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ADMINISTRATION REPORT

PUBLIC WORKS DEPARTMENT,

(IRRIGATION)

BOMBAY PRESIDENCY,

FOR THE YEAR

1898-99.

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ADMINISTRATION REPORT

OF THE

PUBLIC WORKS DEPARTMENT,

(IRRIGATION)

BOMBAY PRESIDENCY,

FOR THE YEAR

1898-99.

Bombay:
PRINTED AT THE GOVERNMENT CENTRAL PRESS.

1899.

APPENDIX A.

Statement showing the entire Expenditure incurred during the financial year 1898-99 on Irrigation Works, Repairs and Establishment in the Province of Sind.

Service.	Works.	Repairs.	Total.
	Rs.	Rs.	Rs.
PRODUCTIVE PUBLIC WORKS.			
MAJOR WORKS.			
<i>49.—Capital Account.</i>			
Works	14,37,710	.....	14,37,710
Establishment	2,12,798
Tools and Plant	7,207
Total	16,57,715
<i>42.—Revenue Account.</i>			
Extensions and Improvements	3,587	.....	3,587
Maintenance and Repairs	1,97,305	1,97,305
Establishment	77,599
Tools and Plant	1,579
Refunds of Revenue
Total	2,80,070
43 —IRRIGATION MINOR WORKS AND NAVIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.			
<i>Capital Account.</i>			
Works... ..	43,977	.....	43,977
Establishment	9,852
Tools and Plant	537
Total	54,366
<i>Revenue Account.</i>			
Extensions and Improvements	25,537	.....	25,537
Maintenance and Repairs	1,91,183	1,91,183
Establishment	77,827
Tools and Plant	2,951
Refunds of Revenue
Total	2,97,498
WORKS FOR WHICH ONLY REVENUE ACCOUNTS ARE KEPT.			
<i>Revenue.</i>			
Extensions and Improvements	1,45,139	.....	1,45,139
Maintenance and Repairs	4,83,201	4,83,201
Establishment	1,93,095
Tools and Plant	4,002
Refunds of Revenue
Total	8,25,437
WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.			
Works and Surveys	29,507	.....	29,507
Maintenance and Repairs	3,22,970	3,22,970
Establishment	89,383
Tools and Plant	9,536
Refunds
Total	4,51,396
DEPOSITS.			
<i>Contributions, Ordinary.</i>			
Works... ..	4,982	.....	4,982
Repairs	2,367	2,367
Establishment	49
Tools and Plant
Total	7,398
Total under all Heads	*35,73,880

Note.—Expenditure exclusive of Establishment and Tools and Plant Rs. 28,57,465
 Cost of Establishment and Tools and Plant " 6,86,415
 Percentage of Establishment and Tools and Plant on Outlay " 23-77
 * Exclusive of Suspense " —2,651

A P P E N D I X B.

B.

debitable to the Canal Clearance Grant in 1898-99 in the Province of Sind.

REPAIRS TO RIVER EMBANKMENTS.		SPECIAL WORKS IN CONNECTION WITH RIVER EMBANKMENTS.		Protecting Slopes of Embankments and Canals.	Miscellaneous.	Arrears.	Contingencies.	Extraordinary Abkalaní Expenditure and closing breaches.	Total Works.	ESTABLISHMENT.				Total Works and Establishment.
Cubic feet.	Cost.	Cubic feet.	Cost.							Abkalaní.	Revenue.	Works.	Total.	
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	Rs.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
...	...	...	...	...	2,593	...	634	1,542	36,742	3,339	1,586	1,684	6,609	43,351
...	...	...	...	...	3,571	...	680	694	22,459	2,964	874	1,163	5,001	27,460
...	...	...	...	...	2,333	...	500	2,116	50,652	4,264	2,188	1,776	8,228	58,880
3,865,257	80,194	3,116,078	19,300	...	3,684	...	1,925	14,714	79,766	6,656	647	1,895	9,193	88,964
...	...	...	...	453	349	...	448	25	19,300	2,325	800	2,268	5,393	24,693
223,444	1,062	...	...	...	...	...	30	2	1,134	265	54	152	471	1,605
...	...	...	...	693	106	...	359	122	37,124	1,771	578	1,722	4,071	41,195
...	...	...	...	...	29	...	...	...	1,863	242	55	165	462	2,325
...	...	...	...	...	19	...	...	...	1,227	258	59	176	493	1,720
995,007	13,190	10,662,466	47,979	...	7,561	...	457	44	70,495	5,499	258	731	6,458	76,983
...	...	...	...	119	...	...	38	...	3,536	161	53	149	363	3,949
249,000	1,876	...	...	...	384	...	3	...	3,315	1,731	101	309	2,141	5,456
...	...	...	...	841	2,086	...	...	55	30,973	7,374	3,647	6,222	17,243	48,216
...	...	...	...	211	198	...	1	...	5,882	...	...	...	...	5,882
...	...	...	...	...	322	...	...	4	8,463	1,494	1,233	1,365	4,092	12,575
...	...	...	...	...	63	...	...	...	4,850	286	121	294	701	5,551
...	...	...	...	...	2	...	...	...	688	275	123	279	677	1,365
...	...	...	...	...	8	...	...	...	103	95	20	54	169	272
...	...	...	...	...	22	...	...	...	108	107	17	54	178	286
683,994	4,318	...	...	348	3,483	...	...	87	9,053	4,089	493	1,692	6,274	15,327
...	...	...	...	...	1,044	...	15	...	26,375	2,951	869	2,645	6,465	32,640
...	...	...	...	...	3,732	...	195	...	82,478	5,230	1,458	4,130	10,818	93,296
141,310	688	...	...	...	743	...	60	...	1,669	3,474	470	1,382	5,326	6,995
...	...	...	...	...	154	-610	...	...	3,601	385	121	381	887	4,483
...	...	...	...	...	301	16	...	...	4,612	433	212	341	936	5,598
...	...	...	...	155	294	-780	...	...	8,534	614	378	1,107	2,099	10,633
...	...	...	...	...	698	407	...	...	14,663	1,912	499	1,465	3,876	18,539
...	...	...	...	...	18	...	...	...	165	...	...	...	...	165
...	...	...	...	...	159	611	...	...	3,156	171	95	248	514	3,670
...	...	...	...	77	176	-85	...	...	1,535	72	36	103	211	1,746
...	...	...	...	...	1,840	-2,451	...	...	26,927	4,574	916	2,880	8,370	35,297
...	...	...	...	...	45	-72	...	...	2,956	44	...	...	44	3,000
...	...	...	...	...	173	-551	...	...	4,367	260	112	331	703	5,070
...	...	...	...	...	29	-860	...	...	1,935	274	74	212	560	2,555
...	...	...	...	...	...	-325	...	...	671	71	19	59	149	820
...	...	...	...	...	7	-260	...	...	1,145	282	20	60	362	1,507
1,593,824	7,663	...	1,152	126	3,549	-772	...	456	14,342	3,641	363	1,293	5,297	19,639
1,207,898	4,792	9,778,422	48,990	...	958	3,999	...	...	61,685	7,025	523	1,570	9,118	70,803
...	...	...	...	...	...	1,000	...	...	1,000	...	...	...	...	1,000

Names of Canals.	CLEARANCE PROPER IN CANALS.		Jungle cutting.	Re-moving Tuddas.	IMPROVING CANAL HEADS.		SIDE SLOPING AND REPAIRING CURVES.		Buildings and Gardens.	Regulators, Bridges and Sluices.	REPAIRS TO CANAL BANKS.		Removing spoil banks and inspection paths.
	Cubic feet.	Cost.			Cubic feet.	Cost.	Cubic feet.	Cost.			Cubic feet.	Cost.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
		Rs.	Rs.	Rs.		Rs.		Rs.	Rs.	Rs.		Rs.	Rs.
Indus River District.	Charting S. S. "Jhelum".	...	...	...	...	...	...	...	...	...	...	...	...
	Coal and Stores for the Steam Launch "Maud."	...	...	...	...	...	...	...	...	...	...	...	...
Eastern Nara.	Nara Supply Channel	...	...	...	...	...	...	...	545	1,321	8,115	962	...
	Eastern Nara	...	...	439	...	...	...	...	...	231	...	...	...
	Mithrao Canal	881,408	3,611	2,283	1,511	432,420	1,988	...	810	6,674	778,090	3,121	...
	Dinwah	155,102	621	113	626	...	...	...	...	227	...	...	...
	Heranwah	...	...	193	...	...	...	...	...	...	...	...	...
	Khupra	188,343	639	...	...	...	...	...	8	...	...	...	...
	Tbarwah	177,002	514	...	...	...	...	118	2,776	291,627	966	...	
Northern Hyderabad Canals.	Nasrat	418,265	1,618	...	210	...	...	...	488	1	198,825	620	...
	Naolakh	1,902,094	7,559	6	2,120	...	...	...	...	32	478,544	1,428	85
	Dambro	532,981	2,007	43	331	...	...	...	...	4	395,579	1,689	...
	Dadwah	8,120,336	32,735	10	299	...	...	...	405	112	1,50,946	2,927	...
	Renwah	35,079	96	81	498	...	...	...	...	85	112,010	474	...
	Other Canals	1,532,401	5,855	130	36	...	...	...	...	10	193,871	752	...
	Mehrāwah	556,549	2,641	...	191	...	...	...	...	-5	...	...	...
	Special repairs to Dambro Regulator...	...	...	...	...	...	...	...	...	1,387	...	...	...
	Right Bank of Bhorti	...	...	42	...	...	...	...	...	16	1,073,382	4,000	...
	Reconstructing the Out-houses of the Chowki at Mithoo Khoso	...	...	...	...	...	...	...	645	...	...	...	...
	Naolakh Bhorti Bund	...	...	...	...	...	...	...	...	...	...	...	...
	Repairing Indus Survey marks in Moro Sub-division	...	...	...	...	...	...	...	...	...	...	...	...
	Repairing Indus Survey marks in Naushāro Sub-division	...	...	...	...	...	...	...	...	...	...	...	...
Bund between the Dad and Mirwah Sahro Canal in Moro Taluka	...	...	...	...	...	...	...	...	...	...	...	...
Central Hyderabad Canals.	Ghāro Mahmuda	3,564,840	13,674	113	1,942	226,033	904	...	...	2	393,018	1,822	...
	Kari Shumāl	1,232,512	5,911	13	588	...	...	...	...	...	31,632	137	26
	Nasir	1,353,874	6,195	...	143	...	...	...	...	...	210,467	926	...
	Other Canals	258,226	371	...	50	...	...	...	...	...	142,801	725	...
	Alibhar Kacheri	216,874	859	...	425	...	...	...	...	...	143,735	687	...
	Great Marak	2,579,550	10,110	1,918	2,478	...	...	...	...	101	1,247,229	5,508	508
	Sarfrāz	1,371,886	3,576	93	133	...	...	...	...	...	87,227	857	290
	Bund to check spill in Hala sub-division	...	...	...	...	...	...	...	...	...	...	...	...
Fuleli Canals.	Fuleli Canals	24,895,186	91,363	1,367	1,511	...	...	...	586	2,687	2,515,201	10,909	1,399
	Other Canals	5,817,356	22,998	201	688	...	...	...	...	1,302	550,739	1,460	...
	Hyderabad Bunds	...	...	...	...	...	...	...	...	...	...	...	...
Begāri Canals District	20,180,241	66,066	1,127	1,167	...	...	96,780	433	6,368	14,780	3,287,971	11,091	...
Shikārpur Canals District	9,783,805	40,754	1,231	2,919	321,818	1,284	177,850	496	3,287	1,920	2,382,510	9,002	903
Ghār Canals District	17,642,070	87,909	45	3,263	38,600	154	20,091	40	3,167	3,060	1,301,078	6,863	524
Western Nāra District	7,158,524	26,429	1,360	2,660	...	...	3,790	12	4,358	3,382	2,132,020	8,072	1,798
Karāchi Canals District	8,934,927	34,219	1,251	1,239	787,954	2,798	...	...	2,974	9,831	7,766,692	27,300	521
Indus River District	...	...	...	...	...	...	...	...	...	...	...	...	...
Eastern Nara...	1,401,955	5,405	3,033	2,137	432,420	1,988	...	...	1,511	10,629	1,077,532	5,049	...
Northern Hyderabad Canals	13,097,710	52,034	415	3,705	...	...	...	...	1,538	1,642	3,303,057	12,000	85
Central Hyderabad Canals...	0,577,712	40,896	2,137	5,739	226,033	904	...	...	...	103	2,257,003	13,217	524
Fuleli Canals...	30,712,542	1,14,361	1,571	2,199	...	...	...	...	586	3,889	2,865,040	12,209	1,399
Total	1,19,487,485	4,68,073	12,170	25,078	1,806,825	7,128	298,511	931	23,789	49,236	26,364,103	1,06,840	6,057

B—continued.

REPAIRS TO RIVER EMBANKMENTS.		SPECIAL WORKS IN CONNECTION WITH RIVER EMBANKMENTS.		Protecting slopes of Embankments and Canals	Miscellaneous.	Arrears	Contingencies.	Extraordinary Abkālani Expenditure and closing breaches	Total Works	ESTABLISHMENT.				Total Works and Establishment.
Cubic feet.	Cost.	Cubic feet	Cost.							Abkālani.	Revenue	Works.	Total.	
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
	Rs.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
...	..	...	...	...	89	...	...	..	89	...	..	...	...	89
...	...	...	...	..	1,130	...	..	...	1,130	...	...	...	...	1,130
...	...	...	...	...	...	...	31	...	2,859	..	1,965	..	1,965	4,824
1,741,349	6,638	...	...	...	776	..	75	1,292	9,441	6,945	1,935	2,419	11,299	20,740
333,171	1,624	...	...	...	2,301	...	...	1,811	25,739	3,099	2,370	2,242	7,711	33,450
...	...	...	...	...	...	...	...	551	2,138	268	112	312	692	2,530
...	...	...	...	...	18	...	...	...	211	...	...	...	...	211
...	...	...	...	...	...	...	20	122	809	248	192	120	560	1,360
57,500	201	...	...	...	682	...	120	668	5,475	1,426	1,770	827	4,023	9,498
...	...	...	...	...	442	...	...	16	3,588	484	215	443	1,142	4,750
...	...	...	...	92	634	...	...	314	11,249	821	346	774	1,941	13,190
...	...	...	...	...	147	...	...	2	4,195	430	148	405	983	5,178
...	...	...	...	1	608	...	...	176	27,856	1,697	422	1,129	3,248	31,104
...	...	...	...	...	248	...	...	44	1,437	769	317	867	1,953	3,390
...	...	...	...	...	343	...	...	1	6,107	773	159	473	1,410	7,517
...	...	...	...	...	81	...	...	...	2,357	452	181	414	1,047	3,400
...	...	...	...	...	...	...	...	...	1,387	...	...	...	...	1,387
...	...	...	...	...	10	...	53	...	4,089	...	...	...	...	4,089
...	...	...	...	...	...	...	...	...	645	...	...	...	...	645
...	...	...	...	...	310	...	...	...	310	1,411	64	..	1,475	1,785
...	...	...	...	...	13	...	...	...	13	...	...	...	...	13
...	...	...	...	...	5	...	...	...	5	...	...	...	...	5
...	...	...	...	...	...	...	...	...	...	80	...	...	80	80
...	...	...	...	...	1,110	...	...	9	19,576	1,430	739	1,789	3,958	23,534
...	...	...	...	...	229	...	...	...	6,904	765	411	967	2,143	9,047
...	...	...	...	...	610	...	...	243	8,097	667	289	705	1,661	9,758
...	...	...	...	...	84	...	...	...	1,430	211	19	51	281	1,711
...	...	...	...	...	263	...	...	...	2,234	356	212	460	1,028	3,262
...	...	...	...	...	522	...	...	112	24,312	1,387	526	1,185	3,098	27,410
...	...	...	...	...	519	...	...	22	4,990	474	261	550	1,285	6,275
...	...	...	...	...	...	...	...	...	229	4	...	..	4	233
...	...	...	...	1,665	831	...	560	3,621	1,16,399	5,749	4,654	6,787	17,190	1,33,589
25,000	100	...	...	2,919	204	...	12	100	29,887	1,145	626	1,178	2,949	32,836
...	...	...	...	...	...	...	...	...	*7,981	...	...	...	...	7,981
3,865,257	30,194	3,116,078	19,300	...	12,181	...	3,939	19,066	1,89,619	17,223	5,295	6,518	29,036	2,18,655
1,467,451	16,128	10,662,466	47,979	1,265	8,448	...	1,335	193	1,38,044	12,252	1,958	5,672	19,882	1,57,926
141,310	688	..	...	...	5,519	...	270	...	1,10,522	11,655	2,797	8,157	22,609	1,33,131
653,994	4,318	...	...	1,400	6,204	...	1	146	60,140	13,720	5,654	9,960	29,334	89,474
2,801,722	12,455	9,778,422	50,142	358	8,430	-733	...	456	1,51,354	19,758	3,368	10,050	33,176	1,94,530
...	...	...	...	...	1,219	...	...	...	1,219	...	...	...	...	1,219
2,137,020	8,463	..	...	...	3,767	...	246	4,444	46,672	11,986	8,344	5,920	26,250	72,922
...	...	..	...	93	2,841	...	53	553	163,238	6,922	1,852	4,505	13,279	76,517
...	...	...	...	...	3,337	...	...	386	67,772	5,294	2,457	5,707	13,458	81,230
25,000	100	...	...	4,584	1,035	...	573	3,721	1,54,217	6,894	5,230	7,965	20,139	1,74,356
11,121,754	72,316	23,556,966	1,17,421	7,700	52,381	-733	6,416	28,965	9,82,797	1,05,704	37,005	64,454	2,07,163	11,89,960
As per Booked Accounts ..									9,87,039	1,05,856	37,081	64,683	2,07,620	11,94,650

* No details available.

† The Executive Engineer, Northern Hyderabad Canals, has shown Rs. 11,811 as arrears; those have not been shown in the detail column.

‡ Exclusive of outlay on Deposits Contribution. Difference due to omission of certain works in Fuleli District and adjustments in supplementary accounts for March 1899.

APPENDIX C.

Statement showing the Expenditure incurred on Work Establishment employed in the Deccan Districts during the year 1898-99, and the percentage it bears to the Outlay on Works and Repairs proper.

No.	Name of Sub-division or District.	OUTLAY ON						Total Contract and Departmental, Columns 5 and 8.	COST OF WORK ESTABLISHMENT SANCTIONED BY			Percentage (column 12 bears to column 9).	REMARKS.
		By Contract.			By Departmental Agency.				Chief or Superintending Engineer.	Executive Engineer.	Total.		
		Original Works, including additions and alterations and improvements and extensions.	Repairs.	Total.	Original Works, including additions and alterations and improvements and extensions.	Repairs.	Total.						
1	2	3	4	5	6	7	8	9	10	11	12	13	14
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1	Mutha Canals ...	...	...	...	8,347	12,982	21,329	21,329	2,106	2,917	5,023	23.55	The result seems to be satisfactory as compared with the last year.
2	Poona Water-supply ...	...	...	...	25,553	8,594	34,147	34,147	1,188	4,888	6,076	17.79	
3	Nira Canal ...	...	...	...	7,542	15,495	23,037	23,037	2,386	5,304	7,690	33.38	
4	*Other Poona Irrigation Works ...	...	...	...	14,353	4,208	18,561	18,561	945	3,084	4,029	21.71	Increased percentage due to less Capital expenditure having been incurred on the Shetphal Tank.
5	†Sholapur Irrigation Works ...	...	1,509	1,509	1,57,264	12,869	1,70,133	1,71,642	2,513	3,404	10,917	6.36	
6	Ahmednagar Irrigation Works ...	...	...	...	202	2,918	3,120	3,120	3,222	...	3,222	103.27	High percentage due to the increase in the pay of Chaukidars and patkarier, &c., by whom most of the repair work is done.
7	Khandesh Irrigation Works ...	...	...	...	33,056	11,816	44,872	44,872	1,218	1,576	2,794	6.3	
8	Dharwar Irrigation Works ...	...	16,952	16,952	297	12,531	12,828	29,780	1,861	1,373	3,254	10.93	The percentage is only slightly higher than that for 1897-98.
	Total ...	...	18,461	18,461	2,46,614	81,413	3,28,027	3,46,488	15,459	27,546	43,005	12.41	

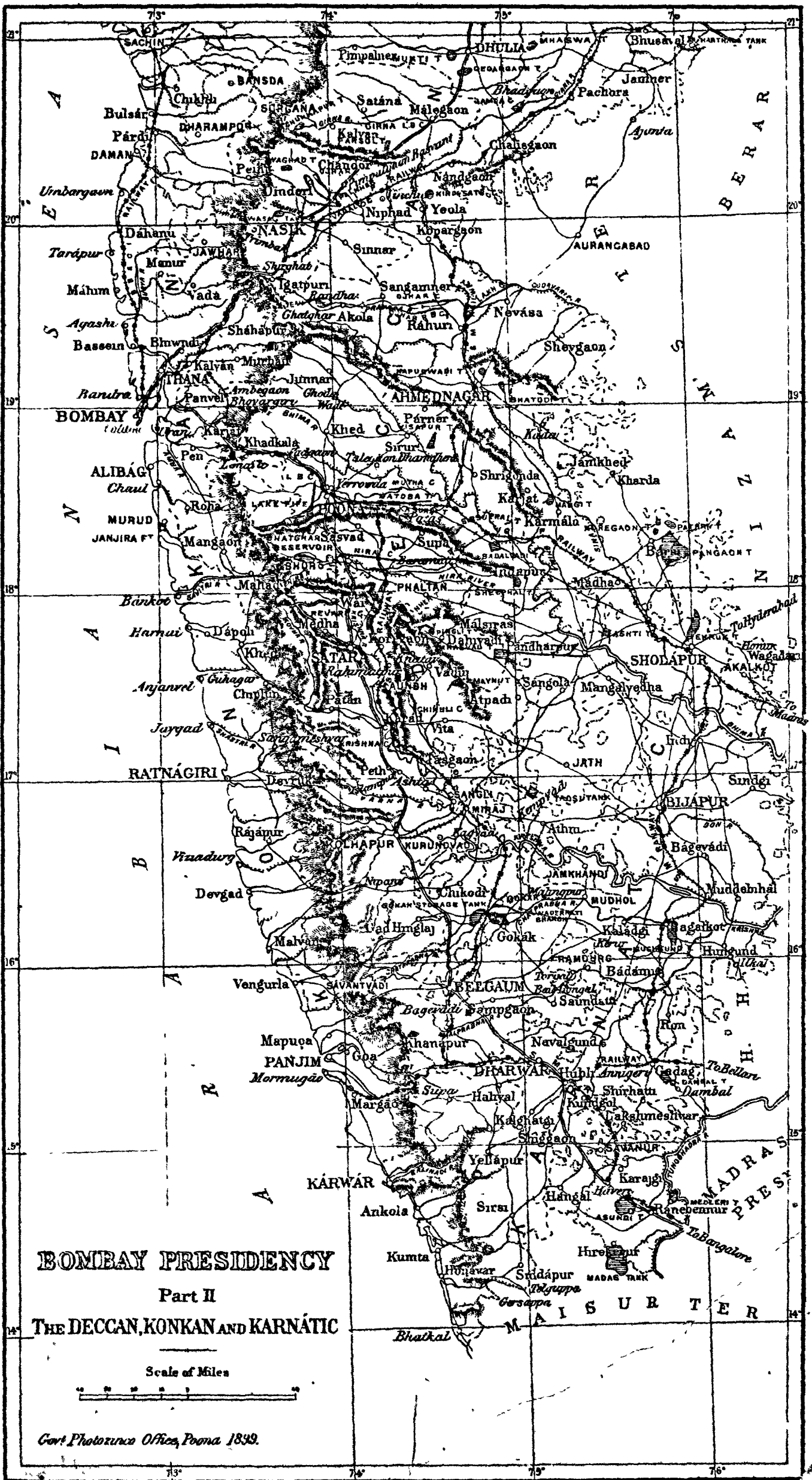
* Includes Shetphal Tank.

† Includes Pathri and Mangi Tanks.

Note.—The figures of expenditure for works in the Nasik District are given in Appendix C to the Administration Report of Civil Works of this Department for 1898-99 (General Branch).

Statement showing the results of Run-off from catchment areas of Tanks in the Deccan for the year 1898.

District.	Name of Work.	Year.	Area of Catchment Square Miles.	Rainfall in Inches.	Supply due to rainfall, millions of Cubic Feet.	Actual run-off millions of Cubic Feet	Proportion of run-off to rainfall, Column 7 divided by Column 6	REMARKS.
1	2	3	4	5	6	7	8	9
Khandesh ...	Mukti Tank ...	1898 ...	34.20	21.03	1,670.90	153.22	.092	The tank was at its lowest level on the 10th June and filled up to overflowing on 11th September 1898. Rainfall is taken between these dates. It is an average of two gauges, Dahiana and Dargaon.
	Mhaswa Tank ...	Do. ...	13.4	19.59	609.85	76.82	.126	The tank was at its lowest level on 10th June and filled up to contour 128.36 M. C. ft. on the 29th September 1898. Rainfall is taken between these dates. The tank did not fill up to F. S. L.
	Hartala Tank ...	Do. ...	6.8	14.81	233.96	17.72	.075	The tank was at its lowest level on 24th July and reached its highest water level on 1st October 1898. Rainfall is taken between these dates. The tank did not reach its F. S. level this year.
Nasik ...	Parsul Tank ...	Do. ...	17.75	14.18	584.74	86.66	.148	The tank was at its lowest level on 9th June and filled to overflowing on 18th September 1898. Rainfall is taken between these dates.
	Waghda Tank ...	Do. ...	29	15.61	1,051.52	238.42	.226	Rainfall is from 9th June to 12th July, both days inclusive. Water first passed over waste weir on July 13th.
Ahmednagar ...	Bhatodi Tank ...	Do. ...	44	17.75	1,814.42	300.17	0.17	Rainfall from 10th June to 28th September 1898, on which date the waste weir commenced to overflow.
Poona ...	Bhadalwadi Tank ...	Do. ...	13.0	17.68	944.70	121.71	.129	These tanks did not overflow this year
	Shirsuphal Tank ...	Do. ...	23.5	15.26	833.12	182.69	.219	
	Mhaswad Tank ...	Do. ...	480	* 16.05	17,897.93	8,364.31	0.467	
Sholapur ...	Ekrak Tank ...	Do. ...	159	29.10	10,749.21	1,449.0	.135	*Average of four stations in the catchment. Rainfall from 9th June to 4th October 1898. The tank did not fill to the waste weir level during the year.
	Ashti Tank ...	Do. ...	92	† 18.95	4,050.27	454.34	0.112	Rainfall from 6th June to 10th September 1898. The waste weir began to overflow on 10th September 1898.
	Koregaon Tank ...	Do. ...	4.40	17.55	179.40	115.98	.646	†Average of two stations in the catchment. Rainfall from 7th June to 10th September 1898. The waste weir began to overflow on 10th September 1898.
Bijapur ...	Muchkundi ...	Do. ...	26	3.65	220.472	12.921	.058	From 2nd September to 10th September. The tank did not fill during the season.
	Do. ...	Do. ...	26	6.10	368.460	130.777	.355	
	Do. ...	Do. ...	26	18.34	1,107.795	193.801	.175	
Dharwar ...	Asundi ...	Do. ...	23	4.66	249.00	95.722	.384	From 23rd September—the date on which the tank was at its lowest water level—to 26th September on which date the tank filled to overflowing.
	Do. ...	Do. ...	23	17.74	947.912	110.482	.117	From 1st June to 26th September.
	Dambal ...	Do. ...	43	3.47	346.644	46.566	.134	From first rainfall—3rd June to 6th June.
	Do. ...	Do. ...	43	5.17	516.470	94.698	.183	From 2nd September to 12th September.
	Do. ...	Do. ...	43	12.97	1,295.672	187.629	.145	From 1st June to 28th September, on which date the tank filled to overflowing.
	Medleri ...	Do. ...	11	4.60	117.554	19.067	.162	From first rainfall—30th May to 5th June.
Satara ...	Do. ...	Do. ...	11	2.20	56.221	8.902	.158	From 6th September to 9th September.
	Do. ...	Do. ...	11	4.62	118.065	30.510	.258	From 23rd September to 25th September.
	Do. ...	Do. ...	11	20.22	516.726	69.817	.135	From 1st June to 29th September, on which date the tank filled to overflowing.
	Majni ...	Do. ...	54	1.24	155.561	55.716	.36	From 1st rainfall—30th May to 10th June.
	Do. ...	Do. ...	54	6.13	769.025	123.793	.17	From 25th July to 9th September, on which date the tank filled to overflowing.
	Do. ...	Do. ...	54	14.33	1,797.738	876.652	.49	From 1st June to 31st October.
	Nehr ...	Do. ...	59.50	3.16	436.808	152.160	.35	From 1st June to 16th June.
	Do. ...	Do. ...	59.50	20.73	2,865.516	1,265.306	.44	From 1st June to 31st October. The tank filled up to the level of the temporary cut in the waste weir channel on 8th September.

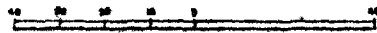


BOMBAY PRESIDENCY

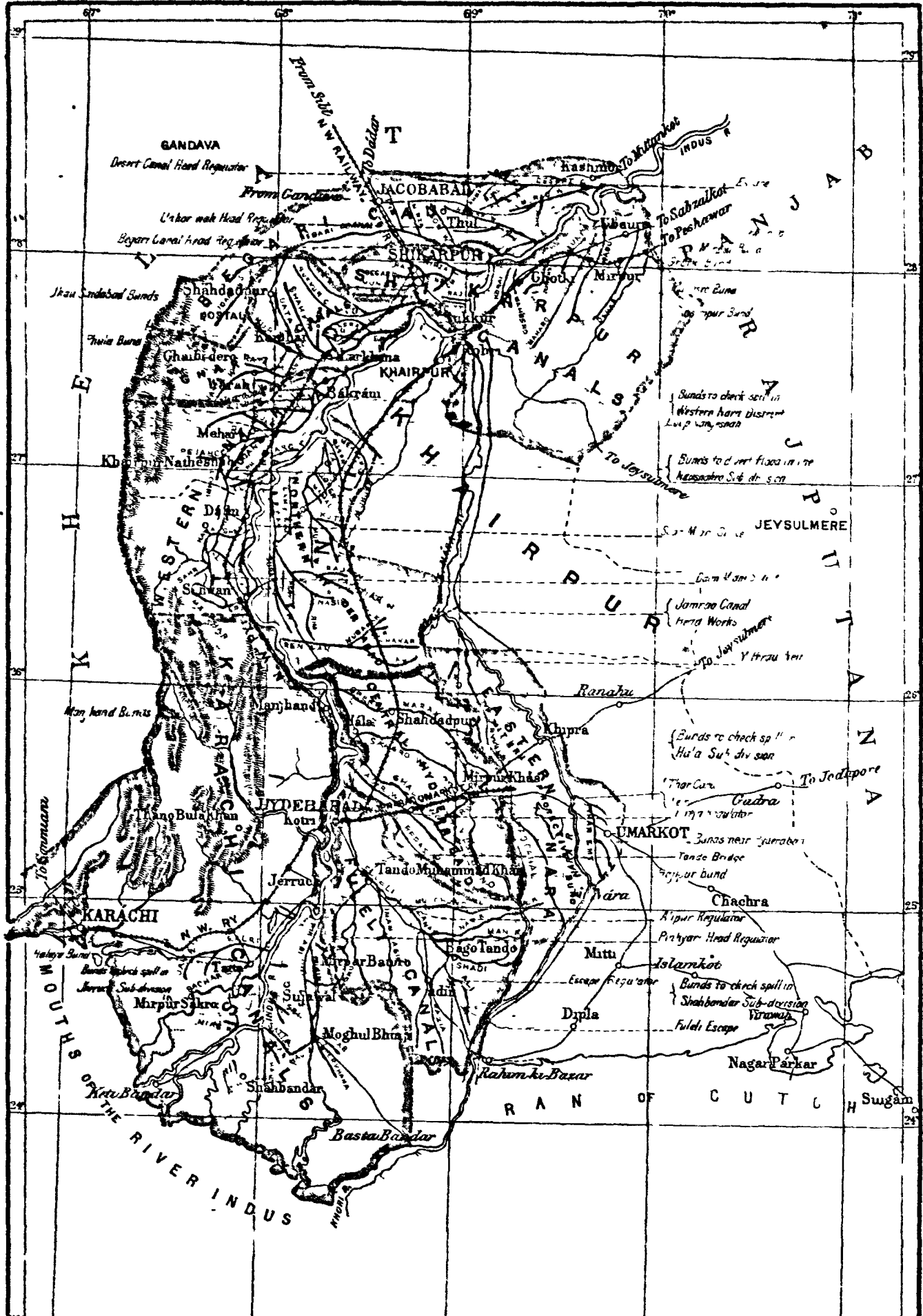
Part II

THE DECCAN, KONKAN AND KARNÁTIC

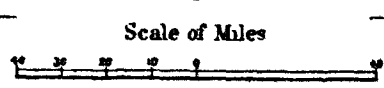
Scale of Miles



Govt. Photodup. Office, Poona, 1899.



BOMBAY PRESIDENCY
Part III
SIND AND CUTCH



References

Begari Canals	—
Shikarpur	—
Gilgr	—
W. Haro	—
Northern Hyderabad Canals	—
Central Hyderabad	—
Eastern Haro	—
Fuleli	—
Karack	—
Jamrao	—
Neu	—