed the insect. Similar grubs were found in specimens sent from the Upper Sind Frontier. Every locust afflicted with this parasite must necessarily die, and as the latter reproduces itself with extraordinary rapidity, Mr. Cotes hopes that "it will prove a valuable ally in reducing the number of locusts." As to the probable history of the grub, he writes—"The large winged fly, which is the mature form of the grub, lays an egg on the back of the locust; out of this egg hatches a minute grub, which bores its way into the tissues and gradually grows at the expense of the locust until it gets to the size of a big grain of boiled rice; it then cuts its way out of the locust, which would by this time probably have fallen to the ground from exhaustion and buries itself in the ground where it transforms into a compact brown pupa, from which the fly shortly emerges ready to copulate, and in the case of the female to lay eggs of its own."

In August last specimens of grasshoppers described as destroying young shoots of the Kharif crops on the Upper Sind Frontier were sent to the Indian Museum. They were identified with *Epacromia Dorsalis*. Little is known about these insects. They may be of local origin and would not probably do any serious damage.

F.—Improved Agricultural Implements.

45. The "Planet Jr." hoes mentioned in last year's report (para. 37) have been useful in the Government farms and at Nadiá, but cultivators have not

taken them up; as with most European implements, they cannot compete in cost with the rayats' tools, which for ordinary cultivation are fully useful.

An American grass mower and a rake, both worked by bullock power, were tried on the Bhadgaon Farm with the result of a saving of Rs. 1-13-0 per ton of grass cut and raked. The average working capacity of these implements is six tons of grass cut and raked per day. The mower works perfectly on ground of a very uneven character.

The price of these implements is Rs. 350 for the mower and Rs. 190 for the rake. They are both excellent machines for use by army departments or wherever hay or fodder is cut in large quantities. I saw the machines worked on very rough grass land for the Commissariat Contractor at Poona. He has purchased a number of the machines and their use will probably extend wherever labour is not cheap.

G.—Trade in Wheat.

46. Appendix B shows the exports of wheat from the ports of Bombay and Karáchi since 1880. The exports from Bombay began to fall in 1887 and reached in 1890 their lowest term since 1881. The highest limit was reached in 1886, mainly in consequence of the failure of the Russian harvests. Judged by the exports during the eight months ending August last this year's exports, from a similar cause, are expected to beat the record of 1886. The partial failure of wheat and rye crops in Europe has also created an unusually heavy demand for Indian wheat. High prices, a falling exchange, and the holding off of rain for a time considerably beyond the usual date, thus facilitating transport, have all been in favour of the wheat trade. The receipts by rail into the port of Bombay during the quarter ending 30th June 1891 (the chief period of shipment) nearly trebled those for the corresponding period of the previous year. This rise has taken place in spite of an unfavourable season both in the Presidency and in Berár. The exports from Karáchi have been rising since their abnormal fall in 1887 and this year's figures will as in Bombay exceed those of any previous year. The estimated outturns of Sind and the Panjáb, which contribute the whole of these exports, show no corresponding increase. It is therefore clear that an abnormal demand has drained the country of large quantities of wheat which would in ordinary circumstances have been used for local consumption.

H.—Cotton.

47. The important discussion on the adulteration and deterioration of Indian cottons raised by Mr. James and the opinions of mercantile bodies on the legislation suggested cannot be dealt with here in detail. Generally the trade has been adverse to interference in the shape of a revival of legislation against undeclared mixture of staples, and the policy of attempting to force the higher grades of cotton upon the grower has not met with favour. The Indian growths, good, bad and indifferent, have been fairly ousted from the Liverpool market by the increasing competition of continental mills, backed with the advantage of cheap labour; a result further precipitated by the cheapness and enormous output of American cotton. It is more than doubtful whether any legislation could hinder a change due to causes of this nature, especially when it is borne in mind that the best of Indian fine cottons cannot compete on their merits with fair American, while they yield a smaller quantitative return per acre. As regards the results to the Bombay cotton grower, no harm has accrued. His market has changed place, but is larger than ever. The Bombay and Sind acreage under cotton stands thus:—

1888-89	5,382,776	The highest previously attained area since 1874-75 being in 1882-83, viz., acres 5,698,862.
1889-90	...	...	58,20,902
1890-91	...	...	5,923,639

The figures for Berár are still more significant. In 1890-91 the highest area on record was attained.

The exports of the Bombay Presidency and Sind show a steady progress (excluding the abnormal trade of 1881 to 1883) allowing for ordinary fluctuations.

(Indian maunds of 82 $\frac{2}{7}$ lbs.)

Year.	Bombay Presidency (proper).	Province of Sind.
1880-81	4,383,197	142,379
1881-82	6,034,033	179,354
1882-83	6,664,551	136,566
1883-84	6,208,891	94,943
1884-85	5,532,384	97,537
1885-86	4,437,817	169,564
1886-87	5,332,737	203,392
1887-88	5,348,562	178,489
1888-89	5,714,301	177,463
1889-90	6,559,220	196,685
1890-91	6,209,948	164,456

The demand therefore for the coarse Indian cottons, following economic changes on the Continent, is steady and increasing, and their gradual encroachment upon the finer but less profuse staples seems to be natural and inevitable so long as these conditions persist.

In August Dr. Watt and Mr. E. Thurston met Dr. T. Cooke and myself in conference at Poona, to discuss the destructive hybridization to which cotton is peculiarly subject and the means of dealing with it. Dr. Watt is of opinion that no cotton in India is botanically a pure species and his object is by culture to reach a form which may be as far as possible stable. As a first step a census of existing forms of Bombay cotton is being made to form a definite basis of comparison, while experiments have been arranged for at the Poona Farm with the object of ascertaining the botanical affinities of the trade staples, and if possible, obtaining a cotton plant of indigenous stock of a staple comparable to that of exotic varieties, while resisting the tendency of those varieties to degenerate by hybridization.

At this conference the nature of cotton and silk collections to be made through this Department for the Imperial Institute was discussed and settled.

I.—Cotton Saw-gins at Dhárwār.

43. One steam roller-gin has been added to the 15 steam-gins existing last year. It may be noted that the Kumpta cotton is steadily encroaching on the exotic variety in this district, for which the saw-gins were introduced. A few small steam-ginning factories have stopped work owing to the expense of employing certificated Engineers now required under the Steam Boilers Inspection Act; hand-gins to some extent taking their place. The Government Factory for repairing saw-gins continued to work during the year under report.

J.—Forecasts.

49. As noted last year forecasts for the important oilseeds.—Sesame, linseed and rapeseed—have been added to those on cotton and wheat. The following statement summarises the results as given in the final reports:—

(Figures in thousands.)

Crop.	Average.			1890-90.			1890-91.			Estimated outturn, 1890-91.	
	British Dis- tricts.	Native States.	Total.	British Dis- tricts.	Native States.	Total.	British Dis- tricts.	Native States.	Total.	British Districts.	Native States.
Cotton	2,738	2,724	5,462	2,919	2,902	5,821	3,123	2,760	5,892	465 59.5	636 91.8
Wheat	2,346	596	2,942	2,360	554	2,914	2,329	513	2,842	594 571.3	156 681.2
Sesame	464	...	464	424	...	424	334	275	609	714 239.3	695 283.1
Linseed	309	...	309	174	...	174	193	24	217	390 226.3	27 126.0
Rapeseed	141	...	141	244	...	244	253	54	307	644 285.1	211 437.5

Note.—Figures in black type give acre rate in pounds.

The forecasts of area again correspond closely with the Agricultural Returns of actuals, viz. :—

Crop.	Area as returned in		Percentage difference.
	Forecast Returns.	Agricultural Returns.	
Cotton	3,123,415	3,157,694	-1.09
Wheat	2,323,934	2,318,578	+0.45

The oilseeds, being a new departure, are out by 8 and 7 per cent. respectively, but these are largely grown as row crops and are difficult to estimate. Rapeseed is a Sind crop only, and the information received proved to be greatly inaccurate, vitiating the forecast altogether.

The outturn is of course only an approximate estimate.

K.—Agricultural Shows and Exhibitions.

50. The shows subsidised by Government were :—

No.	Province.	Place.	Kind of Show.	Date.	Prize Money.	Contributions.
					Ra.	
1	Deccan	Poona	Horse show ...	3rd October 1890.	3,200	Government grant Ra. 8,000; District Local Board Ra. 600; subscriptions Ra. 770.
2	Káthiáwár	Rájkot	Horse show ...	20th November 1890.	1,983 and 38 diplomas.	Government grant. Ra. 600; Káthiáwár Chiefs Ra. 5,250.
3	Deccan	Ahmadnagar...	Horse and cattle show and Agricultural Exhibition.	30th December 1890.	1,146	Government grant Ra. 600; District Local Board Ra. 300.
4	Sind	Jacobabad ...	Sind Horse show	12th January 1891.	4,325	Government grant Ra. 2,000; Shikárpur Local Board Ra. 2,500; Upper Sind Local Board Ra. 1,200.
5	Gujarát	Ahmadabad ...	Horse show ...	9th March 1891	2,578	Government grant Ra. 2,000; His Highness the Cákwar Ra. 1,000; Ahmadabad Local Board Ra. 1,000; Native Chiefs Ra. 600.

Poona Horse Show.—There was an increase of 70 over the exhibits (233) of last year, due probably to a favourable season and an increase in the value of prizes offered. But the quality of the exhibits was poor. The broodmare class alone showed some fine animals, while the only other classes, which the judges could pronounce to be good or fair were the yearlings and 3-year-old fillies. The Committee pointed out in connection with this show that the purchase by Remount Officers of mares and fillies was opposed to the interests of Horse-breeding; but on reference to the Military Department of Government it has not been found possible to impose the desired restriction.

Rájkot Horse Show.—The total number of exhibits was 1,190 as compared with 610 of the previous year and 355 of 1888. Most of these (925) were contributed by the Hálár Pránt and the rest by other Káthiáwár States; 900 were the property of Girásias and other *boná fide* cultivators and the rest mainly of the several Darbárs. His Excellency the Governor was present, 27 horses changed hands in all as compared with 16 in the previous year. No army remounts are yet obtainable in Káthiáwár. 26 entries were shown in the remount class, of which 3 were purchased for police.

The broodmares were very good, especially those belonging to the Native Chiefs, and the yearling stock was good. The two-year colt and filly class was good, but the 3- or 4-year-olds were inferior.

Rs. 1983 were given in prizes including silver medals. The principal prize winners among the States were Bhavnagar, Morvi and Gondal, and many of the

money prizes went to Girássias of Morvi, Nagar and Vánkñner. The quality of stock at the Show remains very low and much unsoundness is exhibited. It would be of great advantage if some of the Chiefs would introduce Veterinary establishments in this part of the country.

Ahmadnagar Horse and Cattle and Agricultural Show:—Being held after an interval of 3 years, the Show was less successful than that held in November 1887. The rains also having held off during the earlier part of the season, the Show had to be postponed till the end of December when agricultural operations were in full progress and exhibitors could with difficulty attend. The number of exhibits in all branches of the Show was much less than on previous occasions. It has therefore been resolved that the Show should be held in future years not later than October or November.

The total number of horse exhibits was 160 as compared with 288 in 1887. The quality of the animals exhibited was good, the classes for young stock, especially three-year-old fillies being noticeable. 12 animals were purchased for remount purposes. In the opinion of the Army Remount Agent, the result of the Show has been satisfactory. The Show was not restricted as previously to animals from the Ahmadnagar District and 39 exhibits were admitted from the neighbouring talukas of Poona.

The Cattle and Agricultural Show was poor. There was a falling off of 176 entries as compared with 1887. Rs. 160 were awarded as prizes to 16 animals, but none of them appear to have belonged to *bond fide* cultivators, which robs this branch of the Show of much of its interest.

The Agricultural Exhibition also was not a success, the specimens of grain, seeds, vegetables and fruit being with few exceptions of an indifferent character. Rs. 192 were awarded in prizes (71 in all) for grain and seed exhibits. Fruit and vegetables were of an ordinary description. Rs. 65 were spent in prizes for miscellaneous products viz., sugar-cane, molasses, tobacco, fibres, lucerne and guinea-grass. The total spent in prizes was Rs. 1,146.

Sind Horse Show—Held this year at Jacobabad. In all, the number of animals brought up was 1,404 as compared with 1,038 produced at the Shikárpur Show in the previous year and no fewer than 1,369 animals were classified and registered. This marked increase was accompanied by a general improvement in quality. The following statement shows the extent to which the various districts were represented;—

Upper Sind Frontier	...	...	...	750
Beluchistán	...	...	...	433
Shikárpur	...	...	...	141
Native States	...	...	...	45
				1,369

The distinctive feature of the Show was, as usual, the large number of mares exhibited by Beluchis and Sind Jamindárs. The pony and mule classes were also well filled.

In the class for remounts (178 against 95 last year) there was a satisfactory increase in the number of exhibits, which are described by the judges as 'fairly good' but somewhat 'small'. 57 were purchased by the Army Remount Agent. In all, 147 horses at a cost of Rs. 31,623 were purchased by the representatives of the various Government Departments.

Rs. 4,325 were given away in prizes, nearly one-half of which was carried off by breeders from Beluchistán, although their exhibits numbered less than one-third of the total.

126 animals were branded at the Show by the Superintendent, Horse Breeding Department, Bombay.

Mule-breeding continues to make fair progress. 85 animals of different ages were exhibited and 8 prizes were given. This industry only requires attention on the part of army purchasers to develop considerably. The Show was altogether most successful.

Ahmadabad Horse Show.—The show was an improvement on that of the last year as regards both number and quality of the exhibits, which were mostly the property of cultivators and *bond fide* breeders.

District or State.	Animals	Prize Money.
Ahmadabad ...	279	1,465
Kaira ...	85	445
Baroda ...	172	290
Mahi Kántha ...	54	195
Other places ...	113	140
Given to geldings by way of en- couragement ...	...	40
	703	2,575

Rs. 2,575 were awarded and about Rs. 1,205 were withheld by the judges.

Chinchli.—There was no show during the year.

Mahábaleshvar Horticultural Exhibition.—This show was held at the Reay Gardens on the 1st May under the patronage of His Excellency the Governor. The total cost of the exhibition was Rs. 910, of which Rs. 563 were realized by subscriptions and sale of tickets, and the balance was derived from the savings of the last exhibition held in 1881. The exhibits, which were restricted to an area of 20 miles round Mahábaleshvar, were divided into four classes—flower, fruit, vegetable, and miscellaneous. The vegetable class included the produce of imported seed from English seedsmen, Simla and Lucknow. In the miscellaneous class were exhibited samples of jam, Mahábaleshvar and Panchgani coffee, Mahábaleshvar arrowroot, honey in combs, bees-wax and flowers. This exhibition should produce good results.

VI.—HORSE AND CATTLE-BREEDING AND VETERINARY ESTABLISHMENT.

Civil Veterinary Department.

51. The Department has been organized as regards the establishment of Veterinary Dispensaries in 12 districts under subsidy of Government, and the relations of the Superintendent, Horse-breeding Operations, to the Department of Land Records and Agriculture have been defined. The Veterinary Dispensaries are to be in charge of graduates of the Bombay Veterinary College, employed as servants of the District Local Board, on salaries of Rs. 50—100. Their duties have been prescribed, and in addition to ordinary hospital work comprise—

- (a) the superintendence of Government Stallions.
- (b) castration.
- (c) attendance at shows.
- (d) repression of epidemic disease in the district.

Provision has been made for the addition, wherever possible, of a travelling graduate, towards whose pay a further contribution is made by Government. This step is of great importance, as it is impossible for officers in charge of dispensaries to attend to epidemics in their districts or to visit the villages without detriment to hospital work. Through these officers much improvement in the treatment of stock should result; they will encourage owners to send difficult cases to the hospital; and they are to report the existence of epidemic disease for the Imperial Bacteriologist.

Under Government Resolution No. 8083-A of 15th November 1890, a Conference was held at Poona under the presidency of Sir E. Buck, at which Mr. Hallen, Mr. Ozanne, Dr. T. Cooke, Major Humfrey, Mr. Steel and Mr. Grainger were present. Dr. Lingard and Mr. Cooper, A.V.D., attended. At this Conference the conduct of the Bacteriological Laboratory and of Veterinary and Horse-Breeding Operations as concerned with Imperial interests formed the subjects of discussion. As regards horse-breeding a number of questions were raised, the chief of which have been the subject of separate consideration by Government.

The Annual Report of the Horse-Breeding Department was reviewed by this Department for the first time.

The number of stallions has increased by one, being now 104. The average annual cost is $5\frac{1}{2}$ per cent. below that of last year though still heavy (Rs. 343-5-5). The average of mares covered (3,270 in all) was 37.5 per stallion. The produce return is unreliable.

The number of mares branded was 1,046, a decrease on the previous year. Remounts to the number of 572 were purchased, also a decrease from last year (643).

Mule-breeding has made considerable progress in Sind, but none in the Presidency Proper.

Subjects which have been brought prominently forward are the under-working of the Government stallions and the inefficiency of the existing branding system to provide the work wanting. Attention has also been drawn to the want of exercise, which interferes with the competence of the stallions and probably is the cause of a somewhat heavy list of casualties. Castration makes little progress.

Veterinary Dispensaries.

52. Excluding the Poona Dispensary attached to the College of Science

Ahmadabad.
Nadiád.

Dhulia.
Násik.

(which has since been made a District Dispensary), there were four dispensaries in working order.

The other districts are for the most part prepared to take advantage of the liberal concessions of Government, and progress will be reported next year.

The Principal of the Bombay Veterinary College, who has reviewed the reports of the four dispensaries, is on the whole satisfied with the results. Itinerating graduates are the chief need. During the year under report the hospitals were not receiving the full support of Government now granted, and for want of funds not much advance could be made. The Local Fund grants will, in most cases, bear an increase and the levy of small fees may afford some assistance. Meanwhile, the people show themselves ready to accept the Veterinary assistance offered. In the 4 dispensaries 2,503 animals were treated out of which 51 per cent. were cured, 19 per cent. relieved, 3 per cent. died, 3 per cent. were returned incurable, 22 per cent. appear as results unknown and 2 per cent. remained under treatment. An unduly large number of cases returned as "results unknown" points to one of the chief difficulties met with viz., that, failing immediate and miraculous cure, rayats are apt to take their animals away prematurely. I attach brief notes on each dispensary.

Ahmadabad.—An average of 4 in-patients and 19 out-patients daily. The Collector has taken steps for the increase of the contributions from the Pinjrapol, Municipal and Local Fund. Mr. Bhatt did good work, but could not leave his dispensary to see to cases of foot and mouth disease which appeared in the district. A travelling Veterinarian is much required in this district. Receipts Rs. 1,116, expenditure Rs. 1,109.

Nadiád.—Rinderpest and foot and mouth disease appeared in the district and the Veterinary graduate spent 3 months travelling, greatly to the damage of the hospital work. A travelling assistant has since been appointed and the dispensary results may be expected to improve rapidly. 675 animals were treated in the hospital (of which 20 per cent. were from outside) and 196 in the villages. Receipts Rs. 1,393; expenditure Rs. 1,178. No in-door accommodation.

Dhulia.—Average attendance of out-patients 10. In-door accommodation deficient. Rinderpest was severe in parts of the district, but not much could be done owing to the absence of a second Veterinary Officer. An outbreak of sheep-pox was taken in hand by Mr. Mehta, Superintendent of the Bhadgaon Farm. Receipts Rs. 1,300, expenditure Rs. 1,219.

Násik.—This dispensary receives its chief income from the Society for Prevention of Cruelty to Animals. The hospital has been well managed and no less than 129 in-door patients were treated and about the same number of out-patients; the daily average attendance being 13.5. Some attendance at private stables was given at a low fee and publicity was given to the uses of the hospital by the distribution of printed handbills in outlying villages. The institution owes much to Miss Harvey of the Zanana Mission, who takes a lively interest in its welfare. Eight prosecutions were undertaken under the Prevention of Cruelty to Animals Act. Receipts Rs. 1,600, expenditure Rs. 1,163.

Cattle Disease.

53. The year was tolerably healthy, severe attacks of disease (Rinderpest in both cases) occurring only in Surat and Khándesh. In Surat the Collector deputed a Veterinarian to visit the affected tracts. There is no doubt that at present the great bulk of disease among farm stock remains unreported. The Collector of Surat remarks that "the rayat has so long been accustomed to look on cattle disease as a visitation of God, for which there is no help that he has not yet got into the habit of complaining about it." There was a great deal of mortality in Poona, especially among young stock, but it was not attributable to any known epidemic disease.

Bacteriological Laboratory.

54. The Conference recommendations under this head laid down the lines on which this institution should be worked. It should investigate diseases of domesticated animals in all parts of India by biological research both in the Laboratory and at the place of outbreak and work out remedial measures. As a first step to this end the conduct of a regular survey, province by province, of such diseases to be undertaken by an officer to be entitled the Superintendent of Bacteriological Survey. Dr. Lingard's title to be, for purposes of official correspondence, Imperial Bacteriologist. A resident Clinical Assistant to be attached, with hospital duties, and as Instructor to students in the Agricultural branch of the College of Science. Detailed recommendations were also made as to the equipment of the Laboratory and the distinctive duties of each office.

Dr. Lingard has been engaged during the year in continuing his investigation into the Intimate Etiology of 'Surra.'

VII.—AGRICULTURAL AND FISCAL STATISTICS.

A.—AGRICULTURAL.

55. The revised forms prescribed by the Government of India for returns of Agricultural Statistics were circulated under Government Resolution No. 5802, Revenue Department, dated 25th August 1891. These do not affect, as far as the Bombay Presidency is concerned, the general instructions prescribed in the Revenue Manual as regards the registration and compilation of Agricultural Returns by District Officers; some special points in the compilation of agricultural stock and price returns will require notice, but the orders were issued too late to have effect this year. The returns for the Government of India will, however, be compiled in the Director's office in the revised forms as far as possible.

The District Agricultural Returns, which were due in this office under the

District.	Date of receipt.
Ratnágiri	3rd October.
Khándesh	5th do.
Broach	8th do.
Thána	21st do.
Poona	23rd do.

Manual on 1st September, were in many cases received late and were especially late for the districts noted in the margin. With the aid of the inspecting staff now being organized, punctual compilation of the Taluka and District Agricultural Returns should easily be secured. Circle Inspectors are required to compile Taluka Agricultural Returns; and the District Returns

are compiled and reviewed for the Collector by the District Inspector.

In the District Returns one great change effected during the year is the exclusion of statistics for a large number of khoti and alienated villages in the Ratnágiri District, the figures formerly reported being found to be untrustworthy. The Collector, Mr. Cumine, on a reference from this office, wrote:—

"No means exists in this Collectorate for obtaining correct figures; and until such means is created, it seems to me that no good can result from requiring from us year after year figures that are notoriously mere guess work."

For Sind the returns received are more complete than formerly, the supplementary statements as to anna valuation of outturn and as to number of fruit trees being now furnished for the first time (*vide* paras. 67 and 68 below).

Return No. I.—Area of Available Statistics.

56. The following table shows the variations in the total number of villages and gross area of the Presidency Proper and Sind, distinguishing area and villages for which Agricultural Statistics are available and are not available:—

Area details.

Province.	GROSS AREA AND VILLAGES.			AREA AND VILLAGES OF STATISTICS AVAILABLE.			AREA AND VILLAGES OF STATISTICS NOT AVAILABLE.		
	1880-90.	1890-91.	Variation.	1880-90.	1890-91.	Variation.	1880-90.	1890-91.	Variation.
<i>A.—Presidency Proper.</i>									
Number of villages ...	22,981	22,981	...	21,334½	20,608½	-726	1,646½	2,372½	+726
Area (thousand acres) ...	47,542	47,546	+4	45,168	43,851	-1,317	2,374	3,695	+1,321
<i>B.—Sind.</i>									
Number of villages ...	3,835	4,107	+272	3,674	3,982	+308	161	125	-36
Area (thousand acres) ...	26,091	28,407	+2,316	24,247	24,421	+174	1,844	3,986	+2,142
<i>Total Presidency (A + B).</i>									
Number of villages ...	26,816	27,088	+272	25,008½	24,590½	-418	1,807½	2,497½	+690
Area (thousand acres) ...	73,633	75,953	+2,320	69,415	68,272	-1,143	4,218	7,681	+3,463

57. Gross Area.—In the Presidency Proper, the gross area shows a net increase of 4,000 acres, the chief variations being in the districts noted in the margin, and attributable to the progress of survey. The total number of villages shows no variation, but 21 alienated villages in Belgaum and 1 in Sâtára were transferred to the head "Government villages."

	Acres.
Khândesh... ..	-6,000
Násik	+1,100
Ahmadnagar	-1,200
Poona	+8,000
Sâtára	+1,800
Ratnágiri	-1,400
Kánara	+2,400

In Sind both the gross area and number of villages are not yet determined and show large variations as noted in the margin. The variations in the number of villages are due partly to the splitting up of villages and partly to transfers. The sudden increase of area in Karáchi is due to the inclusion of unsurveyed villages, which were hitherto not returned. In other districts, the variations are chiefly attributed to progress of survey.

District.	Villages.	Area.
	No.	Acres.
Karáchi	+2	+2,570,000
Hyderabad	+60	+75,600
Shikárpur	-1	+8,000
Upper Sind Frontier	+1	+8,600
Thar and Párkar	+220	-843,000

58. Area of available statistics.—In the Presidency Proper, there is a net decrease of 726 in villages and 13,17,000 acres in area as noted in the margin. The large decrease in Ratnágiri is due as explained above to the exclusion of statistics for khoti and alienated villages, which were merely guess work. In Bijápur, the decrease is due to the village record of an alienated village (Ankalgi) having been stolen in a dacoity. In Kánara, on

	Villages.	Area.
	No.	Acres.
Ratnágiri	-812	-1,412,000
Kánara	+81	+87,000
Poona... ..	+4	+7,900
Sâtára	+1	+14,500
Ahmadnagar	+1	-1,200
Bijápur	-1	-7,400
Khândesh ... ..	...	-5,400
Násik ... ..	...	-600

completion of the original survey all the villages now furnish statistics. In other districts, the increase is due to the transfer of surveyed alienated villages from the head "not available." The variations in area are partly due to changes in the number of villages and partly to correction accompanying the progress of survey.

	Villages.	Area.
	No.	Acres.
Karáchi	+38	+435,000
Hyderabad	+60	+75,600
Shikárpur	+1	+2,600
Upper Sind Frontier	+1	+8,600
Thar and Párkar	+220	-843,000

In Sind, variations occur as noted in the margin, and are due partly to causes noted above under the gross area and partly to transfer of newly surveyed villages from the head "not available."

	Non-reporting Government villages.
Kaira	86
Panch Maháls	59
Khândesh	958½
Násik	12
Thána	2
Kolába	2
Ratnágiri	1,073

Non-reporting villages.—In the Presidency Proper 1,554½ Government villages with an area of 2,658,000 acres and 818 Alienated villages with an area of 1,037,000 acres do not return Agricultural Statistics. The Alienated villages are all unsurveyed, and the Government villages are under special tenures.

In Sind, statistics are returned for all but 125 villages, (120 Government and 5 Alienated) with an area of 3,985,000 acres as returned.

Return No. II.—Cultivated and Uncultivated Area.

59. The variations in areas under different sub-heads of cultivated and uncultivated land, are shown in the appended table. For comparison with last year, the variations exhibited in this return and the other returns are in this review shown for the Presidency Proper exclusive of Ratnágiri. For Ratnágiri and Sind no comparison can be made owing to sudden changes in areas of "available statistics" as noted in para. 58 above.

PRESIDENCY PROPER EXCLUSIVE OF RATNA'GIRI.

Detail.	Area (thousand Acres).		Increase.		Decrease.		
	1889-90.	1890-91.	Thousand Acres.	Per cent.	Thousand Acres.	Per cent.	
<i>A.—Cultivated Area.</i>							
1. Gross cropped ...	25,199	25,458	259	1·02	...	...
2. Cropped more than once...	545	540	...	...	5	0·91
3. Net area cropped...	24,654	24,918	264	1·07	...	...
4. Fallow ...	4,761	4,608	...	...	153	3·21
Total cultivated 3+4.	5. Assessed ...	29,335	29,443	108	0·36
	6. Unassessed ...	50	83	3	3·75
	7. Total A. ...	29,415	29,526	111	0·37
<i>B.—Uncultivated Area.</i>							
Available for cultivation.	8. Assessed ...	1,467	1,323	144	9·81
	9. Unassessed ...	878	863	15	1·70
Not available for cultivation.	10. Forest...	6,361	6,678	317	4·98
	11. Other than Forest ...	5,262	5,088	174	3·30
12. Total B (uncultivated)...	13,968	13,952	...	...	16	0·11
13. Total A+B=Area of available statistics ...	43,383	43,478	95	0·21	...	...

60. The gross cropped area gives a net increase of 259,000 acres or 1·02 per cent., while the area cropped more than once shows a small decrease of 5,000 acres. The net cropped area

District.	Net cropped Area.	Current fallow.	Assessed cultivated i.e., occupied land.
	Area in	thousand	acres.
Khándesh ...	+63	-51	+11
Poona ...	+32	-32	.....
Násik ...	+32	-30½	+1½
Sholápur ...	+24	-22	+2
Bijápur ...	+23	-5	+18
Ahmadabad ...	+21	-17	+4
Ahmadnagar ...	+21	-15	+6
Sátára ...	+18	-9	+9
Dnárwár ...	+12	-10½	+1½
Panch Maháls ...	+9	+19	+28
Surat ...	+6	-6	.....
Kaira ...	+3	-1½	+1½
Belgaum ...	-5	+22	+17
Thána ...	-5	+4	-1

has thus increased by 264,000 acres or 1·07 per cent. This increase is attributable to extended cultivation, (1) of fallow (153,000 acres or an increase of 3·21 per cent.), (2) of waste land newly occupied (108,000 or an increase of 0·36 per cent.) and (3) of land under temporary cultivation (3,000 or 3·75 per cent. increase). The principal variations in the District returns are noted in the margin.

In net cropped area Belgaum and Thána alone show a small decrease of 5,000 acres each. In the Panch Maháls a considerable increase appears both under fallow and newly occupied land, which seems to indicate that more land is

being taken up than is actually put under cultivation. Only in Thána is there a small decrease of about 1,000 acres under total occupied land, which is not explained.

61. There is a decrease of 144,000 acres or 9·81 per cent. under "assessed" land and of 15,000 acres or 1·70 under "unassessed" land "available for cultivation." This decrease occurs chiefly owing to waste land newly taken up for cultivation as noted above, and partly to transfer to forests as indicated below.

Forest.		Thousand Acres.
Kánara ..	...	+76
Thána ...	...	+61
Panch Maháls ...	...	+51
Khándesh ...	...	+42
Poona ...	...	+40
Belgaum...	...	+27
Kolába ...	...	+14

62. Land under forest has gained by 317,000 acres or 4·98 per cent., chiefly in the districts noted in the margin. In Kánara the increase is mainly nominal, being chiefly due to the inclusion of forest land of the 81 villages of the Siddápur Táluka, which returned statistics for the first time. Elsewhere, the increase is obtained by transfer principally of "uncultivable" land.

63. The usual percentage table summarizing the information contained in Returns Nos. I and II., is appended. In Kánara, the area of non-available statistics disappears altogether owing to the completion of the Survey operations; the increase of this item in Ratnágiri has been explained.

No.	District.	Percentage on gross area, of areas for which statistics are not available.	PERCENTAGE ON NET AREA FOR WHICH STATISTICS ARE AVAILABLE, OF AREAS :				
			Cultivated.		Uncultivated.		Forest.
			Actually cropped.	Current Fallows.	Available for cultivation.	Not available for cultivation.	
A.—PRESIDENCY PROPER.							
I.—Gujarát.							
1	Ahmadabad ...	1·0	55	22	4	18	1
2	Kaira ...	8·5	75	5	8	12	...
3	Panch Maháls ...	15·5	36	15	21	9	19
4	Broach ...	1·9	65	6	3	26	...
5	Surat ...	2·4	47	24	7	18	4·
	Average ...	4·8	56	16	7	17	4
II.—Deccan.							
6	Khándesh ...	9·9	59	3	16	12	10
7	Násik ...	4·2	56	9	5	9	21
8	Ahmadnagar ...	2·5	67	8	3	9	13
9	Poona ...	1·2	63	10	1	13	13
10	Sholápur ...	...	74	10	1	9	6
11	Sátára ...	3·7	61	13	1	10	15
	Average ...	4·3	63	8	6	10	13
III.—Karnátak.							
12	Belgaum ...	0·9	62	12	4	6	16
13	Bijápur ...	0·9	77	9	3	6	5
14	Dhárwár ...	2·5	72	9	2	7	10
	Average ...	1·5	71	10	3	6	10
IV.—Konkan.							
15	Thána ...	4·1	22	21	5	30	22
16	Kolába ...	2·4	31	23	4	22	20
17	Ratnágiri ...	85·1	31	36	1	30	2
18	Kánara ...	...	10	3	2	8	77
	Average ...	26·0	19	15	4	20	42
	Average A. ...	7·9	57	11	5	12	15

No.	District.	Percentage on gross area, of areas for which statistics are not available.	PERCENTAGE ON NET AREA FOR WHICH STATISTICS ARE AVAILABLE, OF AREAS:				Forest.
			Cultivated.		Uncultivated.		
			Actually cropped.	Current Fallows.	Available for cultivation.	Not available for cultivation.	
B.—SIND.							
19	Karachi ...	29.7	8	8	19	63	2
20	Hyderabad ...	...	15	24	40	19	2
21	Shikarpur ...	17.6	20	15	40	18	7
22	Upper Sind Frontier ...	48.8	20	43	18	13	6
23	Thar and Parkar ...	...	7	9	...	84	...
	Average B. ...	14.0	12	14	21	50	3
	Average for the Presidency ...	10.1	41	12	11	25	11

Return No. III.—Crops.

64. The rainfall was again favourable for sowing, and more so than last year, the total area under crop having risen by $2\frac{1}{2}$ lakhs or 1 per cent. Jowári, and gram among cereals and pulses, and cotton, oil-seeds and tobacco show a general increase; while bajri, paddy, wheat, tur and other cereals and pulses and sugarcane have generally decreased. Non-food crops have risen by $3\frac{2}{10}$ lakhs or 7.1 per cent., while food-crops have diminished by $\frac{3}{4}$ lakh or 0.3 per cent. The season was specially favourable for sowing cotton and rabi jowári.

Table to show effect of season on area sown.

PRESIDENCY PROPER EXCLUDING RAYNA'GIRI.

Crops.	Area, Thousand Acres.		Increase.		Decrease.	
	1889-90.	1890-91.	Thousand Acres.	Per cent.	Thousand Acres.	Per cent.
Jowári ...	7,698	8,322	624	8.1	...	...
Bajri ...	4,959	4,449	...	...	510	10.3
Paddy ...	1,568	1,555	...	...	13	0.8
Wheat ...	1,924	1,913	...	...	11	0.5
Others ...	1,695	1,694	...	...	1	...
Total Cereals ...	17,844	17,933	89	0.5	...	...
Tur ...	601	524	...	...	77	12.8
Gram ...	691	704	13	1.9	...	...
Others ...	1,152	1,058	...	...	94	8.1
Total Pulses ...	2,444	2,286	...	..	158	6.5
Tobacco ...	70	96	26	37.1	...	...
Sugarcane ...	67	63	...	...	4	6.0
Oil-seeds ...	1,509	1,581	72	4.7	...	...
Cotton ...	2,816	3,052	201	7.0	...	...
Food Crops Total ...	20,520	20,447	...	...	73	0.3
Non-food Crops Total ...	4,679	5,011	332	7.1	...	...
Total Crops ...	25,199	25,458	259	1.0	...	...

Jowari.—Rabi jowári has increased by 11 lákhs acres, while *kharif* jowári

District.	THOUSAND ACRES.		
	Kharif.	Rabi.	Net variation.
Sholápur ... ..	...	+200	+200
Ahmadnagar ... ..	...	+222	+222
Bijápur	-207	+417	+210
Sátára	-9	+88	+79
Dhárwár	+36	-12	+24
Khándesh	-48	...	-48
Broach	-2	-35	-37
Ahmadabad	-35	...	-35
Belgaum	-47	+22	-25
Surat	-23	...	-23
Poona	-12	-2	-14
Násik	-9	-1	-10
Kaira	-6	...	-6

decreased by $4\frac{3}{4}$ lákhs. This net increase of $6\frac{1}{4}$ lákhs or 8.1 per cent. is confined to the East Deccan and Karnátak, where early rain for *kharif* bájri was deficient, and the later rainfall specially favourable for *rabi* sowing. In Dhárwár jowári is principally a *kharif* crop and for this the rains were favourable producing the increase noted. In Broach the smaller area under *rabi* jowári is mainly due to the larger area

devoted to cotton owing to favourable *kharif* rains.

	Thousand Acres.
Ahmadnagar	-253
Sholápur	-201
Bijápur	-121
Sátára	-44
Khándesh	-18
Poona	+67
Belgaum	+24
Kaira	+16
Násik	+7
Ahmadabad	+6

Bajri.—The decrease of $5\frac{1}{10}$ lákhs or 10.3 per cent. is chiefly in the East Deccan and Karnátak where *kharif* rains for bájri sowing were deficient. The decrease in East Deccan and Karnátak is more than counterbalanced by the large increase in jowári above noted. In Khándesh the decrease noticeable under jowári and bájri is explained by the favourable cotton-sowing rain, which drew a large area under that crop.

	Thousand Acres.
Kaira	-12
Sholápur	-6
Broach	-6
Bijápur	-5
Násik	+6
Kánara	+8
Khándesh	+2
Poona	+2

Paddy.—There is a net decrease of 13,000 acres or

0.8 per cent., considerable in Kaira where the heavy

	Thousand Acres.
Ahmadabad	-16
Belgaum	-11
Bijápur	-10
Sátára	-10
Khándesh	-8
Poona	-8
Panch Maháls	-8
Sholápur	-8
Kaira	-5
Ahmadnagar	+46
Dhárwár	+10
Surat	+8
Násik	+8

rain required for this crop was short for sowing.

Wheat.—Although the net decrease is only 11,000 acres or 0.5 per cent., the variations in the districts are considerable. Ahmadnagar increased by 46,000 acres or 19.32 per cent. The *kharif* rains being deficient for bájri sowing the land usually devoted to bájri was put, as explained in the last report, under wheat, the late rains favouring. Surat was specially favoured by a passing late shower and the variations in other districts are also seasonal fluctuations.

Other Cereals.—The minor cereals show altogether a trifling decrease of

	Thousand Acres.
Kodra	-12
Vari	-10
Rála	+13
Rágl	+3
Maize	+5
Barley	-4

1,000 acres. Kodra, Vari and Rágl are grown more or less all over the Presidency and form a staple food of the lower classes in the Konkan, in districts bordering on the Sahyádris and in parts of Gujarát. Rála is practically confined to the Karnátak and South Deccan. Maize is a staple crop in the Panch Maháls taking the place of jowári and bájri in other

districts. Its area in the Panch Maháls has risen by 5,000 acres or 5.74 per cent. Barley with a total area of 32,000 acres is chiefly grown in North Gujarát and South Deccan. The table exhibits variations of these, the chief of the minor cereals only.

	Thousand Acres.
Tur.	
Bijápur	-49
Sholápur	-31
Ahmadnagar	-9
Khándesh	+7
Dhárwár	+6
Poona	+5
Gram.	
Násik	+12
Bijápur	+8
Ahmadnagar	+7
Poona	+5
Panch Maháls	-10
Sátára	-9

Pulses.—There is a net decrease of $1\frac{1}{2}$ lákhs or 6.5 per cent. Nearly two-thirds of the pulses are sown in the *kharif* season and they therefore shared with bájri and *kharif* jowári the general decrease resulting from late rains. Gram shows a net increase of 13,000 acres or 1.9 per cent., chiefly in the Deccan (except Sátára) and in Bijápur.

Tobacco.—Last year the tobacco crop showed an

	Acres.
Ahmadnagar	+5,300
Khândesh	+4,100
Belgaum	+3,700
Sátára	+3,400
Karra	+2,600
Ahmadabad	+1,600
Násik	+1,500
Dhárwár	+1,000
Bijapur	+800
Sholápur	+700
Poona	+600
Brosach	+500

increase of 21,000 acres. This year there is again an increase of 26,000 acres or 37·1 per cent. This is attributed partly to seasonable rainfall and partly to high prices attended by large profits.

	Acres.
Dhárwár	-2,100
Násik	-1,700
Belgaum	-400
Khândesh	-300
Ahmadnagar	-200
Poona	-200
Sátára	+300
Surat	+300
Ahmadabad	+300

Sugarcane.—There is again a small decrease of 3,500 acres or 6 per cent., which is general, except in three districts of Gujarát and in Sátára. The chief variations are noted in the margin. The decrease is specially large in Dhárwár and Násik and is attributed to deficiency of sowing rainfall. Owing to this continuous fall in the sugarcane area of the Presidency, local prices again rose considerably and imports of unrefined sugar (gul) for local supply were more than doubled, as noticed in the Rail-borne Trade Report.

Oil-seeds.—A net increase of $\frac{3}{4}$ lách acres or 4·7 per cent. is observed under

	Thousand Acres.
Sesame	-55
Linseed	+35
Castor	+12
Safflower	+69
Niger	+15
Ground-nut	-3
Others	-1

the principal heads. Of these sesame is grown all over the Presidency, while linseed, nigerseed, ground-nut and safflower are raised chiefly in the Deccan and Karnátak. Castor-oil-seed is largely grown in Gujarát and Karnátak and in Sholápur. Detailed notice as to variations is called for in the case of sesame and linseed.

	Thousand Acres.
Bijapur	-19
Khândesh	-13
Ahmadnagar	-9
Sholápur	-7
Belgaum	-4
Násik	-3
Ahmadabad	+8

Sesame.—The decrease of 55,000 acres or 20·20 per cent. is general except in Ahmadabad. It is specially noticeable in the Deccan and Karnátak, where rain was unfavourable for the *kharif* crops of which sesame is one for the most part in the Deccan and Karnátak.

	Thousand Acres.
Bijapur	+22
Sholápur	+7
Ahmadnagar	+8
Násik	+2
Ahmadabad	+1

Linseed.—The increase of 35,000 acres or 20·23 per cent. is chiefly in the East Deccan and Karnátak, and in Ahmadabad in Gujarát as noted in the margin. Linseed is always a late crop and the increase in the Deccan and Karnátak followed on the favourable late rains.

	Thousand Acres.
Khândesh	+135
Ahmadabad	+65
Brosach	+63
Násik	+18
Surat	+14
Dhárwár	-25
Bijapur	-13
Sholápur	-5

Cotton.—The increase of 2 láchs or 7 per cent. chiefly occurs in Gujarát and North Deccan, where cotton is an early crop, partly owing to seasonable rainfall and partly to high prices and the good yield of the previous year. In the Karnátak Districts, where cotton is a late crop, though the late rains were favourable, the larger area appears to have been devoted to *rabi jowári*, probably under exigencies of rotation.

Potato.—The acreage further fell from 9,600 to 7,800 or 18·75 per cent. The decrease is chiefly in the Poona District, the area falling from 8,100 to 6,500 acres owing to prevalence of disease in the Khed and Junnar Tálukas. The action taken to check this blight has been detailed in paragraph 41 of this report.

Green fodder.—Lucerne shows an increase from 1,140 to 1,440 acres, the crop being chiefly cultivated in Ahmadnagar (560), Poona (350), Násik (270) and Thána (250). Hot weather jowári, which is the only cereal cultivated for fodder, shows a decrease (1,500 acres) from 17,500 to 16,000 acres.

65. Kharif and Rabi crops.—The details given in the appended table show variations under kharif and rabi cereals and pulses :—

(Figures in thousands.)

Year.	KHARIF.		RABI.	
	Cereals.	Pulses.	Cereals.	Pulses.
1889-90	11,178	1,560	6,666	884
1890-91	10,373	1,394	7,559	892
	—805	—166	+893	+8

Owing to the unfavourable early rains in the Deccan and Karnátak the kharif crops contrary to last year, show a large decrease and rabi crops a large increase.

66. The usual two returns showing the distribution of crops are appended. Statement A shows the distribution of the principal crops in each district including Sind. Statement B shows the proportion which the area under the several crops in each district holds with respect to the gross area in the Presidency Proper.

A.—Distribution of Crops—Percentages shown on District Areas.

No.	District.	FOOD CROPS.							NON-FOOD CROPS.					TOTAL.	
		Cereals.							Pulses.	Others.	Cotton.	Oil seeds.	Others.	Food Crops.	Non-food Crops.
		Jowári.	Báji.	Paddy.	Wheat.	Coarse grains.	Others.	Total.							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A.—PRESIDENCY PROPER.															
I.—Gujarát.															
1	Ahmadabad	22	18	5	11	4	1	61	7	1	27	8	1	69	31
2	Kaira	8	31	14	2	24	1	80	11	1	2	2	4	92	8
3	Pauch Maháls	1	12	14	2	16	26	71	18	...	...	6	2	89	11
4	Bronch	15	4	3	9	1	...	32	9	4	52	2	1	45	55
5	Surat	18	1	19	6	9	...	58	16	3	20	8	1	71	29
	Average	10	15	9	7	9	4	60	11	1	23	4	2	72	28
II.—Deccan.															
6	Khándesh	17	24	1	7	1	...	50	7	...	38	4	1	67	43
7	Násik	7	39	3	17	10	...	76	11	1	2	10	...	89	12
8	Ahmadnagar	45	28	...	10	2	...	83	7	...	2	7	1	90	10
9	Poona	40	29	3	5	5	1	83	8	1	...	7	1	92	8
10	Sholápur	70	5	1	2	...	1	79	7	...	...	12	2	86	14
11	Bátára	82	29	2	3	8	1	75	16	1	...	6	2	92	8
	Average	35	25	1	8	4	...	73	9	1	9	7	1	83	17
III.—Karnátak.															
12	Belgaum	42	8	6	7	9	1	73	11	1	8	4	8	85	16
13	Bijápur	55	8	...	6	2	...	71	7	...	14	7	1	78	22
14	Dhárwár	30	...	7	14	8	...	59	10	1	23	4	3	70	30
	Average	43	6	4	9	6	...	68	9	...	15	6	2	77	23
IV.—Konkan.															
15	Thána ... ..	...	...	63	...	22	...	85	8	2	...	4	1	95	5
16	Kolába ... ..	...	...	57	...	34	...	91	6	1	...	2	...	98	2
17	Ratnágiri ... ..	...	...	30	...	55	...	85	6	4	...	4	...	95	5
18	Kánara	1	...	78	...	2	...	81	2	11	...	...	6	94	6
	Average ... ..	...	...	61	...	25	...	86	6	3	...	3	2	95	5
	Average A	33	17	6	7	6	1	70	9	1	12	6	2	80	20
B.—Sind.															
19	Karáchi	16	6	37	9	...	8	71	7	3	...	11	8	81	19
20	Hyderabad	12	34	21	5	...	1	73	3	3	8	11	2	79	21
21	Shikárpur	19	1	25	26	...	1	72	11	1	1	14	1	84	16
22	Upper Sind Frontier	48	8	4	10	...	...	70	5	1	...	24	...	78	24
23	Thar and Párkar	1	69	14	5	...	...	99	1	...	4	6	...	90	10
	Average B	15	24	22	13	...	1	75	6	2	3	12	2	83	17
	Average for the Presidency	31	18	8	8	5	1	71	9	1	11	7	1	81	19

B.—Distribution of Crops—Percentages shown on Presidency Area.

No.	District.	FOOD CROPS.									NON-FOOD CROPS.			TOTAL.	
		Cereals.									Cotton.	Oil seeds.	Others.	Food Crops.	Non-food Crops.
		Jowari.	Bájrí.	Paddy.	Wheat.	Coarse grains.	Others.	Total.	Pulses.	Others.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<i>I.—Gujarát.</i>															
1	Ahmadabad	3.7	5.6	3.8	8.1	3.4	9.1	4.7	3.9	4.1	11.9	3.0	3.1	4.6	9.4
2	Kaira	0.7	5.0	6.6	0.6	11.2	3.9	3.2	3.7	3.0	0.4	0.9	7.6	3.2	1.1
3	Panch Maháls ... ..	...	1.0	3.2	0.5	3.8	45.3	1.4	2.9	0.5	...	2.0	1.9	1.6	0.8
4	Broach	1.1	0.4	5.9	2.8	0.4	0.2	1.0	2.3	11.0	10.2	0.8	1.2	1.3	6.6
5	Surat	1.3	0.2	6.5	1.6	3.0	0.3	1.7	3.9	3.4	3.5	3.0	1.5	1.9	3.2
	Total	6.7	12.2	21.0	13.6	21.8	68.7	12.0	16.7	22.0	26.0	9.8	15.3	13.6	20.1
<i>II.—Deccan.</i>															
6	Khándesh	6.3	15.9	1.7	11.0	1.8	2.4	3.3	8.4	4.3	37.6	7.4	11.0	8.3	26.0
7	Násik	1.6	18.0	3.4	13.2	13.2	2.3	3.6	6.3	7.2	1.1	12.6	3.2	8.7	4.9
8	Ahmadnagar	14.9	15.9	0.8	14.9	2.9	2.0	12.7	2.9	4.2	2.1	11.3	5.3	12.3	3.2
9	Poona	10.4	14.5	4.1	5.9	6.6	7.6	10.0	7.8	11.4	...	9.9	4.7	9.8	3.5
10	Sholápur	18.3	2.6	1.0	2.9	0.2	11.5	9.6	4.1	4.2	0.1	16.9	7.8	9.1	6.0
11	Sátára	7.2	12.2	2.6	3.2	9.7	10.5	7.9	13.5	10.7	0.3	6.9	10.6	8.5	3.1
	Total	58.7	79.1	13.6	58.1	34.4	37.3	57.1	54.0	42.0	41.2	65.0	42.6	56.6	48.8
<i>III.—Karnátak.</i>															
12	Belgaum	9.0	3.3	7.1	6.0	10.7	3.5	7.2	8.4	2.8	4.7	4.5	14.0	7.3	5.3
13	Bijapur	18.1	5.3	0.4	9.0	2.8	0.5	10.9	8.3	2.8	12.6	12.8	4.2	10.6	12.0
14	Dhárwár	7.5	0.1	9.7	15.3	10.4	...	6.8	9.1	6.6	15.5	5.9	17.1	7.1	12.6
	Total	34.6	8.7	17.2	30.3	23.9	4.0	24.9	25.6	18.1	32.8	23.2	35.4	25.0	27.9
<i>IV.—Konkan.</i>															
15	Thána ... ..	...	...	21.2	...	7.6	...	2.5	1.9	3.0	...	1.3	2.0	2.5	0.6
16	Kolába ... ..	...	...	12.4	...	7.7	...	1.2	1.0	1.3	...	0.4	0.3	1.7	0.2
17	Ratnágiri ... ..	...	...	2.3	...	4.3	...	0.6	0.3	2.1	...	0.3	0.3	0.5	0.1
18	Kánara ... ..	...	...	12.3	...	0.3	...	1.1	0.3	11.5	...	...	4.1	1.1	0.3
	Total ... ..	...	...	48.2	...	19.9	...	6.0	3.5	17.9	...	2.0	6.7	5.8	1.2
		100	100	100	100	100	100	100	100	100	100	100	100	100	100

67. **Outturn of Crops.**—The following table gives the anna valuation for the outturn of principal crops in each district. The anna valuation by Mámlatdárs purports to conform to the new standard prescribed by Government, i.e., 16 annas represent an average crop. The statement, however, affords ground for doubt whether this new standard, which is opposed to local practice, is correctly kept in view. There is, besides, a general tendency to under-estimate the anna valuation of outturn as has been noticed in previous reports. Altogether the table must be taken as representing a merely approximate estimate.

Approximate Anna Valuation of Principal Crops in each District, 1890-91.

No.	District.	AVERAGE ANNA VALUATION.										
		Jowari.	Bájrí.	Paddy.	Wheat.	Koira.	Ragl.	Vari.	Tur.	Gram.	Cotton.	
<i>I.—Gujarát.</i>												
1	Ahmadabad	10	12	10	10	9	10	8	11	6	7	
2	Kaira	11	14	8	11	14	13	8	11	6	7	
3	Panch Maháls	Maize	14	7	5	17	13	8	15	10	12	
4	Broach		9	14	7	9	8	...	9	6	10	
5	Surat		9	11	16	12	11	10	5	11	10	9
<i>II.—Deccan.</i>												
6	Khándesh	11	11	10	11	12	12	...	12	10	14	
7	Násik	9	12	12	12	...	12	10	11	11	11	
8	Ahmadnagar	12	8	9	8	...	12	11	11	8	10	
9	Poona	14	10	13	13	10	14	10	9	12	6	
10	Sholápur	15	2	5	10	...	10	8	3	9	2	
11	Sátára	11	9	10	9	8	10	10	9	10	10	
<i>III.—Karnátak.</i>												
12	Belgaum	10	9	13	8	...	10	10	8	9	8	
13	Bijapur	13	9	6	13	...	10	8	9	13	7	
14	Dhárwár	11	10	8	10	...	10	10	10	12	7	

No.	District.	AVERAGE ANNA VALUATION.									
		Jawári.	Bájri.	Paddy.	Wheat.	Kodra.	Ragl.	Vari.	Tur.	Gram.	Cotton.
<i>IV.—Konkan.</i>											
15	Thána ... ..	...	...	16	...	16	13	13	14	11	...
16	Kolába ... ..	...	...	12	...	11	13	10	10	14	...
17	Ratnágiri ... ..	...	...	13	...	13	12	12	12	...	...
18	Kánara ... ..	...	...	13	...	...	14	...	...	...	...
<i>Sind.</i>											
19	Karáchi	10	10	11	14	...	11	10	...	12	11
20	Hyderabad	13	13	11	14	...	...	...	...	13	12
21	Shikárpur	11	11	14	16	...	...	...	...	13	12
22	Upper Sind Frontier	10	12	13	14	...	...	...	...	15	11
23	Thar and Parkar ... ..	...	...	...	Not returned.			...	...	...	...

Note.— In the above table the valuations are calculated on the standard by which 16 annas represent an average crop.

The heavy September-October rain injured ripening bájri in the South Deccan and Karnátak, but assisted a fair yield in Gujarát and North Deccan. Both *kharif* and *rabi* jowári were fairly good throughout; *rabi* jowári especially yielding a full average crop in the East Deccan and Karnátak. Rice suffered from want of moisture owing to deficient late rains in Gujarát, but fared well in the above-ghát districts and in the Konkan. Wheat and gram on the whole yielded a fair outturn, except in parts of Gujarát where they suffered from want of moisture. Other cereals and pulses were fairly good. Cotton was a full average crop in Khán-desh, the principal cotton-growing district in the Deccan, but much below average in Gujarát and the Karnátak. In the Karnátak Districts the crop was injured by blight.

68. *Fruit-trees.*—A decrease is reported in mango, jack and cocoanut trees; while tamarind, toddy-palm and date-palm have increased. This enumeration of trees is, however, not worth much at present. Their distribution in the several provinces is noted below (trees in forest and village sites not being included):—

FRUIT-TREES (EXCLUSIVE OF RATNÁGIRI).

(Figures in thousands.)

No.	Province.	Mango.	Tamarind.	Jack.	Cocoanut.	Toddy-palm.	Date-palm.
1	Gujarát	515	117	4	7	237	647
2	Deccan	730	56	10	7	10	110
3	Karnátak	356	103	19	67	...	966
4	Konkan	300	30	87	1,180	89	13
Total for the (1890-91.		1,961	306	120	1,261	336	1,736
Presidency Proper. (1889-90.		1,973	298	122	1,274	334	1,680
		—12	+8	—2	—13	+2	+56
5	Sind	186	...	...	1	...	151
Grand Total 1890-91...		2,147	306	120	1,262	336	1,887

Fruit-trees of special local importance are shown in the subjoined table so far as enumeration has yet been effected:—

Trees and Districts.	Number.	Trees and Districts.	Number.
1.—Moha (<i>Bassia latifolia</i>.)		5.—Hirda (<i>Terminalia chebula</i>.)	
Kaira	135,000		
Panch Maháls	89,800		
Khándesh	57,500		
Násik	3,100	Ahmadnagar	10,600
Broach	1,200	Násik	1,000
2.—Betel-nut (<i>Areca catechu</i>.)		6.—Fig (<i>Ficus carica</i>.)	
Kánara	7,371,700		
Thána	4,600	Poona	36,000
Kolába	2,200	Násik	3,000
Sátára	400	Ahmadnagar	2,000
3.—Ráyan (<i>Mimusops hexandra</i>.)		Belgaum	600
Kaira	74,800	Hyderabad	600
Panch Maháls	3,900	Shikárpur	500
Broach	1,700	7.—Vine (<i>Vitis Vinifera</i>.)	
4.—Keshewnut (<i>Anacardium occidentale</i>.)		Násik	38,500
Kánara	86,500	Poona	31,800
Thána	5,200	Ahmadnagar	27,700
Khándesh	1,600	Shikárpur	19,400
Belgaum	600	Khándesh	1,700
		Karáchi	1,000

Return No. IV—Irrigation.

69. The net irrigated area now amounts to 3·13 per cent. of the net cropped area in the Presidency Proper and 86·79 per cent. in Sind. Though the total area under crops irrigated shows no variation, the net irrigated area gives a decrease of 11,000 acres or 1·39 per cent. in the Presidency Proper exclusive of Ratnágiri. The variations under the principal sub-heads are shown below:—

Irrigated Area.

Detail	PRESIDENCY PROPER EXCLUSIVE OF RATNÁGIRI.					
	Thousand Acres.		Increase.		Decrease.	
	1889-90.	1890-91.	Thousand Acres.	Per cent.	Thousand Acres.	Per cent.
A.—Area Irrigated.						
1. Irrigated from canals ...	112	111	...	...	1	0·89
2. Do. from tanks, wells, &c.	679	669	...	...	10	1·47
3. Total irrigated ...	791	780	...	...	11	1·39
B.—Crops Irrigated.						
4. Rice	154	162	8	14·81	...	...
5. Wheat	192	177	...	...	15	7·81
6. Sugarcane	64	61	...	...	3	4·68
7. Other crops	472	482	10	2·11	...	...
8. Total Crops irrigated ...	882	882	...	...	...	...

NOTE.—The difference between columns 3 and 8 is due to the inclusion in column 8 of the area cropped with irrigation more than once.

The chief variations in the areas irrigated from canals, tanks and wells, &c., are in the districts noted in the margin. The canal area shows a considerable increase in Poona, which has not been explained. In this district, though net irrigated area gives an increase of but 1,300 acres, the total area increased by 12,500 acres of which 11,200 acres occurs in the area cropped under irrigation more than once. The variations in areas irrigated from tanks and wells are attributed to more or less seasonable rainfall in the areas concerned.

District.	Canal.	Tanks, Wells, &c.	Net variations.
Sholapur ..	..	-7,700	-7,700
Násik ..	..	-5,300	-5,300
Ahmadnagar ..	+100	-5,100	-5,000
Khándesh ..	+800	-4,300	-3,700
Dhárwár ..	+1,900	-3,300	-1,400
Ahmadabad ..	+900	+7,500	+8,400
Poona ..	-4,100	+5,400	+1,300
Kaira ..	-100	+1,000	+900
Belgaum ..	-300	+900	+600

70. Among irrigated crops rice gives an increase of 8,000 acres, chiefly in Ahmadabad (7,300 acres). Wheat also shows a considerable increase in Ahmadabad (2,600 acres); elsewhere, there is a general decrease, Sholapur (5,000), Sátára (4,600), Ahmadnagar (2,600), Násik (2,400), Poona (1,600) and Kaira (1,400). In sugarcane the principal decrease occurs in Dhárwár (2,000) and Násik (1,500).

Return No. V.—Agricultural Stock.

71. Of the 3 large cities which have not hitherto returned agricultural stock, as noticed in the last report, Ahmadabad and Surat this year returned their stock. Broach alone now does not return the city stock. The Collector has been addressed with a view to arrangements being made with the Municipality for its enumeration. Sind sends no agricultural stock returns, V. F. 13 not being represented in the forms in use. A considerable increase appears under all principal heads except under breeding-bulls and sheep. The former decrease is due probably to correction of former incorrect entries.

Agricultural Stock.

Detail.	PRESIDENCY PROPER EXCLUSIVE OF RATNA'GIRI.					
	Number in thousands.		Increase.		Decrease.	
	1889-90.	1890-91.	Thousands.	Per cent.	Thousands.	Per cent.
1. Plough cattle... ..	3,135	3,138	3	...	...	...
2. Breeding-bulls	30	22	...	...	8	26.66
3. Cattle for other purposes... ..	134	148	14	10.45	...	...
4. Milch cattle	2,718	2,785	67	2.46	...	...
5. Young stock	2,056	2,094	38	1.84	...	...
6. Total cattle (columns 1—5)	8,073	8,187	114	1.41	...	...
7. Horses and ponies	139	140	1	0.72	...	...
8. Sheep... ..	2,007	1,995	...	...	12	0.59
9. Goats... ..	1,173	1,276	103	8.78	...	...
10. Ploughs	1,047	1,055	8	0.76	...	...
11. Carts	472	482	10	2.11	...	...

The general increase is explained by (1) abundance of fodder and comparative freedom from epidemics, (2) purchases stimulated by a prosperous year and (3) in some districts return of stock, which had migrated in the previous year of scarce fodder. These general causes should, however, be accepted with caution, for the enumeration of stock is, as noticed in previous reports, still very defective.

72. The district variations under the principal heads are noted below :—

Districts.		Plough Oxen.	Cows.	She-Bufferaloes.	Young Stock.	Total Cattle.	Sheep.	Goats.
1	Ahmadabad ...	+3,400	+6,100	+5,100	+6,400	+22,800	+3,500	+9,600
2	Kaira ...	—4,400	+1,100	+2,000	+7,700	+6,300	—3,900	+2,800
3	Panch Maháls ...	—11,900	—9,800	—3,200	—9,400	—34,800	—300	—3,500
4	Broach ...	+450	+600	+700	—1,000	+1,100	—1,000	+4,400
5	Surat ...	+300	+300	+1,800	+5,100	+10,500	—100	—3,100
6	Khándesh ...	+2,100	+1,200	+4,700	+22,000	+28,700	—1,300	+10,100
7	Násik ...	+7,500	+14,300	+1,600	+3,000	+27,700	+3,200	+21,800
8	Ahmadnagar ...	+4,400	+6,900	+500	+1,500	+15,500	+16,000	+40,700
9	Poona ...	+650	+4,500	+2,700	—12,000	—2,500	—8,700	+10,200
10	Sholápur ...	+5,400	+19,900	+1,100	+600	+29,200	—7,000	+7,800
11	Sátára ...	—2,300	—300	+1,100	—1,300	—3,600	+6,000	—200
12	Belgaum ...	+1,300	—2,100	—400	+5,200	—2,400	—4,100	+2,400
13	Bijápur ...	+4,400	+2,900	+1,400	—300	+7,900	—11,000	—1,700
14	Dhárwár ...	—3,000	+500	+2,200	+6,700	+7,300	—3,500	—1,600
15	Thána ...	—40	—4,000	—700	—3,200	—10,300	—400	+1,000
16	Kolába ...	—150	+2,200	+300	+3,200	+6,300	—200	+1,800
17	Kánara ...	+500	+1,500	+300	+3,900	+4,900	+300	+100

The large decrease in the Panch Maháls under all heads is nominal, being due to exclusion of stock of 104 villages for which complete statistics are not available and of which the stock was hitherto incorrectly included. In Thána the decrease is unexplained, but it may partly be due to return of cattle which poured in last year from Poona and Násik. The Poona decrease in "young stock" is attributed to disease.

73. The enumeration of sheep and goats is specially faulty owing to the roving habits of the herding classes. Goats show an increase in the Deccan and in Ahmadabad. The considerable decrease of sheep in Bijápur (11,000) is attributed to diminution of grazing areas by the extensive occupation of waste land from year to year.

Due attention is not yet paid to standing orders regarding the enumeration of outside stock, to which special attention was invited in the last report (paragraph 65), this remark applying particularly to Ahmadnagar, Belgaum and Khándesh.

Ploughs and Carts.—There are no variations worth mentioning.

B—RAINFALL

74. The scope of duty assigned to the Director in connection with the registration and compilation of rainfall statistics has been considerably extended during the year, and the system of registration has been improved at the instance of the Meteorological Reporter to the Government of India as follows :—

1st.—A common hour for registration (8 A.M.) and a common rainfall week ending on Saturday 8 A.M. to be adopted for the whole of India.

2nd.—All rain-gauges to be *systematically* inspected.

3rd.—Symon's rain-gauges, tested by the Meteorological Department, to be the only description of gauge used.

4th.—Monthly returns of rainfall showing daily fall at each station, to be published by each Local Government; copies to be bound together and issued as an annual volume by the Imperial Meteorological Department.

5th.—For the purpose of calculating the number of rainy days, a fall of one-tenth of an inch and upwards to be taken to denote a rainy day.

The Director now compiles and publishes in the prescribed form monthly rain returns showing daily fall at 279 stations, 208 being for the Presidency Proper, 11 for Sind and 60 for Native States in Bombay. To secure systematic inspection of rain-gauges, Assistant and Deputy Collectors in charge of talukas, Civil Surgeons and Deputy Sanitary Commissioners, have been appointed Inspecting Officers. For Native States the inspection has been assigned to Assistants and Deputy Assistants, to Political Agents, and Surgeons in charge of hospitals.

Initial inspection reports have been received from District Officers for a considerable number of stations. Complete inspection reports will be received during the current season, and it will then be possible to secure uniformity of registration in all essentials.

75. The rainfall for each district has been fully analysed in the appended tables (pp. xxiii—xxxv). In the following table the rainfall for each district Head-quarter town is compared with the average fall and with that of last year :—

Season, 1890-91.

Rainfall at District Head-quarters.

No.	District Head-quarters.	ANNUAL RAINFALL ENDING 31ST DECEMBER.					
		Average of eleven years ending 1886.	1889.		1890.		
			Fall.	Rainy days.	Fall.	Rainy days.	
		Inches.	Inches.		Inches.		
1	DECCAN.	Dhulia (Khándesh) ...	25.79	17.65	...	25.24	37
2		Násik ...	33.74	22.93	...	29.30	49
3		Ahmadnagar ...	25.11	23.15	...	21.60	36
4		Poona ...	31.06	37.49	...	39.52	62
5		Sholápur ...	33.33	33.22	...	28.33	34
6		Sátára ...	40.84	46.21	...	37.45	80
7	KARNÁTAK.	Belgaum ...	46.80	55.40	...	49.85	83
8		Bijápur ...	26.79	36.04	...	28.56	38
9		Dhárwár ...	32.95	38.64	...	28.54	65
10	KONKAN.	Kárwár (Kánara)...	116.62	179.93	...	121.04	98
11		Ratnágiri ...	100.73	106.97	...	120.16	96
12		Alibág (Kolába) ...	84.79	86.01	...	95.65	90
13		Thána ...	99.12	96.73	...	98.00	97
14	GUJARÁT.	Surat... ..	44.06	40.22	...	56.35	53
15		Broach ...	44.21	33.73	...	26.98	37
16		Kaira... ..	37.13	41.22	...	27.24	46
17		Godhra (Panch Maháls) ...	43.24	36.02	...	37.11	46
18		Ahmadabad ...	29.92	24.89	...	22.75	43

Note.—The column of "Rainy days" for 1889 has been left blank, as 10 cents of rain now constitute a rainy day (instead of 1 cent) and no comparison could therefore be made.

The rainfall was generally below average in Gujarát (except in Surat), above average in the Konkan, and slightly below or up to average in the Deccan and Karnátak.

Deccan.—In Khándesh and the western tracts bordering on the Sahyádris the rainfall was on the whole seasonable and sufficient. In the eastern tracts, away from the gháts, *kharíf* sowing rain was scant and breaks too prolonged. Here general relief came early in September. Late rains were heaviest in south and throughout beneficial to *rabi* crops. *Kharíf* outturn was fairly good in West Deccan and Khándesh, but poor in east, where however *rabi* was a good crop.

Karnátak.—*Kharíf* rain was favourable in tracts bordering on the Sahyádris. Elsewhere it was deficient and the breaks were injuriously prolonged as in the East Deccan. Early relief came by the 10th September in Bijápur, but general relief not till the end of the month. The late rains were heavy and favourable for *rabi* crops.

Konkan.—Rainfall throughout good except in Kánara, where September rain was short for rice. The late rains were injuriously heavy, especially in south. *Kharíf* outturn, however, was generally good especially in Thána and Kolába.

Gujarát.—Sowing rain in June was abnormally heavy in Surat, 10 to 30 inches being recorded between 18th and 21st and as much as 16 inches during 24 hours at Bárdoli on the 19th. Sown seed was washed away and had to be re-sown in many places. Rain in September was sufficient and seasonable, but the closing showers of early October were generally absent. The result was that rice suffered and the *rabi* area was not full. *Kharíf* crops, except rice, were fairly good, but *rabi* crops were comparatively poor. Fruits, such as mango, ráyan and mohwa, were a bumper crop.

76. There was no general sowing rain till the 4th week in June. In Gujarát it came as late as 20th July. Heavy rain fell in July and August, but in the East Deccan and Karnátak *kharíf* rain was scant both for general sowing and for growth of standing crops. In these *rabi* tracts fairly heavy rain fell in September and early October sufficient for general *rabi* sowing. But throughout the Deccan and Karnátak the late heavy rains failed, seriously injuring the prospects of harvest.

C.—CROP EXPERIMENTS.

77. The number of experiments made in 1890-91 was 77 as shown in the margin against 81 in 1889-90. These experiments are submitted to Government with a separate report.

Rice 12 ; jowári 9 ; ragi 7 ; wheat 8 ; kodra, groundnut, linsced, sugarcane, 5 each ; gram and nigerseed, 4 each ; wál and cotton, 3 each ; vari, 2 ; maize, potato, vatána, safflower and castor-oil seed, 1 each.

margin against 81 in 1889-90. These experiments are submitted to Government

VIII.—TRADE AND TRADE STATISTICS.

78. A detailed report for the year ending 31st March 1891, has already been submitted to Government, as also the Sind Report with review. The trade registered in the Presidency Proper and Sind during the year is shown below :—

Year.	PRESIDENCY PROPER.				SIND.			
	External Trade.		Local Trade.	Total Trade.	External Trade.		Local Trade.	Total Trade.
	Imports.	Exports.			Imports.	Exports.		
(Figures in lákhs of maunds = 1 maund 82½ lbs.)								
Average	291	91	280	662	57	12	63	132
1889-90	281	89	256	626	94	16	65	175
1890-91	289	102	284	675	90	23	72	185
Increase + or decrease — over average	—2	+11	+4	+13	+83	+11	+9	+53
Increase + or decrease — over last year	+8	+13	+28	+49	—4	+7	+7	+10

The trade of the Presidency Proper as well as of Sind shows considerable improvement over average and that of the previous year. To the total trade of Sind the Punjáb contributes this year 97·4 per cent. The road-borne trade has, as usual, been registered at six selected *nákas* under the rotation system. With a view to estimate the probable amount of traffic in goods and passengers that would be available for the proposed five feeder lines in Gujarát, road-traffic was also registered by the Public Works Department, as a special case, at traffic stations carefully selected with a view to local conditions.

IX.—ARCHÆOLOGY.

79. No reports on the subject have been received from the District Officers under Government Resolution No. 1672, dated 13th April 1889, General Department.

X.—MINERAL STATISTICS.

80. During the year under report two returns of mineral statistics were submitted to the Government of India. The first contained information for the nine months ending 30th September 1890 and was submitted in January 1891, as required by the Government of India's letter No. 27-30-33 Statistics, dated 16th September 1890. These orders were superseded by the Government of India's Circular No. 7-22-18 Statistics, dated 20th March 1891, and an amended return for the calendar year was submitted as before in September.

CONCLUSION.

81. Ráo Báhádur Ichhárám Bhagwándás has continued to fill the post of Personal Assistant and by his zeal and a thorough command of his duties has earned high praise. I can also thoroughly endorse the previously recorded high estimate of services of Mr. Yashawantráo Nilkanth, the Superintendent.

Mr. Mchta has done excellent work on the Bhadgaon Farm.

I have the honour to be,
Sir,

Your most obedient Servant,

E. L. CAPPEL,
Director, Land Records and Agriculture,
Bombay.

STATISTICS.

A.—AGRICULTURAL.

- I.—Area of Available Statistics.**
- II.—Area, Cultivated and Uncultivated.**
- III.—Crops.**
- IV.—Irrigation.**
- V.—Agricultural Stock.**
- III. A.—Details under Khari'f and Rabi Crops.**
- III. B.—Principal Fruit-bearing Trees.**

I.—Area of Available Statistics, 1890-91.

No.	District.	NUMBER AND AREA OF VILLAGES,*						VILLAGES FOR WHICH STATISTICS ARE AVAILABLE.						VILLAGES FOR WHICH STATISTICS ARE NOT AVAILABLE.							
		Government.		Alienated.		Total.		Surveyed Government Rayatwari.		Other Government.		Surveyed Alienated.		Total.		Government.		Alienated.		Total.	
		No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.
1	2		3		4		5		6		7		8		9		10		11		
A.—BOMBAY PRESIDENCY PROPER.																					
<i>I.—Gujarat.</i>																					
1	Ahmadabad	882	2,818,551	52	123,518	884	2,442,069	448	10,56,400	384	1,262,151	86	98,917	868	2,417,468	..	...	16	24,601	16	24,601
2	Kaira	663	994,259	28	27,464	591	1,021,723	486	757,835	91	177,132	..	...	827	934,987	36	59,292	28	27,464	64	86,756
3	Panch Mahals	611	902,255	79	125,683	691	1,027,938	403	627,269	149	198,200	32	42,652	684	868,121	59	76,768	47	83,031	106	59,817
4	Broach	408	917,809	15	18,724	423	936,533	407	916,680	1	1,179	..	...	408	917,809	..	...	15	18,724	15	18,724
5	Surat	820	1,020,650	32	81,055	853	1,057,705	810	1,014,415	10	12,235	4	5,254	825	1,031,904	..	...	28	25,801	28	25,801
<i>II.—Deccan.</i>																					
6	Khandesh	3,228	5,447,660	111	209,020	3,334	5,656,680	2,878	4,623,138	186	365,728	63	109,099	2,928	5,097,960	358	458,799	48	99,921	406	558,720
7	Nasik	1,512	3,419,921	184	301,520	1,696	3,721,441	1,500	3,394,658	..	...	80	168,078	1,580	3,562,731	12	25,263	104	138,447	116	158,710
8	Ahmadnagar	1,223	3,668,043	151	550,889	1,374	4,218,932	1,223	3,668,048	..	...	110	444,598	1,333	4,112,644	..	...	40	106,293	40	106,293
9	Poona	1,002	2,866,115	201	505,297	1,204	3,371,412	1,002	2,866,034	..	...	182	464,020	1,165	3,330,054	..	81	39	41,277	39	41,358
10	Sholapur	665	2,697,942	52	209,111	717	2,907,053	665	2,697,942	..	...	52	209,111	717	2,907,053	..	...	..	...	..	...
11	Satara	981	2,476,327	896	608,287	1,867	3,084,614	981	2,476,327	..	...	269	493,418	1,280	2,969,740	..	...	127	114,854	127	114,854
<i>III.—Karnatak.</i>																					
12	Belgaum	913	2,347,859	220	499,449	1,133	2,847,302	913	2,347,859	..	...	162	471,817	1,075	2,819,176	..	...	58	28,126	58	28,126
13	Bijapur	1,011	3,205,699	162	422,008	1,173	3,627,707	1,011	3,205,699	..	...	154	389,120	1,165	3,593,819	..	...	8	33,888	8	33,888
14	Dharwar	1,289	2,689,249	194	256,563	1,473	2,945,812	1,289	2,689,249	..	...	137	180,871	1,426	2,870,120	..	...	47	75,697	47	75,697
<i>IV.—Konkan.</i>																					
15	Thana	1,880	2,397,964	104	122,168	1,984	2,520,132	1,844	2,355,467	22	25,762	29	33,852	1,894	2,415,081	14	16,735	76	88,316	90	105,051
16	Kolaba	1,264	1,103,412	80	80,461	1,344	1,183,873	771	681,076	491	522,232	6	3,466	1,268	1,106,774	2	104	74	28,995	78	27,089
17	Ratnagiri	1,271	2,393,881	62	108,738	1,333	2,502,619	54	126,691	144	246,539	..	...	1,283	373,280	1,073	2,020,651	62	108,738	1,135	2,129,889
18	Kanara	1,416	2,522,359	..	...	1,416	2,522,359	1,416	2,522,359	..	...	..	...	1,416	2,522,359	..	...	..	...	..	...
Total A. ...		20,866	43,395,960	2,114	4,149,934	22,981	47,545,894	17,833	37,927,096	1,478	2,811,153	1,296	3,112,761	20,608	43,851,010	1,554	2,657,711	618	1,037,173	2,372	3,694,884
B.—SIND.																					
19	Karachi	859	7,654,429	14	85,700	873	7,690,129	774	8,445,298	62	1,986,518	13	26,841	849	5,408,692	23	2,272,678	1	8,859	24	2,231,537
20	Hyderabad	1,390	5,481,463	57	258,907	1,447	5,745,360	1,263	4,218,785	127	1,262,668	57	26,907	1,447	5,745,360	..	...	..	...	..	...
21	Shikarpur	1,174	4,941,190	17	279,035	1,191	5,220,225	1,142	4,066,623	..	...	14	293,674	1,156	4,300,297	82	874,567	8	45,411	85	919,978
22	Upper Sind Frontier	299	1,583,552	6	86,722	305	1,606,304	233	677,554	1	120,591	5	23,337	299	821,422	65	770,497	1	13,365	66	783,882
23	Thar and Parkar	291	8,145,500	..	...	291	8,145,500	..	...	291	8,145,500	..	...	291	8,145,500	..	...	..	...	..	...
Total B. ...		4,013	27,791,154	94	615,414	4,107	28,406,568	3,412	12,408,195	481	11,465,217	89	547,759	3,982	24,421,171	120	3,917,742	5	67,655	125	3,935,397
Grand Total ...		24,879	71,187,114	2,208	4,765,348	27,088	75,952,462	21,245	50,335,291	1,959	14,276,370	1,385	3,660,520	24,590	68,272,181	1,674	6,575,453	823	1,104,828	2,497	7,680,281

* Exclusive of Foreign Territory, Feudatory and Tributary States.

II.—Area, Cultivated and Uncultivated, 1890-91.

No	District.	Total area as in columns 6, 6 and 7 of Return No. 1.	CULTIVATED AREA.					UNCULTIVATED AREA.							
			Gross area cropped.	Deduct area cropped more than once.	Remainder net area cropped.	Add current Fallows.	Total columns 6 and 7.	Details of column 7.		Available for Cultivation.		Not available for Cultivation.		Total columns 10 to 13.	
								Assessed Land.	Unassessed Land.	Assessed Land.	Unassessed Land.	Forest.	Other.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14		
A.—BOMBAY PRESIDENCY PROPER.		Acres.												Acres.	
<i>I.—Gujarát.</i>															
1	Ahmadabad	{ Rayatwari ... Other Government. Alienated ...	721,849 590,629 42,927	17,154 2,221 102	704,215 591,307 42,825	77,639 305,074 56,011	791,864 989,381 98,888	779,502 987,116 98,380	2,862 2,265	70,798	13,940 6,265	21,554	108,245 206,505 81	274,546 272,770 81	
	Total	2,417,468	1,360,824	19,477	1,341,347	5,87,24	1,870,071	1,865,454	4,617	70,798	20,214	21,554	434,531	517,397	
2	Kaira	{ Rayatwari ... Other Government. Alienated ...	767,335 177,132	564,603 100,192	15,077 4,816	549,626 165,076	38,417 6,761	587,943 161,437	587,455 161,408	488 29	69,019 201	1,295 21	89	99,539 16,383	169,892 15,695
	Total	934,967	724,795	19,593	705,202	44,178	749,380	748,863	517	69,310	1,316	39	114,922	185,587	
3	Panch Mahals	{ Rayatwari ... Other Government. Alienated ...	627,269 398,200 42,652	375,984 63,974	43,799 6,326	232,185 61,618	20,733 88,000	201,918 160,618	259,658 160,289	2,205 359	84,078	96,698 1,289	14,421 16,730	41,362 29,533 5,665	345,351 47,552 6,643
	Total	868,121	368,553	52,008	316,545	132,988	449,533	446,909	2,624	84,078	96,982	160,951	76,580	418,588	
4	Broach	{ Rayatwari ... Other Government. Alienated ...	916,630 1,179	595,111 900	377	594,734 900	51,112 243	645,846 1,143	638,186 1,143	7,660	25,935	2,024	242,825 26	270,784 26	
	Total	917,809	596,011	377	595,634	51,355	646,989	639,329	7,660	25,935	2,024	242,825	270,820		
5	Surat	{ Rayatwari ... Other Government. Alienated ...	1,014,415 12,235 5,254	537,562 5,812	83,684 585	478,878 5,227	245,602 4,426	724,480 9,653	722,742 9,653	1,738	85,136 609	30,027 769	44,555	180,217 1,124 149	289,235 2,652 361
	Total	1,031,904	547,169	59,288	487,881	251,145	739,026	737,288	1,738	36,047	30,786	44,555	181,490	292,878	
<i>II.—Deccan.</i>															
6	Khandesh	{ Rayatwari ... Other Government. Alienated ...	4,623,188 365,723 109,099	2,868,682 51,392	10,930 179	1,678,052 51,392 71,864	155,466 538 8,608	3,033,518 51,930 80,462	3,027,429 2,980 80,368	6,099 49,950 106	417,878	256,678 131,118 6,340	325,783 182,061 760	589,261 615 11,994	1,539,800 313,793 28,637
	Total	5,097,960	3,012,407	11,109	3,001,298	164,612	3,165,910	3,110,765	55,145	428,435	303,131	508,594	601,890	1,932,050	
7	Nasik	{ Rayatwari ... Other Government. Alienated ...	3,394,668 168,073	1,915,444 111,211	24,719 1,687	1,890,725 109,524	287,150 16,968	2,177,875 126,492	2,177,895 126,460	480 32	100,040 8,658	42,159 8,765	760,829 2,291	813,765 21,877	1,216,783 41,581
	Total	3,562,721	2,026,655	26,406	2,000,249	304,118	2,304,367	2,303,855	512	108,698	50,914	763,120	335,632	1,258,364	
8	Ahmadnagar	{ Rayatwari ... Other Government. Alienated ...	3,668,048 444,596	2,447,673 324,474	26,535 1,498	2,421,139 322,976	288,768 41,426	2,707,906 364,402	2,707,658 364,381	248 21	58,835 11,647	48,518 10,892	539,025 894	313,764 57,461	660,142 80,194
	Total	4,112,644	2,772,147	28,033	2,744,114	328,194	3,072,308	3,072,039	269	70,482	59,210	539,419	371,225	1,040,336	
9	Poona	{ Rayatwari ... Other Government. Alienated ...	2,868,094 464,020	1,963,132 322,369	81,726 13,603	1,781,406 309,766	294,221 56,020	2,075,627 305,786	2,074,920 365,633	707 153	28,347 1,694	4,096 1,364	433,181 1,295	324,753 93,881	790,407 93,234
	Total	3,330,054	2,185,501	94,329	2,091,172	350,241	2,441,413	2,440,553	860	30,041	5,460	434,476	418,664	888,611	
10	Sholapur	{ Rayatwari ... Other Government. Alienated ...	2,697,942 209,111	2,081,977 162,850	24,799 1,847	2,007,178 160,563	274,515 24,600	2,281,693 175,003	2,281,363 174,887	330 116	17,848 125	2,722 3,824	177,805	218,074 30,359	416,219 34,109
	Total	2,907,053	2,184,327	26,646	2,157,681	209,015	2,456,696	2,456,250	416	17,973	6,346	177,605	248,433	450,327	

11	Sátára ...	{ Rayatwari ... Other Government ... Alienated ...	2,476,327 493,413 331,201	1,581,608 331,201	89,488 24,680	1,492,320 306,624	203,022 99,398	1,785,342 406,020	1,785,070 406,020	272 272	27,307 258	4,121 8,719	424,048 12,403	235,509 66,013	690,985 87,393
	Total ...		2,969,740	1,913,010	114,066	1,798,944	392,418	2,191,362	2,191,090	272	27,565	12,840	436,451	301,522	778,378
III.—Karnatak.															
12	Belgaum ...	{ Rayatwari ... Other Government ... Alienated ...	2,347,859 471,317 317,823	1,456,262 317,823	24,740 2,821	1,431,522 816,001	243,487 92,867	1,675,009 407,868	1,673,555 407,868	1,454 1,454	63,072 23,333	18,807 1,469	439,028 2,907	151,943 29,740	672,850 63,449
	Total ...		2,819,176	1,774,084	27,561	1,746,523	336,354	2,082,977	2,081,423	1,454	92,405	20,276	441,935	181,683	736,299
13	Bijápúr ...	{ Rayatwari ... Other Government ... Alienated ...	3,203,099 338,120 284,607	2,485,554 284,607	4,566 392	2,480,988 181,215	292,045 88,925	2,773,033 323,140	2,772,953 323,101	75 89	80,928 12,047	19,574 1,176	162,451 27,184	169,713 24,573	432,666 64,980
	Total ...		3,593,819	2,770,161	4,958	2,765,203	330,970	3,096,173	3,096,059	114	92,975	20,750	189,635	194,286	497,646
14	Dhárwár ...	{ Rayatwari ... Other Government ... Alienated ...	2,689,249 180,871 111,104	1,977,602 111,104	25,656 2,060	1,951,946 109,044	221,903 29,730	2,173,849 133,774	2,173,691 139,582	158 192	48,474 17,343	1 14,635	276,365 276,365	190,560 10,119	515,400 42,097
	Total ...		2,870,120	2,088,706	27,716	2,060,990	251,633	2,312,623	2,312,273	350	59,817	14,636	276,365	206,679	557,497
IV.—Konkan.															
15	Thána ...	{ Rayatwari ... Other Government ... Alienated ...	2,355,467 25,762 33,852	518,160 6,948 8,495	6,115 21 72	512,045 6,925 8,423	490,979 8,862 10,123	1,003,024 10,787 18,546	998,754 10,642 18,420	4,270 145 126	42,750 78	71,592 7,739	525,547 446	712,554 6,715	1,352,443 14,975
	Total ...		2,415,081	533,601	6,208	527,393	504,964	1,032,357	1,027,816	4,541	42,826	85,449	527,206	727,153	1,382,724
16	Kolába ...	{ Rayatwari ... Other Government ... Alienated ...	581,076 534,231 3,466	182,650 164,772 977	5,808 5,047 25	176,842 159,725 852	115,722 136,616 1,252	292,564 290,341 2,204	290,662 296,134 2,204	1,902 207	3,865 152	35,232 5,164	139,795 81,943	109,620 138,633	288,512 225,891
	Total ...		1,106,774	348,399	10,830	337,519	253,590	591,109	589,000	2,109	4,017	41,004	221,738	248,906	515,665
17	Ratnágiri ...	{ Rayatwari ... Other Government ... Alienated ...	126,691 246,539 3,711	38,819 81,167	1,626 3,711	37,193 77,476	40,046 93,342	77,239 170,818	77,169 170,806	71 12	171 57	896 1,592	4,626 6,352	43,759 68,720	49,452 75,721
	Total ...		373,230	120,006	5,337	114,669	133,388	248,057	247,974	83	228	2,488	9,978	112,479	125,173
18	Kánara ...	{ Rayatwari ... Other Government ... Alienated ...	2,522,359 251,981	251,981	11,582	240,399	83,411	323,810	323,685	125	61,357	1,403	1,934,346	201,443	2,193,549
	Total ...		2,522,359	251,981	11,582	240,399	83,411	323,810	323,685	125	61,357	1,403	1,934,346	201,443	2,193,549
	Total A. ...	{ Rayatwari ... Other Government ... Alienated ...	31,927,098 2,811,153 3,112,761	22,334,671 1,136,793 2,106,963	473,379 12,427 49,768	21,861,292 1,114,276 2,057,195	3,521,238 727,862 492,198	25,382,530 1,842,138 2,549,393	25,251,846 1,790,171 2,548,608	30,684 51,967 785	1,235,835 1,279 85,870	649,787 153,941 62,501	6,352,998 286,532 48,527	4,306,946 527,263 368,470	12,544,566 969,015 563,368
	Total ...		43,851,010	25,578,337	545,574	25,032,763	4,741,298	29,774,061	29,690,625	83,436	1,322,984	865,229	6,688,057	5,200,679	14,076,949
B.—SIND.															
19	Karáchi ...		5,408,592	495,761	46,553	449,208	431,680	880,888	524,286	356,602	70,242	961,024	117,105	3,379,333	4,527,704
20	Hyderabad ...		5,745,360	849,175	13,836	835,339	1,346,843	2,182,182	1,705,958	476,224	385,283	1,933,795	128,951	1,115,149	3,563,178
21	Shikárpur ...		4,300,297	1,024,697	167,357	857,340	652,324	1,509,664	1,091,056	418,608	160,538	1,540,852	312,169	777,074	2,790,633
22	Upper Sind Frontier ...		821,422	163,669	7,509	161,160	356,253	517,413	436,951	80,462	28,613	120,184	46,405	108,807	304,009
23	Thar and Párkar ...		8,145,500	584,300	2,527	581,763	695,610	1,277,373	588,231	689,142	...	...	...	6,868,127	6,868,127
	Total B. ...		24,421,171	3,122,602	237,792	2,884,810	3,482,710	6,367,520	4,346,482	2,021,038	644,676	4,555,855	604,630	12,248,490	18,053,651
	GRAND TOTAL ...		68,272,181	28,700,939	783,366	27,917,573	8,224,008	36,141,581	34,037,107	2,104,474	1,967,660	5,421,084	7,292,687	17,449,169	32,130,600

III.--Crops, 1890-91.

I--CEREALS.

No	District.	Jowari (Great Millet), Sorghum vulgare, &c.	Bajri (Spiked Millet), Pennisetum Typhoidum.	Paddy (Bhat), Oryza sativa.	Wheat (Gahu), Triticum aestivum.	Barley (Jav, Satu), Hordeum vulgare.	Malze (Maka), Zea mays.	Kodra (Horik), Panicum scribuciatum.	Rajgi (Naghi), Eleusine coracana.	Rale, Kang (Italian Millet), Panicum Italicum.	Yaral (Sava and Barag), Panicum maliaceum. P. miliare.	Banti, Banti, Panicum flavidum.	Bhadli, Panicum pilosum.	Amaranth (Rajira), Amaranthus frumentaceus.	Others.	Total A.
1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A.—BOMBAY PRESIDENCY PROPER.																
I.—Gujarat.																
1	Abmadabad ...	157,895	145,419	52,166	74,266	12,302	2,483	10,641	2,329	59	4,463	7,582	.....	14	.....	469,819
	{ Rayatwari ...	139,153	97,308	8,189	76,475	8,203	739	8,035	861	210	2,650	13,495	.....	.....	.....	350,373
	{ Other Government ...	8,004	4,987	1,404	2,432	132	215	209	65	.....	29	550	.....	.....	.....	18,187
	{ Alienated ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	305,142	247,714	61,759	153,173	15,737	3,437	18,945	3,255	269	7,142	21,597	.....	14	.....	838,184
2	Kaira ...	42,788	176,110	93,012	11,447	7,107	841	27,006	50,212	280	371	1,775	.....	101	12	460,562
	{ Rayatwari ...	13,124	47,933	11,767	1,023	239	26	84,941	8,888	40	290	89	.....	37	256	118,703
	{ Other Government ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	{ Alienated ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	55,912	224,093	104,779	12,470	7,396	367	111,947	59,100	320	661	1,814	.....	138	268	579,265
3	Panch Mahals...	2,030	30,207	35,668	8,912	876	72,897	15,452	11,493	27	1,252	12,181	129	20	1,409	191,452
	{ Rayatwari ...	1,873	8,946	10,979	849	259	15,342	6,985	3,431	6	949	3,997	377	.....	232	52,318
	{ Other Government ...	271	3,833	3,924	230	44	3,059	2,477	1,397	.....	65	1,380	80	.....	80	17,636
	{ Alienated ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	4,174	42,986	50,571	9,441	1,179	91,698	23,864	16,321	33	2,255	16,658	535	20	1,671	261,406
4	Broach ...	91,801	20,870	14,646	53,606	.....	16	6,496	186	8	1	.....	.....	2	310	187,448
	{ Rayatwari ...	109	8	13	55	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	151
	{ Other Government ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	{ Alienated ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	91,410	20,879	14,659	53,661	.....	16	6,497	186	8	1	.....	.....	2	310	187,629
5	Surat ...	95,393	7,818	102,430	31,811	.....	.....	32,778	12,750	2	92	1,014	216	5	380	223,969
	{ Rayatwari ...	1,082	8	978	64	.....	.....	239	72	.....	.....	.....	.....	.....	.....	3,043
	{ Other Government ...	2,483	10	282	20	.....	.....	113	67	.....	.....	.....	.....	.....	.....	2,970
	{ Alienated ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	99,463	7,836	103,690	31,395	.....	.....	33,030	12,879	2	92	1,014	216	5	380	290,002
II.—Deccan.																
6	Khândesh ...	504,595	689,916	15,569	202,076	6	2,325	2,437	10,301	341	4,533	2,035	1,137	292	114	1,435,677
	{ Rayatwari ...	1,789	6,300	10,249	6,123	.....	209	1,857	2,248	13	579	2,198	492	9	6	32,132
	{ Other Government ...	17,789	11,776	967	3,136	.....	217	5	202	2	174	63	34	23	.....	34,463
	{ Alienated ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	524,173	707,992	26,785	211,335	6	2,821	4,289	12,811	356	5,286	4,286	1,663	331	120	1,502,257
7	Násik ...	131,229	764,508	51,811	316,676	.....	2,632	.....	148,839	1,121	42,836	947	1,894	180	.....	1,463,956
	{ Rayatwari ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	{ Other Government ...	4,573	39,901	2,038	32,037	.....	161	.....	7,811	162	1,325	827	42	10	.....	85,907
	{ Alienated ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	135,795	801,799	53,849	348,713	.....	2,813	.....	156,650	1,283	44,161	1,774	1,936	190	.....	1,548,963
8	Ahmadnagar ...	1,059,430	640,478	12,084	261,551	156	707	199	32,876	926	11,337	225	4,507	342	494	2,025,252
	{ Rayatwari ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	{ Other Government ...	180,097	60,439	253	22,941	30	76	.....	.....	64	26	.....	30	13	.....	269,974
	{ Alienated ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	1,239,527	706,917	12,292	284,492	186	783	189	32,876	990	11,363	225	4,537	355	494	2,295,226
9	Poona ...	755,537	527,922	68,810	90,985	885	2,129	22	66,230	1,706	36,756	270	8,081	475	7,302	1,542,165
	{ Rayatwari ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	{ Other Government ...	110,481	115,532	5,821	20,755	53	100	.....	1	261	2,263	.....	1,316	3	.....	262,616
	{ Alienated ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	866,008	643,454	64,631	111,740	938	2,229	23	61,643	2,026	39,039	270	9,397	478	2,005	1,801,761

10	Sholapur	Rayatwari	1,413,849	105,308	51,392	51,324	919	12,703	1	45	1,052	...	262	56	8,230	1,610,413	
		Other Government	108,069	9,978	1,080	4,009	52	992	...	...	45	101	5	...	865	123,174
		Alienated	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Total	1,519,918	115,284	16,249	55,333	951	13,695	1	45	1,097	1,596	267	56	9,095	1,733,587	
11	Sátára	Rayatwari	500,968	468,278	29,889	50,713	4,298	7,593	67	51,049	22,242	39,395	391	573	5,359	1,179,915	
		Other Government	100,154	78,641	11,751	11,468	1,194	2,344	1	16,043	8,486	12,581	...	141	581	243,364	
		Alienated	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Total	601,122	544,919	41,740	62,181	5,492	9,937	68	67,092	30,727	51,976	391	714	5,940	1,422,299	
<i>III.—Karnatak.</i>																	
12	Belgaum	Rayatwari	590,678	112,035	106,510	98,798	73	6,608	38	46,239	70,305	26,053	...	2	2 ⁰	1,065,360	
		Other Government	148,199	33,643	6,387	15,269	5	1,724	...	5,561	13,875	3,481	...	...	...	228,143
		Alienated	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Total	747,876	145,678	112,897	114,062	78	7,332	38	51,800	84,180	29,534	...	2	26	1,293,503	
13	Bijapur	Rayatwari	1,354,679	211,985	6,320	157,611	4	745	46	124	29,149	7,959	...	3	13	1,768,548	
		Other Government	155,331	22,783	465	14,801	...	170	...	14	4,865	967	...	...	...	199,486
		Alienated	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Total	1,510,010	234,768	6,795	172,402	4	915	46	138	34,014	8,926	...	3	13	1,968,034	
14	Dhárwár	Rayatwari	584,159	4,701	136,685	281,478	12	29	8	41,073	81,641	26,499	...	...	...	1,156,295
		Other Government	36,381	336	17,558	10,799	...	2	...	4,739	5,190	2,157	...	1	...	77,168	
		Alienated	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Total	620,540	5,037	154,243	292,277	12	31	8	45,812	86,831	28,656	...	1	...	1,233,448	
<i>IV.—Konkan.</i>																	
15	Thána	Rayatwari	7	...	323,571	128	...	69	13,205	71,560	...	32,088	...	...	...	440,628
		Other Government	...	...	6,879	...	...	...	...	456	...	194	...	...	...	6,329
		Alienated	...	...	7,474	...	...	...	35	296	...	194	...	...	...	7,999
		Total	7	...	336,724	128	...	69	13,240	72,312	...	32,476	...	...	...	454,956
16	Kolába	Rayatwari	...	...	140,039	...	...	...	2,604	14,073	...	11,101	...	...	...	167,816
		Other Government	...	...	56,879	...	...	...	16,004	42,155	...	33,002	...	...	...	147,540
		Alienated	...	...	895	...	...	...	...	23	...	17	...	...	...	935
		Total	...	...	197,312	...	...	...	18,608	56,251	...	44,120	...	...	...	316,291
17	Ratnágiri	Rayatwari	...	...	12,391	...	...	...	6,732	7,186	...	4,492	...	...	...	30,801
		Other Government	...	...	23,352	...	...	...	15,368	20,361	...	12,181	...	...	53	71,315
		Alienated	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Total	...	...	35,743	...	...	...	22,100	27,547	...	16,673	...	...	53	102,116
18	Kánara	Rayatwari	1,055	...	196,189	...	...	11	...	5,257	121	342	...	...	...	202,975
		Other Government	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Alienated	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Total	1,055	...	196,189	...	...	11	...	5,257	121	342	...	...	...	202,975
	Total A	Rayatwari	7,294,576	3,903,951	1,403,018	1,690,177	26,633	109,798	167,512	561,828	209,039	251,065	26,420	16,225	2,065	18,649	15,680,661
		Other Government	157,630	160,548	127,585	84,639	3,841	16,376	82,430	78,472	263	49,814	18,799	569	46	547	781,939
		Alienated	869,926	384,857	60,304	137,987	1,500	9,980	2,991	41,675	32,955	23,390	2,810	1,457	201	2,079	1,572,022
		Total	8,322,132	4,449,356	1,590,907	1,912,803	31,979	136,154	252,893	681,975	242,257	324,299	48,029	18,551	2,312	21,275	18,034,922
<i>B.—SIND.</i>																	
19	Karáchi	...	79,763	29,567	184,178	45,008	11,662	968	...	1,190	65	64	...	...	...	352,465
20	Hyderabad	...	100,637	289,802	176,324	46,287	5,505	314	...	26	31	354	...	...	...	619,280
21	Shikárpur	...	193,568	15,096	257,367	270,897	5,002	3	...	63	471	12	...	...	434	742,913
22	Upper Sind Frontier	...	80,278	12,828	7,342	16,923	503	16	...	1	435	...	...	...	167	118,493
23	Thar and Párkar	...	8,204	402,240	80,946	26,660	388	2	...	...	...	16	...	...	...	518,456
		Total B	462,450	749,533	706,157	405,775	23,060	1,303	...	1,280	1,002	446	...	...	601	2,351,607
	Grand Total	...	8,784,582	5,198,889	2,297,064	2,318,578	55,039	137,457	252,893	683,255	243,259	324,745	48,029	18,551	2,312	21,876	20,386,529

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CA

III.—Crops, 1890-91—continued.

No.	District.	V.—CONDIMENTS AND SPICES.																	VI.—STARCHES.			VII.—SUGAR.																					
		Cardamom (Veldode) <i>Electaria cardamomum</i> .	Chillies (Mirchya), <i>Cap-sicum frutescens</i> .	Ginger (A. le), <i>Zingiber officinale</i> .	Black Pepper (Mirj) <i>Piper nigrum</i> .	Betel-leaves (Piane), <i>Piper-betel</i> .	Betelnut (Supari), <i>Areca-catechu</i> .	Turmeric (Halud), <i>Cur-cuma longa</i> .	Fennel (Badi-shep), <i>Pimpinella anisum</i> .	Dill-seed (Bilant-shep) <i>Anethum sowa</i> .	Coriander (Dhane), <i>Coriandrum sativum</i> .	Cumin (Jire), <i>Cuminum cyminum</i> .	Ajwan-seed (Ova), <i>Pty-chotis a jowan</i> .	Fenugreek (Methi), <i>Trigonella tenuis-gra-cum</i> .	Common Mustard (Bai), <i>Sinapis Indica</i> .	Garlic (Lasun), <i>Allium sativum</i> .	Others.	Total V.	Arrowroot, <i>Maranta arundinacea</i> , <i>Curcuma aneustifolia</i> , &c.	Others.	Total VI.	Sugarcane (Us, Sheedi), <i>Saccharum officinarum</i> .	Others.	Total VII.																			
	I	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66																			
A.—BOMBAY PRESIDENCY PROPER.																																											
I.—Gujarat.																																											
		Acres.																	Acres.			Acres.																					
1	Ahmadabad		1,910 340 98	211				4	268 60 1			13		802 21	8	60 1		3,266 421 97				1,010 751 1		1,010 751 1																			
	Total		2,355	211				4	319			13		823	8	51		3,784				1,792		1,792																			
2	Kaira		913 251	69 37				8 2	215 1		1	586 1,127	2 3	129 18	9	45 62	234 29	2,210 1,630				234 215		234 215																			
	Total		1,163	106				10	216		1	1,713	5	147	9	107	263	3,740				449		449																			
3	Panch Mahals		474 164 8	14 1				1		63	1	62		84 11		31 44		690 229				190 25		190 25																			
	Total		646	15				1		63	11	62		45		76		919				225		225																			
4	Broach		150	18				19		34	36			22	5	47	10	341				58		58																			
	Total		150	18				19		34	36			22	5	47	10	341				58		58																			
5	Surat		669 28 24	115				96		21	4		91	320 1	73	138	34	1,661 29 21				4,974 62 7		4,974 62 7																			
	Total		721	115				96		21	4		91	321	73	138	34	1,614				5,047		5,047																			
II.—Deccan.																																											
6	Khândesh		7,305 7 78	3		277		61	1,180 8 65	4,854 35 29	9,675		1,131 44	283 13	216 114	177 140		25,342 47 694				1,403 6 130		1,403 6 130																			
	Total		7,388	3		288		102	1,260	5,018	9,736		1,175	296	360	317		25,943				1,539		1,539																			
7	Násik		4,188 369	13		139	1	18	16		7		1,018	9	475			5,881 458				5,704 613		5,704 613																			
	Total		4,557	15		168	1	18	16		7		1,023	36	501			6,342				6,317		6,317																			
8	Ahmadnagar		4,962 534			372		1			1					109	1	5,506 569				2,572 186		2,572 186																			
	Total		5,496			402	1	1			1					173	1	6,075				2,758		2,758																			
9	Poona		7,763 1,646	3		454		31			540		6	11	16	732		9,555 2,378				6,410 905		6,410 905																			
	Total		9,409	3		967		34			545		6	11	16	941		11,931				7,375		7,375																			

10	Shoiápur	Rayatwári	7,431		294		739	2	1	166		3	4		113		8,753		2,070	2,970
		Other Government																		
		Alienated	427							34							462		183	182
		Total	7,858		294	1	739	2	1	200		3	4		113		9,215		3,152	3,152
11	Sátára	Rayatwári	10,466	47	350	4	2,011	176		466		30	62	1	726	1	14,339		10,415	10,415
		Other Government																		
		Alienated	2,994	67	70		543	23		139		14			80	2	3,955		3,019	3,018
		Total	13,450	114	420	4	2,559	199		605		63	62	1	815	3	18,294		13,433	13,433
<i>III.—Karnátak.</i>																				
12	Belgaum	Rayatwári	13,904		110	4	142	45		1,230			112	126	1,226		16,908		8,161	8,161
		Other Government																		
		Alienated	3,147		101	1	50	27		616			3	8	822		4,270		2,855	2,855
		Total	17,051		220	5	192	72		1,846			115	129	1,548		21,178		11,016	11,016
13	Bijápur	Rayatwári	2,700		66		6	3		22			2	4	153		2,956		967	967
		Other Government																		
		Alienated	353		4		1			8					24		385		116	116
		Total	3,053		70		7	3		25			2	4	177		3,341		1,083	1,083
14	Dhárwár	Rayatwári	51,713	6	1,286	514	82	4	2	182		80	189	154	1,109		55,280		3,758	3,758
		Other Government																		
		Alienated	1,844		61	50		3		1				3			1,962		430	430
		Total	53,557	6	1,347	564	32	7	2	183		89	189	157	1,109		57,242		4,188	4,188
<i>IV.—Konkan.</i>																				
15	Thána	Rayatwári	294	254	188	4	32			623				19	12		1,426		1,340	1,340
		Other Government	21							21							43			
		Alienated																		
		Total	315	254	188	4	32			644				19	12		1,468		1,340	1,340
16	Kolába	Rayatwári	45		20	274				164							503		43	43
		Other Government	8			1				2							6		13	13
		Alienated																		
		Total	48		20	275				166							509		55	55
17	Ratnágiri	Rayatwári	54			375											429		22	22
		Other Government	10			316											326		12	13
		Alienated																		
		Total	64			691											755		34	34
18	Kánara	Rayatwári	1,266	253	4	1,767	271	11,580	55					1	2	258	15,460		3,424	3,424
		Other Government																		
		Alienated																		
		Total	1,266	253	4	1,767	271	11,580	55	3				1	2	258	15,460		3,424	3,424
Total A.		Rayatwári	1,266	115,183	757	1,767	3,838	12,766	3,256	1,919	661	1,360	2,988	671	5,205	538	170,359		53,689	53,689
		Other Government		833	39			317	2	56	35				107	29	2,030		1,083	1,083
		Alienated		11,518	69		828	53	643	119	890	1,127	51	147	815	2	15,162		8,513	8,513
		Total	1,266	127,534	864	1,767	4,664	13,126	3,901	2,094	5,139	14,013	1,788	1,421	3,060	818	6,127	569	188,151	63,285
<i>B.—SIND.</i>																				
19	Karáchi		49				3	26		114	92	3		40,411	77	18	40,793		1,068	1,068
20	Hyderabad		248					1	7	64	11			1,036	76	4	1,497		926	926
21	Shikárpur		251					21		2,090	94	3		711	63	16	3,249		520	520
22	Upper Sind Frontier		1					1		208					1		211		4	4
23	Thar and Párkar		43							100				7	5		155		14	14
		Total B.		592			3	49	7	2,576	197	6		42,215	222	38	45,905		2,532	2,532
Grand Total			1,266	128,126	864	1,767	4,664	13,126	3,904	2,143	5,146	16,589	1,985	1,427	3,060	43,053	6,349	607	234,056	65,817

No.	District.	VIII.—OIL SEEDS.										IX.—DYES.					X.—FIBRES.							XI.—MISCELLANEOUS.	Gross Area cropped.	Deduct Area cropped more than once.	Remainder Net Area cropped.
		Seam (Til), Sesamum indicum.	Linseed (Alsi, Javac), Linum usitatissimum.	Castor oil Seed (Erand-dya), Ricinus communis.	Safflower Seed (Kardai), Carthamus tinctorius.	Rope (Shiras), Brassica napus.	Niger-seed (Khurdam), Verbesina sativa.	Ground-nut (Bhulnuz), Arachis hypogea.	Cocunut (Khobard), Cocos nucifera.	Others.	Total VIII.	Indigo (Nil, Gull), Indigofera tinctoria.	Safflower (Kusumb), Carthamus persicus.	Morinda (Al, Surangi), Morinda citrifolia.	Others.	Total IX.	Cotton (Kupna), Gossypium hirsutum.	Bombay Hemp (San), Jute, Crotalaria juicea.	Hemp (Ambadi, Sheera), Hibiscus cannabina.	Jute.	Rhea.	Others.	Total X.				
	1	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
A.—BOMBAY PRESIDENCY PROPER.																											
I.—Gujarat.																											
1	Ahmadabad.	Rayatwari... 18,126 Other Govt. 11,219 Alienated ... 1,429	2,556 844	9,145 2,568 141	343 101	528 37	...	...	...	...	30,768 14,769 1,670	201	636 238	...	...	837 238	160,620 182,099 21,072	1,029 1,088 7	64 141	...	...	...	161,613 183,827 21,079	240 12	721,369 594,307 42,825	17,154 2,221 102	704,215 594,307 42,825
	Total ...	30,774	3,400	11,854	444	625	...	...	...	...	47,097	201	874	...	...	1,075	363,690	2,124	205	...	...	...	366,019	261	1,360,824	19,477	1,341,347
2	Kaira	Rayatwari... 5,544 Other Govt. 1,830 Alienated ...	325	5,675 668	489 71	9	...	...	...	...	12,041 2,669	128	801 61	...	...	929 109	7,100 4,173	115 1	1,734 617	...	...	...	8,940 4,791	13 31	561,603 199,192	15,077 4,516	540,526 155,676
	Total ...	7,374	325	6,343	559	9	...	...	...	...	14,610	266	862	...	...	1,128	11,273	116	2,351	...	...	...	13,740	44	724,795	19,593	705,202
3	Panch Mahals.	Rayatwari... 18,823 Other Govt. 1,454 Alienated ... 580	97	1,546 363 200	...	507 30 30	8,862 1,422 642	...	...	...	27,840 3,273 1,462	13	...	...	...	13	563 541 83	3,037 1,314 114	427 107 43	...	...	...	4,027 2,072 245	...	275,064 68,974 23,595	43,799 6,320 1,853	232,145 62,654 21,712
	Total ...	20,862	107	2,114	...	567	8,926	...	...	...	32,576	13	...	...	...	13	1,192	4,485	667	...	...	...	6,344	...	368,553	52,008	316,545
4	Broach	Rayatwari... 12,837 Other Govt. 41 Alienated ...	...	1,293	...	...	...	...	...	...	14,130 41	790	29	...	...	819	809,837 559	80	2	...	...	...	309,509 559	23	595,111 840	377	594,734 840
	Total ...	12,878	...	1,293	...	...	...	...	...	...	14,171	790	29	...	...	819	310,096	30	2	...	...	...	310,128	23	596,011	377	595,634
5	Surat	Rayatwari... 2,737 Other Govt. 8 Alienated ... 67	...	43,312 511 62	...	17 ...	223 2 2	163 ...	...	...	46,451 545 132	...	53	...	...	53	105,525 1,309 531	3,099 10 4	46 ...	...	...	...	108,670 1,319 535	104	537,562 5,812 3,795	59,654 645 19	478,878 5,227 3,776
	Total ...	2,812	...	43,885	...	17	226	188	...	...	47,128	...	53	...	...	53	107,365	3,113	46	...	...	...	110,524	104	547,169	59,288	487,881
II.—Deccan.																											
6	Khandesh.	Rayatwari... 62,202 Other Govt. 3,680 Alienated ... 1,187	27,988 843 629	5,181 1,588 104	2,030	...	7,059 1,588 178	3,344 ...	...	...	107,804 7,119 2,113	776	...	292	...	1,068	1,116,222 8,731 27,786	1,241 399 76	5,012 191 114	...	...	...	1,122,476 4,320 27,976	44	2,882,962 51,392 72,033	10,930 ...	2,878,052 71,824
	Total ...	67,069	29,825	5,928	2,030	...	8,825	3,358	...	...	117,035	776	...	292	...	1,068	1,147,738	1,716	5,317	...	...	...	1,154,772	44	3,012,407	11,109	3,001,293
7	Nasik	Rayatwari... 24,481 Other Govt. ... Alienated ... 646	38,069 ...	3,565 ...	8,764	...	107,393 9,642	...	...	...	191,014 8,385	...	...	...	...	7	34,230 431	2,844 409	65	...	...	...	87,139 839	1	1,915,444 111,211	24,719 1,897	1,890,725 109,524
	Total ...	25,127	39,794	3,605	9,554	...	111,766	10,453	...	...	200,299	7	...	...	...	7	34,661	3,252	65	...	...	...	37,978	1	2,026,655	26,406	2,000,249
8	Ahmadnagar.	Rayatwari... 6,702 Other Govt. ... Alienated ... 638	12,153 ...	252 ...	110,213	...	29,364 3,314	...	343	...	162,311 17,272	280	...	...	...	280	82,132 12,332	192 6	3,385 499	...	...	...	55,709 12,827	29	2,447,673 324,474	26,335 1,409	2,421,139 322,976
	Total ...	7,340	13,723	262	124,629	...	29,752	3,564	...	343	179,613	331	...	...	...	331	64,464	198	3,874	...	...	...	68,536	41	2,772,147	23,033	2,744,114
9	Poona	Rayatwari... 2,504 Other Govt. ... Alienated ... 583	813 ...	320 ...	89,107	...	34,960 9,350	...	64	...	139,117 17,990	...	...	...	...	...	163 24	332 45	2,619 291	...	...	...	3,114 360	261	1,663,132 322,369	81,726 12,603	1,751,446 309,766
	Total ...	3,087	885	329	99,305	...	41,952	11,485	...	64	157,107	...	...	...	...	...	187	377	2,910	...	...	...	3,474	1,082	2,185,501	94,329	2,091,172

0	Sholapur	{ Rayatwari... Other Govt. Alienated ...	5,314 85 ...	33,507 1,910 ...	9,453 615 ...	152,926 10,629	17,468 1,374 ...	33,780 2,519	250,545 17,126 ...	67	239	306 ...	2,700 117 ...	280 1 ...	15,644 668	83 ...	19,707 786 ...	66 1 ...	2,031,977 153,350 ...	24,789 1,847 ...	2,007,178 150,503 ...	
	Total ...		3,601 35,417	10,068 163,455	...	18,837 36,293	...	267,671 67	239 ...	306 ...	2,817 281	16,312 ...	83 ...	19,493 67	2,184,327 26,646	2,157,681											
1	Sátara	{ Rayatwari... Other Govt. Alienated ...	128 21 ...	1,928 477 ...	633 95 ...	23,021 3,258 ...	9 ...	16,083 4,028 ...	45,520 14,312 ...	1 ...	87,121 22,209	7,295 331	3,776 904	5,098 1,069	...	16,167 2,344	85 3	1,581,806 331,204	89,486 24,580	1,492,320 306,624		
	Total ...		149 2,362	628 26,277	9 20,111	59,852 1	109,330 ...	...	...	...	7,626 4,680	6,195 ...	10 ...	18,511 91	1,913,010 114,066	1,798,944								
IV.—Karnatak.																											
2	Belgaum	{ Rayatwari... Other Govt. Alienated ...	2,251 319 ...	1,528 404 ...	8,300 1,835 ...	26,929 8,025	7,293 680 ...	10,472 2,408	56,771 13,619	121,489 22,357	1,768 657	2,513 597	...	125,569 23,641	9 5	1,456,262 317,822	24,740 2,821	1,431,522 315,001		
	Total ...		2,570 1,930	10,185 34,954	...	7,873 12,878	...	70,390 ...	...	...	143,875 2,425	2,910 ...	...	149,210 14	1,774,084 27,561	1,746,523								
3	Bijapur	{ Rayatwari... Other Govt. Alienated ...	13,473 1,172 ...	54,125 6,583 ...	6,092 848 ...	80,965 8,104	29,936 2,450 ...	28 11	184,517 13,171	342,021 43,798	142 2	9,244 822	...	351,407 44,622	19 1	2,485,554 284,607	4,566 392	2,480,988 284,215		
	Total ...		14,645 59,713	6,938 88,939	...	32,386 37	...	202,688 ...	...	...	385,819 144	10,066 ...	...	396,029 20	2,770,161 4,958	2,765,203								
4	Dhárwár	{ Rayatwari... Other Govt. Alienated ...	8,010 307 ...	20,342 942 ...	16,560 889 ...	40,847 1,526	4,252 428	90,011 4,092	457,111 14,293	315 33	5,088 329	...	462,464 14,655	23 1	1,977,602 111,104	25,656 2,060	1,951,946 109,044		
	Total ...		8,317 21,284	17,449 42,373	...	4,680 ...	...	94,103 ...	...	...	471,404 348	5,367 ...	...	477,119 24	2,088,706 27,716	2,060,990							
IV.—Konkan.																											
15	Thána	{ Rayatwari... Other Govt. Alienated ...	4,447 79 6	...	2,854 ...	2 ...	32 ...	13,163 55 86	...	43 ...	20,541 134 92	3,408 30 1	2,476 41	5,879 71 1	15 ...	518,160 6,946 8,495	6,115 21 72	512,045 6,925 8,423		
	Total ...		4,532 ...	2,854 2	32 13,304	...	43 20,767	...	...	...	3,434 2,517	...	...	5,951 15	533,601 6,208	527,393						
16	Kolába	{ Rayatwari... Other Govt. Alienated ...	1,318 4,290	7 18	32 45	124 ...	1,481 4,343	200 452	1	201 452	2 ...	182,650 164,772 977	5,808 5,047 25	176,842 159,725 952		
	Total ...		5,598 ...	25 ...	...	77 ...	124 5,824	...	...	...	652 1	...	...	653 2	348,399 10,880	337,519					
17	Rátnágiri.	{ Rayatwari... Other Govt. Alienated ...	1,784 2,948	1 ...	1,784 2,949	70 231	72 231	131 ...	38,819 81,187	1,636 3,711	37,193 77,476		
	Total ...		4,732 ...	...	...	...	1 4,733	...	...	...	301 ...	...	2 303	131 120,006	5,337 114,669					
18	Kánara	{ Rayatwari... Other Govt. Alienated ...	62 ...	1 ...	228	168	319 ...	776	60 88	...	148 ...	65 ...	251,961 ...	11,582 ...	240,399 ...		
	Total ...		62 1	226 ...	...	168 ...	319 776	...	...	...	60 88	...	...	148 65	251,961 11,582	240,399					
Total A....																											
	{ Rayatwari... Other Govt. Alienated ...	188,950 25,539 7,040	193,327 2,062 13,323	114,314 4,770 4,896	535,435 172 56,944	1,162 67 30	276,250 3,114 19,519	115,611 22 22,475	...	894 1 ...	1,425,943 35,743 124,232	2,256 138 58	1,519 299 ...	531 ...	4,805 437 58	2,716,607 192,410 143,190	21,933 3,545 2,258	53,254 1,187 4,452	...	86 10 ...	2,791,880 197,142 149,910	1,144 43 844	22,334,671 1,136,703 2,106,963	473,379 22,417 49,768	21,861,292 1,114,276 2,057,195		
	Total ...	221,529 208,707	123,986 592,551	1,259 298,883	138,108 ...	895 1,585,918	2,451 1,818	531 ...	4,800 3,052,207	27,736 58,893	...	96 3,138,932	2,031 25,578,337	545,574 25,032,763													
B.—SIND.																											
19	Karáchi	...	4,679 ...	105 ...	16,004	32,959 53,747	24	24 783	115	898 2	495,761 46,553	449,208	
20	Hyderabad	...	42,119	10,376	40,447 92,942	6,834 ...	1	8 6,843	423 72,857	2	73,282 42	849,175 13,836	833,339	
21	Shikárpur	...	10,072	*68,145	66,433 144,650	1,492	452 1,944	50 6,545	1	6,596 316	1,024,697 167,357	857,340	
22	Uppar Sind Frontier.	...	21,560	10,125	8,343 40,028	6	6 749	22	771 112	168,669 7,509	161,160	
23	Thar and Párkar	...	8,149	2,477	20,441 31,067	425	425 24,553	16	24,569 ...	584,300 2,537	581,763	
	Total ...		86,579 ...	105 ...	107,127 ...	...	168,623 362,434	8,781 1	...	460 9,242	105,487 626	3 ...	...	106,116 472	3,122,602 237,792	2,684,810									
	Grand Total		308,108 208,707	124,091 592,551	108,386 298,883	138,108 ...	169,518 1,948,352	11,232 1,819	531 ...	460 14,042	3,157,694 28,362	58,896 ...	...	96 3,245,048	2,503 28,700,929	783,366 27,917,573										

* In last report area (65,939 Acres) under "Rape" in Shikárpur was inadvertently entered under "Castor oil seed."

IV.—Irrigation, 1890-91.

No.	District.	Net Area cropped.	Area irrigated from Canals.	Area irrigated from other sources.	Total Area irrigated.	CROPPING OF IRRIGATED AREA.							Deduct Area cropped with irrigation more than once.	Balance net irrigated Area.	
						Wheat.	Rice.	Other Cereals and Pulses.	Sugarcane.	Other Food Crops.	Non-food Crops.	Fodder Crops.			Total.
						6	7	8	9	10	11	12			13	14	15
A—BOMBAY PRESIDENCY PROPER.		Acres.			Acres.							Acres.	Acres.	Acres.	
I.—Gujarat.															
1	Ahmadabad ...	704,215 594,307 42,825	3,784 185	43,072 19,747 8,205	47,756 19,913 8,205	11,958 12,339 2,442	24,371 2,298 376	12,128 1,909 261	1,040 751 1	8,461 794 113	2,965 125 27	16 1,079	55,967 19,915 3,220	8,201 3 16	47,756 19,912 8,205
	Total ...	1,341,347	3,949	66,924	70,873	26,769	27,045	14,386	1,792	4,288	3,117	1,695	79,092	8,219	70,873
2	Kaira ...	549,598 155,876	4,850	22,742 14,697	27,592 14,697	3,854 495	7,749 385	6,241 1,330	233 215	1,958 1,175	7,318 10,759	2,083 872	29,436 15,201	1,844 504	27,592 14,697
	Total ...	705,202	4,850	37,439	42,289	4,319	8,134	7,571	448	3,133	18,077	2,955	44,637	2,348	42,289
3	Panch Mahals. {	232,185 62,648 21,712	..... ..... .....	1,198 492 15	1,198 492 15	452 172 .....	..... ..... .....	40	190 25 10	273 290 8	247 5 .....	..... ..... .....	1,202 492 15	4	1,198 492 15
	Total ...	316,545	.....	1,705	1,705	624	.....	40	225	568	252	.....	1,709	4	1,705
4	Broach ...	594,734 900 .....	..... ..... .....	763	763	1 ..... .....	..... ..... .....	17	51	492	209 ..... .....	..... ..... .....	770	7	763
	Total ...	595,634	.....	763	763	1	.....	17	51	492	209	.....	770	7	763
5	Surat ...	478,878 5,227 3,776	..... ..... .....	10,609 95 7	10,609 95 7	14	3,406	58	4,978 62 7	1,234 6	1,078 27 .....	..... ..... .....	10,764 95 7	155	10,609 95 7
	Total ...	487,881	.....	10,711	10,711	14	3,406	58	5,047	1,240	1,103	.....	10,866	155	10,711
II.—Deccan.															
6	Khandesh ..	2,678,052 51,392 71,854	10,752 41 247	21,424 2 1,043	22,176 43 1,290	10,666 16 204	1,817 8	3,124 20 87	1,403 6 130	7,475 2 859	9,151 59	261	33,897 43 1,297	1,721 7	32,176 43 1,290
	Total ...	3,001,298	11,040	22,469	33,509	10,885	1,825	3,181	1,539	8,336	9,210	261	35,237	1,728	33,509
7	Nasik ...	1,890,725 109,524	24,734 1,795	35,519 2,803	60,253 4,608	21,203 1,059	4,253 238	14,815 572	5,492 659	10,787 1,145	11,283 984	1,249 132	63,062 4,699	8,829 101	60,253 4,698
	Total ...	2,000,249	26,529	38,322	64,851	22,262	4,491	15,387	6,061	11,932	12,267	1,331	73,781	8,930	64,851
9	Ahmadnagar. {	2,421,138 322,976	4,979 113	69,095 8,716	74,074 8,829	26,437 3,951	692 209	30,203 3,121	2,262 183	13,302 1,618	9,633 462	1,065 58	84,754 9,422	9,589 793	74,674 8,829
	Total ...	2,744,114	5,092	78,411	83,503	30,388	901	33,384	2,445	14,920	10,115	1,723	93,876	10,373	83,503
8	Poona... {	1,731,406 309,766	26,769 2,612	68,376 9,430	95,145 12,071	21,645 3,214	1,177 91	43,376 5,420	5,984 934	35,049 3,772	6,230 394	2,698 437	116,159 14,362	21,014 2,100	95,145 12,072
	Total ...	2,091,172	29,411	77,806	107,217	24,859	1,268	48,796	6,918	38,821	6,624	3,135	130,421	23,204	107,217

10	Sholapur	{ Rayatwari ... Other Government ... Alienated ...	2,007,178 150,503 Total ...	8,884 290 9,174	66,075 4,412 70,487	74,939 4,702 79,641	27,690 2,209 29,899	2,785 155 2,940	40,429 2,680 43,109	2,970 181 3,151	5,451 328 5,779	17,778 848 18,626	869 84 453	94,472 6,485 103,957	22,633 1,753 24,316	79,641 4,702 79,641	
11	Sátara	{ Rayatwari ... Other Government ... Alienated ...	1,492,320 806,624 Total ..	6,584 903 7,487	76,729 20,533 97,262	83,813 21,436 104,749	17,478 4,366 21,844	4,145 1,606 5,841	23,628 3,796 27,324	10,363 2,903 13,266	12,854 3,969 16,813	29,123 7,052 36,175	759 164 953	98,280 23,936 122,216	14,967 2,500 17,467	83,313 21,436 104,749	
<i>III.—Karnatak.</i>																	
12	Belgaum	{ Rayatwari ... Other Government ... Alienated ...	1,431,522 315,001 Total ...	1,880 1,458 3,338	82,212 9,591 40,803	34,092 10,049 44,141	2,027 1,099 3,126	8,146 330 8,376	5,632 1,990 7,622	8,061 2,826 10,887	9,610 2,940 12,550	2,531 1,500 4,081	74 57 131	36,071 10,702 46,773	1,979 653 2,632	84,092 10,049 44,141	
13	Bijapur	{ Rayatwari ... Other Government ... Alienated ...	2,480,988 294,215 Total ...	506 506	7,961 1,218 9,179	8,467 1,218 9,685	1,548 198 1,746	1,202 127 1,329	1,040 140 1,189	968 115 1,083	3,057 451 3,508	1,693 224 1,917	170 23 193	9,673 1,297 10,965	1,211 69 1,280	8,407 1,218 9,685	
14	Dhárwár	{ Rayatwari ... Other Government ... Alienated ...	1,951,946 109,044 Total ...	8,682 781 9,463	73,818 8,854 82,672	62,500 9,635 92,135	28 28	73,223 8,822 82,045	510 510	3,550 386 3,936	3,710 323 4,033	2,343 109 2,452	2 2	83,366 9,640 93,006	866 5 871	83,500 9,635 92,135	
<i>IV.—Konkan.</i>																	
15	Tháua	{ Rayatwari ... Other Government ... Alienated ...	512,045 6,925 8,423 Total ...	..... ..... ..... .....	5,078 10 50 5,138	5,078 10 50 5,138	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....	1,327 1,327	3,625 10 50 3,685	131 131	30 30	5,113 10 50 5,173	35 35	5,078 10 50 5,138
16	Kolába	{ Rayatwari ... Other Government ... Alienated ...	176,842 159,735 952 Total ...	..... ..... ..... .....	2,460 20 2,480	2,460 20 2,480	..... ..... ..... .....	..... ..... ..... .....	..... ..... ..... .....	41 2 43	1,836 14 1,850	585 4 589	..... ..... ..... .....	2,482 20 2,482	2 2	2,460 20 2,480
17	Ratnágiri	{ Rayatwari ... Other Government ... Alienated ...	37,193 77,470 Total ...	32 81 63	955 1,303 2,258	987 1,334 2,321	..... ..... .....	874 676 1,550	37 102 139	..... ..... .....	81 559 640	..... ..... .....	..... ..... .....	992 1,337 2,329	5 3 8	987 1,334 2,321
18	Kánara	{ Rayatwari ... Other Government ... Alienated ...	240,399 Total ...	..... ..... .....	26,312 26,312	26,312 26,312	..... ..... .....	12,954 13,954	662 662	2,867 2,867	6,511 6,511	2,485 2,485	..... ..... .....	26,479 26,479	167 167	26,312 26,312
Total A.			{ Rayatwari ... Other Government ... Alienated ...	21,861,291 1,114,276 2,057,195 Total ...	102,416 237 8,229 110,882	565,898 36,866 68,677 671,141	668,314 36,603 77,106 782,023	145,031 12,961 18,742 176,764	147,794 3,359 11,052 163,105	181,896 3,461 18,026 203,373	51,780 1,061 8,245 61,086	129,756 2,780 15,563 139,099	104,771 10,920 11,739 127,430	9,406 2,551 955 12,912	761,434 37,113 85,222 883,769	93,126 510 8,116 101,746	688,314 36,603 77,106 782,023
<i>B.—SIND.</i>																	
19	Karáchi	.....	449,208	294,952	151,256	449,208	45,008	184,178	159,071	1,068	6,615	95,779	4,043	495,762	46,554	449,208
20	Hyderabad	.....	835,339	772,509	53,920	826,429	45,419	176,324	417,733	926	13,321	171,673	14,326	839,722	13,293	826,429
21	Shikárpur	.....	857,340	585,534	271,806	857,340	270,898	257,367	323,691	520	14,682	155,691	1,848	1,024,697	167,357	857,340
22	Upper Sind Frontier	.....	161,160	151,597	9,563	161,160	16,923	7,342	102,131	4	1,106	41,156	7	168,669	7,509	161,160
23	Thar and Párkár	.....	581,763	210,319	27	210,346	26,392	80,946	50,724	15	558	54,232	.....	212,867	2,521	210,346
Total B.			2,884,810	2,014,911	489,572	2,504,483	434,640	706,157	1,053,350	2,533	36,282	518,531	20,224	2,741,717	237,234	2,504,483	
Grand Total			27,917,573	2,125,793	1,160,713	3,286,506	581,404	869,262	1,256,723	63,619	175,381	645,961	33,136	3,625,486	338,980	3,286,506	

AX

V.—Agricultural Stock, 1890-91.

No.	District.	CATTLE AND OTHER QUADRUPEDS.										Horses and Ponies.	Sheep.	Goats.	PLOUGHS.		CARTS.		
		Plough Cattle.		Bulls for breeding purposes.		Oxen and He-Bufferaloes, for other purposes.		Milk Cattle.		Young Stock.					Total Cattle.	Small.	Large, i.e. over two Bullocks.	For riding.	For carrying loads.
		Oxen.	He-Bufferaloes.	Bulls.	Bull Bufferaloes.	Oxen.	He-Bufferaloes.	Cows.	She-Bufferaloes.	Calves.	Buffalo Calves.								
		2	3	4	5	6	7	8	9	10	11									12	16	17	18	19
A.—BOMBAY PRESIDENCY PROPER.																			
<i>I.—Gujarāt.</i>																			
1	Ahmadabad	{ Rayatwari ... 83,254 Other Government... 55,731 Alienated ... 6,238	{ 37 13 1	{ 763 197 23	{ 293 124 10	{ 4,231 689 6	{ 628 185 6	{ 52,127 39,201 3,753	{ 62,729 24,655 3,018	{ 31,013 17,168 1,600	{ 28,930 11,635 1,364	{ 264,005 151,403 16,278	{ 8,837 2,753 407	{ 20,275 21,973 3,651	{ 13,691 19,916 3,224	{ 39,277 25,394 2,666	{ 34	{ 1,649 177 51	{ 12,627 8,045 1,073
	Total	145,223	51	983	427	4,902	819	95,081	92,402	50,029	41,829	431,746	6,997	51,599	36,831	67,327	34	1,877	21,745
2	Kaira	{ Rayatwari ... 90,705 Other Government... 22,141 Alienated	{ 17 8	{ 180 23	{ 201 130	{ 693 192	{ 73 80	{ 41,144 3,337	{ 74,539 34,238	{ 34,371 4,522	{ 53,219 22,637	{ 285,232 89,308	{ 1,774 328	{ 5,240 1,162	{ 28,841 7,409	{ 49,498 13,711	{ 8	{ 744 629	{ 18,163 7,940
	Total	112,846	25	203	421	885	153	44,481	110,777	38,893	75,856	384,540	2,100	6,402	34,340	63,119	3	1,276	27,103
3	Panch Mahāls	{ Rayatwari ... 58,146 Other Government... 16,270 Alienated ... 4,553	{ 14 1 30	{ 555 65 37	{ 190 33 17	{ 1,148 488 3	{ 28 33 3	{ 47,797 14,359 3,869	{ 14,690 4,078 1,102	{ 43,842 12,836 3,365	{ 9,654 2,779 667	{ 176,144 51,038 13,827	{ 1,998 583 83	{ 3,128 2,939 2	{ 17,998 4,840 1,140	{ 29,184 8,184 2,202	{ 178 50 3	{ 5,892 1,923 539	
	Total	78,970	25	647	240	1,637	64	66,025	19,858	60,243	13,100	240,809	2,674	6,064	24,068	39,578	.....	237	8,154
4	Broach	{ Rayatwari ... 55,579 Other Government... .. Alienated	{ 3	{ 57	{ 95	{ 690	{ 49	{ 11,282	{ 29,420	{ 15,527	{ 19,175	{ 131,877	{ 2,470	{ 15,778	{ 25,848	{ 26,972	{ 3	{ 3,147	{ 16,009
	Total	55,579	3	57	95	690	49	11,282	29,420	15,527	19,175	131,877	2,470	15,778	25,848	26,972	.....	3,147	16,008
5	Surat	{ Rayatwari ... 98,499 Other Government... 719 Alienated ... 689	{ 3,948 00 8	{ 284 1 5	{ 199 2 1	{ 8,888 46 11	{ 324	{ 61,801 705 377	{ 43,254 303 281	{ 78,817 834 419	{ 33,292 244 137	{ 329,801 51,038 1,924	{ 1,483 4 5	{ 66,913 314 121	{ 28,343 113 77	{ 46,847 384 316	{ 910 7 2	{ 9,202 84 64	{ 27,865 216 193
	Total	99,907	4,011	290	202	8,945	324	65,683	43,838	77,870	33,677	334,747	1,492	67,348	28,533	47,547	919	9,316	28,364
<i>II.—Deccan.</i>																			
6	Khāndesh	{ Rayatwari ... 327,340 Other Government... 19,432 Alienated ... 9,961	{ 1,840 83 38	{ 4,332 276 40	{ 809 37 9	{ 19,941 548 595	{ 2,852 4 71	{ 173,594 18,649 5,071	{ 100,342 2,649 2,691	{ 127,728 12,285 3,528	{ 61,727 1,473 1,590	{ 820,471 53,436 23,562	{ 20,844 494 459	{ 33,968 97 899	{ 138,188 3,185 4,311	{ 90,338 9,583 2,171	{ 19,480 4 1,020	{ 35,478 275 815	{ 64,074 2,705 1,370
	Total	356,733	1,959	4,648	855	21,084	2,927	195,279	105,682	143,541	64,760	897,468	21,706	34,992	145,684	102,102	20,484	39,569	68,149
7	Nāsik	{ Rayatwari ... 200,094 Other Government... .. Alienated ... 13,039	{ 22,226 1,434	{ 3,225 242	{ 229 13	{ 10,572 658	{ 552 28	{ 151,055 7,539	{ 28,266 1,521	{ 82,780 4,023	{ 12,375 610	{ 509,354 29,107	{ 12,459 763	{ 92,167 6,195	{ 119,504 7,213	{ 40,622 2,601	{ 23,794 1,833	{ 12,363 533	{ 20,158 1,582
	Total	213,133	23,660	3,467	242	11,230	580	158,594	27,787	86,783	12,985	538,461	13,222	98,361	125,717	52,223	25,627	12,896	21,740
8	Ahmadnagar	{ Rayatwari ... 254,245 Other Government... .. Alienated ... 30,047	{ 5,713 118	{ 607 68	{ 109 23	{ 8,754 1,354	{ 1,139 174	{ 178,187 19,590	{ 30,353 2,613	{ 111,373 12,316	{ 15,564 1,468	{ 608,103 67,794	{ 20,572 2,434	{ 227,584 33,064	{ 172,496 21,363	{ 25,192 4,308	{ 39,464 4,433	{ 11,093 1,132	{ 15,913 1,704
	Total	284,292	5,831	675	191	10,113	1,313	197,777	32,966	123,688	17,047	673,893	23,006	290,638	193,859	29,500	43,897	12,225	17,617
9	Poēna	{ Rayatwari ... 207,798 Other Government... .. Alienated ... 40,428	{ 7,739 395	{ 634 70	{ 189 23	{ 7,724 813	{ 743 162	{ 129,968 22,894	{ 38,026 6,408	{ 66,133 11,442	{ 17,179 2,817	{ 477,239 55,447	{ 11,280 1,899	{ 205,491 22,171	{ 90,026 14,312	{ 27,061 2,843	{ 21,679 6,158	{ 2,743 332	{ 17,839 4,131
	Total	248,226	8,134	904	211	8,537	905	152,860	45,329	77,575	19,996	562,677	13,179	227,652	105,238	29,904	27,037	3,075	22,061

10	Sholapur	{ Rayatwari ... Other Government ... Alienated ...	184,006 13,021 Total ...	9,539 763 10,602	835 79 914	289 15 304	10,060 235 10,295	2,874 136 3,010	126,142 8,975 135,117	35,875 2,222 38,097	95,029 6,011 101,940	23,467 1,650 25,117	488,416 34,007 522,423	11,227 668 11,895	242,555 26,707 269,262	81,304 7,339 88,643	3,780 307 4,096	15,510 1,139 16,648	633 31 664	12,304 576 12,880
11	Sátara	{ Rayatwari ... Other Government ... Alienated ...	190,150 41,919 Total ...	15,271 4,219 19,490	381 148 529	145 44 189	5,077 1,122 6,199	836 210 1,066	114,365 25,135 139,500	60,051 15,074 76,055	75,897 16,901 92,798	88,852 8,979 47,831	501,975 113,750 615,725	12,185 1,858 14,041	323,810 53,229 377,039	69,200 14,710 83,910	20,259 5,636 25,895	19,198 4,347 23,545	679 194 873	18,158 3,893 22,051
<i>III.—Karnatak.</i>																				
12	Belgaum	{ Rayatwari ... Other Government ... Alienated ...	138,493 30,215 Total ...	34,157 4,970 39,136	1,605 297 1,902	326 74 400	7,789 1,053 8,842	1,533 209 1,742	90,980 17,173 108,162	64,577 13,388 77,963	81,280 15,451 96,731	42,943 9,155 52,098	468,602 91,992 555,684	5,435 1,917 7,352	170,054 47,439 217,493	68,416 14,712 83,128	49,955 6,874 56,829	8,990 2,509 11,499	454 75 529	24,224 4,050 28,274
13	Bijapur	{ Rayatwari ... Other Government ... Alienated ...	177,137 23,951 Total ...	8,171 1,206 9,377	154 14 168	180 21 201	6,803 559 7,362	3,358 466 3,824	118,507 16,333 134,840	54,782 7,527 62,309	146,895 19,329 166,224	52,270 7,240 59,510	568,257 76,646 644,903	11,089 1,104 12,193	178,850 26,029 202,879	116,140 18,355 134,501	46,011 6,893 52,904	9,943 1,135 11,078	139 15 153	13,119 1,409 14,528
14	Dhárwár	{ Rayatwari ... Other Government ... Alienated ...	192,897 14,475 Total ...	22,797 2,980 25,777	488 15 503	288 12 300	12,277 755 13,032	1,683 41 1,724	106,028 9,280 115,308	73,173 4,944 78,117	140,057 11,548 151,605	61,834 4,345 66,179	611,622 48,395 659,917	-5,031 392 5,423	119,401 4,554 123,955	83,255 5,394 88,649	86,146 7,127 93,273	5,433 285 5,718	650 39 695	44,474 3,129 47,603
<i>IV.—Konkan.</i>																				
15	Thána	{ Rayatwari ... Other Government ... Alienated ...	131,156 1,828 2,695 Total ...	46,035 841 488 47,364	481 348 ... 827	75 13 ... 88	3,813 44 108 3,965	352 ... 5 357	110,524 2,021 1,167 113,732	21,846 824 287 22,457	105,989 1,416 1,046 108,451	17,611 266 214 18,081	487,882 7,087 6,099 450,999	1,171 132 13 1,317	2,559 80 11 2,650	45,242 452 332 46,026	81,626 1,216 1,328 84,170	... ... ... ...	4,089 49 89 4,927	24,658 332 790 25,780
16	Kolába	{ Rayatwari ... Other Government ... Alienated ...	87,485 30,230 318 Total ...	18,253 11,921 203 30,377	209 151 ... 360	72 65 ... 137	3,337 882 ... 3,719	722 82 ... 804	34,433 26,418 196 61,047	11,547 6,802 41 18,390	30,383 21,058 160 52,201	8,737 4,717 25 13,479	145,178 102,426 943 248,547	572 71 1 644	876 167 ... 1,043	16,038 10,874 131 27,043	25,355 19,781 242 45,378	... ... ... ...	1,148 95 5 1,248	4,155 632 12 4,799
17	Ratnágiri	{ Rayatwari ... Other Government ... Alienated ...	11,402 35,552 309 Total ...	2,583 7,823 102 10,508	13 13 1 27	7 5 1 13	731 382 1 1,115	85 22 1 108	6,395 24,039 314 30,748	2,344 7,428 96 9,868	4,654 21,064 236 25,954	1,331 5,818 69 6,718	29,545 101,646 1,131 132,322	32 93 1 126	155 255 ... 410	2,388 6,233 35 8,656	7,015 21,902 205 29,122	... ... ... ...	78 59 ... 78	873 264 ... 873
18	Kánara	{ Rayatwari ... Other Government ... Alienated ...	80,233 Total ...	27,116 27,116	558 558	139 139	5,773 5,773	1,390 1,390	81,258 81,258	27,263 27,263	57,576 57,576	11,388 11,388	292,694 292,694	291 291	1,790 1,790	3,618 3,618	47,743 47,743	... ... ... ...	75 75	5,769 5,769
Total A.		{ Rayatwari ... Other Government ... Alienated ...	2,518,619 181,911 231,838 Total ...	225,754 20,759 18,942 265,465	15,551 1,072 1,039 17,662	3,983 406 263 4,655	118,301 2,746 7,278 128,325	19,241 406 1,612 21,159	1,633,860 126,728 141,686 1,906,774	772,897 84,475 61,206 918,578	1,327,224 91,971 108,534 1,527,629	598,826 48,463 40,315 598,826	8,319,432 7,149,478 559,321 8,319,432	123,750 4,366 12,012 140,128	1,734,572 26,987 224,102 1,995,661	1,118,432 53,212 112,648 1,284,292	751,804 100,189 45,709 897,682	164,618 11 21,860 186,489	84,493 1,289 3,378 89,160	346,995 22,057 24,451 393,503
Grand Total			2,932,378	263,446	17,662	4,655	128,325	21,159	1,906,774	918,578	1,527,629	598,826	8,319,432	140,128	1,995,661	1,284,292	897,682	186,489	89,160	393,503
<i>B.—SIND.</i>																				
19	Karáchi	... ..	} Not available.																	
20	Hyderabad	... ..																	
21	Shikárpur	... ..																	
22	Upper Sind Frontier	... ..																	
23	Thar and Párkar	... ..																	

ACCOMPANIMENT A TO RETURN III.

Details of Kharif and Rabi under Cereals and Pulses, 1890-91.

CLASS I.—(CEREALS).																	
No.	District.	Jowári, Sorghum Vulgare.	Bájrí, Pennisetum Typhoidum.	Rice.	Wheat.	Barley.	Maize.	Kodm, Paspalum Scrobiculatum.	Ragi, Eleusine Coracana.	Rále, Panicum Italicum.	Vari, P. Millare.	Banti, P. flavidum.	Bhadli, P. pilosum.	Rájgira, Amaranth.	Others.	Total Cereals.	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
																Acres.	
<i>I.—Gujarát.</i>																	
1	Ahmadabad	{ Kharif ... 305,142 Rabi	{ 247,714	{ 61,759	{ 153,173	{ 15,737	{ 3,437	{ 18,945	{ 3,255	{ 269	{ 7,142	{ 21,507	{	{ 14	{	{	688,901 169,193
	Total	305,142	247,714	61,759	153,173	15,737	3,437	18,945	3,255	269	7,142	21,507	.....	14	.....	.....	838,184
2	Kaira	{ Kharif... 53,050 Rabi ... 3,863	{ 224,089	{ 104,779	{ 12,470	{ 7,396	{ 367	{ 111,947	{ 59,100	{ 320	{ 661	{ 1,814	{	{ 138	{	{ 268	554,414 24,951
	Total	55,912	224,093	104,779	12,470	7,396	367	111,947	59,100	320	661	1,814	.....	138	.....	268	679,265
3	Panch Maháls	{ Kharif ... 4,171 Rabi ... 3	{ 42,988	{ 50,567	{ 9,441	{ 1,179	{ 91,695 8	{ 23,864	{ 16,321	{ 33	{ 2,255	{ 16,653 5	{ 535	{ 18	{ 2	{ 1,671	250,769 10,637
	Total	4,174	42,986	50,571	9,441	1,179	91,698	23,864	16,321	33	2,255	16,658	535	20	1,671	261,406	
4	Broach	{ Kharif ... 12,117 Rabi ... 79,293	{ 20,879	{ 14,659	{ 53,661	{	{ 16	{ 6,497	{ 186	{ 8	{ 1	{	{	{ 2	{	{ 310	54,675 132,954
	Total	91,410	20,879	14,659	53,661	.....	16	6,497	186	8	1	.....	.....	2	.....	310	187,629
5	Surat	{ Kharif ... 99,321 Rabi ... 242	{ 7,836	{ 103,690	{ 31,395	{	{	{ 83,030	{ 12,879	{ 2	{ 92	{ 1,014	{ 216	{ 4	{ 1	{ 380	258,364 21,639
	Total	99,463	7,836	103,690	31,395	.....	.....	33,030	12,879	2	92	1,014	216	5	380	290,092	
<i>II.—Deccan.</i>																	
6	Khándesh	{ Kharif ... 524,173 Rabi	{ 707,992	{ 26,785	{ 211,335	{ 6	{ 2,821	{ 4,289	{ 12,811	{ 356	{ 5,286	{ 4,286	{ 1,663	{ 334	{ 120	{	1,290,916 211,341
	Total	524,173	707,992	26,785	211,335	6	2,821	4,289	12,811	356	5,286	4,286	1,663	334	120	.....	1,502,257
7	Násik	{ Kharif ... 120,505 Rabi ... 15,290	{ 801,799	{ 53,849	{ 348,713	{	{ 2,813	{	{ 156,650	{ 1,283	{ 44,161	{ 1,774	{ 1,936	{ 190	{	{	1,184,960 364,005
	Total	135,795	801,799	53,849	348,713	.....	2,813	.....	156,650	1,283	44,161	1,774	1,936	190	.....	.....	1,549,963
8	Ahmadnagar	{ Kharif Rabi ... 1,239,527	{ 706,917	{ 12,292	{ 284,492	{ 186	{ 783	{ 189	{ 32,876	{ 990	{ 11,363	{ 225	{ 4,537	{ 355	{ 494	{	771,297 1,524,019
	Total	1,239,527	706,917	12,292	284,492	186	783	189	32,876	990	11,363	225	4,537	355	494	2,295,226

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9	Poona ...	{	Kharif ...	84,738	643,454	64,631	596	2,198	23	61,643	2,026	39,039	270	9,397	478	2,359	920,878	
			Rabi ...	771,272	111,740	842	83	516	883,903
			Total ...	866,008	643,454	64,631	111,740	938	2,229	23	61,643	2,026	39,039	270	9,397	478	2,905	1,804,781	
10	Sholapur ...	{	Kharif ...	.....	115,284	16,249	.....	.....	13,695	1	45	1,097	1,596	.....	267	56	9,095	157,385
			Rabi ...	1,519,918	55,333	951	1,570,202
			Total ...	1,519,918	115,284	16,249	55,333	951	13,695	1	45	1,097	1,596	.....	267	56	9,095	1,733,587
11	Sátára ...	{	Kharif ...	307,897	544,919	41,740	.....	.....	9,156	68	67,092	30,712	51,976	391	.....	714	5,940	1,060,605
			Rabi ...	293,223	62,181	5,492	781	361,694
			Total ...	601,122	544,919	41,740	62,181	5,492	9,937	68	67,092	30,727	51,976	391	.....	714	5,940	1,422,299
<i>III.—Karnatak.</i>																			
12	Belgaum ...	{	Kharif ...	438,034	145,678	112,897	.....	.....	7,309	38	51,800	84,180	29,534	.....	.....	2	26	869,498
			Rabi ...	309,842	114,062	78	23	424,005
			Total ...	747,876	145,678	112,897	114,062	78	7,332	38	51,800	84,180	29,534	.....	.....	2	26	1,293,503
13	Bijapur ...	{	Kharif ...	818,187	234,768	6,795	.....	.....	915	46	138	33,046	8,926	.....	.....	3	31	598,737
			Rabi ...	1,186,823	172,402	4	68	1,369,297
			Total ...	1,510,010	234,768	6,795	172,402	4	915	46	138	34,014	8,926	.....	.....	3	13	1,968,034
14	Dhárwár ...	{	Kharif ...	453,433	5,037	154,243	.....	.....	31	8	45,812	34,799	23,422	.....	.....	1	.....	771,798
			Rabi ...	167,107	292,277	2,032	234	461,650
			Total ...	620,540	5,037	154,243	292,277	12	31	8	45,812	86,831	28,656	.....	.....	1	.....	1,233,448
<i>IV.—Konkan.</i>																			
15	Thána ...	{	Kharif ...	7	.....	336,552	126	.....	69	13,240	72,308	.....	32,469	.....	.....	.....	.....	454,768
			Rabi	172	2	6	187
			Total ...	7	336,724	128	69	13,240	72,312	32,476	454,956
16	Kolába ...	{	Kharif ...	.....	.....	197,312	.....	.....	.....	18,608	56,251	.....	44,120	.....	.....	.....	.....	316,291
			Rabi
			Total	197,312	18,608	56,251	44,120	316,291
17	Ratnágiri ...	{	Kharif ...	.....	.....	35,743	.....	.....	.....	22,100	27,547	.....	16,673	.....	.....	.....	53	102,116
			Rabi
			Total	35,743	22,100	27,547	16,673	53	102,116
18	Kánara ...	{	Kharif ...	1,055	.....	192,535	.....	.....	9	.....	5,257	121	342	.....	.....	.....	.....	189,319
			Rabi	13,654	2	13,656
			Total ...	1,055	196,189	11	5,257	121	342	202,975
Grand Total	{	Kharif ...	2,725,728	4,440,352	1,577,077	126	794	135,312	252,893	681,969	299,553	323,397	48,024	18,551	2,157	20,759	10,475,092		
		Rabi ...	5,596,404	4	13,830	1,912,677	31,185	842	.....	.....	6	2,704	902	5	165	516	7,559,230	
		Total ...	8,322,132	4,449,356	1,590,907	1,912,803	31,979	136,154	252,893	681,975	242,257	324,299	48,029	18,551	2,312	21,275	18,034,922		

ACCOMPANIMENT A. TO RETURN III—continued.

Details of Kharif and Rabi under Cereals and Pulses, 1890-91.

No.	District	CLASS II.—(PULSES).													Total Pulses.
		Tur, Cajanus Indicus.	Gram, Cicer arctinum.	Mug, Phaseolus mungo.	Udid, P. radiatus.	Math, P. aconitifolius.	Vál. Dolichos lablab.	Chavli, D. catiáng.	Kulth, D. uniflorus.	Vátáno, Pisum sativum.	Lentil, (Masur).	Lákh (Lákh) Chickling, vetch.	Field Vetch (Guvár).	Others.		Total Pulses.
1		17	18	19	20	21	22	23	24	25	26	27	28	29	30
<i>I.—Gujarát.</i>															
1	Ahmadabad ...	3,029	10,285	11,502	5,671	46,355	160	1,423	4,288	.....	.....	.....	8,064	.....	80,495
	{ Kharif ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19,255
	{ Rabi... ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	3,029	10,285	11,502	5,671	46,355	160	1,428	4,280	.....	.....	.....	8,064	.....	90,780
2	Kaira ...	26,280	4,609	4,839	1,206	30,001	848	4,800	.....	.....	.....	.....	10,985	.....	70,125
	{ Kharif ...	40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,049
	{ Rabi... ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	26,330	4,609	4,839	1,206	30,001	848	4,866	.....	.....	.....	.....	10,985	.....	83,774
3	Panch Maháls ...	6,891	40,664	3,102	7,272	3,220	151	550	77	2,320	.....	.....	897	.....	22,160
	{ Kharif ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	42,956
	{ Rabi... ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	6,891	40,664	3,102	7,272	3,220	151	550	77	2,320	.....	.....	897	.....	65,144
4	Broach ...	5,079	782	308	20	3,159	157	129	.....	558	.....	34,198	246	.....	9,098
	{ Kharif ...	8,516	.....	7	.....	17	648	80	.....	.....	.....	.....	8	.....	44,764
	{ Rabi... ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	13,595	782	315	20	3,176	805	159	.....	558	.....	34,198	254	.....	53,862
5	Surat ...	22,460	2,447	2,592	3,065	362	500	733	.....	3,913	5	4,049	1,830	.....	31,542
	{ Kharif ...	1,477	.....	507	.....	.....	44,992	.....	.....	.....	.....	.....	.....	.....	57,390
	{ Rabi... ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	23,957	2,447	3,099	3,065	362	45,492	733	.....	3,913	5	4,049	1,830	.....	88,952
<i>II.—Deccan.</i>															
6	Khándesh ...	65,068	38,028	4,911	21,117	3,057	169	1,249	56,684	2,604	606	110	.....	.....	152,951
	{ Kharif ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40,742
	{ Rabi... ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	65,068	38,028	4,911	21,117	3,057	169	1,249	56,684	2,604	606	110	.....	.....	193,693
7	Násik ...	27,130	80,444	1,017	23,682	1,070	8	18	64,965	2,418	9,152	3,847	.....	.....	117,890
	{ Kharif ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	95,861
	{ Rabi... ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	27,130	80,444	1,017	23,682	1,070	8	18	64,965	2,418	9,152	3,847	.....	.....	213,751
8	Ahmadnagar ...	32,225	113,178	7,843	2,482	12,951	825	58	31,223	1,277	506	73	.....	405	80,869
	{ Kharif ...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	113,178
	{ Rabi... ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total ...	32,225	113,178	7,843	2,482	12,951	825	58	31,223	1,277	506	73	.....	405	203,046

9	Poona ...	{	Kharif ...	87,703	88,133	1,715	4,163	21,988	119	89	25,702	128	18	70	...	...	81,667
			Rabi	4,304	260	1,797	1,771	1,289	97,644
			Total ...	27,703	88,133	1,715	4,163	21,988	4,513	329	27,499	1,695	1,302	70	...	...	179,301
10	Sholapur ...	{	Kharif ...	48,148	70,008	2,949	632	18,140	50	15	5,085	68	43	306	...	...	70,219
			Rabi	70,425
			Total ...	48,148	70,008	2,949	632	18,140	50	15	5,085	68	43	306	...	...	140,644
11	Sátára ...	{	Kharif ...	64,743	87,146	12,854	31,312	60,574	2,902	749	44,667	1,922	784	...	...	...	218,802
			Rabi	89,802
			Total ...	64,743	87,146	12,854	31,312	60,574	3,902	749	44,667	1,922	784	...	...	...	308,605
III.—Karnatak.																		
12	Belgaum ...	{	Kharif ...	57,272	52,629	8,073	2,282	4,103	1,686	379	49,979	5,817	5,665	...	...	...	128,467
			Rabi	69,413
			Total ...	57,272	52,629	8,073	2,282	4,103	6,874	279	49,905	5,817	5,665	...	...	...	192,899
13	Bijapur ...	{	Kharif ...	62,475	61,805	24,724	6	4,943	2,990	29,607	47	...	...	...	...	...	127,791
			Rabi	62,950
			Total ...	62,475	61,805	24,724	6	4,943	4,139	2,990	29,607	47	...	...	...	...	190,741
14	Dhárwár ...	{	Kharif ...	55,439	48,369	41,494	2,740	9,691	6,192	849	44,300	544	86	...	...	...	144,471
			Rabi	65,283
			Total ...	55,439	48,369	41,494	2,740	9,691	6,192	849	44,300	544	86	...	...	...	209,704
V.—Konkan.																		
15	Thána ...	{	Kharif ...	7,682	2,618	700	22,154	4,425	4,467	1,053	161	...	...	...	...	...	39,381
			Rabi	3,990
			Total ...	7,682	2,618	700	22,154	4,425	4,467	1,053	161	...	...	...	...	...	43,371
16	Kolába ...	{	Kharif ...	2,000	2,752	2,295	7,477	7,501	80	2,768
			Rabi
			Total ...	2,000	2,752	2,295	7,477	7,501	80	22,109
17	Ratnágiri ...	{	Kharif ...	485	39	163	1,528	2,611	37	2,118	7,196
			Rabi
			Total ...	485	39	163	1,528	2,611	37	2,118	7,196
18	Kánara ...	{	Kharif ...	139	312	1,325	1,643	1	74	286	1,689	365	4	2,206
			Rabi
			Total ...	139	312	1,325	1,643	1	74	286	1,689	365	4	5,839
Grand Total ...				524,309	704,248	132,920	138,742	214,635	88,739	19,135	363,168	23,913	18,193	42,764	22,030	625	1,401,123	
				81,641	708,174	10,372	7,246	214,608	67,043	18,488	352,844	1,693	1,975	42,510	22,022	825	892,288	
Total ...				524,309	704,248	132,920	138,742	214,635	88,739	19,135	363,168	23,913	18,193	42,764	22,030	625	2,293,411	

ACCOMPANIMENT B TO RETURN III.

Number of principal Fruit-bearing Trees, 1890-91.

No.	District.	Mango.	Tamarind.	Jack.	Cocoanut.	Toddy-palm.	Date-palm.
A.—BOMBAY PRESIDENCY PROPER.							
<i>I.—Gujarát.</i>							
1	Ahmadabad ...	54,032	10,841	...	...	51	1,040
2	Kaira ...	219,099	20,984	...	30	15	...
3	Panch Maháls ...	40,827	5,986	...	...	129,734	...
4	Broach ...	23,423	6,425	3	87	33,160	1,311
5	Surat ...	177,188	72,737	3,563	6,716	74,023	644,910
	Total ...	514,569	116,973	3,566	6,833	236,983	647,261
<i>II.—Deccan.</i>							
6	Khándesh ...	191,708	12,884	8	126	1,706	...
7	Násik ...	155,224	7,552	48	201	53	42,411
8	Ahmadnagar ...	59,785	9,083	13	570	...	721
9	Poona ...	117,963	7,558	707	1,397	8,573	...
10	Sholápur ...	31,779	7,303	...	150	2	66,683
11	Sátára ...	173,781	11,434	8,909	4,620	...	...
	Total ...	730,240	55,814	9,685	7,064	10,334	109,815
<i>III.—Karnátak.</i>							
12	Belgaum ...	115,949	21,329	10,618	1,838	...	8,017
13	Bijápur ...	73,236	24,931	49	2,198	113	436,022
14	Dhárwár ...	166,885	56,537	8,760	62,613	4	522,541
	Total ...	356,070	102,797	19,427	66,649	117	966,580
<i>IV.—Konkan.</i>							
15	Thána ...	171,297	14,883	2,874	87,622	69,490	12,528
16	Kolába ...	73,147	4,140	4,399	90,451	19,000	30
17	Ratnágiri ...	53,956	2,206	28,721	142,473	...	...
18	Kánara ...	115,982	11,126	80,567	1,002,392	...	...
	Total ...	414,382	32,355	116,561	1,322,938	88,490	12,558
	Total, A ...	2,015,261	307,939	149,239	1,403,484	335,924	1,736,214
B.—SIND.							
19	Karáchi ...	37,909	86	...	1,062	...	555
20	Hyderabad ...	95,664	12	...	...	...	1,462
21	Shikárpur ...	47,401	20	...	...	...	148,321
22	Upper Sind Frontier.	1,438	...	...	...	...	739
23	Thar and Párkar ...	3,347	...	...	...	...	...
	Total, B ...	185,759	118	...	1,062	...	151,077
	GRAND TOTAL ...	2,201,020	308,057	149,239	1,404,546	335,924	1,887,291

STATISTICS.

B.—RAINFALL

EXPLANATORY REMARKS.

Rain Periods and their dates.

Early Rains	...	...	...	...	...	1st January—10th April.
Ante-Monsoon—						
11th April to 4th June	...	{	Ashvini	...	...	11th April—24th April.
			Bharani	...	...	25th April—4th May.
			Krittika	...	...	9th May—22nd May.
			Rohini	...	...	23rd May—4th June.
Monsoon-Kharif—						
5th June to 14th August	...	{	Mrig...	...	...	5th June—19th June.
			Ardra	...	...	20th June—3rd July.
			Punarvasu	...	...	4th July—17th July.
			Pushya	...	...	18th July—31st July.
			Ashlesha	...	...	1st August—14th August.
Monsoon-Rabi—						
15th August to 21st Oct..	...	{	Magha	...	...	15th August—27th August.
			Purva	...	...	28th August—10th September.
			Uttara	...	...	11th September—24th September.
			Hast	...	...	25th September—7th October.
			Chitra	...	...	8th October—21st October.
- Late Rains—						
22nd Oct. to 30th Nov. ...	...	{	Svāti	...	...	22nd October—3rd November.
			Vishákha	...	...	4th November—17th November.
			Anurádha	...	...	18th November—30th November.
December,						

The average given in the tables is that for eleven years ending 1886, except for very few stations. The rainy day being now defined under the Government of India's orders as a day with a rainfall of 10 cents or more instead of 1 cent or more as before, no comparison of rainy days with those of the last year can be made.

The anna valuation given in the remarks is on the basis of 16 annas representing an average crop.

Synopsis of Rainfall Summary, 1890-91.

District.	KHARIF.		RABI.		General Remarks as to Rain.
	Rain.	Harvest.	Rain.	Harvest.	
West Khándesh ...	Seasonable ...	Fairly good ...	Hast deficient ...	Good in west, fair in north, poor in Sindkheda.	Below or up to average.
East Khándesh ...	Seasonable and sufficient.	Good or very good.	Sowing rain scant but good after.	Fair, oil-seeds poor.	Do.
Násik ...	Good in west, deficient elsewhere.	Fairly good, except in south and east, where poor.	Seasonable ...	Good except Sinnar and Málagaon.	Do.
Ahmadnagar ...	Late and deficient.	Fair, but very poor in south.	Sufficient and seasonable.	Fair to good ...	Below average.
Poona ...	Good in Mával, short in Desh.	Fair ...	Seasonable, but long breaks in Chitra and Sváti.	Fair ...	Up to average. Vishákha most beneficial. December rain unusually heavy in south-east.
Sholápur ...	Good at first, but long breaks.	Very poor, except Bársi	Very seasonable and sufficient.	Excellent, kardai slightly suffered from blight.	Below average in south; above in north.
Sátára ...	Good in west and centre. Scant in east.	Fair ...	Seasonable ...	Fair to good ...	Below or up to average.
Belgaum ...	Late and long breaks except in west.	Fairly good in west. Poor to fair elsewhere.	Good except Athni & Saundatti.	Do. ...	Up to average.
Bijápur ...	Good at first, break injuriously long.	Fair ...	Seasonable ...	Fairly good, but cotton poor.	Up to or above average. Slight damage by locusts in Indi and Sindgi.
Dhárwár ...	Good at first, but long breaks.	Do. ...	Do. Sváti and Vishákha too heavy in south.	Fair. Cotton affected by blight.	Average.
Kánara ...	Seasonable ...	Do. ...	Seasonable ...	Fair ...	Up to or above average.
Ratnágiri ...	Very seasonable.	Fairly good ...	Do. Chitra injuriously heavy	Do. ...	Above average.
Kolába ...	Do. ...	Do. ...	Do. ...	Do. ...	Above average. Late rain injuriously heavy.
Thána ...	Do. ...	Very good ...	Very seasonable.	Very good ...	Above average.
Surat ...	Abnormally heavy at first.	Fair to good ...	Seasonable, but not sufficient.	Fair ...	Below average except north and south.
Broach ...	Seasonable ...	Do. ...	Good at first, but closed too soon.	Do. ...	Below average. Slight damage by locusts in places.
Kaira ...	Do. ...	Fairly good ...	Short ...	Poor ...	Below average. Rice suffered in outturn.
Panch Maháls ...	Do. ...	Do. Rice poor.	Do. ...	Do. ...	Below average.
Ahmadabad ...	Do. ...	Do. ...	Do. ...	Poor to fair ...	Below average. Rabi crops suffered from frost and blight.

West Khándesh, 1890.

Rain Periods.	DHULIA.		PIMPALNER.		NANDURBÁR.		NAVÁPUR.		TALODA.		SHÁHÁDA.		SHIRPUR.		SINDKHEDA.		AMALNER.		PÁROLA.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
	In.		In.		In.		In.		In.		In.		In.		In.		In.		In.	
Early Rains ...	0·03	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ante-Monsoon ...	2·38	4	2·14	2	1·48	2	1·04	2	0·57	1	0·52	2	1·27	2	0·67	2	1·83	3	5·35	4
Monsoon-Kharif ...	14·56	21	7·78	21	14·10	37	28·37	47	19·66	43	12·73	31	9·93	30	9·48	16	17·70	30	16·56	32
Monsoon-Rabi ...	6·44	8	6·02	10	5·94	14	13·76	14	6·53	12	10·19	14	4·53	8	2·73	8	5·10	8	8·23	12
Late Rains ...	1·83	4	0·40	1	1·99	2	0·22	1	0·62	2	1·05	1	0·36	1	1·17	1	1·29	2	1·77	5
Total	25·24	37	16·34	84	23·51	55	43·39	64	27·38	58	24·49	48	16·08	43	14·05	27	25·92	43	32·01	53
Average ...	25·79	...	27·42	...	32·67	...	...	...	34·96	...	31·56	...	27·56	...	22·95	...	23·05	...	32·08	...

General characteristics.—A hilly and rugged tract except where the wide black soil plains extend on either side of the Tápti and its tributaries. Rainfall very heavy in the dāngs.

Remarks.—Rainfall generally below average. Ante-monsoon showers in Rohini were favourable for preparing land. Monsoon broke in second week of June and partial sowings commenced. General heavy rain after 15th of June, throughout sufficient for sowing of cotton, jowári, tili, &c. July rain, though light, was on the whole sufficient and seasonable for completing kharif sowings and for weeding, except in south, where bájri sowing delayed and crops began to suffer for want of moisture. A'shlesha rain in 1st half of August was throughout beneficial. A break followed, which was favourable at first, but continued too long until relieved by general heavy rain of Purva and Uttara in second week of September. This September rain was very beneficial to all standing crops and for preparing land for rabi. Hast rain was favourable for rabi sowing but generally deficient. Light to fair showers of Vishákha in early November and light showers again in December, though slightly harmful to cotton, were generally favourable to rabi crops. Season was on the whole fairly good. Kharif outturn estimated at cotton 8 to 16 annas; jowári, bájri and other crops 8 to 14 annas; rabi outturn was good (14 annas) in west; fair (10 annas) in north, elsewhere poor (4 to 8 annas) especially in Shirpur and Sindkheda, where very poor (2 to 6 annas).

East Khándesh, 1890.

Rain Periods.	CHÁLIS- GAON.		PÁGHORA.		BHADGAON.		ERANDOL.		CHOPDA.		JALGAON.		JÁMNER.		BHUSAVAL.		EDALGA- BAD.		SA'VDA.		YA'VAL.		RA'YER.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
	In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.	
Early Rains ...	...	...	...	...	...	...	...	...	0·01	...	...	...	0·02	...	...	...	...	...	0·03	...	...	...	...	...
Ante-Monsoon ...	1·74	4	...	...	1·21	1	2·46	5	0·43	4	0·23	2	3·47	2	0·52	1	...	...	0·05	...	...	...	0·49	1
Monsoon-Kharif...	19·20	24	24·27	36	21·91	36	25·43	48	19·30	35	18·68	39	19·94	32	18·70	30	16·28	26	17·80	28	15·55	31	16·89	22
Monsoon-Rabi ...	5·85	12	7·97	9	3·49	8	7·67	13	6·04	8	4·96	10	8·00	13	6·94	7	5·79	11	3·94	9	5·02	7	4·79	10
Late Rains ...	2·01	3	1·40	3	1·66	3	1·42	4	1·22	2	1·71	2	1·30	3	0·65	2	0·90	2	0·86	1	0·50	2	4·71	2
Total	28·80	44	33·64	48	28·27	48	37·03	70	27·00	49	25·80	53	32·78	50	26·81	40	22·97	39	22·68	38	21·07	40	26·69	35
Average ...	29·70	...	29·51	...	31·29	...	31·12	...	31·58	...	33·42	...	34·64	...	35·18	...	29·78	...	28·96	...	34·44	...	33·56	...

General characteristics.—In the north, high hills of the Sátputas. The southern and western portions are also hilly but the hills less high, and continuous. Drainage by the Tápti, the Girna and the Purna. Rainfall larger than in the West Khándesh but less certain.

Remarks.—Rainfall below average in north-east and up to average in south-west. Fair preparatory showers except in northern tálukás. Monsoon broke about 10th June with fairly heavy showers, sufficient for kharif sowing of cotton, jowári, bájri &c. July rain was seasonable and sufficient for completing kharif sowing and for weeding. A'shlesha rain in 1st half of August, though excessive for cotton in eastern tálukas, was generally beneficial to standing crops. The subsequent break in Magha was throughout favourable for weeding and for healthy growth of crops. Rainfall in September was on the whole sufficient and seasonable for standing crops and for commencing rabi sowing. October rain was generally deficient, but rabi sowings full, as previous rain was more favourable here than in West Khándesh. Vishákha rain in early November, though slightly harmful to cotton, causing discoloration and shedding, was very beneficial to young rabi crops and for completing sowing of wheat and gram. Light showers in December were also favourable. On the whole season fairly good. Outturn of cotton estimated at 12 to 18 annas; jowári and bájri at 10 to 16 annas, and tili 6 to 8 annas. Rabi outturn of wheat and gram estimated at 10 to 12 annas and that of linseed at 4 to 6 annas.

Násik, 1890.

Rain Periods.	NÁSIK.		IGATPURI.		BINNAR.		NIPHÁD.		YEOLA.		NAND-GAON.		MALE-GAON.		SATA'NA.		KALVAN.		CHA'NDOR.		DINDORI.		PEINT.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
	In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.	
Early Rains ..	0'52	1	..	..	0'14	1	..	..	0'08	..	..	..	..	..	..	..	..	..	..	..	0'52	1	..	..
Ante-Monsoon ..	1'87	2	1'14	4	1'78	4	0'87	3	1'94	6	1'42	5	1'21	5	0'57	2	0'46	2	3'10	5	0'58	2	1'11	3
Monsoon-Kharif ..	13'10	29	11'5'93	69	8'56	32	9'00	23	9'12	14	15'69	16	7'59	15	7'78	19	12'49	27	15'60	35	11'37	39	80'83	60
Monsoon-Rabi ..	11'03	15	27'89	33	11'3	15	8'70	15	8'70	8	3'35	7	6'73	6	6'25	11	8'78	14	12'85	14	18'55	23	34'60	34
Late Rains ..	2'38	2	1'13	3	3'34	7	1'92	5	2'12	4	1'89	3	0'72	3	3'80	5	2'06	4	3'45	4	3'62	2	2'78	4
Total ..	29'30	49	148'13	179	25'17	59	20'58	46	21'98	32	22'35	31	18'25	29	18'40	37	23'79	47	34'49	58	34'64	67	119'32	101
Average ..	33'74	..	130'09	..	27'21	..	22'68	..	21'88	..	28'13	..	25'30	..	24'11	..	34'82	..	29'48	..	32'43	..	92'36	..

General characteristics.—The district is divisible into the Desh (or open country) and the Dángs (near the Sahyádris with heavy rainfall and primitive cultivation). The west portions of Násik, Dindori and Igatpuri and the whole of Peint belong to the Dángs.

Remarks.—Rainfall generally below average except in Chándor, Dindori, Peint and Igatpuri. Ante-monsoon showers were throughout favourable for preparing land and for sowing rice, nágli, &c., in western Dángi tálukas. General sowing rain came in 2nd week of June and kharif sowing began, though soon retarded in many places owing to cessation of rain. July rain was sufficient and seasonable for transplantation in Dángi tálukas; elsewhere it was too light for general sowing, especially in north. Ashlesha rain in 1st fortnight of August, though excessive in Dángi tálukas, was highly seasonable in central and eastern tálukas for young crops and for further extension of bájri sowing. Magha rain was very scant and crops again suffered from want of moisture, especially in north-east. General relief came by middle of September, the rainfall being most opportune for standing crops, which were greatly improved. Hast rain in early October was throughout seasonable and sufficient for standing kharif and for rabi sowing, except in east. The late rains in November and December were also favourable for rabi crops. Season was, on the whole, fairly good. Kharif outturn was estimated at 12 to 16 ans. except in south and east, where it was 6 to 8 ans. Rabi outturn was throughout estimated at 8 to 16 ans.

Ahmadnagar, 1890.

Rain Periods.	1 NAGAR.		2 PARNER.		3 SHRIGONDA.		4 KARJAT.		5 JÁMKHED.		6 SHRYGAON.		7 NEVA'SA.		8 RA'RURI.		9 KOPAR-GAON.		10 BANGAM-NEE.		11 AKOLA.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
	In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.	
Early Rains ..	0'07	..	..	..	0'35	1	0'05	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ante-Monsoon ..	1'78	2	0'95	3	1'67	2	1'35	4	3'18	2	3'0	2	1'43	4	2'49	2	0'49	2	1'43	2	0'60	1
Monsoon-Kharif ..	4'62	13	8'74	27	8'21	10	5'02	9	8'44	13	9'42	13	9'29	16	7'68	9	6'48	14	8'38	16	7'75	28
Monsoon-Rabi ..	8'82	14	6'56	14	8'81	11	6'01	10	10'78	19	7'94	15	7'91	13	5'04	11	4'44	8	7'00	9	6'25	13
Late Rains ..	6'31	7	3'49	7	6'52	8	8'78	10	6'04	8	8'15	7	3'00	7	3'05	6	4'64	6	2'75	5	1'91	4
Total ..	21'60	36	19'74	51	20'56	29	21'21	33	28'42	42	23'51	37	21'63	40	18'24	28	16'05	30	17'44	32	16'51	46
Average ..	25'11	..	23'16	..	21'52	..	25'39	..	28'95	..	26'94	..	25'42	..	22'86	..	18'41	..	20'86	..	23'00	..

General characteristics.—(1) Desh—Godávri valley (tálukas 6 to 9) : rich alluvial plains, growing much wheat. Rainfall very uncertain. Bhima and Ghor valley (tálukas 3 and 4) alluvial, but less fertile. Rainfall more capricious. Good year exceptional. Tálukas 1, 2, 5 and 10 lie between these valleys. Alternation of bare hill and treeless plain with occasional fertile well-wooded tracts. Rain more regular. (2)—Dángs—Half Akola has very heavy rain, half abuts on the Desh. The record shows the fall of the plain portion.

Remarks.—Rainfall generally below average. Ante-monsoon showers, though generally light, were favourable for preparing land. Monsoon broke with Mrig (5th June) and the fall was sufficient for sowing of mug, udid, cotton, &c. Very little rain fell in the 2nd fortnight of June and throughout July. Sowing of bájri and other kharif crops retarded and sown crops of cotton, mug, &c., began to wither. The needed relief, however, came in Áshlesha in early August, the rainfall being very beneficial to young crops and sufficient to allow bájri sowing to be recommenced. Heavy rain of Purva in September was throughout seasonable and sufficient for standing kharif crops and rain of Rabi in early October was favourable for full rabi for commencing sowing of rabi jowari. Fair showers in November and December sowings which were completed in subsequent breaks. Fair showers in November and December were throughout beneficial to rabi crops. On the whole season was fair. Outturn of tushar crops, i. e., mug, udid, &c., was fair (8 to 10 ans.) in east; elsewhere very poor (about 2 ans.) Kharif outturn was generally fair (8 to 12 ans.) except in south where poor (1 to 4 ans.). Rabi crops were generally good, the outturn being estimated at 12 to 16 ans., except in centre and west, where it was 7 to 10 ans.

POONA, 1890.

Rain Periods.	POONA.		PAUD.		VADGAON.		LONAVLI.		KHED.		GIRODA.		JUNNAR.		SIRUR.		SA'AVAD.		SOPA.		BARA-MATI.		INDAPUR.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
Early Rains ...	0.26	3	0.02	...	0.08	...	...	...	0.30	2	...	...	0.09	...	...	...	...	...	...	...	0.23	1	0.16	1
Ante-Monsoon ...	2.23	4	1.46	3	0.43	1	1.33	2	0.51	2	1.28	2	1.72	3	3.15	5	2.21	3	0.94	4	2.43	5	0.22	...
Monsoon-Kharif ...	15.80	33	52.43	60	27.84	49	152.67	63	8.17	24	14.66	33	12.50	36	3.88	9	7.64	23	5.15	10	5.87	16	4.72	9
Monsoon-Rabi ...	10.97	15	11.18	25	8.49	18	32.42	42	7.34	12	8.75	11	11.02	14	13.16	13	6.81	9	5.54	12	6.23	13	6.76	16
Late Rains ...	9.66	8	3.57	9	3.67	7	2.92	4	2.23	3	3.76	7	3.61	6	4.02	4	7.05	7	3.94	6	9.61	7	6.64	9
Total ...	39.52	63	63.66	97	40.50	75	189.39	116	18.55	43	23.45	58	28.94	59	23.21	30	23.71	42	20.67	32	24.56	42	18.69	35
Average ...	31.06	...	60.16	...	64.93	...	158.04	...	24.66	...	30.14	...	23.67	...	21.73	...	23.25	...	20.32	...	22.72	...	24.78	...

General characteristics.—The district varies from a heavy certain rainfall to a most scant capricious one. Sure rain is enjoyed by the west portions of Junnar, Khed, Haveli, and all of Mával. A moderate but regular rainfall characterizes the central belt, while the Bhimthadi and Indápur talukás are uncertain and irregular like the adjoining talukás of Sholápur.

Remarks.—Rainfall generally up to average except in Khed and Indápur. Ante-monsoon showers were generally light but useful for preparing land and for commencing early sowing of rice, nagli, &c. in Mával. Regular monsoon set in fairly in 2nd week of June, rain being sufficient for kharif sowing of rice, nagli &c. in Mával and of bajri, mug &c. in the Desh. July rain was seasonable and sufficient for transplantation in the western talukás of Mával but very deficient in the eastern Deshi parts, especially in Sirur and Bhimthadi. A'shlesha rain was slightly excessive in Mával where the subsequent break in Magha was favourable, elsewhere in the Desh August rain, though beneficial at first, was not sufficient for standing crops which were suffering from want of moisture in most parts. Here relief came in September, the general heavy fall of Purva being very beneficial to standing kharif and sufficient for commencing rabi sowing. Hast rain in early October, though favourable for standing kharif crops and rabi sowing, was not sufficient, especially for rice in Mával. Almost no rain fell in Chitra and Svati and hence heavy Vishakha rain was most opportune, being highly beneficial to late kharif as well as to rabi crops. Heavy rain fell again in December in south-eastern talukás and was generally beneficial to rabi crops. Season fair on the whole. Outturn of both kharif and rabi crops was estimated at 8 to 11 annas. Kardai was slightly damaged by late rains and the outturn was reduced to 6 annas.

SHOLÁPUR, 1890.

Rain Periods.	SHOLA'PUR.		BA'RSI.		MA'DHA.		KARMA'LA.		PANDHARPUR.		SANGOLA.		MA'LSIRAR.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
Early Rains ...	0.30	1	0.10	1	...	...	0.05	...	...	...	0.35	1	0.23	1
Ante-Monsoon ...	0.70	2	2.67	5	2.38	4	2.23	3	0.99	4	1.55	3	0.27	2
Monsoon-Kharif ...	11.49	13	11.88	19	6.28	12	5.74	10	6.81	12	2.40	7	6.69	13
Monsoon-Rabi ...	7.59	11	10.50	16	15.06	15	12.51	14	12.49	18	3.71	15	6.46	11
Late Rains ...	8.26	7	12.25	8	5.30	7	6.67	9	2.80	6	4.89	7	5.83	10
Total ...	29.33	34	38.90	49	29.02	33	27.20	36	23.09	40	17.90	33	19.73	37
Average ...	33.33	...	32.35	...	27.89	...	26.32	...	27.65	...	22.99	...	21.07	...

General characteristics.—The isolated taluka of Bársi is richest, and has the surest rain; but the rainfall is scanty all over the district, and very capricious.

Remarks.—Rainfall below average in southern and above average in northern talukás. Monsoon broke early in June with fair showers throughout the district, useful for preparing land and for commencing kharif sowings in places. The subsequent rain, however, was generally deficient and kharif sowings only partially done except at Bársi, where the rainfall was seasonable and sufficient. Fair fall of A'shlesha in early August was favourable for standing kharif and for preparing land for rabi sowing. Purva and Uttara rain in September was throughout seasonable and sufficient for sowing rabi jowari. October rain though light was on the whole sufficient for completing sowing of jowari, wheat, gram, &c. The general heavy rain of Vishakha in the first week of November was most seasonable and highly beneficial to rabi crops which were flourishing everywhere. Fairly heavy showers again fell in December, which were generally favourable to rabi crops, but excessive in Bársi where rabi outturn was slightly reduced. On the whole kharif season was generally poor, the outturn being estimated at 2 to 4 annas. Rabi season was throughout excellent, and, though kardai slightly suffered from blight in places, jowari was full average crop.

Sátára, 1890.

Rain Periods.	SA'TA'RA.		KORRGAON.		WA'I.		KHANDALA.		MEDHA.		MALCOLM-PETH.		PA'TAN.		KARA'D.		PETH.		SHIRA'LA.		DAHIVADI.		VADUJ.		VITA.		TA'SGAON.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
	In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.	
Early Rains ...	0.62	3	2.10	2	0.74	3	0.48	1	1.17	1	0.29	1	0.58	3	1.65	2	0.59	1	0.20	1	0.31	1	0.10	1	0.20	1	0.80	3
Ante-Monsoon ...	0.35	1	2.81	5	2.12	5	1.74	3	0.95	2	4.57	6	0.82	2	0.45	3	1.21	4	0.69	2	1.51	5	1.51	5	1.23	6	1.84	6
Monsoon-Kharif ...	28.44	58	14.12	41	17.14	33	7.86	15	50.45	59	271.53	71	61.11	63	18.20	36	15.95	29	30.78	45	5.19	13	6.83	17	8.42	32	9.07	25
Monsoon-Rabi ...	4.58	13	3.0	9	5.52	10	4.98	12	5.52	12	42.31	41	6.30	11	4.91	14	5.94	9	7.62	8	5.89	16	7.86	10	7.05	13	5.10	12
Late Rains ...	8.50	5	4.28	4	3.80	4	3.37	7	2.70	5	3.97	6	4.00	6	5.45	7	2.54	5	2.70	3	4.91	7	5.61	7	4.92	10	3.21	5
Total ...	37.45	80	26.81	61	29.32	60	18.43	33	66.79	79	322.67	125	72.90	85	50.66	62	26.23	48	41.08	59	17.81	42	22.01	40	21.82	62	20.02	51
Average ...	40.84	...	27.68	...	32.47	...	21.45	...	70.49	...	268.08	...	67.85	...	31.64	...	29.43	...	37.88	...	20.51	...	21.85	...	24.71	...	28.19	...

General characteristics.—Western Belt—Parts of Jávi, Pátan, Wái, Sátára and Válva, hilly. Regular and heavy rainfall. Central Belt—East portions of above and all Koregaon and Karád. Rich, well-watered valleys. Eastern Belt—The rest chiefly a waving plain and of poor land. Uncertain rainfall. But south portion of Tásgaon rich, well-wooded plains.

Remarks.—Rainfall generally below or up to average. Ante-monsoon showers generally light but favourable for preparing land. Monsoon broke in 2nd week of June, with sufficient rain for commencing kharif sowing throughout the district. July rain was sufficient and seasonable for transplantation of rice, nágli, &c., in west and for completing kharif sowing in south and centre, but it was very deficient in north-east tálukás (Mán and Khatáv), where sowing retarded and sown crops began to suffer. The heavy and continuous rain of A'shlesha in first-half of August was slightly harmful to standing crops in western and central tálukás where the subsequent break in Magha was very favourable for weeding and for growth of crops. In south-eastern tálukás, however, A'shlesha rain was deficient and hence the break in Magha was injurious to crops. Partial relief came in Purva, while the fall of Uttara and Hast, though not sufficiently heavy, was throughout seasonable and most beneficial to standing crops as well as for rabi sowing. Vishákha rain in early November was fairly heavy and generally beneficial to rabi crops. The unusually heavy rain in December, though slightly harmful to jowári, &c., in places, was on the whole beneficial to rabi. Season was on the whole good. Kharif outturn was estimated at 10 to 14 annas in west and centre and at 4 to 10 annas in south-east. Rabi outturn ranged from 8 to 12 annas in south-east and 12 to 16 annas elsewhere.

Belgaum, 1890.

Rain Periods.	BELGAUM.		CHANDGAD.		KHA'NA'-PUR.		SAMPGAON.		SAUNDATTI.		MURGOD.		GOKA'K.		CHIKODI.		HUKERI.		ATHNI.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
	In.		In.		In.		In.		In.		In.		In.		In.		In.		In.	
Early Rains ...	0.58	1	0.40	2	0.98	2	0.99	4	0.14	...	0.52	2	0.11	...	1.02	3	2.31	3	0.03	...
Ante-Moon ...	2.62	6	4.58	8	2.59	7	2.48	6	3.19	6	2.86	8	1.78	4	6.68	7	1.65	5	5.28	7
Monsoon-Kharif ...	30.59	53	94.81	68	52.30	61	10.46	30	6.91	15	9.21	21	7.72	23	12.21	26	13.89	26	3.36	14
Monsoon-Rabi ...	10.20	14	8.01	25	8.60	23	9.09	13	3.60	9	5.80	11	4.98	10	2.72	8	4.86	9	4.71	13
Late Rains ...	5.76	9	9.54	10	5.10	10	6.84	9	4.05	5	6.13	7	4.45	8	5.31	4	7.85	5	2.61	4
Total ...	49.85	83	117.34	118	69.67	103	23.86	44	17.89	35	24.52	49	19.04	45	28.82	48	30.06	48	15.99	38
Average ...	46.80	...	95.98	...	64.68	...	28.14	...	24.47	...	24.40	...	23.79	...	27.65	...	21.60	...	24.42	...

General characteristics.—Near the Sahyádris, the rain of the south-west monsoon is very constant and heavy (Belgaum and Khánápur). Further east, Chikodi, Gokák and Sampgaon, it is fitful. The eastern tálukás show a fitful fall, but this is supplemented by a scanty supply from the north-east monsoon (which comes generally in October and later).

Remarks.—Rainfall generally up to average, slightly above in south-west and below in north-east tálukás. Ante-monsoon showers were throughout favourable for preparing the land. Rainfall in June was sufficient for sowing rice, nágli, &c., in south-west; elsewhere rain scanty and kharif sowings retarded. July rain, though excessive for nágli, was sufficient and favourable for rice transplantation and for sowing sprouted rice in south-west; elsewhere good rain came in Pushya in the third week of July and was generally sufficient for kharif sowing except Athni which received very little rain. A'shlesha rain in August was excessive in south-west but subsequent break in Magha was very valuable for weeding and for healthy growth of crops. Elsewhere August rain was deficient and crops suffered from want of moisture. Heavy rain was throughout absent in September and rice began to suffer and cotton sowing retarded. Hast rain in early October, though not heavy, was very beneficial to withering rice and for rabi sowing. Rainfall in latter part of October was again deficient, especially in Saundatti and Athni, where crops were withering. General heavy rain of Vishákha in early November was throughout seasonable and highly beneficial to rabi crops. Season Kharif outturn was estimated at 10 to 16 annas in south-west; elsewhere 4 to 10 annas. Rabi crops were fairly good in west and south-west (10 to 16) annas, elsewhere middling (6 to 10 annas).

Bijápur, 1890.

Rain Periods.	DWA'PUR.		INDI.		SINDGI.		BA'GEVA'DI.		MUDDEBIAL.		BA'GALKOT.		BILOI.		BA'DA'MI.		HUNGUND.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
	In.		In.		In.		In.		In.		In.		In.		In.		In.	
Early Rains..	0'11	..	0'80	2	0'43	1	0'40	1	..	..	0'04	..	0'07	..	..	..	0'04	..
Ante-Monsoon ..	3'42	5	1'05	5	3'79	4	2'75	8	2'60	7	5'95	8	2'32	6	3'23	5	2'75	8
Monsoon-Kharif ..	7'20	10	11'41	16	9'75	13	2'88	8	11'47	15	3'02	11	5'48	11	4'03	11	3'87	7
Monsoon-Rabi ..	10'89	17	11'60	16	10'09	15	10'23	23	13'01	16	9'07	14	9'37	15	15'74	19	5'74	10
Late Rains ..	6'94	6	4'53	7	6'75	6	4'59	7	8'96	8	5'90	6	8'09	8	6'10	4	7'66	10
Total ..	23'56	33	29'69	46	30'80	39	20'85	47	36'04	46	23'98	39	25'31	40	20'10	39	20'06	85
Average ..	26'79	..	25'73	..	25'71	..	23'02	..	23'46	..	24'07	..	22'93	..	25'51	..	25'82	..

General characteristics.—This district receives its rain from both the south-west and the north-east monsoon. Hungund enjoys an even and generally sure rainfall. Bágalkot and Bádámi fare well as a rule. The rich plains of the Krishna and Don valleys are uncertain. The north talukas of Bijápur, Indi and Sindgi have capricious and light rainfall.

Remarks.—Rainfall generally above the average except Bágévádi and Hungund. Ante-monsoon showers were throughout favourable for preparing land. Monsoon set in with Mrig in fairly heavy showers all over, sufficient for commencing kharif sowing, especially in north. Sowings, however, retarded or only partially continued as the rainfall in July was generally scanty. Ashlesha and Magha rain in August was good at Indi and Sindgi in north and at Bádámi in south where standing crops were in good condition; elsewhere sown crops were badly withering from want of moisture. General relief came in 2nd week of September with Purva, the rainfall being very beneficial to standing kharif as also for rabi sowing of cotton, rála, jowári, &c. Hast rain in early October was also sufficient and seasonable for standing kharif crops, and for further sowing of rabi jowári, wheat and gram. Vishákha rain in November, though rather heavy in places, was highly beneficial to standing crops throughout. Slight damage was caused in November by locusts while passing through Indi and Sindgi Talukas. Season fair on the whole. Kharif outturn estimated at 6 to 13 annas and rabi outturn at 8 to 14 annas. Cotton having suffered from blight gave poor outturn.

Dhárwár, 1890.

Rain Periods.	DHA'RWAR.		MUGUD.		HUBLI.		KALGHATGI.		BANKAPUR.		HANGAL.		KOD.		RANEENNUR.		KARAJI.		GADAG.		MUNDARGI.		NAVALGUND.		NARGUND.		RON.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
	In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.	
Early Rains ..	0'82	2	0'30	1	0'06	..	1'05	2	..	..	0'41	2	1'45	2	0'05	..	0'63	2	..	..	0'36	1	..	..	0'40	1	..	..
Ante-Monsoon ..	4'00	9	3'83	10	2'32	7	4'79	9	2'82	6	3'59	10	6'19	10	5'68	10	4'15	7	4'25	5	3'38	4	2'08	5	1'18	3	3'91	7
Monsoon-Kharif ..	11'31	31	15'53	40	8'07	18	16'85	43	9'45	34	22'43	47	9'61	30	5'51	15	7'65	23	6'35	14	4'44	13	3'95	10	5'09	11	5'22	14
Monsoon-Rabi ..	5'54	12	5'20	10	9'78	14	7'37	19	3'38	10	6'20	14	4'18	7	6'99	14	5'81	11	9'00	17	10'34	18	10'33	14	16'88	16	14'31	16
Late Rains ..	7'07	11	6'81	9	8'56	10	10'60	8	6'24	8	7'40	9	13'68	10	16'48	12	11'26	7	4'78	6	7'74	10	3'50	6	1'85	6	4'13	6
Total ..	29'54	65	31'67	70	29'79	40	40'66	81	21'69	58	40'03	62	35'11	59	34'70	51	29'51	50	24'38	42	26'26	46	19'86	35	25'40	37	27'57	42
Average ..	32'95	..	34'34	..	27'03	..	30'14	..	28'29	..	37'31	..	27'70	..	23'82	..	27'21	..	25'98	..	17'51	..	25'36	..	23'56	..	25'77	..

General characteristics.—The district is composed of hilly tracts—the malád growing rice and hill grains (Hángal, Kalghatgi and Kod) and the black-soil plains growing cotton and wheat (Gadag, Ron, Navalgund and Hubli), or cotton but no wheat (Karajgi and Ráneennur). The Dhárwár and Bankápur Talukas are partly malád. The soil of the malád is red and gravelly, but the rainfall is steady and comparatively heavy. It is more sure and seasonable the further to the west. The proverb says: 'Good rain won't give a big crop, nor will bad rain bring famine.' This is in comparison to the fertile black-soil plains, where with good seasonable rains the produce is very large, but where the fall is irregular and uncertain, and where there is always risk of drought.

Remarks.—Rainfall above average in south and west, elsewhere below or up to average. Ante-monsoon showers were useful for preparing land for cultivation. Monsoon broke about 8th June with light showers, sufficient to begin rice sowings in west; elsewhere kharif sowing retarded till 20th July when fair rain of Pushya sufficient for jowári sowing came all over the district. Ashlesha rain in 1st half of August was beneficial but insufficient, while Magha and Purva rain was very scanty throughout the district except in north-east and crops began to suffer everywhere. Relief came with Hast at end of September, the fall being highly beneficial to withering rice and other crops and for completing cotton sowing. Sváti and Vishákha rain in November was unnecessarily heavy in south, but seasonable and very beneficial to rabi crops. In north however, rabi crops suffered from want of moisture. Season was fair on the whole. The outturn of both kharif and rabi crops was estimated at 8 to 12 annas. Cotton being affected by blight generally suffered in outturn.

Kánara, 1890.

Rain Periods.	KÁRWÁR.		ANROLA.		KUMTA.		HONÁ'VAR.		DHATKAL.		HALIYÁL.		SUPA.		YELLA'PUR.		MUNDGOD.		SIRSI.		SIDDA'PUR.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
	In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.	
Early Rains ...	...	...	...	...	0.03	...	...	...	...	...	0.90	1	2.05	3	0.05	...	0.48	1	0.61	1	...	...
Ante-Monsoon ...	15.18	13	16.89	12	21.22	13	17.70	11	13.99	14	5.60	12	5.49	11	4.51	9	1.60	7	4.81	12	3.02	7
Monsoon-Kharif ...	95.11	63	109.93	66	133.84	65	122.05	68	104.91	69	26.44	47	64.75	68	72.61	65	22.40	49	71.81	61	79.49	63
Monsoon-Rabi ...	8.35	15	11.09	19	11.89	23	11.23	23	7.63	21	10.59	15	7.57	17	12.45	25	8.28	20	9.27	20	5.98	19
Late Rains ...	2.40	7	4.52	10	4.84	7	8.07	7	5.28	11	7.04	13	8.67	9	10.39	12	6.99	10	9.94	11	8.46	11
Total ...	121.04	98	142.43	107	171.32	108	154.05	109	131.81	114	50.52	88	88.53	108	100.01	111	89.05	87	96.44	105	96.95	100
Average ...	116.62	...	126.46	...	133.11	...	128.39	...	140.91	...	44.37	...	89.18	...	91.66	...	41.25	...	91.94	...	98.93	...

General characteristics.—A hilly and thickly wooded district, divided into two parts by a broken and irregular range of hills. The lowland or coast tract has the heavier rainfall; in the upland the fall rapidly decreases with the distance from the Sahyádrí crest.

Remarks.—Rainfall generally up to average and slightly above average on coast. South-west monsoon set in early on 29th May on the coast with sufficient and seasonable rain for sowing. In upland talukas sowing rain came a little later. Kharif sowings completed in June throughout the district. Rain in first half of July was insufficient but heavy rain fell throughout in Pushya and A'shlesha, and, though slightly excessive in places, was on the whole seasonable and sufficient for transplantation which was completed by middle of August. Rainfall in September was generally deficient and rice crops, especially in hilly lands in coast talukas, suffered in outturn. Hasta rain in early October was very beneficial to rice and other crops in upland talukas. Late rains in Sváti and Vishákha, though moderately heavy and useful for sowing second crops, were generally unseasonable and injurious to ripened as well as to reaped rice and to betelnut. On the whole season was fairly good. Outturn of rice and other crops was generally estimated at 13 annas.

Ratnágiri, 1890.

Rain Periods.	RATNA-GIRI.		VENOURLA.		MA'LVAN.		DEVGAD.		RA'JA'PUR.		SANGA-MRSHVAR.		CHIPLUN.		GUHAGAR.		KHED.		DA'POLI.		MANDAN-GAD.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
	In.		In.		In.		In.		In.		In.		In.		In.		In.		In.		In.	
Early Rains ...	...	...	0.22	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ante-Monsoon ...	6.14	5	11.29	5	14.34	7	7.28	5	6.77	6	3.10	5	1.60	4	2.57	4	2.26	5	2.15	3	2.24	3
Monsoon-Kharif ...	104.15	65	97.77	60	89.61	63	72.88	64	144.84	70	169.51	70	152.31	67	92.74	67	151.03	69	142.70	67	157.26	71
Monsoon-Rabi ...	8.50	22	13.60	25	8.76	20	6.78	19	12.26	27	22.83	38	21.81	34	9.76	23	30.35	38	21.98	32	22.43	37
Late Rains ...	1.37	4	1.14	4	1.94	3	1.81	1	1.76	4	3.08	5	2.74	5	1.44	3	2.76	8	1.00	2	0.92	3
Total ...	120.16	96	124.02	95	113.05	93	88.25	89	165.62	107	198.52	118	178.46	110	106.51	97	186.40	115	167.83	104	182.85	114
Average ...	100.73	...	101.48	...	89.57	...	87.50	...	127.91	...	145.57	...	146.04	...	100.84	...	130.62	...	132.64	...	150.79	...

General characteristics.—The district is formed by a narrow belt of lowland; though hilly, and rugged as a whole, the valleys are more open near the Sahyádris than towards the centre, and these again fall into nearly level plateaus towards the centre. The rainfall is abundant and regular, being considerably heavier inland than on the coast.

Remarks.—Rainfall generally above average. Regular monsoon broke early about 31st May and rain fell almost daily till the end of August; the fall of Pushya and A'shlesha was excessive, especially in northern talukas, causing slight damage to young crops and delaying transplantation. Magha rain in 2nd fortnight of August was generally light and very beneficial to growing crops. In September and October rain fell generally in light showers, but was on the whole seasonable and quite up to requirements. Chitra rain in October, however, was injuriously heavy in Sangamesh-var and Chiplun. The late rain of Vishákha in early November, though slightly injurious to ripened as well as to reaped crops, was favourable for sowing second crops. Season was good on the whole. Outturn of early crops was estimated at 14 to 16 annas, and that of late crops and of kharik at 13 to 14 annas.

Kolába, 1890.

Rain Periods.	A'LÍBA'G.		PANVEL.		URAN.		PEN.		ROHA.		MÁ'NGAON.		MAHÁD.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
Early Rains ...	In. 0'03	...	In. 0'04	...	In. ...	...	In. 0'15	1	In. ...	...	In. ...	...	In. ...	...
Ante-Monsoon...	2'63	3	1'76	2	0'87	3	1'71	2	3'85	2	1'32	2	0'95	3
Monsoon-Kharif ...	71'01	64	110'58	66	76'58	61	105'46	67	109'35	68	135'65	66	143'94	67
Monsoon-Rabi ...	20'96	21	20'73	29	17'10	24	23'77	37	18'85	31	32'32	40	20'91	33
Late Rains ...	1'03	2	1'06	2	1'0	1	2'40	1	2'97	2	1'35	4	1'91	4
Total ...	95'65	90	134'17	99	95'55	89	133'49	103	135'2	103	170'64	112	167'71	107
Average ...	84'79	...	110'50	...	95'43	...	114'04	...	122'27	...	127'69	...	130'43	...

General characteristics.—A rugged belt of country from 15 to 30 miles broad. Rainfall abundant and regular, being heaviest in parts towards the Sahyádris.

Remarks.—Rainfall generally above average. Regular monsoon set in with Mrig (5th June), the rainfall in June being seasonable and sufficient throughout the district for sowing and transplantation. Very heavy rain fell in Pusya at end of July and though excessive for weeding, was not injurious to any of the crops. August rain was seasonable and sufficient to all crops. Purva and Uttara rain in September, though excessive for rice in lowlying lands, was on the whole beneficial to standing crops. Chitra rain in October was excessive in Mángaon, while late rain of Vishákha was injurious to reaped and ripe crops in Pen and Roha. It was, however, favourable to rabi crops. Season was good on the whole. Outturn of rice, nágli, and vari was estimated at 10—14 annas. Rabi outturn was estimated at 14 annas.

Thána, 1890.

Rain Periods.	THÁ'NA.		KALYA'S.		KARJAT.		MÁTHA-RÁN.		KHÁLÁ-PUR.		MURBÁD.		SHÁHÁ-PUR.		MOKHÁDA.		BHURWÁD.		BASSHIN.		VÁDA.		MÁHIM.		DÁHÁNU.		UMBAR-GAON.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
Early Rains ...	In. ...	...	In. ...	...	In. ...	...	In. ...	...	In. ...	...	In. ...	...	In. ...	...	In. ...	...	In. ...	...	In. ...	...	In. ...	...	In. ...	...	In. ...	...	In. ...	...
Ante-Monsoon ...	0'77	2	0'92	2	0'44	1	0'50	1	1'20	3	0'72	2	0'39	1	1'31	2	1'08	1	0'81	1	0'95	2	0'92	1	0'58	2	0'80	2
Monsoon-Kharif ...	82'16	64	99'29	61	122'60	68	239'65	69	117'09	65	94'48	65	95'89	68	72'80	65	94'12	66	67'96	54	67'14	61	36'72	54	49'76	61	64'16	60
Monsoon-Rabi ...	14'40	29	17'83	27	21'63	28	49'99	48	26'69	35	25'71	35	25'04	34	22'67	36	15'80	27	15'99	21	18'04	34	8'42	20	8'15	17	17'70	18
Late Rains ...	0'67	2	1'56	4	2'13	4	2'35	3	3'37	5	1'10	2	0'70	2	2'27	2	0'82	2	0'19	1	0'43	1	1'06	2	0'44	1	0'05	...
Total ...	98'00	97	119'60	94	147'00	101	292'49	121	148'35	108	122'01	104	122'02	105	99'20	106	111'82	96	84'93	77	86'58	98	47'12	77	58'92	81	72'71	70
Average ...	99'12	...	100'73	...	126'91	...	209'71	...	122'09	...	96'16	...	111'34	...	100'92	...	101'79	...	78'85	...	95'96	...	62'67	...	71'39	...	64'83	...

General characteristics.—Inland, the district is well watered and well wooded. Rainfall abundant, being considerably more inland than on the coast and less towards the north than towards the south.

Remarks.—Rainfall generally above average, and a little below in north. Monsoon broke in light showers with Mrig (5th June) and rice and varkas sowing commenced everywhere. Heavy rain fell in latter half of June by which sowing delayed and sown seed washed away in places. Rainfall in July and August was throughout seasonable and sufficient for ploughing and transplantation which was completed by middle of August. September rain was very favourable for standing crops. Hast rain in October, though generally light, was injurious to early crops in some places, while Vishákha rain in early November slightly damaged cut crops lying in fields. On the whole season was very good. Kharif outturn was throughout estimated at 12 to 20 annas. The outturn of salt rice was unusually good. Rabi outturn was estimated at 10 to 18 annas.

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Surat, 1890.

Rain Periods.	SURAT.		OLPA'D.		RA'NDER.		MA'NDVI.		BA'RDOLI.		VA'LOD.		JALA'POR.		CHIKHLI.		BALSA'R.		PA'RDI.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
	In.		In.		In.		In.		In.		In.		In.		In.		In.		In.	
Early Rains ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ante-Monsoon ...	1.04	1	0.10	1	0.64	2	0.10	1	0.32	1	2.19	2	0.90	1	0.73	2	0.25	1	0.30	1
Monsoon-Kharif ...	46.97	39	23.67	30	43.22	42	43.47	49	59.30	48	44.17	51	33.73	46	51.12	55	52.89	52	57.51	57
Monsoon-Rabi ...	8.30	13	5.64	11	7.85	15	11.36	15	9.32	17	10.57	15	8.50	11	20.67	23	18.71	24	26.79	23
Late Rains ...	0.04	...	...	...	0.23	1	0.08	...	...	...	0.34	1	1.24	2	0.03	...	0.29	2	0.24	1
Total ...	56.35	53	34.41	43	51.96	62	53.01	65	68.94	66	57.27	69	49.37	60	72.55	80	72.14	79	84.84	84
Average ...	44.06	...	35.52	...	42.95	...	65.27	...	68.82	...	61.31	...	58.96	...	77.63	...	74.43	...	71.49	...

General characteristics.—Western portion all along the coast poor sandy soil; central belt with rich soil and moderate rainfall; further to the east Dangs with heavy rainfall but light soil. As a rule rain lighter on the coast than inland.

Remarks.—Rainfall generally below average; and slightly above average in Chorasi and Bardoli in north and Pardi in south. Fair preparatory showers of Rohini in early June. Monsoon broke about 12th June with fair showers, sufficient for sowing rice, cotton, bajri, &c. Abnormally heavy rain fell between 16—21st June, either washing away newly sown seed or causing it to rot in many places. Rain fell almost daily in July, and though seasonable and sufficient for rice transplantation, was excessive for sowing cotton, juar, &c. August rain fell generally in light showers and with intervening breaks was very favourable for completing sowing of cotton, juar, &c., as also for weeding. Heavy rain of Uttara in 2nd week of September, coming after a break, was very beneficial to standing crops and for preparing land for rabi sowing. Hast rain was fair in south, where useful for rabi sowing; elsewhere very scant. Light showers of Vishakha in early November, though insufficient, were beneficial to rabi crops. Season fair on the whole. Outturn of rice was generally good and estimated at 16 annas. Cotton and jawari suffered owing to excessive rain in the beginning and want of moisture from late rains, the outturn being 9 annas. Rabi crops fair in south, elsewhere below average.

Broach, 1890.

Rain Periods.	BROACH.		ANKLESHVAR.		HANSOT.		VAGRA.		AMOD.		JAMBUSAR.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
	In.		In.		In.		In.		In.		In.	
Early Rains ...	...	...	...	...	...	...	...	...	...	...	...	...
Ante-Monsoon ...	0.68	1	1.51	1	0.33	1	0.74	2	0.49	1	0.57	1
Monsoon-Kharif ...	20.79	27	25.64	30	18.45	23	13.73	28	19.35	23	20.13	24
Monsoon-Rabi ...	5.51	9	5.85	10	4.97	9	5.30	8	4.80	12	6.47	11
Late Rains ...	...	...	...	...	...	...	0.02	...	...	...	0.05	...
Total ...	26.98	37	33.00	41	23.75	33	19.79	38	24.64	36	27.22	36
Average ...	44.21	...	41.41	...	34.24	...	30.60	...	41.75	...	39.46	...

General characteristics.—Rich alluvial plains growing cotton and wheat. Rainfall moderate but sure, being as a rule more plentiful in the Broach taluka. The rainfall is supplemented by heavy dews from October to December.

Remarks.—Rainfall throughout below average. Fair preparatory rain of Rohini in early June. Monsoon broke about 12th June. General heavy rain came in Ardra in latter half of June, being seasonable and sufficient for kharif sowing everywhere. July rain, though deficient in quantity, fell at seasonable intervals and was on the whole favourable for completing kharif sowing and for weeding. Fairly heavy rain fell in A'shlesha about middle of August and was throughout beneficial to standing crops of cotton, juar, &c., though insufficient for rice, especially in Ankleshvar and Hansot. General heavy rain came again, after a long break, by the middle of September and was very beneficial to standing crops and for rabi sowing of juar, wheat, lang, &c. Very little rain fell subsequently and rabi crops suffered from want of moisture. Season was on the whole fair. Kharif outturn was estimated at 9 to 14 annas. Cotton suffered from severe cold and want of sufficient moisture from dews and the outturn was poor (10 annas), compared with last year's bumper crops.

Kaira, 1890.

Rain Periods.	KAIRA.		MHEMAD- ABAD.		MATAR.		NADIA'D.		KAPADVANJ.		TU'SRA.		A'NAND.		BORBAD.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
	In.		In.		In.		In.		In.		In.		In.		In.	
Early Rains ...	...	...	...	...	...	...	...	...	...	...	0.23	1	...	...	...	...
Ante-Monsoon ...	0.17	1	1.07	1	0.31	1	0.20	1	0.55	2	0.66	1	0.35	2	0.96	2
Monsoon-Kharif ...	22.10	36	20.87	29	22.93	30	27.53	36	30.71	32	21.87	28	20.62	29	26.14	28
Monsoon-Rabi ...	4.00	9	6.66	7	3.85	8	4.17	8	4.73	5	2.23	6	3.47	7	2.84	7
Late Rains ...	0.07	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	27.24	46	28.60	37	27.11	39	31.96	45	36.01	39	25.23	36	24.44	36	29.94	37
Average ...	37.13	...	34.24	...	37.93	...	37.27	...	34.57	...	36.61	...	33.44	...	37.89	...

General characteristics.—The district is mostly one unbroken alluvial plain. In the north and north-east patches of rich rice land; the centre, a tract of most fertile soil yielding the choicest crops; and westward a bare though well cultivated tract of rice land.

Remarks.—Rainfall generally below average except at Kapadvanj. Light to fair showers of Rohini in early June were useful for preparing land. Monsoon broke about 11th June with fair fall all over the district sufficient to commence rice and kodra sowing. Kharif sowing continued though heavy rain was absent till close of June. July opened with general heavy rain sufficient for completing kharif sowing and for commencing rice transplantation. Pushya rain, in latter half of July though favourable for other kharif crops, was insufficient for rice, and many seedling beds, as the Collector remarks, became useless. Many cultivators in despair sowed bajri and other cereals or deliberately decided to allow their land a fallow, thinking that no rice could come to perfection. The result was that comparatively only a small area was planted with rice. General heavy rain came about 11th August in A'shlesha and was very favourable for completing rice transplantation. Very little rain fell in September and the late rains were altogether absent, consequently rabi area was smaller than usual. Season was on the whole fair. Kharif outturn was fairly good; bajri, guar, &c., 14 annas, kodra and cotton 13 annas, juar and bavto 12 annas, tobacco and rice 9 annas. Of rabi, wheat fair, 11 annas, but gram poor, 4 annas. The yield of rayan, mango and moho tree was plentiful.

Panch Mahals, 1890.

Rain Periods.	GODRA.		KALOL.		HALOL.		DORAD.		JHA'LOD.		JA'MBUGHODA.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
	In.		In.		In.		In.		In.		In.	
Early Rains...	0.14	1	...	...	...	...	...	...	...	...	...	...
Ante-Monsoon ...	0.12	...	1.04	1	0.10	1	0.55	1	0.20	1	0.33	2
Monsoon-Kharif ...	30.13	34	23.80	36	33.00	35	18.73	32	23.90	33	38.16	39
Monsoon-Rabi ...	6.72	11	2.94	9	3.45	9	5.57	10	2.96	6	10.90	12
Late Rains ...	...	...	...	...	...	...	0.59	1	...	...	0.98	1
Total ...	37.11	46	27.73	46	36.55	45	25.44	44	27.06	40	50.37	54
Average ...	43.24	...	40.20	...	47.97	...	32.56	...	32.66	...	50.69	...

General characteristics.—Rainfall lighter and later in the east than in the western division.

Remarks.—Rainfall much below average. Monsoon broke about 11th June with moderately heavy showers, sufficient to commence kharif sowings of rice, kodra, maize, &c. General heavy rain fell in A'rdrā and Punarvasu until middle of July and was sufficient for completing kharif sowing. Pushya rain in latter half of July was deficient for rice transplantation. Heavy rain in A'shlesha in 2nd week of August, though seasonable and sufficient for rice transplantation, was excessive for bajri and pulses, especially in Jambughoda. Partial break in Magha and Purva in August was generally favourable to all crops except rice which needed more rain. Fair showers of Uttara in 2nd week of September were throughout beneficial. Very little rain fell in Hast and the late rains were altogether absent; consequently kharif crops, especially late sown rice, suffered in outturn and rabi area was short. Season on the whole fair. The outturn of kharif crops, maize, bajri, &c., was estimated at 10 to 14 annas; rice was poor, 3 to 8 annas. Rabi outturn of gram and wheat was estimated at 4 to 8 annas. Fruit trees, e. g., moho, mango, &c., gave a bumper yield.

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Ahmadabad, 1890.

Rain Periods.	AHMEDABAD.		PARANTIJ.		MODASA.		SA'NAND.		* VIRANGAM.		DHOLEA.		DHANDHUKA.		GOONA.	
	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.	Fall.	Rainy days.
Early Rains ...	In.	...	In.	...	In.	...	In.	...	In.	...	In.	...	In.	...	In.	...
Ante-Monsoon ...	0.65	1	0.44	2	0.00	2	0.20	1	1.72	2	0.07	...	0.74	2	0.67	2
Monsoon-Kharif ...	17.26	35	19.51	32	27.06	38	18.48	34	20.05	27	22.02	23	8.49	16	16.12	22
Monsoon-Rabi ...	4.84	7	2.81	10	1.97	6	3.10	7	4.02	8	8.74	8	2.97	7	8.98	10
Late Rains ...	...	...	0.17	1	...	...	...	...	...	...	...	...	...	...	0.12	...
Total ...	22.75	43	22.93	45	29.63	44	21.78	42	25.79	37	26.83	30	12.20	25	21.64	36
Average ...	29.92	...	30.08	...	37.32	...	31.09	...	28.22	...	36.39	...	27.92	...	27.35	...

General characteristics.—Except in the hilly parts of Modasa, where the supply is sometimes considerable, the rainfall throughout the districts is generally very light.

Remarks.—Rain throughout below average. Monsoon broke about 11th June in light showers useful for preparing land and for commencing kharif sowing in north. General sowing rain came in Ardra after 20th June. In July rain fell at seasonable intervals and was sufficient for completing kharif sowings of juar, bajri, &c., but not enough for rice transplantation. Heavy rain came in Ashlesha in 2nd week of August and was favourable for completing rice transplantation. Fair showers of Uttara in middle of September were beneficial to all standing crops, but closing showers, especially desirable for rice, were absent. Consequently rice suffered in outturn. Rabi area was comparatively small and rabi crops suffered from want of moisture, especially in Dhandhuka, which is a rabi taluka and where year's rainfall was most deficient. Rabi crops also suffered in some parts from frost and blight. Season on the whole fair except in Dhandhuka. Outturn of bajri and jowari estimated at 10 to 14 annas, and of rice at 6 to 12 annas. Cotton crop variously estimated at from 3 to 12 annas and wheat at 6 to 12 annas.

APPENDIX A.

Dairy Experiments.

These experiments have been conducted with two objects in view:—

- (1) to introduce improved European dairy machinery and processes, and
- (2) to study systematically the feeding and management of milch cattle and the value of various breeds for dairy purposes.

The use of separators has already considerably extended. The Bombay Agent of the Dairy Supply Company has sold 24 cream separators, half in Bombay and the rest to mofussil purchasers. One of these has established a separator at Nadiád (Gujarát). He separates about 700 lbs. of milk daily and sends the cream in locked cans to Bombay, where it is made into butter next morning. He sells his butter at 12 annas per lb., paying Rs. 2-8-0 per 100 lbs. of milk. At this rate, he appears to make a profit of about Rs. 15 per day. The separated milk he has found unsaleable hitherto at Nadiád. It is, however, now made into curd and sent to Bombay. In Bombay and Poona separated milk finds a ready sale, especially among the poorer classes. Generally the machines are working in Bombay and Poona at good profit.

A Dairy Class was opened by this Department in Bombay for a month, when about 20 persons were instructed, among whom were two men deputed by the Mahárája of Ulwár and one by the Nadiád Agricultural Association. A man deputed by the Kolhápúr Darbár was trained at the Poona Dairy.

In June last, Mr. Keventer, the dairy expert, held exhibitions at Belgaum and Dhárwár. At Belgaum the milk was poor, yielding one pound of butter to 17 lbs. of milk. A competitive trial with Gavlís was arranged, but the results were inconclusive as the milk supplied was undoubtedly tampered with. The separator turned out one pound of butter for 20 lbs. of milk while the Gavlís extracted an equal quantity from half the quantity of milk. At Dhárwár good results were shown, but little interest was manifested in the demonstration. At the request of the local administrations Mr. Keventer visited Kolhápúr and Bangalore, exhibiting and working the dairy machinery. His services have since August last been transferred to the Agricultural Department of the North-Western Provinces.

This Department undertook with the permission of Government the supply of milk and butter to the Poona Military hospitals and prisons during 1891-92 and has thus been able to extend its experience of the milking breeds of cattle. The contract has proved a financial success. During the seven months ending October last, the Commissariat Department has saved about 250 rupees per mensem besides securing a pure supply for the soldiers. At the same time, it has been found practicable to produce milk at a reasonable profit at 8 seers per rupee on the Government Farm or is somewhat less than the local market rate, but the profits of the farm herd amount to Rs. 485. The Medical and Commissariat officers have recorded a very favourable opinion as to quality. The separated milk is considered sufficiently nutritious for ordinary purposes and is useful for fever patients.

Experiments have been made to prove the varying percentages of butter fat in the milk of individual animals from the time they calve until they go dry. The effect of feeding with varying qualities of concentrated food has also been noted. Soxhlet's apparatus has been used successfully in these experiments. The ordinary lactometer fails to test buffalo's milk correctly, because of its richness, and Soxhlet's apparatus fails so far from a similar cause, but this is corrected by reducing the milk to a known standard.

The difference in butter fat between the first and last drawn milk in the case of buffalo milk has also been worked out.

Percentage of butter fat in first seer drawn	...	...	4.0
Do. do. last do.	...	...	10.1
Average per cent. of fat in the whole milk of this buffalo	...	...	6.98

These experiments have been conducted by Mr. Mollison, who has embodied the results in a memorandum on "Points on butter-making in India." This memorandum together with other papers has been circulated by the Government of India and published in the *Indian Agriculturist*.

Cheese-making.—Mr. Mollison has written a full report on the results of the cheese-making experiments conducted in Poona last hot weather, which is here summarized.

In spite of the great heat results were encouraging and point to the conclusion that although in districts like Poona, where pasturage is deficient, milk dear, and the temperature not sufficiently cool and uniform, the industry is not likely to take root, in Northern India it will probably succeed.

The cheeses were made in part from buffalo milk containing 6 per cent. fat, and in part from "reduced" milk containing half that quantity. (Reduced milk is half buffalo and half separated milk.) The chief difficulty was experienced in ripening, during which process an even temperature not easily attainable in Poona, of 65° to 75° Fahrenheit, should be maintained, with moist a

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Cheeses were successfully made with *Withania* rennet, which offers no disadvantages over the animal rennet that could not be overcome by care and experience.

The best cheeses made with both rennets were made with whole buffalo milk. They were of good flavour, good texture, and had good keeping qualities.

The best cheese made out of the series was made from milk one-half of which had been ripened by being left overnight in a temperature under 70 degrees. No sour whey was added in this case.

Mr. Keventer the Swedish expert, who superintended the experiments, gained valuable experience of the conditions of Indian cheese-making. He is now carrying them on, under more favourable circumstances at Aligarh, and the apparatus used here has been taken over by the Government of the North-Western Provinces.

APPENDIX B.

Exports of Indian wheat from Bombay and Karachi to all Ports beyond the Presidency from 1880—1891.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<i>Exports from Bombay.</i>													
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1880...	2,927	1,626	3,407	4,985	17,110	19,407	15,055	7,832	4,193	6,527	8,652	22,991	114,712
1881...	21,768	19,275	20,000	32,481	42,428	52,236	47,369	28,172	35,132	48,835	76,714	49,559	472,969
1882...	85,674	40,239	30,557	30,390	67,886	37,190	19,386	5,396	13,797	22,317	34,159	32,703	419,694
1883...	31,019	25,403	29,516	37,503	76,205	82,881	55,921	32,425	36,265	18,466	29,319	34,508	489,431
1884...	15,285	15,933	14,997	15,230	44,831	54,894	65,437	45,546	30,974	19,045	28,038	27,806	378,016
1885...	41,846	32,366	45,824	38,933	56,871	66,602	33,379	38,004	48,975	52,808	59,598	53,977	569,183
1886...	31,424	24,484	28,402	71,581	124,232	56,341	38,715	52,896	55,461	51,166	37,584	53,433	625,719
1887...	44,235	21,379	26,595	75,325	101,018	113,946	20,172	12,657	14,778	14,106	17,383	11,129	472,723
1888...	12,090	14,419	23,729	67,400	118,586	66,165	32,841	32,472	29,514	46,241	28,058	23,022	494,537
1889...	47,591	18,567	26,949	30,649	41,838	15,934	20,382	23,129	17,796	21,390	17,716	31,569	313,510
1890...	22,795	7,653	9,191	36,907	49,386	26,745	25,562	15,362	4,045	12,312	37,824	36,387	284,169
1891...	36,141	12,681	19,882	70,161	156,136	150,086	35,001	25,552	...	...	...	...	...

Exports from Karachi.

1880...	1,487	4,677	2,792	1,160	1,819	893	808	217	172	351	955	647	15,978
1881...	1,163	409	182	820	1,647	1,055	3,439	2,300	7,809	12,207	18,575	20,280	69,686
1882...	16,794	5,390	2,296	3,105	5,276	7,833	7,516	8,282	10,012	11,023	23,571	16,910	118,008
1883...	8,161	19,158	15,767	2,356	4,830	21,289	39,198	33,013	11,946	11,815	17,264	14,551	217,348
1884...	8,832	14,438	21,110	8,533	6,752	9,683	14,001	23,733	18,343	21,326	27,331	18,869	192,951
1885...	12,023	21,745	31,204	19,648	12,511	13,612	29,768	35,476	28,716	40,741	30,376	46,116	321,936
1886...	27,926	13,619	13,542	7,975	12,326	20,531	24,299	11,331	17,563	18,781	4,487	6,581	178,961
1887...	4,420	2,090	304	20	1,539	7,621	7,698	2,098	181	3,081	3,609	2,960	35,621
1888...	1,325	1,794	1,111	461	4,995	15,313	15,921	19,826	24,291	17,836	25,765	24,842	153,480
1889...	29,514	10,074	11,365	19,271	11,186	24,137	46,366	32,209	28,263	84,647	52,626	49,068	348,726
1890...	27,607	18,174	11,409	7,656	12,012	18,746	54,553	46,919	24,471	41,861	32,312	35,572	331,292
1891...	26,964	16,530	20,763	6,946	2,457	41,998	107,434	94,249	...	...	...	...	...