



15

ADMINISTRATION REPORT

OF THE

PUBLIC WORKS DEPARTMENT,

(IRRIGATION)

BOMBAY PRESIDENCY,

FOR THE YEAR

1897-98.

Bombay:
PRINTED AT THE GOVERNMENT CENTRAL PRESS

1898.

APPENDIX A.

Statement showing the entire Expenditure incurred during the financial year 1897-98 on Irrigation Works, Repairs and Establishment in the Province of Sind.

Service.	Works.	Repairs.	Total.
	Rs.	Rs.	Rs.
PRODUCTIVE PUBLIC WORKS.			
MAJOR WORKS.			
<i>41.—Capital Account.</i>			
Works ..	13,80,771	.....	* 13,80,771
Establishment	2,07,770
Tools and Plant	12,015
Total	16,00,556
<i>42.—Revenue Account.</i>			
Extensions and Improvements ..	13,795	.....	13,795
Maintenance and Repairs	2,22,385	2,22,385
Establishment	61,413
Tools and Plant	1,120
Refunds of Revenue	118
Total	2,98,831
43—IRRIGATION MINOR WORKS AND NAVIGATION WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.			
<i>Capital Account.</i>			
Works ..	1,14,232	.....	* 1,14,232
Establishment	25,628
Tools and Plant	360
Total	1,40,220
<i>Revenue Account</i>			
Extensions and Improvements...	—53,756	.....	—53,756
Maintenance and Repairs	2,11,703	2,11,703
Establishment	44,716
Tools and Plant	1,355
Refunds of Revenue	96
Total	2,04,114
WORKS FOR WHICH ONLY REVENUE ACCOUNTS ARE KEPT.			
<i>Revenue.</i>			
Extensions and Improvements...	1,93,265	.....	1,93,265
Maintenance and Repairs	4,44,097	4,44,097
Establishment	1,89,728
Tools and Plant	2,870
Refunds of Revenue	342
Total	8,30,302
WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.			
Works and Surveys ..	80,906	.....	80,906
Maintenance and Repairs	3,81,704	3,81,704
Establishment	1,02,417
Tools and Plant	1,793
Refunds
Total	5,66,820
DEPOSITS.			
<i>Contributions, Ordinary.</i>			
Works...	4,831	.....	4,831
Repairs	1,258	1,258
Establishment	15
Tools and Plant
Total	6,104
Total under all Heads	† 36,46,947

* *Notes.*—Expenditure exclusive of Establishment and Tools and Plant Rs. 29,95,717
 Cost of Establishment and Tools and Plant " 6,51,200
 Percentage of Establishment and Tools and Plant on Outlay " 21.74

* Net after deducting Rs. 123 and Rs. 273 on account of Receipts on Capital Account.

† Exclusive of Suspense, Rs. 3,422.

B.
debitable to the Canal Clearance Grant in 1937-38 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 Abkalan Expenditure, closing breaches, &c.	Total Works.	ESTABLISHMENT.				Total Works and Establishment	Rupees.
Cubic feet.	Cost.	Cubic feet.	Cost.							Abkalan.	Revenue.	Works.	Total.		
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Rs.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
...	1,060	1,367	2,820	954	46,305	3,187	2,264	1,686	7,137	53,442	
...	1,539	—484	391	408	17,121	2,973	1,218	1,123	5,314	22,437	
...	1,316	2,609	899	2,154	1,443	75,368	3,321	2,570	1,579	7,470	82,855	
496,048	2,017	12,757,550	1,07,062	...	1,141	3,150	1,923	11,121	1,49,203	15,937	500	1,697	18,577	1,07,780	
...	563	664	...	227	11	24,767	3,324	933	2,819	7,076	31,843	
375,698	1,686	...	...	...	...	...	...	...	1,656	582	36	108	696	2,542	
...	1,997	1,581	...	453	177	26,429	1,997	616	1,894	4,607	29,936	
...	142	...	38	...	1,260	...	...	...	...	1,200	
...	157	...	11	...	500	...	...	...	...	800	
...	151	...	...	...	...	1,501	163	65	284	482	1,983	
942,050	7,217	291,797	7,742	...	612	...	22	959	16,969	6,969	331	1,006	8,306	25,165	
419,645	2,059	...	2,465	474	807	...	112	151	6,699	2,446	88	262	2,795	9,494	
...	...	33,703	139	534	1,623	...	...	776	37,383	9,497	3,864	6,180	19,541	56,924	
...	...	16,858	111	123	273	...	...	19	8,342	...	...	...	...	8,342	
...	322	...	...	7	6,256	1,583	1,173	840	3,596	9,872	
...	85	...	...	...	8,068	346	112	326	784	8,852	
...	15	...	...	...	1,189	304	136	277	717	1,906	
...	5	...	...	...	250	104	27	59	190	442	
...	42	...	...	...	780	169	39	33	261	1,041	
3,911,990	18,456	569,233	4,650	111	3,098	...	94	48	31,192	5,320	421	1,462	7,203	38,395	
...	2,454	...	413	...	21,459	3,039	925	2,811	6,775	28,234	
...	3,793	...	371	...	1,08,267	6,133	1,530	4,619	12,282	1,20,646	
531,795	2,223	...	...	...	1,084	...	75	...	3,684	3,021	514	1,463	4,988	5,672	
...	—216	...	...	5,239	397	128	391	916	6,153	
...	
...	13	2	—136	...	...	5,290	445	203	492	1,140	6,879	
...	70	...	—637	...	...	7,316	530	378	1,063	2,021	9,377	
...	—800	...	...	11,165	3,717	477	1,466	5,660	16,855	
...	180	...	...	...	...	109	
...	—936	...	...	1,943	188	97	298	583	2,526	
...	85	...	...	2,247	68	29	97	194	2,441	
...	50	15	...	...	22,856	3,523	975	2,881	7,679	30,565	
...	—4	...	...	3,234	15	...	...	15	3,249	
...	—1,233	...	...	1,029	266	398	338	732	1,761	
...	—76	...	...	757	310	72	212	594	1,371	
...	—232	...	...	762	60	18	54	132	894	
...	—398	...	...	761	256	18	60	334	1,095	
1,783,510	8,946	...	1,029	...	1,530	947	...	...	14,136	5,343	367	1,237	6,947	21,083	
1,259,422	5,447	3,990,546	26,508	...	2,157	—4,429	...	...	32,764	9,712	515	1,573	11,800	44,564	
...	3,976	...	1,093	...	1,093	5,069	
...	...	1,768,090	8,503	...	1,214	...	...	758	11,588	7,443	1,978	2,842	12,263	23,851	
...	2,024	...	...	823	14,958	3,058	2,403	2,816	8,277	23,235	
...	618	3,235	272	112	312	696	3,931	
...	83	...	...	...	99	...	...	...	...	99	
...	65	...	...	...	166	...	...	...	...	976	
...	...	13,000	70	...	727	...	...	70	7,774	1,329	1,844	803	3,976	11,750	
...	205	...	...	364	3,626	598	272	621	1,491	5,117	
...	439	...	...	1,171	20,819	876	354	958	2,213	23,112	
...	134	...	...	22	2,621	510	251	685	1,426	4,047	
...	595	...	...	846	22,046	1,839	412	1,142	3,393	25,439	
...	237	...	...	53	2,450	831	322	846	1,999	4,449	
...	656	...	...	200	3,892	414	159	480	1,053	4,945	
...	168	...	...	...	4,843	507	156	419	1,112	5,955	
...	51	...	66	...	...	...	...	66	
...	1,470	63	...	1,533	1,533	
...	9	...	...	...	9	...	...	...	...	9	
...	192	...	...	...	192	...	...	...	...	192	
...	41	...	...	...	41	...	...	...	...	41	
...	1,011	...	...	...	1,011	...	...	...	...	1,011	
...	42	...	...	...	42	...	...	...	...	42	

Names of Canals.	CLEARANCE PROPER IN CANALS.		Jungel cutting	Re- moving Tudas.	IMPROVING CANAL HEADS.		SIDE SLOPING AND REPAIRING CURVES.		Build- ings and Gar- dens.	Reco- nstruc- tion, Bridges and Stuices.	REPAIRS TO CANAL BANKS.		Remov- ing bank and inven- tion 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.
Central Hyderabad Canals	Ghoro Mahmuda	4,206,660	19,497	124	1,055	...	...	...	...	...	709,872	2,225	...
	Kan Simal... ..	1,473,968	7,480	...	535	...	...	...	...	...	53,013	238	...
	Nasir	2,448,812	7,185	73	233	293,624	1,468	...	...	...	216,256	1,163	...
	Other Canal ... ..	.....	...	22	1	...	...	...	...	...	266,000	1,471	...
	Abbar Kachori	2,36,352	1,386	59	455	...	...	...	...	...	3,007	13	...
	Great Marak	3,943,717	15,012	564	1,016	...	...	...	...	...	810,302	5,673	...
	Sarav	1,112,155	4,866	155	219	...	...	...	...	...	3,000	17	227
	Bund to check spill in Hala Sub-division
Repairs to Indus Survey marks ... ..	.....	...	...	...	...	...	...	...	...	...	...	...	...
Fuleli Canals	Fuleli Canal	22,619,348	76,243	1,600	1,725	...	...	...	691	4,115	1,991,561	7,766	2,505
	Other Canals and Bunds ...	3,322,353	11,128	372	396	...	...	...	152	450	164,080	530	...
Leghari Canals	21,729,666	94,697	3,194	3,078	...	...	...	...	7,914	22,640	2,983,586	12,099	935
Shalarpur Canals	5,190,256	22,392	395	2,937	916,044	4,051	...	...	4,169	1,493	3,111,335	12,592	610
Western Nara	7,714,354	28,595	2,129	1,920	...	...	16,200	53	7,112	5,258	3,883,630	16,720	1,112
Glac Canals	20,470,044	103,103	...	1,441	1,323,385	5,910	...	...	3,717	1,813	1,811,670	7,013	...
Karachi Canals	2,468,693	34,871	684	1,123	33,000	148	...	...	3,410	9,237	5,575,230	22,326	63
Eastern Nara	1,178,877	4,867	3,365	1,665	125,036	637	...	...	2,722	8,774	1,294,822	4,905	...
Northern Hyderabad Canals ...	7,008,254	33,820	236	3,476	3,439,564	11,529	...	...	1,160	344	985,917	4,654	23
Central Hyderabad Canals ...	12,471,664	55,426	997	3,514	293,624	1,468	...	...	...	...	2,161,230	10,825	227
Fuleli Canals	25,941,706	87,371	1,972	1,521	...	...	...	...	843	4,565	2,145,641	8,296	2,505
Total ...	1,11,173,514	465,142	12,972	90,674	6,140,653	23,743	16,200	53	31,047	64,124	23,953,321	99,430	5,505

B—concluded.

REPAIRS TO RIVER EMBANKMENTS.		SPECIAL WORKS IN CONNECTION WITH RIVER EMBANKMENTS.		Protecting slopes of Embankments and Canals.	Miscellaneous	Arrears.	Contingencies.	Extraordinary Abkalaní Expenditure, closing breaches, &c.	Total Works.	ESTABLISHMENT.				Total Works and Establishment.	Remarks.
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	30
	Rs.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
...	...	...	...	...	1,103	...	...	747	24,751	1,495	788	2,180	4,413	29,164	
...	...	...	...	...	281	...	...	...	8,537	764	411	1,151	2,326	10,863	
...	...	...	...	...	763	...	6	12	10,303	662	302	852	1,816	12,719	
...	...	...	...	...	66	...	...	...	1,530	176	36	124	336	1,916	
...	...	...	...	...	283	...	...	250	2,451	450	304	877	1,631	4,083	
...	...	...	...	...	382	...	...	3,530	26,177	1,280	505	1,407	3,192	29,369	
...	...	...	...	...	402	...	...	94	5,980	668	300	954	1,922	7,903	
...	...	...	211	...	...	...	...	...	211	187	...	...	187	393	
...	...	...	...	...	20	...	...	...	20	...	...	...	...	20	
...	...	...	...	927	3,457	...	692	8,060	1,07,181	6,239	5,021	8,736	19,996	1,27,177	
...	...	...	5,040	16	15	...	229	1,325	19,653	1,691	618	1,316	3,625	23,273	
496,048	2,517	12,757,550	107,062	1,316	6,399	4,932	7,288	13,926	2,87,997	25,411	7,002	6,085	38,498	3,26,493	
1,737,383	10,962	294,797	10,207	3,185	3,863	...	863	1,298	79,041	15,450	2,089	6,323	23,862	1,02,903	
3,911,990	18,456	619,794	4,930	768	5,463	...	94	850	93,460	17,323	5,772	9,197	32,292	1,25,752	
531,795	2,223	...	...	...	7,331	...	859	...	1,33,410	12,193	2,969	8,883	24,045	1,57,455	
3,042,932	14,393	3,990,516	27,537	83	3,739	-8,050	...	...	1,09,509	25,170	3,415	10,162	38,747	1,48,313	
...	...	1,781,090	8,573	...	4,103	...	...	2,435	42,046	12,350	7,622	6,893	26,865	68,911	
...	...	...	...	...	3,789	...	51	2,656	61,738	7,045	2,029	5,146	14,220	75,958	
...	...	...	211	...	3,303	...	6	4,633	80,610	5,682	2,596	7,545	15,823	96,433	
...	...	...	5,040	943	3,472	...	921	9,385	1,26,834	7,930	5,639	10,052	23,621	1,50,455	
9,720,148	48,551	19,443,777	1,63,560	6,295	41,462	-3,118	10,082	35,183	10,14,705	1,28,554	39,133	70,286	2,37,973	12,52,678	Difference ch... ly due to con... sion of cert... works in Fule... h Canals Dist... tinct and ad... justments in... supplementary... accounts for... March 1893
As per booked Accounts ...									10,21,561	1,28,643	39,222	70,463	2,38,328	12,59,389*	

* Exclusive of Refunds of Revenue and outlay on Deposits Contribution.

APPENDIX C.

Statement showing the Expenditure incurred on Work Establishment employed in the Deccan Districts during the year 1897-98, and the percentage it bears to the Outlay on Works and Repairs proper.

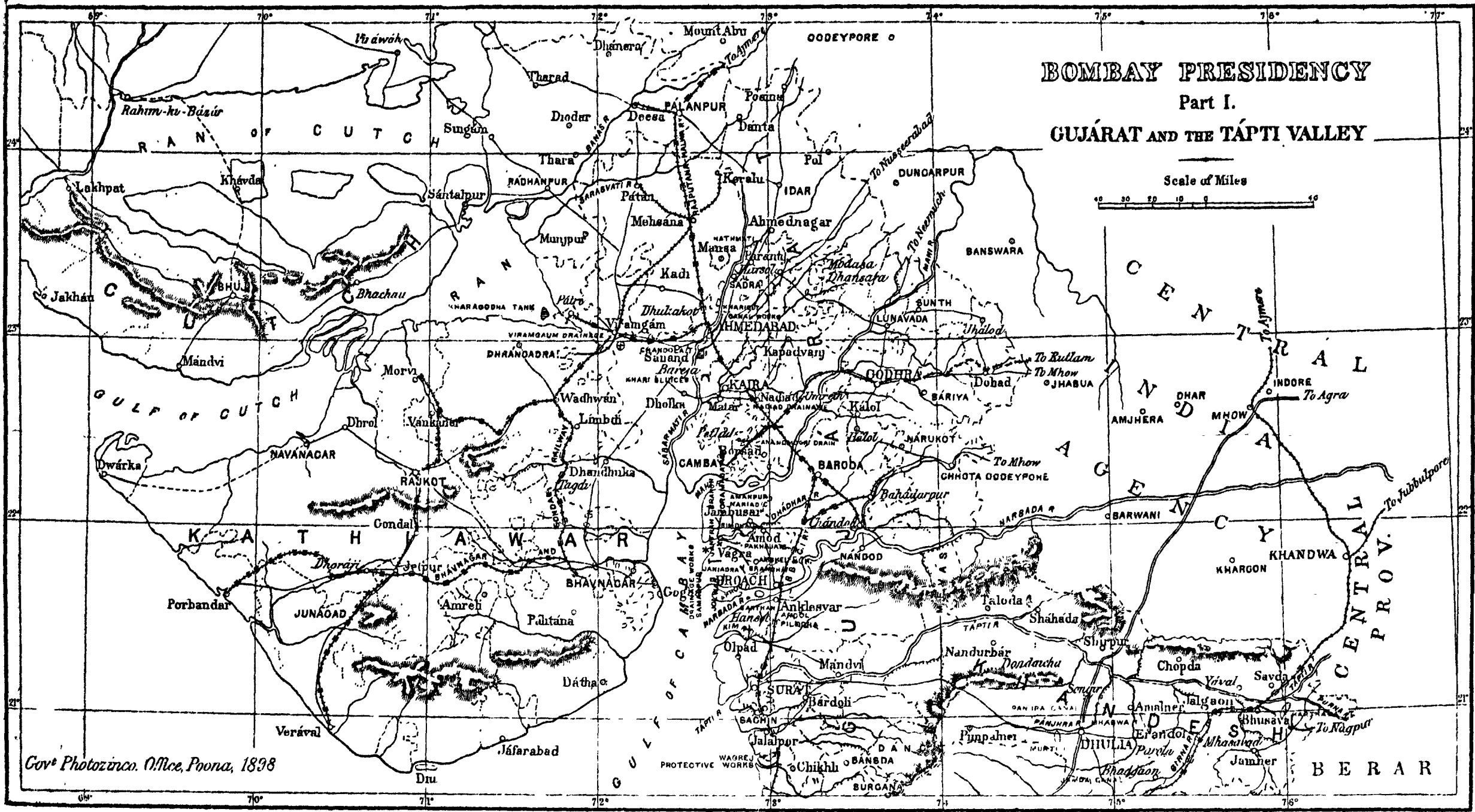
No.	Name of Sub-division or District.	OUTLAY ON						Total Contract and Departmental Columns 5 and 8.	COST OF WORK ESTABLISHMENT SANCTIONED BY			Percentage (column 12 bears to column 9).	REMARKS.
		By Contract.			By Departmental Agency.				Chief or Superintending Engineer.	Executive Engineer.	Total.		
		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 ...	...	...	...	2,314	15,689	18,003	18,003	2,328	3,066	5,394	29.96	} Increased percentage due to less Capital outlay.
2	Poona Water-supply...	...	...	...	...	7,119	7,119	7,119	828	4,888	5,716	80.29	
3	Nira Canal ...	...	...	...	1,751	15,489	17,240	17,240	2,322	5,276	7,598	44.07	
4	*Other Poona Irrigation Works...	...	...	...	2,89,126	2,674	2,91,800	2,91,800	2,938	6,671	9,609	3.29	The result seems to be satisfactory as compared with the last year.
5	†Sholapur Irrigation Works ...	...	...	...	6,24,916	30,001	6,54,917	6,54,917	2,138	24,973	27,111	4.14	
6	Ahmednagar Irrigation Works ...	...	...	...	50,513	2,466	52,979	52,979	959	5,991	6,950	13.11	Increased percentage due to the amounts of repair estimates being less than usual, and the canal establishment maintained being the same.
7	Násik Irrigation Works ...	23,292	...	23,292	1,86,799	2,25,535	4,12,334	4,35,676	5,094	28,551	33,645	7.72	
8	Khándesh Irrigation Works ...	...	...	...	71,110	20,112	91,222	91,222	1,573	5,149	6,722	7.37	
9	Dhárwár Irrigation Works ...	...	...	...	2,714	20,732	23,446	23,446	1,439	1,024	2,463	10.50	Scattered works require large establishment, hence the high percentage. It is also partly due to restricted allotments and consequent small expenditure during the year.
	Total ...	23,292	...	23,292	12,23,243	3,39,867	15,69,110	15,92,402	19,619	85,589	1,05,208	6.61	

* Includes Shetphal Tank.

† Includes Pathri and Mangi Tanks.

Statement showing the Results of Run-off from Catchment Areas of Tanks in the Deccan for the year 1897.

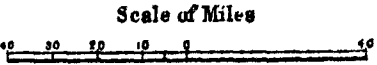
District.	Name of Tank.	Year.	Area of Catchment, Square Miles	Rainfall in Inches.	Supply due to rainfall, millions of Cubic Feet.	Actual run-off, millions of Cubic Feet.	Proportion of run-off to Rainfall, Column 7 divided by Column 6.	REMARKS.
1	2	3	4	5	6	7	8.	9
Khandesh	Mukti Tank ...	1897 ...	34.20	9.40	746.86	227.08	.304	The tank was at its lowest water level on the 8th July 1897 and filled up to overflowing on 29th August 1897. Rainfall is taken between these dates. It is an average of two gauges, Dalina and Sargaon.
	Mhasva Tank ...	Do. ...	13.4	8.43	262.43	143.13	.545	The tank was at its lowest water level on 6th July 1897 and filled to overflowing on 12th August 1897. Rainfall is taken between these dates.
	Hartala Tank ...	Do. ...	6.8	10.89	172.04	15.71	.091	The tank was at its lowest water level on 23rd August 1897 and stood unfilled at its highest water level on 25th September 1897. Rainfall is taken between these dates. The tank did not reach its F. S. capacity this year.
Nasik	Parsul Tank ...	Do. ...	17.73	22.17	914.23	126.22	.138	The tank was at its lowest water level on 5th July 1897 and filled to overflowing on 22nd September 1897. Rainfall is taken between these dates.
Ahmednagar	Waghad Tank ...	Do. ...	29	38.97	2,624.85	2,162.12	0.823	Rainfall from 19th July to 6th October 1897, both days inclusive.
	Bhatodi Tank ...	Do. ...	44	14.37	1,468.91	242.22	0.16	Rainfall from 10th June to 25th September 1897. The waste weir began to overflow on 25th September 1897, the run off to that date being 0.15.
Poona	Bhadalwadi Tank ...	Do. ...	23	14.89	795.62	273.24	.343	The tank was dry up to 2nd July and overflowed on 2nd October 1897. The run-off has been calculated between these dates.
	Shirsuphal Tank ...	Do. ...	23.5	10.45	570.52	244.52	.428	The tank did not overflow this year. Rainfall to 22nd October.
	Mhaswad Tank ...	Do. ...	480	*21.45	23,919.66	9,133.90	.382	Rainfall from 1st June to 31st October 1897. The waste weir began to overflow on the 28th September 1897. The run-off to that date is 0.140.
Sholapur	Ekrak Tank ...	Do. ...	159	27.59	10,191.41	2,932.23	.292	*Average of 5 stations in that catchment. Rainfall from 1st June to 31st October 1897. The waste weir began to overflow on 12th October 1897, and the run-off up to that date is .243.
	Ashti Tank ...	Do. ...	92	†11.09	8,782.34	3,790.40	.430	Rainfall from 1st June to 31st October 1897 and cut in waste weir began to overflow on 7th September 1897, the run-off up to that date being .085.
	Koregaon Tank ...	Do. ...	4.40	24.85	254.01	89.99	.350	†Average of two stations in catchment. The tank did not fill to waste weir crest in the year.
Bijapur	Muchkundi Tank ...	Do. ...	26	5.92	357.587	105.739	.296	From 28th May to 3rd July.
	Do. ...	Do. ...	26	10.23	617.925	122.163	.196	From 7th September to 3rd October.
	Do. ...	Do. ...	26	18.02	1,088.466	219.475	.202	From 28th May to 3rd October.
Dhárwar	Asundi ...	Do. ...	23	3.65	195.033	55.318	.284	From first rainfall—8th April to 21st April.
	Do. ...	Do. ...	23	2.60	138.927	42.345	.305	From 26th May to 6th June, on which date the tank filled to overflowing.
	Do. ...	Do. ...	23	7.00	374.035	96.699	.258	From 8th April to 6th June.
	Do. ...	Do. ...	23	7.55	408.424	39.853	.099	From 8th August to 24th September, on which date the tank filled a second time.
	Dambal ...	Do. ...	43	3.12	311.691	73.176	.234	From 28th May to 6th June.
	Do. ...	Do. ...	43	1.48	147.848	16.428	.111	From 12th June to 16th June. The tank overflowed on the 17th June.
	Do. ...	Do. ...	43	8.14	813.166	145.324	.179	From first rainfall—8th April to 16th June.
	Medleri ...	Do. ...	11	4.61	117.809	41.764	.355	From first rainfall—22nd May to 5th June.
	Do. ...	Do. ...	11	12.41	317.140	38.491	.121	From 1st September to 2nd October, on which date the tank filled.
	Do. ...	Do. ...	11	23.52	575.503	74.166	.129	From 22nd May to 2nd October.
Maini ...	Do. ...	54	2.12	265.960	107.038	.402	From first rainfall—6th June to 13th June.	
Satara	Do. ...	Do. ...	54	1.07	134.234	55.399	.413	From 18th September to 20th September, on which date the tank filled to overflowing.
	Do. ...	Do. ...	54	8.27	1,037.493	191.582	.185	From 6th June to 20th September.
	Nehr ...	Do. ...	59.50	2.52	348.340	51.257	.155	From 10th June to 18th June.
	Do. ...	Do. ...	59.50	4.45	615.125	247.894	.394	From 18th September to 28th September.
	Do. ...	Do. ...	59.50	18.23	2,519.940	352.721	.140	From 10th June to 28th September, on which date the tank nearly filled up to the level of the temporary cut in the waste weir channel.



BOMBAY PRESIDENCY

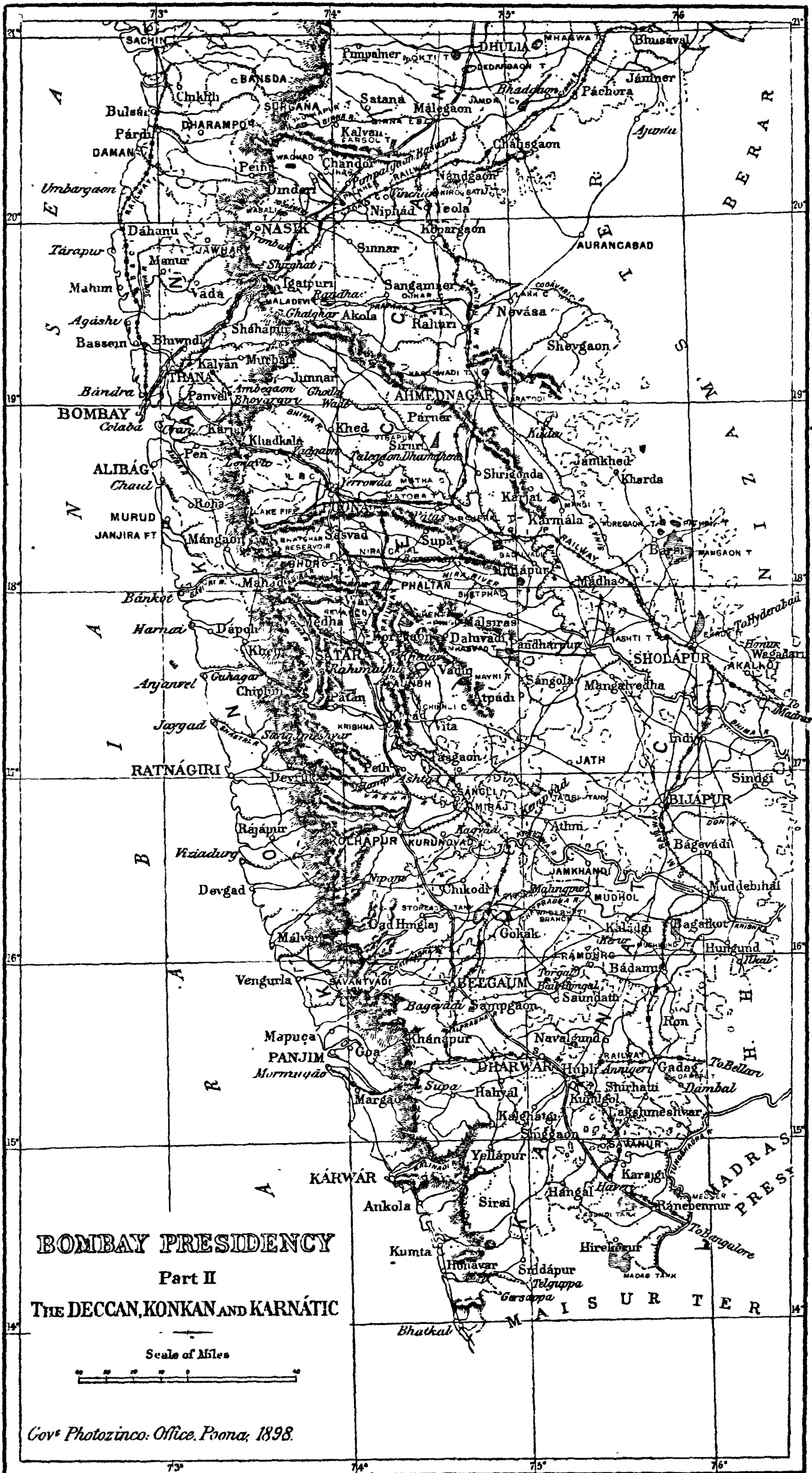
Part I.

GUJARAT AND THE TAPTI VALLEY

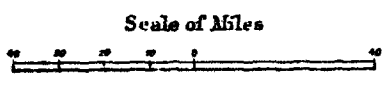


Govt Photodupl. Office, Poona, 1898

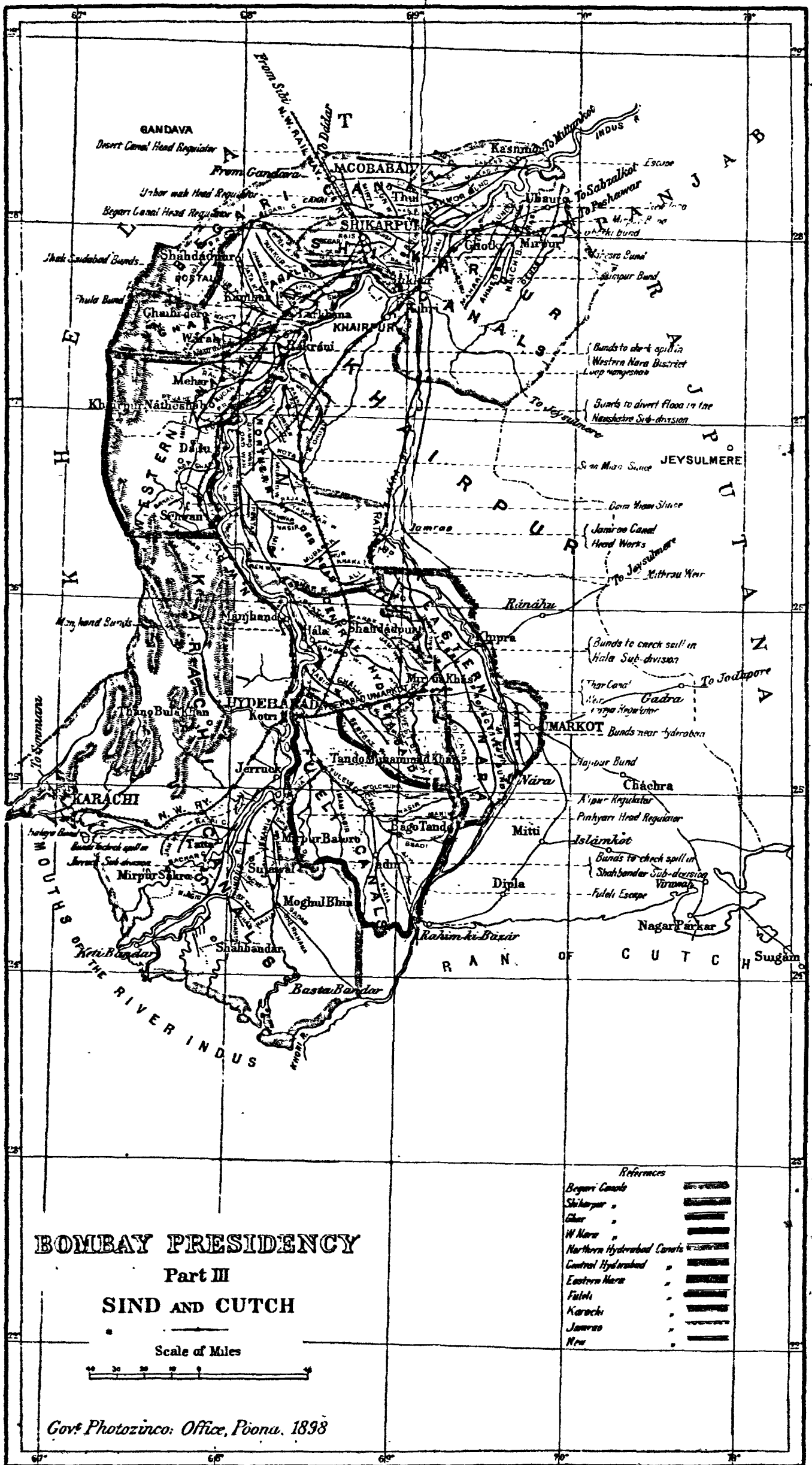
JAMBUSAR TALUKA	1 AYANPUR NARAHU CHANNEL	▲ JAMBUSAR TALUKA	6 SINDHAD CHANNEL
★ VAKRA DO	2 KURA MADAF 11 DU	● VIRAMGAUM DO	NUH'SINGPUR VIRAMGAUM DRA NABE CHANNEL
† ANKILJHAR DO	3 SAMANU H KANDHIA PHADHIE CHANNEL	○ VAGRA DO	7 JOLVA CHANNEL
X VAGRA	4 SARHAN ADULI PI ODHA DO		8 ANHOD DO
	5 LOKHAN ANHRE DO		



BOMBAY PRESIDENCY
 Part II
THE DECCAN, KONKAN AND KARNATIC



Govt Photoinco. Office, Poona, 1898.



BOMBAY PRESIDENCY

Part III

SIND AND CUTCH

Scale of Miles



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- References**
- Begari Canals
 - Shikarpur "
 - Ghar "
 - W. Mer "
 - Northern Hyderabad Canals
 - Central Hyderabad "
 - Eastern Mer "
 - Futli "
 - Karachi "
 - Jamrao "
 - New "