

ADMINISTRATION REPORT

OF THE

PUBLIC WORKS DEPARTMENT,

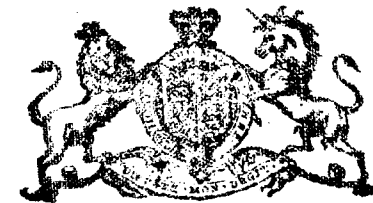
IRRIGATION BRANCH,

IN THE

MADRAS PRESIDENCY,

FOR THE YEAR

1894-95.

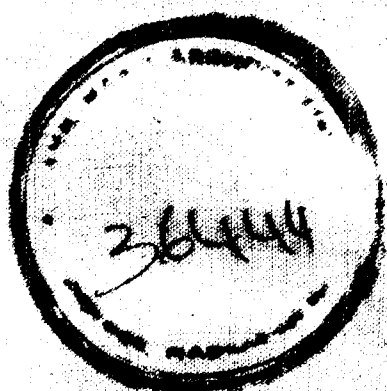


MADRAS:

PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS.

1896.

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- Do. Sangam do.
- Do. Kurnool-Cuddapah Canal.
- Do. Barfir Tank Project.
- Do. Cauvery Delta System.
- Do. Srivaikuntam Ancient System.
- Do. Periyár Project.
- Do. Rushikulya Project.

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To Accompany the Administration Report

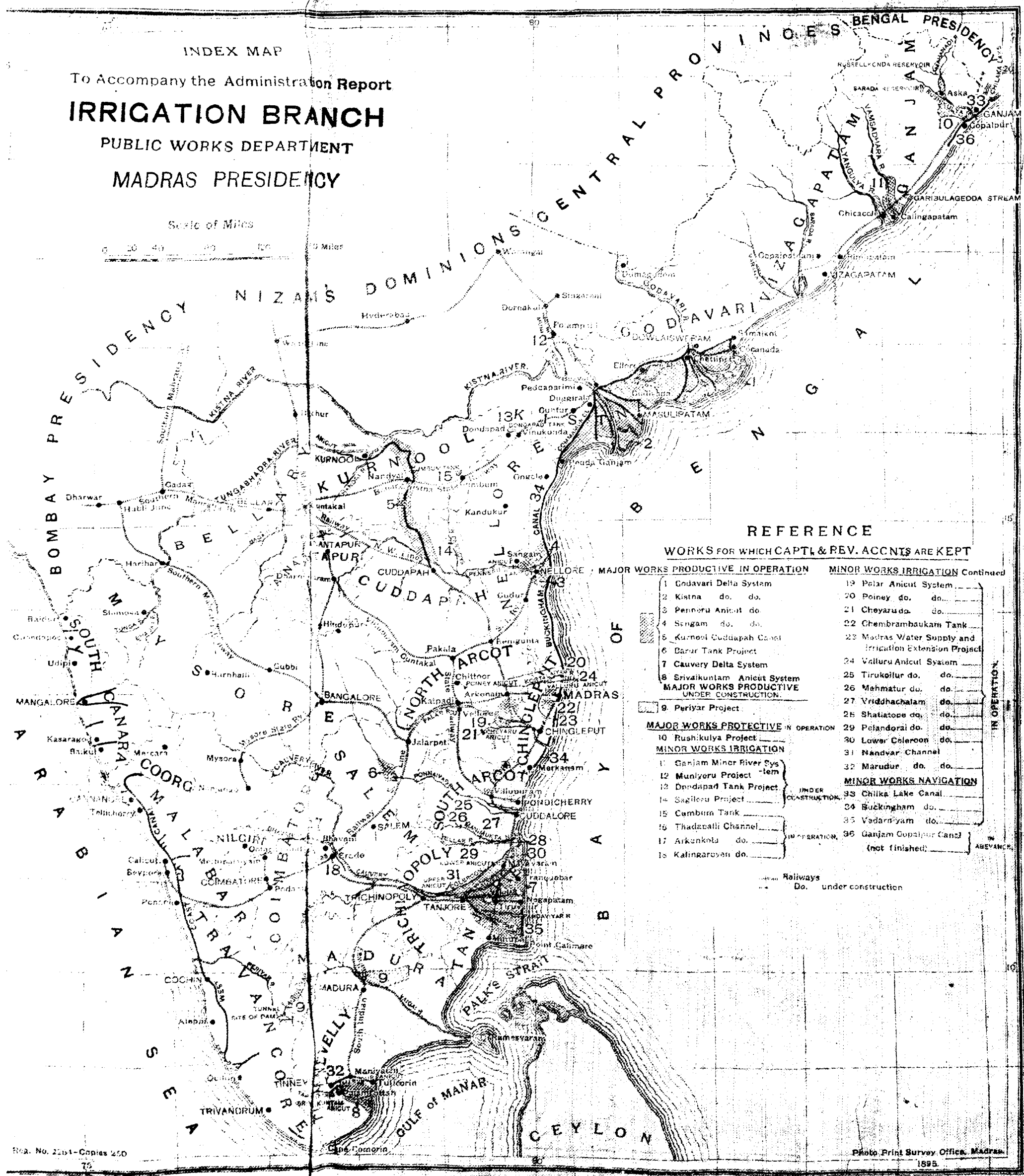
IRRIGATION BRANCH

PUBLIC WORKS DEPARTMENT

MADRAS PRESIDENCY

Scale of Miles

0 20 40 60 80 100 Miles



REFERENCE

WORKS FOR WHICH CAPTL & REV. ACCNTS ARE KEPT

MAJOR WORKS PRODUCTIVE IN OPERATION MINOR WORKS IRRIGATION Continued

- 1 Godavari Delta System
- 2 Kistna do. do.
- 3 Pennar Anicut do.
- 4 Sangam do. do.
- 5 Kurnool-Cuddapah Canal
- 6 Barur Tank Project
- 7 Cauvery Delta System
- 8 Srivaikuntam Anicut System
- 9 Periyar Project
- 10 Rushikulya Project
- 11 Muniyoru Project -tem
- 12 Dandapad Tank Project
- 13 Sagileru Project
- 14 Camburn Tank
- 15 Thadavalli Channel
- 16 Arkenkula do.
- 17 Kalingarayan do.
- 18 Polur Anicut System
- 19 Poiney do. do.
- 20 Cheyarada do.
- 21 Chembrambaukam Tank
- 22 Madras Water Supply and Irrigation Extension Project
- 23 Valluru Anicut System
- 24 Tirukollur do. do.
- 25 Mahmatir do. do.
- 26 Vriddhachalam do.
- 27 Shatlatore do. do.
- 28 Pelandorai do. do.
- 29 Lower Coleroon do.
- 30 Nandvar Channel
- 31 Marudur do. do.
- 32 Chikka Lake Canal
- 33 Buckingham do.
- 34 Vadarnyam do.
- 35 Ganjam Gopalpur Canal (not finished)

MAJOR WORKS PROTECTIVE IN OPERATION

MINOR WORKS IRRIGATION

UNDER CONSTRUCTION

IN OPERATION

ABANDONED

RAILWAYS

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

Do. under construction

ADMINISTRATION REPORT

OF THE

PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH,

MADRAS PRESIDENCY,

1894-95.

GENERAL.

During the year Colonel R. R. E. Drake-Brockman, R.E., Chief Engineer, Second Class, continued to discharge the duties of the appointment of Chief Engineer for Irrigation.

Mr. F. W. Ashpitel, A.M.I.C.E., Executive Engineer, Third Grade, having been deputed to the Marine Department on special duty, handed over charge of his appointment of Assistant Chief Engineer for Irrigation on the 21st January 1895 to Mr. W. B. deWinton, Executive Engineer, First Grade, who remained in charge until the 26th March 1895, when he was relieved by Mr. T. W. S. Smyth, Executive Engineer, Third Grade.

The works in the Irrigation Branch of this Presidency are primarily divided into two classes:—

- I. Major Works.
- II. Minor Works and Navigation.

The expenditure on class No. I is met from "Imperial" funds; that on class No. II from "Provincial" and "Local" funds.

Among "Major Works," the following nine works, of which the first eight are in operation and the ninth is under construction, are classed as "Productive," viz.:—

- No. 1. Godavari delta system,
- " 2. Kistna do.
- " 3. Pennar anicut system,
- " 4. Sangam do.
- " 5. Kurnool-Cuddapah canal system,
- " 6. Barur tank project,
- " 7. Cauvery delta system,
- " 8. Srivaikuntam anicut system,
- " 9. Periyar project,

and one is classed as "Protective," viz., No. 10, the "Rushikulya project," which is still under construction.

Chief Engineer / Irrigation

Assistant Chief Engineer.

Classical of work.

ADMINISTRATION REPORT OF THE

No. I.

Statement showing the expenditure compared with grants for 1894-95—cont.

	Grants.						Expenditure.									Expenditure compared with final grants.	
	Budget.	Final grants.					Original works.	Repairs.	Establishment.	Tools and plant.	Suspense Account.	Total.	Less receipts on Capital account.	Net expenditure of the year.	More.	Less.	
		Original works.	Repairs.	Establishment.	Tools and plant.	Total.											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
Revenue Account—cont.																	
No. 24. Vallōra anicut system ..	Rs. 600	Rs. 520	Rs. 270	Rs. 181	Rs. ..	Rs. 971	Rs. 527	Rs. 286	Rs. 187	Rs. ..	Rs. ..	Rs. 1,000	Rs. ..	Rs. 1,000	Rs. 29	Rs. ..	
25. Tirukkōyilār anicut system ..	24,000	2,463	9,400	2,789	..	14,652	2,516	8,696	2,626	..	..	13,840	..	13,840	..	812	
26. Mohamattur do. ..	5,100	230	2,400	606	..	3,236	186	2,354	540	..	..	3,080	..	3,080	..	166	
27. Vriddhachalam do. ..	8,000	490	3,000	807	..	4,297	440	2,978	792	..	..	4,210	..	4,210	..	87	
28. Sbatatope do. ..	17,200	904	6,200	1,681	..	8,885	894	6,209	1,612	..	..	8,716	..	8,716	..	170	
29. Pelandorai do. ..	10,600	383	6,662	1,646	2	8,669	363	6,663	1,644	2	..	8,667	..	8,667	..	2	
30. Lower Coleroon do. ..	27,000	3,876	18,860	5,337	..	28,062	3,934	18,739	5,081	..	..	27,734	..	27,734	..	328	
31. Maradur anicut system ..	14,000	496	10,000	2,439	..	12,935	496	10,005	2,434	..	..	12,935	..	12,935	..	..	
32. Chikla lake canal ..	300	..	524	120	..	644	..	496	113	..	..	609	..	609	..	35	
33. Buckingham canal ..	1,06,000	4,553	68,000	20,337	4,100	97,990	4,556	62,886	26,094	4,848	..	97,883	..	97,883	..	107	
34. Vēlāranīyam canal ..	4,400	..	3,496	924	..	4,420	..	2,934	788	..	..	3,722	..	3,722	..	698	
35. Ganjam-Gopalpur canal ..	..	..	..	..	..	..	..	12	3	..	..	16	..	16	16	..	
Total ..	3,09,800	24,595	2,05,989	64,821	8,979	3,00,334	21,974	2,06,427	64,027	4,223	..	2,95,651	..	2,95,651	..	4,683	
MINOR WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.																	
Old maintenance charges ..	3,64,162	10,381	1,42,880	2,87,441	1,868	4,42,540	10,381	1,42,550	2,87,478	1,868	..	4,42,577	..	4,42,577	37	..	
Ordinary works ..	8,99,300	2,97,942	4,32,790	1,68,304	10,930	9,10,056	3,11,202	4,18,626	1,63,896	10,699	..	8,99,421	..	8,99,421	..	10,635	
Tank restoration works—																	
Investigation ..	59,000	..	..	53,288	600	53,888	216	..	55,241	579	..	56,136	..	56,136	..	2,752	
Execution ..	4,42,288	2,39,004	1,21,082	32,820	5,460	4,48,306	2,41,376	1,13,662	82,365	5,392	..	4,48,774	..	4,48,774	465	..	
Minor works, Revenue Department ..	..	10,126	12,211	4,136	385	27,907	7,165	7,270	3,340	218	..	18,083	..	18,083	..	9,724	
Total ..	17,64,750	5,57,452	7,08,933	6,02,079	19,133	18,87,697	5,70,829	6,83,497	5,02,409	18,756	..	18,64,991	..	18,64,991	..	22,606	
Agricultural works ..	2,04,600	88,727	2,02,099	68,660	4,002	3,60,478	88,809	2,13,265	64,423	4,032	..	3,65,589	..	3,65,589	5,111	..	
Total, Provincial ..	28,75,000	10,10,247	11,15,981	8,06,569	48,668	29,81,445	10,02,602	11,02,189	7,94,251	38,202	..	29,37,244	..	29,37,244	..	44,201	
LOCAL IRRIGATION CESS FUND.																	
43. MINOR WORKS AND NAVIGATION.																	
Minor works for which neither Capital nor Revenue Accounts are kept ..	12,000	10,270	1,950	..	..	12,320	9,721	763	..	..	..	10,484	..	10,484	..	1,836	
EXPENDITURE FROM CONTRIBUTIONS.																	
42. MINOR WORKS (WORKING EXPENSES).																	
No. 7. Cauvery delta system ..	..	..	..	..	..	..	1,346	209	496	30	..	2,083	..	2,083	..	..	
43. MINOR WORKS AND NAVIGATION—WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT, P.W.D.																	
No. 30. Lower Coleroon anicut system.	..	..	..	..	..	..	19	..	4	..	..	23	..	23	..	..	
43. MINOR WORKS AND NAVIGATION—MINOR WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT, P.W.D.																	
Vizagapatam ..	..	..	..	..	..	..	2,611	977	211	13	..	3,812	..	3,812	..	..	
Nellore ..	..	..	..	..	..	..	..	60	..	..	..	60	..	60	..	..	
Coimbatore ..	..	..	..	..	..	..	11	..	..	..	..	11	..	11	..	..	
Trichinopoly ..	..	..	..	..	..	..	303	37	58	2	..	401	..	401	..	..	
Madura ..	..	..	..	..	..	..	126	92	46	3	..	266	..	266	..	..	
Tinnevely ..	..	..	..	..	..	..	2,098	1,636	1,058	71	..	5,891	..	5,891	..	..	
Total ..	..	..	..	..	..	..	6,146	2,802	1,403	90	..	10,441	..	10,441	..	..	
AGRICULTURAL WORKS.																	
Vizagapatam ..	..	..	..	..	..	..	..	530	..	..	..	530	..	530	..	..	
Gódavari ..	..	..	..	..	..	..	..	26	..	..	..	26	..	26	..	..	
Total ..	..	..	..	..	..	..	..	556	..	..	..	556	..	556	..	..	
Total Expenditure from Contributions ..	..	..	..	..	..	..	8,111	2,567	1,968	122	..	13,762	..	13,762	..	..	

net receipts collected in the Public Works Department was (of revenue) Rs. 3,59,824, that is, Rs. 7,903 less than in the year 1893-94, and Rs. 6,176 less than the amount anticipated. The decrease was due to the works under "Agricultural" works.

Direct receipts.

Area irrigated for both first and second crops was 6,218,296 acres in the previous year.

Total area irrigated.

Of the 2,520,599 acres were under "Major Works," 463,064 acres for which Capital and Revenue Accounts are kept," and the balance for which such accounts are not kept.

Net (indirect) revenue, exclusive of deductions and remissions, was Rs. 1,94,57,882 in the previous year. The revenue for the year amounted to Rs. 10,47,963. Inclusive of Rs. 6,50,297, the revenue credited in the accounts of the year, the enhanced and the receipts collected in the Public Works Department, the direct and indirect, was Rs. 2,07,81,408, of which Rs. 1,04,68,035 was from "Major Works," Rs. 18,37,899 from "Minor Works for which accounts are kept," and the remainder from works for which accounts are not kept. Of the revenue derived from "Major Works" only Rs. 1,04,68,035 has been credited in the accounts of the department by the Exchequer Accounts, owing to late receipt of revenue information for the year of the Cauvery delta system.

Total revenue derived.

Statement No. II compares the charges during the official year and revenue for the financial or revenue year 1904 which closed on 31st March 1904.

Statement of revenue and charges.

The following statement shows the incidence of water-rate under classes I and II works during fasli 1304 :—

STATEMENT showing the incidence of water-rate under classes I and II works for fasli 1304 (1894-95) (Proceedings, Board of Revenue, Revenue Settlement, Land Records and Agriculture, No. 333, dated 16th October 1895 and No. 394, dated 16th December 1895).

1	First crop.																					Second crop.		
	Government.							Zemindari.							Inam.									
	Extent of wet lands.	Water-rate of wet lands.	Rate per acre.	Extent of dry crops irrigated.	Water-rate of dry crops irrigated.	Rate per acre.	Irrigated free of charge for water.	Charged.							Irrigated free of charge for water.	Charged.				Irrigated free of charge for water.	Charged.			
								Extent of wet lands.	Water-rate of wet lands.	Rate per acre.	Extent of dry crops irrigated.	Water-rate of dry crops irrigated.	Rate per acre.	Extent of wet lands.		Water-rate of wet lands.	Rate per acre.	Extent of dry crops irrigated.	Water-rate of dry crops irrigated.		Rate per acre.	Extent.	Water-rate.	
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Class I Works.																								
No. 1. Gódávri delta	321,985	12,90,128	4-0	6,478	13,653	2-11	54,776	41,999	1,70,578	4-06	3,011	7,580	2-45	73,342	148,270	5,94,520	4-01	10,050	25,729	2-58	..	100,855	2,55,101	
" 2. Kistna do.	303,605	12,38,224	4-08	6,707	22,013	3-28	18,728	75,797	2,94,347	3-88	3,451	9,252	2-68	37,968	71,502	2,92,050	4-08	2,364	9,940	3-35	..	110	81	
" 3. Pennár anicut	51,148	2,31,385	4-52	358	1,183	3-16	..	..	..	..	..	..	..	13,616	2,762	11,240	4-07	338	1,098	3-25	..	3,351	8,601	
" 4. Sangam do.	61,783	2,33,493	4-59	1,400	5,583	3-74	..	..	..	..	..	..	..	10,355	1,432	5,541	3-87	335	1,097	3-27	..	4,095	11,947	
" 5. Kurnool-Cuddapah canal ..	14,238	58,423	4-10	4,379	8,172	1-87	..	..	..	..	..	..	..	..	5,163	24,017	3-90	1,814	4,221	2-33	..	6,946	20,286	
" 6. Barur tank project	2,237	8,408	3-78	5	19	3-80	..	201	805	4-00	..	..	..	129	81	824	4-00	3	11	3-67	129	1,695	2,147	
" 7. Cauvery anicut	749,896	35,16,690	4-69	27,251	81,814	3-00	413	..	..	..	..	..	..	100,998	5,201	24,562	3-56	3,727	11,576	3-11	6,878	96,557	3,58,43	
" 8. Srivaikuntam anicut	20,288	1,26,892	5-25	808	1,054	3-00	137	719	2,823	3-08	..	..	..	1,116	422	1,687	4-00	8	98	3-50	568	17,701	57,21	
" 10. Rushikulya project	16,008	31,128	1-94	151	543	2-27	621	2,813	5,931	2-11	..	..	..	3,564	4,081	8,443	2-07	173	343	1-98	..	9	1	
Class II Works.																								
No. 11. Gánjam minor rivets system ..	37,443	96,258	2-57	24	39	1-62	3,257	147	182	1-24	..	..	..	14,818	163	599	3-67	5	24	4-50	..	3,311	5,82	
" 16. Cumbum tank	3,939	23,522	6-13	49	126	2-57	..	..	..	..	..	..	..	1,754	31	135	4-35	1	5	5-00	1,173	3,592	13,52	
" 16. Thadapalli channel	12,445	1,00,048	7-44	108	406	5-76	..	..	..	..	..	..	..	472	195	860	4-39	2	7	3-50	..	508	2,35	
" 17. Arkankota do.	3,801	27,294	6-99	48	166	3-46	..	..	..	..	..	..	..	103	61	337	5-52	7	27	8-86	..	91	38	
" 18. Kalingaroven channel	8,443	59,319	7-03	1,265	3,788	2-99	..	..	..	..	..	..	..	747	173	807	4-66	619	2,348	3-79	744	9,532	56,54	
" 19. Pálar anicut	82,938	2,02,934	3-22	993	1,709	1-72	..	..	..	..	..	..	..	11,782	151	446	2-95	184	248	1-35	3,908	19,586	48,98	
" 20. Poiney anicut	20,321	73,264	3-62	1,252	2,117	1-89	..	..	..	..	..	..	..	2,162	77	314	4-08	63	117	1-59	157	4,664	12,77	
" 21. Choyaru anicut	18,753	60,241	3-21	237	551	2-32	..	..	..	..	..	..	..	1,755	145	409	2-82	17	54	3-18	1,780	11,266	17,41	
" 22. Chembrambakam tank	10,931	38,080	3-47	112	276	2-48	..	..	..	..	..	..	..	2,066	15	21	1-40	4	12	3-00	236	4,301	11,57	
" 23. Madras water-supply and irrigation extension	5,774	15,568	2-59	35	105	3-03	133	..	..	..	..	..	..	1,452	10	42	4-20	10	22	2-20	433	2,197	4,56	
" 24. Valluru anicut	2,039	5,925	2-84	1	1	1-00	..	..	..	..	..	..	..	2,803	43	171	3-98	25	66	2-54	..	188	46	
" 25. Tirukkolár anicut	20,477	80,505	3-95	532	1,497	2-81	..	..	..	..	..	..	..	1,552	208	792	3-81	59	242	4-10	15	3,521	10,37	
" 26. Mohamattur do.	2,555	11,092	4-34	17	33	1-94	..	..	..	..	..	..	..	17	281	903	3-91	32	127	3-97	..	55	11	
" 27. Vriddachalam do.	6,148	24,020	3-91	12	45	2-75	..	..	..	..	..	..	..	148	51	204	4-00	4	18	4-50	..	347	7	
" 28. Shatistope anicut	26,273	93,004	3-51	459	1,632	3-56	..	..	..	..	..	..	..	1,650	243	972	4-06	38	111	3-36	..	5,538	10,3	
" 29. Pelendorai do.	7,839	23,565	3-77	69	265	3-83	..	..	..	..	..	..	..	420	433	1,744	4-03	29	105	3-62	..	191	6	
" 30. Lower Coleroon anicut	96,706	2,59,115	3-71	1,000	3,232	3-25	..	..	..	..	..	..	..	8,286	882	3,501	3-97	142	477	3-36	..	4,551	14,80	
" 32. Marsalur anicut	15,328	1,16,880	6-95	58	187	5-00	..	..	..	..	..	..	..	676	..	..	..	..	..	..	447	15,838	68,81	

(Signed) P. RAJARATNA MUDALIAR,
Secretary to the Board of Revenue,
Revenue Settlement, Land Records and Agriculture

General
character of
the season.

The following statement compares the rainfall for the years 1894-95 and 1893-94:—

Districts.	1894-95.			1893-94.		
	South-west monsoon.	North-east monsoon.	Total.	South-west monsoon.	North-east monsoon.	Total.
	IN.	IN.	IN.	IN.	IN.	IN.
Ganjām	34.43	11.90	46.33	43.14	10.97	54.11
Vizagapatam	36.89	15.44	52.33	46.64	9.87	56.51
Gōdāvari	24.40	15.19	39.59	31.67	24.06	55.63
Kistna	18.70	12.18	30.88	23.11	13.55	36.66
Nellore	12.89	18.56	31.45	10.82	32.20	43.02
Cuddapah	19.26	8.82	28.08	16.08	16.08	32.14
Karnool	19.92	8.53	28.45	19.11	8.79	27.90
Bellary	15.62	6.45	22.07	19.04	9.24	28.22
Anantapur	14.40	7.43	21.83	16.31	8.43	24.74
Chingleput	22.27	20.26	42.53	15.88	31.55	47.43
North Arcot	19.06	11.44	30.50	16.69	22.81	39.50
South Arcot	23.01	16.49	39.50	17.23	31.55	48.78
Salem	21.86	9.43	30.79	21.37	17.05	38.42
Coimbatore	12.35	9.23	21.58	12.21	17.63	29.74
Tanjore	15.34	19.83	35.17	10.80	36.59	47.39
Trichinopoly	17.04	10.46	27.50	16.98	26.01	42.94
Madura	12.76	16.52	29.27	12.23	21.24	33.47
Tinnevely	4.47	12.10	16.57	4.60	18.47	23.07
Total	344.16	230.26	574.42	369.86	356.43	726.29
Average	19.12	12.79	31.91	19.99	19.74	39.74

The season was generally unfavourable during the year. The south-west monsoon was up to the average, but it set in late in several districts. The north-east monsoon was scanty, being less than that of the previous year by seven inches and less than the normal by nearly two inches.

Ganjām.—The rainfall during the year was on the whole satisfactory. The south-west monsoon commenced at the usual time but ceased altogether in September, and there was scarcity of water in the vicinity of Berhampur for a short time. The rice crop was quite up to the average.

Vizagapatam.—The south-west monsoon was generally light, whilst in Sarvasiddhi and Golconda taluks it was a failure and transplanting did not commence till end of September for want of water. The north-east monsoon burst on the 16th October and it rained heavily till the end of the month. Transplanting was vigorously commenced but with poor results, as one-fourth of the nursery beds withered away.

Gōdāvari.—The rainfall was on the whole favourable throughout the year, although below the average. The freshes in the river were rather small, and late, but water-supply being good, the crops yielded the usual harvest.

Kistna.—In the Kistna Eastern division the year, on the whole, may be considered a favourable one, but owing to deficient rainfall during transplantation difficulty was felt in the Cowtaram sub-division in supplying sufficient water, although the canals were all being run fuller than usual. After transplantation the supply was ample. In the Kistna Western division the rainfall was unfavourably distributed being slight from June to August, while the north-east monsoon practically ceased on the 18th November. The supply of water in the river was sufficient throughout the year.

Nellore.—Though the rainfall for 1894-95 was less than that of the previous year, its distribution was better and very little remission, owing to want of water, was given in the delta systems; as warned by past experience, early steps were taken to economize water. In the Sangam delta no rain fell after the end of November and the freshes in the Pennar failed in December. By reserving the supply of water in the river for the lower system (Pennar) and husbanding the supply in the reservoir of the upper (Sangam), the crops, with few exceptions, were harvested.

Cuddapah.—The season was favourable for agricultural operations in the early part of the year, but owing to the failure of the north-east monsoon very few tanks received a full supply and a large area of wetland was not cultivated, especially in the Voyalpad, Madanapalli, Kadiri and Rayachoti taluks.

Karnool.—The season was generally favourable to the early crops. The rainfall was sufficient although less than the average, and there was no special demand for water from the Karnool-Cuddapah canal. The early failure of water in the rivers was unfavourable to second-crop cultivation.

Bellary.—In the Anantapur sub-division the season was fair. Dry crops were good in most taluks, but wet crops poor. The rainfall was below the average. In the Bellary sub-division except in the Adoni taluk the tanks did not fill. The Rayadrug and Kuddligi taluks were particularly badly off in this respect.

Chingleput.—Although the rainfall was up to the average, several of the tanks in the division received very little water, notably Chembrambakam and Uttramerur. The Red Hills, Cholavaram and Madurantakam tanks received full supply.

North Arcot.—The rainfall on the whole was not good. The rain-fed tanks received a poor supply and but few of them filled more than once. The tanks connected with the Palar, Poiney and Cheyaru ancient systems had a fair supply, with the exception of those more remote from the Cheyaru ancient. All the tanks but one of the Aliabad system had a good supply.

South Arcot.—The rainfall was satisfactory. The tanks received a good supply.

Salem.—The rainfall was not satisfactory throughout the district, the north-east monsoon having been rather scanty.

Coimbatore.—The north-east monsoon was a total failure and the result was an unfavourable season.

Tanjore.—The rivers were in fresh about the end of May and plenty of water was available during the first part of the irrigation season. Later on the supply was not so good. The outturn of the crops was about three-fourths.

Negapatam.—The rainfall was about a fourth less than it was during the previous year, but as it was fairly distributed over the cultivated tracts, the loss of crops was less than was anticipated. On the whole the yield was rather poor, but no large remissions were necessary.

Trichinopoly.—The season was on the whole favourable, although the rainfall was rather deficient in the latter part of the year. There was no heavy flood or damage to crops.

Madura.—The rainfall was rather less than that of the previous year; there were no unusual floods in any of the rivers and the prices of the staple articles of food were moderate.

At Periyar the total rainfall registered for the year was 70.11, and at Thelady 45.10 against an average for the previous five years of 65.57 and 56.61 inches, respectively.

Tinnevely.—During the south-west monsoon the total rainfall was less than in the previous year and the supply of water was, in consequence, insufficient. The north-east monsoon was favourable on the whole, though there was a scarcity of water at the Srivaikuntam ancient during February and March 1895; but the abnormal fall of rain in April saved the withering crops under the north main channel. The raising of the Srivaikuntam ancient greatly contributed towards supplying more water to the channels than in previous years and under similar circumstances.

ACCIDENTS.

The bank of the Attali canal in the Gōdāvari Western division breached in the month of August 1894 owing, probably, to a crack in the bank caused by hot weather; this necessitated the closure of the head sluice at Vijeshwaram for two days. Bhimudu tank, an old ruined tank that had been restored during the year, breached in November 1894; it was probably maliciously breached, but this could not be proved.

In the Kistna Western division a small breach occurred in the 21st mile of the river flood bank on the 21st and 22nd July 1894 which was closed in a few days. In October the maximum flood level in the river at the 4th reach of the Bank canal was recorded and the flood bank in this reach was breached in a few places. This portion of the flood bank had never been made up to full height and no serious damage was done.

In the Chingleput division two minor tanks were breached.

In the Madura division there were seven breaches caused to a few works by the heavy rains in September and October 1894, but the accidents were not of importance and occasioned no loss of revenue. Of these breaches one was due to insufficiency of escape, and the rest to causes other than want of sluices or escapes.

In the Tinnevely division there were 76 accidents or breaches to works and these were repaired at a cost of Rs. 3,262. None of the accidents were due to want of escapes or sluices.

MAJOR (PRODUCTIVE) WORKS.

CAPITAL ACCOUNT.

Under 19. Capital Expenditure not charged to Revenue, Irrigation Works, the estimates, grants and outlay during, and to the end of, the year were as shown below :—

Departmental heads.	Sanctioned estimate.	Budget grant for 1894-95.	Final grant for 1894-95.	Outlay during 1894-95.	Excess outlay.	Total outlay to end of 1894-95.
<i>Direct Charges.</i>	RS.	RS.	RS.	RS.	RS.	RS.
Works	4,96,81,571	8,81,614	10,21,621	10,67,792	46,171	4,60,17,646
Establishment	74,33,027	1,95,020	2,28,344	2,38,688	10,345	66,22,617
Tools and plant	25,80,866	66,357	1,07,035	1,11,723	4,688	24,17,997
Loss by exchange	41,09,686	..	..	..	..	40,97,246
Suspense	..	..	..	807	807	..
Total	6,38,05,150	11,42,000	13,57,000	14,17,397	60,397	6,91,55,605
Deduct receipts on Capital Account	2,13,461	..	..	2,992	2,992	2,54,382
Net Total	6,35,61,589	11,42,000	13,57,000	14,14,405	57,405	6,89,01,143
<i>Indirect Charges.</i>						
Capitalized abatement of land revenue	32,20,400	..	..	16,170	..	28,86,242
Leave and pension allowances	12,88,439	..	..	23,416	..	11,79,979
Total	45,08,739	..	..	49,586	..	40,65,221
Grand Total	6,80,70,623	..	..	14,63,991	..	6,29,66,364

The direct charges during the year were Rs. 3,42,822 less than in the previous year, and Rs. 57,405 more than the final grant. The excess was chiefly due to the works of the Periyar project having been proceeded with more vigorously than was expected.

REVENUE ACCOUNT.

The charges under "42. Major Works (Working Expenses)"—Productive and Protective Works—are as shown below :—

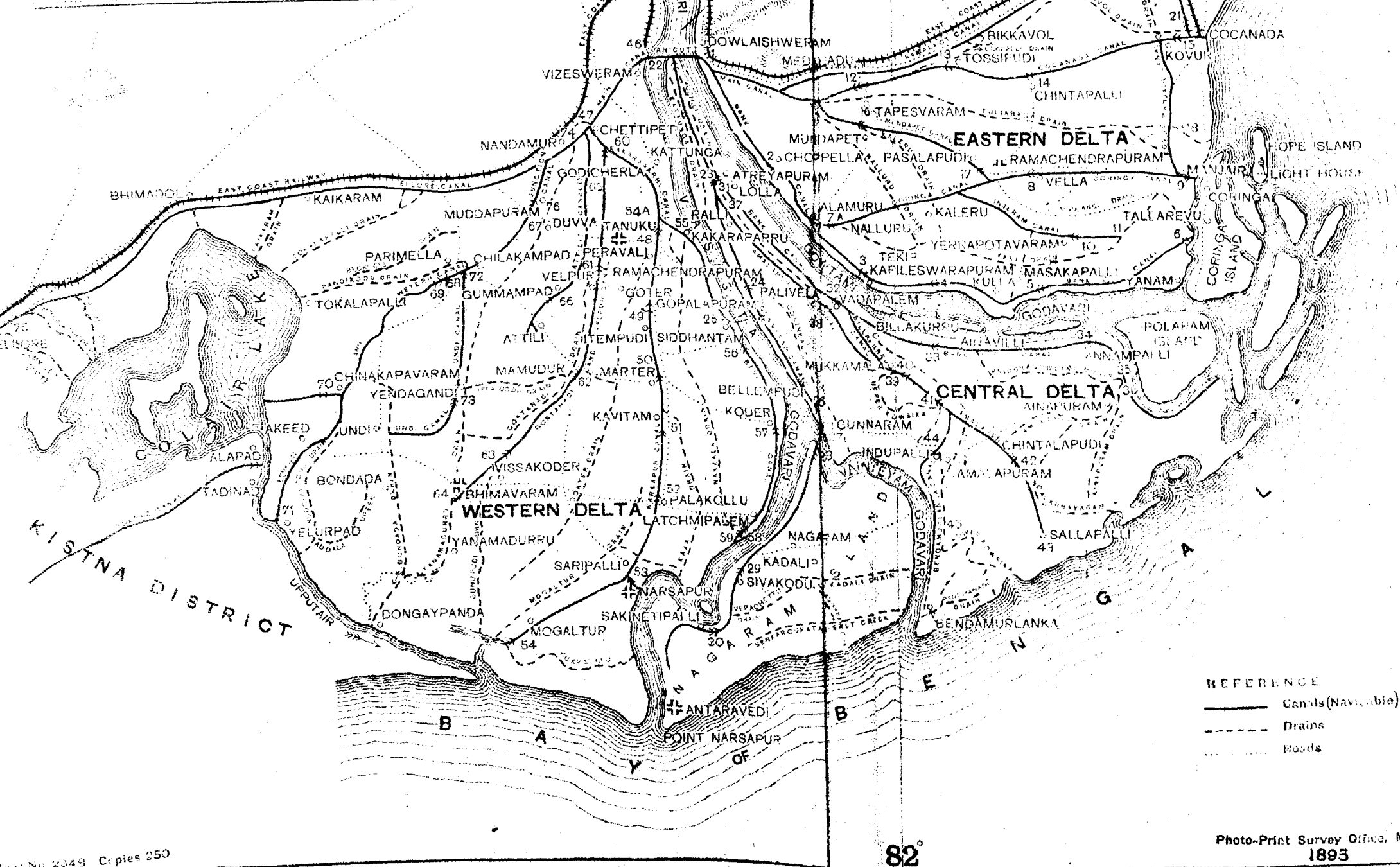
Departmental heads.	Final Grant.*		Outlay.		
	Budget.	Final grant.	Gross.	Deduct old maintenance charges.	Net.
<i>Direct Charges.</i>	RS.	RS.	RS.	RS.	RS.
Extensions and improvements	54,921	45,311	66,307	4,261	51,046
Maintenance and repairs	6,04,974	5,10,688	6,53,176	1,36,386	5,16,590
Establishment	5,16,373	5,21,607	7,46,647	2,64,663	4,81,984
Tools and plant	80,832	83,513	24,281	1,743	22,538
Total	11,50,000	11,61,319	16,38,361	4,27,223	11,11,138
<i>Indirect Charges.</i>					
Capitalized abatement of land revenue	..	..	6,665	..	6,665
Leave and pension allowances	..	..	1,04,454	39,912	64,542
Total	..	..	1,11,119	39,912	71,197
Grand Total	..	..	16,49,470	4,67,135	11,82,335

* Exclusive of grant for old maintenance charges.

SKETCH MAP OF THE **GODAVARI DELTA**

SHOWING POSITIONS OF
THE PRINCIPAL IRRIGATION & NAVIGATION WORKS

SCALE OF MILES



PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1894-95.

MAJOR (PRODUCTIVE) WORKS.

11

The expenditure during the year under direct charges was less than that of the preceding year by Rs. 55,864.

The total area irrigated under "Major Works" and the revenue derived therefrom as compared with the previous year are given below:—

	Area occupied.	Area charged as irrigated.	Irrigation revenue.	Average rate per acre.
	ACS.	ACS.	RS.	RS.
1894-95	2,531,368	2,520,690	91,47,747	3.63
1893-94	2,470,463	2,453,192	87,68,382	3.56

Area irrigated and revenue derived.

The Revenue Account, compared with the previous year, is as follows:—

Financial results.

	1894-95.	1893-94.
	RS.	RS.
Irrigation revenue	88,04,348	81,26,280
Add share of enhanced land revenue	4,83,494	4,78,428
Add revenue of previous years brought into account	6,50,287	6,881
Direct receipts in the Public Works Department	1,94,183	1,87,899
Total	1,01,21,322	87,94,139
Deduct working expenses and collection charges in the Civil Department.	19,39,503	19,65,276
Total net revenue	82,81,729	68,28,864
Deduct old irrigation revenue minus old maintenance charges	27,37,023	26,74,686
Net revenue	55,44,706	41,54,178
Deduct interest charges	21,96,962	21,53,106
Surplus revenue	33,47,744	20,01,072

The net revenue amounted to 7.61 per cent. on the capital outlay of the works in operation, and this percentage would be 11.96 were it not that the capital outlay is weighted with the great cost of the unremunerative Kurnool-Cuddapah canal which had to be purchased in 1882-83.

No. 1.—GODAVARI DELTA SYSTEM.

CAPITAL ACCOUNT.

The following statement exhibits the total of the open capital sanctions and the grant of, and expenditure incurred during, the year:—

Grant and outlay.

Departmental heads.	Amount of estimate.	Final grant for 1894-95.	Outlay during 1894-95.	Total outlay to end of 1894-95.
	RS.	RS.	RS.	RS.
Direct Charges.				
Works	98,261	4,563	4,362	77,040
Establishment	17,781	777	787	19,620
Tools and plant	16,401	..	..	7,768
Suspense accounts	..	..	..	789
Total	1,22,443	6,140	5,129	86,661
Less receipts on Capital Account	..	..	..	34
Net Total	..	5,140	5,129	86,627

The date of completion of the works of the system which remained to be carried out on 1st April 1890 and which required renewal of sanction was extended by the Government of India to the 31st March 1895. The total capital outlay to the end of 1894-95 was Rs. 1,28,16,644.

Progress of
works.

In the Gódávari Eastern division compensation amounting to Rs. 982 for land taken up for the new head lock at Vijeshwaram was paid. The work of extending Salapaka channel at 35 miles 14 chains on Kovur-Manjair junction canal and constructing a culvert across it was in progress. In the Gódávari Western division the construction of No. 3 under-tunnel of Deva channel was completed, and that of an under-tunnel to pass Bondakodu drain under Magam channel was in progress.

REVENUE ACCOUNT.

Grant and
outlay.

The charges on Revenue Account were as shown below :—

Departmental heads.	Grant, * 1894-95.	Outlay during 1894-95.		
		Gross.	Deduct old mainte- nance charges.	Net.
Extensions and improvements	Rs. 18,398	Rs. 20,230	..	Rs. 20,230
Maintenance and repairs	2,15,815	2,21,692	..	2,21,692
Establishment *	2,38,779	2,08,982	7,480	1,99,502
Tools and plant	42,300	45,582	..	45,582
Total	5,00,292	4,94,458	7,480	4,87,008
Indirect charges	..	36,044	1,050	33,994
Grand Total	..	5,29,500	8,500	5,21,000

* Exclusive of grant for old maintenance charges.

Extensions
and improve-
ments.

A new channel from Jagannaikpur channel and a regulator at head of the Municipal channel, Cocanada canal, was in progress. The land required for the work not having been made available until late in the year, progress was slow. Several small masonry works and excavation of small channels were also carried out.

Maintenance
and repairs.

The annual ordinary repairs to head works, canals, distributaries and drains were carried out. New gates for Mogultur and Chilakampad locks and new lower gates for Chintapalli lock were constructed.

Establish-
ment.

The charges for establishment amounted to Rs. 1,99,502 and are made up of the following items :—

Twenty-three per cent. on Expenditure	Rs. 68,689
Ten per cent. on Direct Revenue for services rendered by Public Works Department in collection of Navigation and other Miscellaneous revenue	12,549
Six per cent. on Indirect Revenue for services rendered by Public Works Department in distribution of water for Irrigation	1,33,331
Total ..	1,99,502

Tools and
plant.

The floating plant and machinery of the delta were kept in good order. In the Gódávari Eastern division five first and three second class iron ballacuts (ferry flats) were constructed. In the Gódávari Western division nine first and three second class iron ballacuts and four inspection pinnaces were constructed.

Floating
plant.

The following abstract shows the value and the cost of upkeep of the floating plant employed on works of construction and maintenance :—

Description.	Number.	Original value.	Estimated annual cost of upkeep.	Actual cost of upkeep.
Steamers	4	Rs. 1,11,559	Rs. 3,120	Rs. 1,889
Steam dredgers ("Bucket")	6	1,64,176	..	2,324
Steam dredgers (Priestman's)	3	45,138	4,140	781
Dredge punts	4	9,349	800	182
Iron double trap dredge punts	3	12,430	330	314
Wooden boats	21	61,544	2,116	5,872
Iron boats	11	15,539	690	662
Iron flats	3	18,311	410	965
Iron punts	17	61,947	2,080	4,295
Steel barges	3	16,500	1,020	948
Steel boats	12	13,983	3,380	1,810
Light boats	7	1,270	302	89
Total	84	4,06,667	17,867	21,688

The excess of the actual cost over the estimated cost of upkeep is due to the necessary special repairs of wooden boats and iron punts. The actual cost of upkeep in the previous year was Rs. 19,667.

The subjoined statement exhibits the earnings of the steamers employed on the Gódávari delta works :—

Earnings
of delta
steamers.

Names of steamers.	Book value.	Earnings.			Working expenses exclusive of repairs.	Balance.	
		Amount paid by private parties and nominal earnings for towing material boats.	Amount charged for hire of steam- ers used by Public Works officers.	Total.		Surplus.	Deficit.
"Shamrock"	Rs. 8,382	Rs. 487	Rs. 1,514	Rs. 1,981	Rs. 1,902	Rs. 79	..
"Arthur Cotton"	8,871	43	1,535	1,578	1,271	307	..
"Victoria"	20,237	33	997	1,030	1,383	..	353
"John Mullins"	20,340	2,059	1,582	3,641	2,618	1,023	..
Total	55,830	2,602	5,628	8,230	7,174	1,056	853

The receipts collected in the Public Works Department compare as follows with the amounts entered in the budget and revised estimates for 1894-95 :—

Receipts in
the Public
Works
Department.

Budget estimate	Rs. 1,20,000
Revised ..	1,20,000
Actuals ..	1,24,831

The principal portion of these receipts is derived from navigation, the receipts from which amounted to Rs. 1,03,892 against Rs. 1,01,691 in the previous year. The charges (which are chiefly arbitrary) amounted to Rs. 81,261 against Rs. 71,001 in the previous year.

Navigation
receipts and
charges.

The area irrigated and the revenue derived during the year compare with those of the previous year as shown below :—

Area irri-
gated and
revenue
derived.

	Area occupied.	Area charged as irrigated (see state- ment II-E).	Irrigation revenue.
First crop .. 1894-95	ACR. 658,971	ACR. 658,858	Rs. 20,56,992
Second crop .. 1894-95	648,509	640,744	20,52,069
.. 1893-94	100,865	100,865	2,49,022
.. 1893-94	81,008	80,996	2,68,889

The extent of sugarcane cultivation during 1894-95 compares with that of the previous year as shown below :—

	1894-95.	1893-94.
Eastern section	ACR. 5,306	ACR. 5,456
Central	447	586
Western	702	517
Total	7,555	6,559

The share of enhanced land revenue due to the works amounted to Rs. 1,58,008 as shown below :—

Enhanced
share of land
revenue.

Land assessment on waste lands	Rs. 1,51,686
Miscellaneous items	3,104
Four per cent. on sale-proceeds of tank-bed lands	819
Total	1,55,609

ADMINISTRATION REPORT OF THE

GODÁVARI DELTA SYSTEM.

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The gross revenue and working expenses per acre amounted to Rs. 3.45 and Rs. 2.85, respectively, against Rs. 3.51 and Rs. 0.86 in the previous year.

The following statement shows the financial results :—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 4,94,456	Rs. 1,33,99,909	Direct receipts in the Public Works Department ..	Rs. 1,24,541	Rs. 25,31,000
Indirect	35,044	7,10,534	Irrigation revenue	23,48,014	2,77,25,000
Collection charges in the Civil Department	1,19,001	38,83,775	Share of enhanced land revenue ..	1,53,900	25,17,000
Interest on capital outlay—Direct charges	4,38,645	1,21,60,564	Total	26,26,455	53,43,000
Total expenditure and charges ..	10,85,146	3,06,56,013	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	1,15,500	25,71,000
Surplus revenue	14,23,207	2,99,16,861	Net Total	25,10,955	27,72,000
Total	25,18,353	6,05,71,904			

The net revenue from the system during the year, after paying interest charges, was 11.14 per cent. on the capital outlay, "Direct" and "Indirect," against 10.64 per cent. in the previous year. The anticipated ultimate return was 9.3 per cent. per annum on the capital outlay.

The following is a synopsis of the results of the system :—

1. Areas charged as irrigated.	First crop	Total	Assumed old irrigation	Rs. 556,000
	Second crop		New irrigation due to works	155,234
				502,874
				100,000
2. Net revenue in 1894-95 after deducting interest and all charges	Total	Rs. 15,43,207		
	Portion taken as due to the works carried out since Capital and Revenue accounts have been kept separate of what is assumed to be due to old irrigation works			2,77,250
3. Accumulated net surplus revenue (exclusive of all that assumed to be due to old irrigation works) to end of 1894-95		2,99,16,861		
4. Total expenditure on Capital Account, both direct and indirect, which has secured the results shown above		1,33,16,861		
5. Year from which amounts against items 3 and 4 commenced to be calculated		1844-45		

GENERAL REMARKS.

The Godáviri river rose above the crest of the anicut on the 19th June 1894 and did not fall below it till the 10th March 1895. The number of days the water stood at or 3 feet above the anicut crest was 153 against an average of 110 days for the previous 42 years; and at or above 4 feet, 86 days against an average of 65 for the same period. The maximum flood of the year was 11.6 feet on the anicut crest against the previous recorded maximum of 17 feet. The state of the river was favourable for irrigation.

In December 1894 the preparation of a complete Engineering History of the system was entrusted by Government to Mr. G. T. Walsh, A.R.I.C.E., late Acting Chief Engineer and Secretary to Government, Public Works Department, who had passed the greater part of his service in the Godáviri district.

A head sluice to side channel from the left bank of Dosapad channel was commenced.

Kunderu channel.—The bridge at 3rd mile was in progress; the drop in 8th mile and tail escape were completed.

The crest of the Komatigunta weir was lowered by six inches.

Masulipatam canal.—The earthwork of Medur channel was almost completed. The head sluice, drops Nos. 1 and 2, the tail escapes in the Gudapad and Kistnapuram branches and a wharf wall at Pamarru were completed. Widening the Kanakavalli drain was finished. Inlets remain to be constructed. Widening Masulipatam canal from the head sluice of the Bank canal to Kankipad was completed to the normal level of silt, i.e., $1\frac{1}{2}$ feet above original bed level.

Pulleru canal.—Materials were collected for regulators and sluices at 4 miles 5 furlongs and 10 miles 7 furlongs of Gudivada channel.

Extension of Chintalacodu branch and Kankipad road culvert were completed.

The two drops and the two sluices of Butlercodu were completed and drop No. 3 was commenced.

Bantumilli canal.—Establishment sheds at Lakshmapuram lock were almost completed. A lascars' shed at Kamalapuram lock was finished; materials were collected for two ramps.

All the head sluices and tail escapes along the Bantumilli main distributary were completed. The head sluice of Kamalapuram north side channel and the excavation of the channel to the extent considered necessary were carried out. Four minor sluices along the channel and fixing demarcation stones were completed. Distributary channels in the second reach were in progress, shutters were fitted to the surplus weir at Bantumilli and materials were collected for improvements to the weir. A girder bridge at $2\frac{1}{2}$ miles, and a combined drop and sluice at $2\frac{1}{4}$ miles of south side channel, were fully completed.

Pedalanka channel.—Earthwork in the main channel was completed for a length of 20 miles and materials were collected for all masonry works, except a few at the tail end. Superstructure of the weir at 6 miles 6 furlongs was raised 3 feet, the under-tunnel at 6 miles 2 furlongs and the girder bridge across Bantumilli-Gudivada road were commenced. The Chevur Polimeracodu head sluice was in progress.

Potruz canal.—Head sluices and iron troughs for Lingala and Rudrayaram channels were completed; excavation of Lingala channel was almost completed. Three sluices of Peda Kommilera north side channel were completed and materials collected for the rest. Branch No. 2 of Peda Kommilera south side channel and its head sluice were completed and the two minor sluices were nearly finished. The extension of Kykalur channel and raising the banks of the old channel were completed and materials collected for minor sluices. The single lascars' shed at Vingaram was finished.

Drains.—Fixing demarcation stones along Pullava, Vedurava and Dammidi drains was completed. Ramps along China Kommilera drain and widening Pedalanka main drain were completed. Kalidindicodu, Arthamur drain and Pedatummidi affluent were in progress.

Kistna Western Division.

Main canal.—Widening in first mile and revetment in 2nd and 3rd miles, right side, completed; tow-path work in progress in $2\frac{1}{4}$ to $7\frac{1}{4}$ miles. The retaining wall at Sitanagaram between the head lock and head sluice, and the wharf wall in the left bank and the cattle crossing at Duggirala were completed. Fender pile bridge in front of east side channel head sluice completed.

Bank canal.—Earthwork and revetment in 19th mile were finished and the earthwork in 21st mile and demarcation on both sides of the canal were in progress. Syphon sluice at 33 miles $5\frac{1}{4}$ furlongs and head sluices to Ullipalem, Kuchinapudi, Allapuram and Arnappalli channels were completed. Head sluices of Kollur side and Varahapuram channels were in progress.

Nallur channel with Nos. 1 and 2 branches and cattle-crossing at Ipur were completed. The cattle-crossing at Pedapalem, Munnangi Potarazu donka, &c., lock establishment sheds at Revendrapad, Kollur and Mortata, and diversion of Bank canal at 7th and 8th miles were in progress.

Nisampatam canal.—Extension of west side channel with No. 1 branch was finally completed. Aqueduct at Nallamada was nearly completed. Head sluice for branch channel of west side channel extension and lock establishment sheds at Kuchipudi were in progress. Wooden trough over Dontalur channel to carry No. 1 branch of Imani channel and improvements to the Pedapalli drain were completed.

Commamur canal.—A girder bridge over the Tungabhadra near Ponnun No. 1 sluice to Kankatapalem branch, road tunnel and earthwork for A. B. channel and revetments in 27th and 28th miles left bank were completed. Mulapalem and Kankatapalem branch channel works were in progress. Lock establishment sheds at Nallamada, Santaravur and wharf wall at Santaravur were in progress.

Romperu drain.—The improvements were commenced. Widening and extending Alleru affluent was completed. Swerna affluent was almost finished.

Koppalli drain.—was completed including bridge.

Tenuli drain.—below Bodapad channel was completed.

Repalli main drain.—Razole straight cut was completed.

Tungabhadra drain.—was in progress. Excavating Nallamada affluent was in progress. A crossing at 19th mile and Bodapad channel were completed.

One crane to lift 3 tons, 6 bulls patent dredgers and 6 gin blocks were purchased locally.

Tools and plant.

REVENUE ACCOUNT.

The charges on Revenue Account were as shown below:—

Grant and outlay.

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 12,500	Rs. 12,499	Rs.	Rs.
Maintenance and repairs	2,04,028	2,05,035	..	12,499
Establishment	1,91,342	1,85,690	4,260	2,05,035
Tools and plant	40,310	37,298	..	1,81,480
Total	4,48,880	4,20,457	4,260	4,16,197
Indirect Charges	..	23,500	640	23,860
Total	..	4,43,957	4,900	4,38,057

* Exclusive of grant for old maintenance charges.

In the Kistna Northern division one work was completed. In the Kistna Eastern division 13 works were completed and 5 were in progress. Materials were also collected for a few works. In the Kistna Western division 9 works were completed and 21 were in progress.

Extensions and improvements.

The ordinary and special repairs to head works, canals, drains and distributaries in the three divisions were carried out. Very extensive special repairs to the Kistna anicut were rendered necessary by the formation, during the irrigation season, of deep holes in the apron just below the crest, and in the river bed below the apron. These latter holes were filled in with sand. The scours of the stone apron immediately below the crest were very extensive, extending for an aggregate length of 1,320 feet and being of average section 20×12 . The maximum depth of any scour hole was 18 feet below crest of anicut or 5 feet above the bottom of the formation of the body wall. The apron was repaired with rough stone packing surfaced rubble masonry.

Maintenance and repairs.

2 feet thick. In addition, a longitudinal retaining wall 20 feet from the crest and 4 feet thick was built at the site of scour holes with cross or binding walls either of piles or masonry at 20 and 80 feet intervals. The progress on this work was most satisfactory; it was commenced in December and most of the important work was completed by the end of March.

Establishment.

The charges for establishment amounted to Rs. 1,61,430 and are made up of the following items:—

Twenty-three per cent. on Expenditure	Rs.
Ten per cent. on Direct revenue	48,472
Six " " on Indirect revenue	5,374
	1,07,694
Total	1,61,430

Tools and plant.

The floating plant was repaired and kept in good order. Dredge No. 3 and the "Ajax"—punt No. 77—were broken up. In the Kistna Western division, one first-class and nine second-class ballacuts (ferry flats) were under construction.

Floating plant.

The following abstract shows the value and the cost of upkeep of the floating plant:—

Description.	Number.	Original value.	Estimated annual cost of upkeep.	Actual cost of upkeep.
Steamer "Alexandra"	1	Rs. 18,121	Rs. 2,510	Rs. 895
Dredgers	4	69,000	3,660	835
Iron punts	46	90,807	9,153	8,895
Composite punts	33	79,819	10,630	9,614
Iron punt, small	1	260	50	—
Trap punt	1	4,854	220	167
Circular trap punt	1	1,205	170	170
Anchor paddle boat	1	900	150	107
Furniture for Anchor superintendent	1	224	55	—
Staff boats	11	17,753	1,405	2,754
Total	94	2,71,411	28,000	19,357

Earnings of Delta steamer.

The subjoined statement exhibits the earnings of the steamer employed on the Kistna delta works:—

Name of steamer.	Cost of steamer.	Earnings.			Working expenses.	Balance.	
		Amount paid by private parties and for towing material boats.	Amount charged for hire of steamers used by Public Works officers.	Total.		Surplus.	Deficit.
"Alexandra"	Rs. 18,121	Rs. 799	Rs. 118	Rs. 917	Rs. 834	Rs. 7	Rs. —

Receipts in the Public Works Department.

The receipts collected in the Public Works Department amounted to Rs. 53,729 against a budget and revised estimate of Rs. 50,000 and are made up of the following items:—

Receipts from plantations	Rs. 4,735
Do. from other canal produce	8,919
Do. from navigation	37,393
Rents of buildings	1,560
Water-charges of towns	1,364
Miscellaneous	563
Total	53,729
Deficit against estimate	26

The navigation charges (chiefly arbitrary) amounted to Rs. 64,961 against Rs. 68,284 during the previous year.

The irrigated area and revenue of the year compare with those of the previous year as shown below:—

Area irrigated and revenue derived.

		Area occupied.	Area charged as irrigated.	Irrigation revenue.
First crop	1894-95	ACS. 520,724	ACS. 519,887	Rs. 18,63,758
	1893-94	513,477	512,430	18,59,205
Second crop	1894-95	110	109	809
	1893-94	148	148	372

The share of enhanced land revenue due to the works amounted to Rs. 1,72,087 as shown below:—

Enhanced share of land revenue.

Increments to the land assessment after the lands were brought under irrigation	Rs. 53,506
Land assessment on waste lands brought under irrigation	1,00,484
Do. on miscellaneous items	15,343
Four per cent. on sale-proceeds of tank-bed lands	2,754
Total	1,72,087

The gross revenue and working expenses amounted to Rs. 4.02 and Rs. 1.04 per acre against Rs. 4.06 and Rs. 1.15, respectively, in the previous year.

The following statement shows the financial results:—

Financial results.

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 4,30,457	Rs. 86,87,665	Direct receipts in the Public Works Department	Rs. 53,729	Rs. 8,45,254
Indirect charges	52,500	8,18,368	Irrigation revenue	18,64,067	8,31,83,997
Collection charges in the Civil Department	98,258	20,73,505	Share of enhanced land revenue	1,72,087	41,16,196
Interest on capital outlay—			Total receipts	20,89,883	8,61,44,447
Direct charges	4,35,199	89,18,038	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	66,100	31,60,835
Total expenditure and charges	9,87,414	1,94,77,464	Net Total	20,23,783	8,49,83,612
Surplus revenue	10,56,889	1,55,06,148			
Total	20,23,783	3,49,83,612			

The net return, after paying interest charges, was 9.08 per cent. on the total capital outlay against 9.03 per cent. in the previous year.

The following is a synopsis of the results of the system:—

Synopsis of results.

1. Areas charged as irrigated.	Total	ACS. 519,867
	Assumed old irrigation	77,429
	New irrigation due to works	442,438
	Second crop	109
2. Net revenue in 1894-95 after deducting interest and all charges.	Total	Rs. 11,22,469
	Portion taken as due to the works carried out since Capital and Revenue Accounts have been kept exclusive of what is assumed to be due to old irrigation works	10,56,349
3. Accumulated net surplus revenue (exclusive of all that assumed to be due to old irrigation works) to end of 1894-95		1,55,06,148
4. Total expenditure on Capital Account, both direct and indirect, which secured the results shown above		1,16,25,104
from which amounts against items 3 and 4 commenced to be liquidated		2855-56

ADMINISTRATION REPORT OF THE

KISTNA DELTA SYSTEM.

GENERAL REMARKS.

State of river.

The Kistna river rose over the crest of the anicut on the 18th June 1894 and did not fall below it until 23rd December 1894; the maximum height of water which passed over the anicut during the year was 14.5 feet on 29th July 1894. The highest flood recorded is 20.04 feet and occurred in July 1882; the crest level was then 46.25, but was raised in 1893-94 to 49.25. The fact that injury to the anicut apron had occurred was first noticed on the 16th July 1894, when the water was rising for the first and greatest flood.

No. 3.—PENNER ANICUT SYSTEM.

CAPITAL ACCOUNT.

Total outlay.

Against a grant of Rs. 1,500 for works, an outlay of Rs. 1,272 was incurred on account of compensation for land for Survepalli canal. The total capital outlay, including indirect charges to the end of the year, was Rs. 18,86,304 against a sanctioned estimate of Rs. 19,07,631.

REVENUE ACCOUNT.

Grant and outlay.

The charges on Revenue Account for the year were—

Departmental heads.	Grant.*	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 1,416	Rs. 1,485	Rs. 3,564	Rs. 2,129
Maintenance and repairs	10,100	33,362	13,860	9,492
Establishment	10,638	31,612	11,027	10,485
Tools and plant	5	5	5	5
Total	19,323	46,292	28,456	17,845
Indirect charges	..	3,182	1,544	1,638
Total	..	49,474	30,000	19,474

* Exclusive of grant for old maintenance charges.

One work was completed and five works were in progress.

Special and ordinary repairs to the anicut, canals and channels, &c., were carried out and the works maintained in good order.

The charges for establishment amounted to Rs. 10,485 as shown below:—

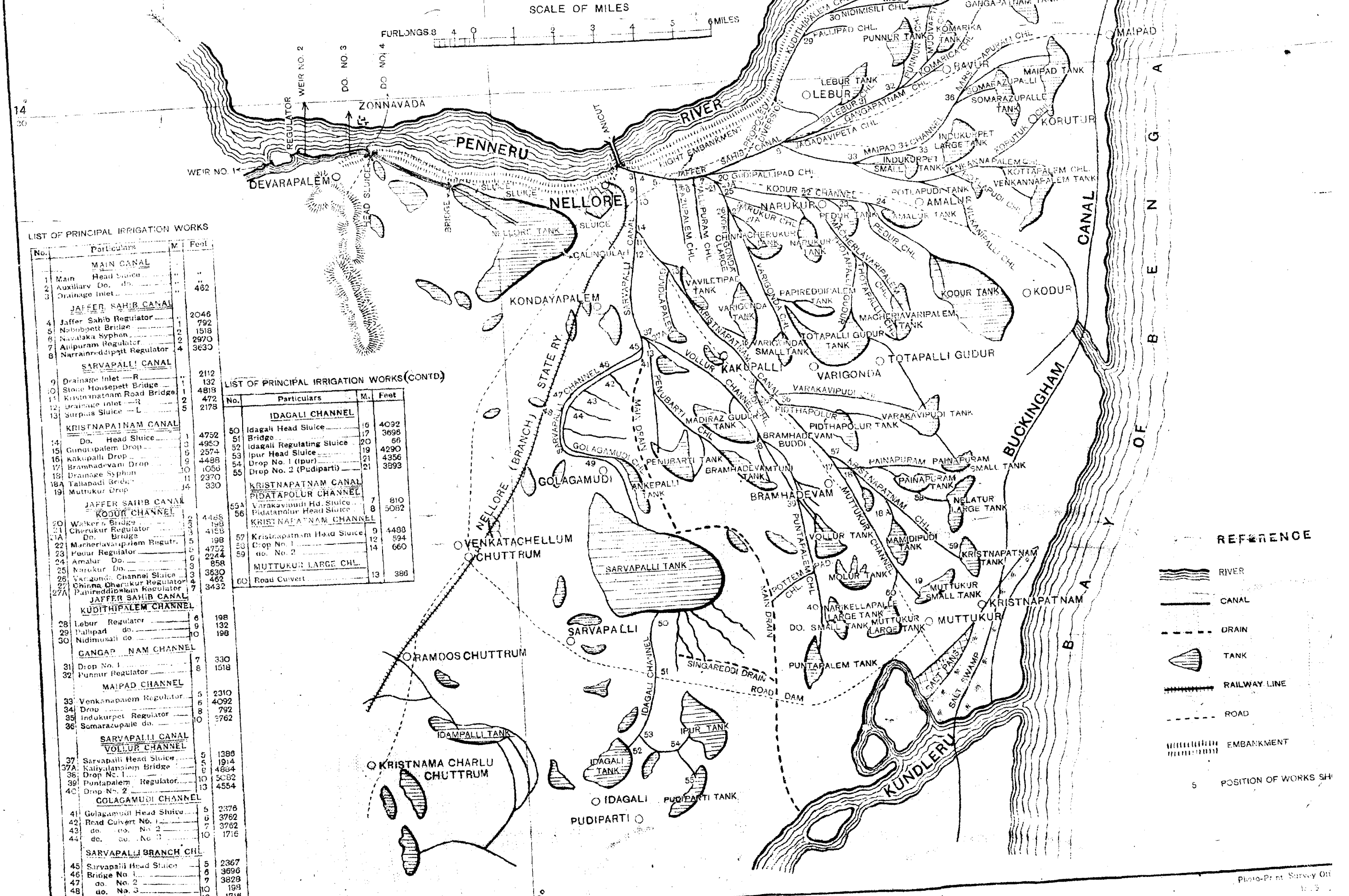
Twenty-three per cent. on Expenditure	Rs. 1,894
Ten per cent. on Direct revenue	40
Six " on Indirect revenue	8,751
Total	10,485

The receipts in the Public Works Department amounted to Rs. 397 against a budget and revised estimate of Rs. 800 and Rs. 600, respectively.

The irrigated area and revenue compare as follows with those of the previous year:—

	Area occupied.	Area charged as irrigated.	Irrigation revenue.
First crop 1893-94	68,222	67,208	2,64,844
1894-95	67,617	66,712	2,60,391
Second crop 1893-94	2,351	2,351	8,602
1894-95	3,634	3,634	10,019

PENNERU ANICUT SYSTEM

SHOWING POSITIONS OF
THE PRINCIPAL IRRIGATION WORKS

The share of enhanced land revenue due to the works amounted to Rs. 20,272 as shown below :—

Enhanced share of land revenue

	Rs.
Land assessment on waste lands brought under irrigation	19,339
Do. on miscellaneous items	570
Four per cent. on sale-proceeds of tank-bed lands	863
Total	20,272

The gross revenue and working expenses per acre amounted to Rs. 4.02 and Rs. 0.82, respectively, against Rs. 3.99 and Rs. 0.81 in the previous year.

The following statement shows the financial results :—

Financial results.

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
	Rs.	Rs.		Rs.	Rs.
Direct charges	46,299	11,69,221	Direct receipts in the Public Works Department	397	7,314
Indirect charges	3,182	92,424	Irrigation revenue	2,62,846	62,29,374
Collection charges in the Civil Department	8,306	1,94,099	Share of enhanced land revenue	20,272	4,61,391
Interest on capital outlay—			Total receipts	2,63,515	66,99,079
Direct charges	65,472	16,95,164	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	87,000	26,53,282
Total expenditure and charges	1,23,259	31,50,908	Net Total	1,96,515	40,45,797
Surplus revenue	73,256	8,94,889			
Total	1,96,515	40,45,797			

The net return, after paying interest charges, was 3.88 per cent. on the total capital outlay against 3.76 per cent. in the previous year.

The following is a synopsis of the results of the system :—

Synopsis of results.

1. Areas charged as irrigated.	First crop	Total	Assumed old irrigation	Rs.	67,203
			New irrigation due to works	26,200	
	Second crop	Total	Assumed old irrigation	Rs.	3,361
			New irrigation due to works	2,915	
2. Net revenue in 1894-95 after deducting interest and all charges.	Total	Portion taken as due to the works carried out since Capital and Revenue Accounts have been kept exclusive of what is assumed to be due to old irrigation works	Rs.	1,60,256	
3. Accumulated net surplus revenue (exclusive of all that assumed to be due to old irrigation works) to end of 1894-95				73,256	
4. Total expenditure on Capital Account, both direct and indirect, which has secured the result shown above				8,94,889	
5. Year from which amounts against items 3 and 4 commenced to be calculated				18,86,304	1860-61

GENERAL REMARKS.

The highest flood in the Pennér during the year occurred on the 23rd October 1894, when the depth over the Pennér anicut crest was 5.3 feet. The highest flood on record is 19' 3" which occurred on the 30th November 1882. The river flowed over the anicut for 92 days from July to November 1894.

Floods.

Seven works were completed.

Special and ordinary repairs to the anicut, canals, channels, &c., were carried out.

The charges for establishment amounted to Rs. 14,693 as shown below :—

23 per cent. on Expenditure	Rs.	4,823
10 do. on Direct revenue	54	
6 do. on Indirect revenue	9,816	
Total	Rs.	14,693

Extensions and improvements. Maintenance and repairs. Establishment.

The receipts in the Public Works Department amounted to Rs. 536 against a budget and revised estimate of Rs. 1,200 and Rs. 700, respectively.

Receipts in the Public Works Department.

The irrigated area and revenue compare as follows with those of the previous year :—

Area irrigated and revenue derived.

	Area occupied.	Area charged as irrigated.	Irrigation revenue.
	ACS.	ACS.	RS.
First crop .. { 1894-95	75,386	72,583	2,90,660
{ 1893-94	73,514	71,667	2,85,971
Second crop. { 1894-95	4,095	4,095	11,943
{ 1893-94	3,493	3,393	9,920

The share of enhanced land revenue due to the works amounted to Rs. 21,887 as shown below :—

Enhanced share of land revenue.

Land assessment on waste lands brought under irrigation	Rs.	14,985
Do. on miscellaneous items	957	
Four per cent. on sale-proceeds of tank-bed lands	5,952	
Total	Rs.	21,887

The gross revenue and working expenses per acre amounted to Rs. 4.24 and Rs. 0.94, respectively, against Rs. 4.20 and Rs. 1.03 in the previous year.

The following statement shows the financial results :—

Financial results.

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
	RS.	RS.		RS.	RS.
Direct charges	59,167	5,61,383	Direct receipts in the Public Works Department ..	536	7,329
Indirect charges	3,777	21,925	Irrigation revenue	3,02,893	23,66,330
Collection charges in the Civil Department	9,275	53,766	Share of enhanced land revenue	21,887	94,935
Interest on capital outlay—			Total receipts	3,25,026	24,67,594
Direct charges	1,23,298	12,73,731	Deduct portion of revenue assumed to be due to " old irrigation " less old maintenance charges	1,14,000	11,32,734
Total expenditure and charges	1,95,607	19,20,095	Net Total	2,11,026	12,84,860
Surplus revenue	16,519	— 6,35,235			
Total	2,11,026	12,84,860			

The actual return, after paying interest charges, was Rs. 15,519 against Rs. 1,377 in the previous year.

GENERAL REMARKS.

The greatest depth of water in the year over the Sangam anicut crest was 3.20 feet on the 22nd October 1894, and the highest recorded on the 17th October 1889 was 8.70 feet. The river rose over the anicut crest on the 18th July 1894 and was above that level for 85 days during the period from July to November.

No. 5.—KURNOOL-CUDDAPAH CANAL.

CAPITAL ACCOUNT.

No expenditure in India has been incurred on the Capital Account of the canal since its purchase. Owing to receipts on Capital Account to the extent of Rs. 801 by sale of stores, the cost of the purchase of the canal which stood at Rs. 2,16,40,127 at the end of the previous year was reduced to Rs. 2,16,39,326 during the year.

REVENUE ACCOUNT.

The expenditure on *Revenue Account* compares as follows with the grant of the year :—

Departmental heads.	Grant.	Expenditure.
Extensions and improvements	Rs. 6,000	Rs. 7,710
Maintenance and repairs	67,500	68,192
Establishment	23,951	24,101
Tools and plant	1,416	1,078
Total	98,867	1,01,081
Indirect charges	..	3,374
Total	..	1,04,455

Compensation for land for Chennur channel was paid, the roofs of covered wharf at Kristnapuram and inspection bungalow at Allur were renewed, land at Joharapuram was drained and the survey of the Chepaud project was in progress.

The outlay under this head was incurred in keeping the canal and its masonry works in order. On special repairs Rs. 16,843 were spent chiefly in renewing and repairing lock-gates and rebuilding a portion of the body wall of north anicut at Sunkesala.

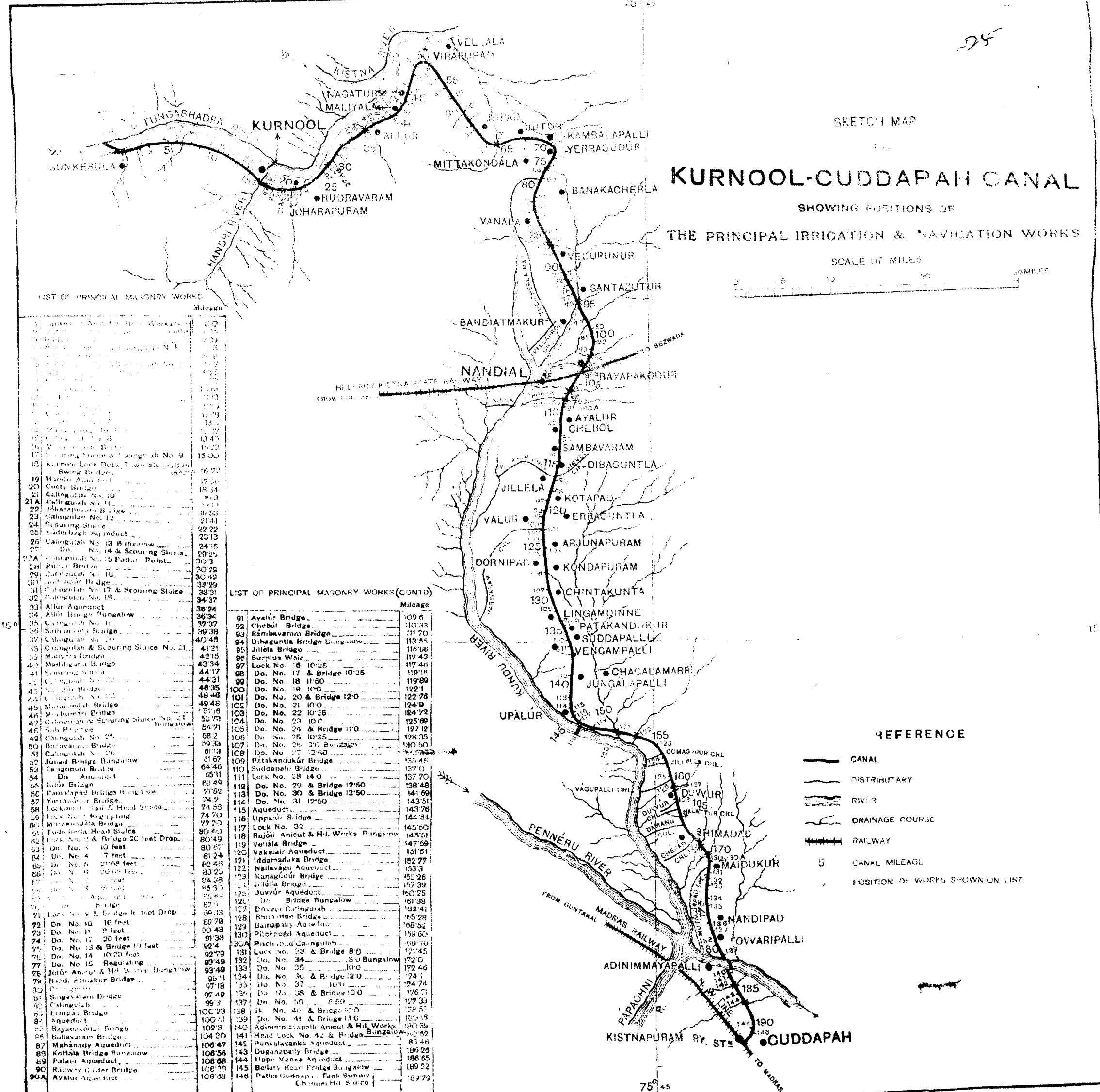
The charges for establishment amounted to Rs. 24,101 as shown below :—

93 per cent. on Expenditure	Rs. 16,843
10 do. on Direct revenue	889
6 do. on Indirect revenue	6,373
Total	24,101

The outlay was incurred in the upkeep of boats and in repairing the ordinary canal plant.

The following abstract shows the value and the cost of upkeep of the floating plant :—

Description.	Number.	Original value.	Actual cost of upkeep, including special repairs.
Staff boats	3	Rs. 12,682	Rs. 268
Passenger boats	4	17,740	261
Carriage boats	4	17,950	310
Pulicat boats	2	400	21
Boats	4	832	1
Total	17	44,064	661



The collections in the Public Works Department amounted to Rs. 8,506, against an estimate of Rs. 9,000 and are made up of the following items:—

Receipts in the Public Works Department.

	Rs.
Kurnool town supply	3,500
Navigation receipts	1,457
Other canal produce	348
Rents of buildings	490
Miscellaneous	149
Plantations	2,852
Total ..	8,796
Deduct refunds of Revenue ..	290
Net Total ..	8,506

The amount realized was Rs. 2,313 less than in the previous year owing chiefly to the sale of tumma trees for fuel having been curtailed.

The navigation charges amounted to Rs. 10,102.

The irrigated area and revenue assessed compare as follow with those of the previous year:—

Area irrigated and revenue derived.

						Area irrigated.	Irrigation revenue.
						ACS.	RS.
Kernool ..	{	1894-95	..	..	..	17,633	57,384
		1893-94	..	..	..	15,395	57,018
Cuddāpah ..	{	1894-95	..	..	..	16,457	55,722
		1893-94	..	..	..	16,029	51,408
Total ..						1894-95 ..	1,13,106
						1893-94 ..	1,08,428

The increase in revenue in 1894-95 was mainly due to the penal charges levied on surreptitious irrigation.

The liberal concessions previously accorded to persons desirous of taking up blocks of unoccupied waste lands of 50 acres and upwards in extent under the canal for irrigated cultivation were temporarily modified and brought into force from 1st August 1890 as shown below:—

Extension of irrigation.

- When blocks of 10 acres and upwards of unoccupied waste are taken up for irrigation, no water-rate will be charged for the first five years.
- In the next five years only half rate will be charged.
- Full rates will be levied after ten years.
- The holders of these block-lands are under no restriction as to the crops they may grow.
- During the second five years, water-rate will have to be paid only on the area actually irrigated subject to a minimum of 8 annas per acre.
- For subsequent years the charge will be on the entire extent of the blocks with a minimum of one rupee per acre.

The following statement exhibits the financial results of the canal based on the actual collections of irrigation revenue:—

Financial results.

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
	RS.	RS.		RS.	RS.
Direct charges	1,01,081	12,60,774	Receipts in the Public Works Department	8,506	1,35,783
Indirect charges	5,374	62,311	Revenue collected in the Civil Department	1,04,550	11,30,351
Collection charges in the Civil Department	5,225	51,918	Total ..	1,13,056	12,75,134
Interest on capital outlay—			Net deficit ..	8,64,332	1,16,29,453
Direct charges	8,67,708	1,08,29,584	Total ..	9,77,388	1,29,04,687
Total expenditure and charges ..	9,77,888	1,29,04,687			

Growth of revenue.

The following statement shows the growth of revenue and decrease in working expenses of the canal from 1882-83, the year in which it was taken over from the late Madras Irrigation and Canal Company :—

Year.	Working expenses (direct charges).	Revenue.	Deficit.	Surplus revenue.
1882-83	Rs. 1,33,410	Rs. 76,023	Rs. 57,387	..
1883-84	1,81,710	42,800	1,38,910	..
1884-85	2,02,520	1,32,286	70,234	..
1885-86	1,00,044	65,000	1,05,944	..
1886-87	1,81,921	65,004	1,16,917	..
1887-88	1,41,440	65,518	75,922	..
1888-89	1,42,046	77,727	64,319	..
1889-90	1,19,566	78,959	40,607	..
1890-91	1,50,439	1,28,666	21,773	..
1891-92	1,23,190	1,42,722	..	19,532
1892-93	1,58,105	1,48,281	9,824	..
1893-94	1,82,472	1,29,440	53,032	..
1894-95	1,01,081	1,13,656	..	11,975

GENERAL REMARKS.

Water supply.

There was a slight fresh in the Tungabhadra on the 26th May when water rose to 0.5 above the crest of the anicut. The next fresh was on 9th June to much the same height. Under-slucies were closed on the 15th and head sluices opened, and from this time the water in the river maintained varying levels above the crest up to the end of December, when it began to fall, i.e., about 15 days earlier than in the previous year. The water reached the maximum height of 4.6 feet on 25th July 1894.

On the 7th July 1894 water at the anicut across the Pennar river rose from 4 feet below to 2 feet above the crest and continued above the crest level until the 24th February 1895, after which date the river gradually fell. Water would have fallen below the crest at an earlier date, but was maintained by a small sand bank placed on the crest of the anicut.

Improvement of canal irrigation.

The Special Deputy Collector who was attached to the canal worked throughout the year. The system of distributing water by docket (application) was introduced for the first time during the year. Second revenue inspectors were appointed to check the area cultivated and for the detection of surreptitious irrigation.

Patha Cuddapah tank supply channel.

The new supply channel from the Karnool-Cuddapah canal to the Patha Cuddapah tank was practically completed during 1893-94, except cement plastering to the interior of the Bugga syphon which was done during the year. The total outlay to the end of the year including indirect charges was Rs. 55,785 against a sanctioned estimate of Rs. 54,000. The whole expenditure was charged to the canal under "43. Minor works and Navigation."

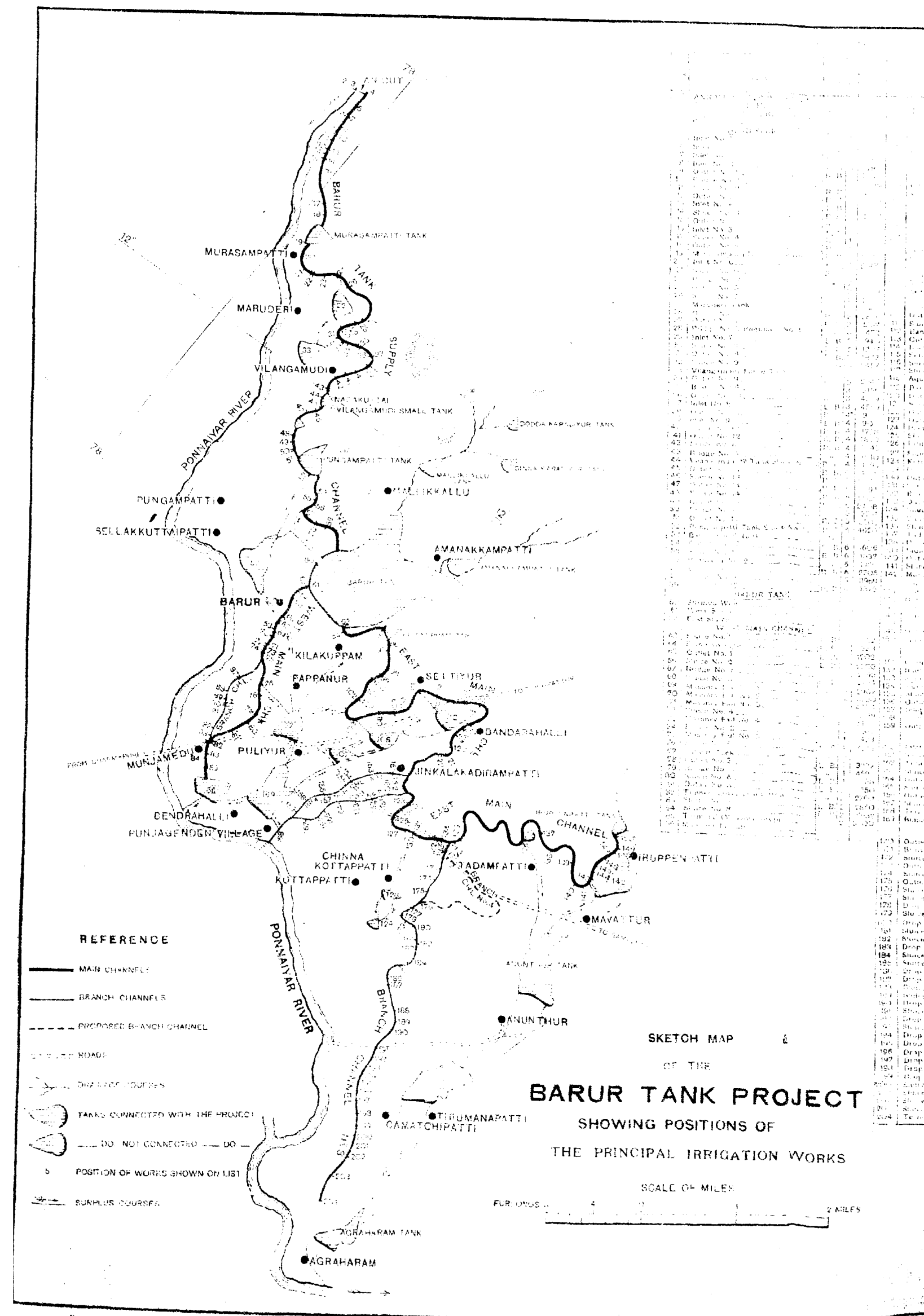
No. 6.—BARUR TANK PROJECT.

CAPITAL ACCOUNT.

Total outlay.

There was no expenditure on capital account of this project during the year. The total capital outlay, including indirect charges, to the end of the previous year was Rs. 4,19,713 against a sanctioned estimate of Rs. 4,36,881.

In December 1894 an estimate, amounting to Rs. 4,200, for constructing surplus sluices in the weir of Barur tank was sanctioned under open Capital account.



REVENUE ACCOUNT.

The charges on *Revenue Account* were—Grant and
outlay.

Departmental heads.	Grant.*	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 500	Rs. 600	Rs. ..	Rs. 600
Maintenance and repairs	2,264	2,231	..	2,231
Establishment	1,866	1,338	120	1,218
Tools and plant	..	..	..	..
Total	4,120	4,169	120	4,049
Indirect charges	..	201	30	171
Total	..	4,370	150	4,220

* Exclusive of grant for old maintenance charges.

Mile and furlong stones along the Barur channels were fixed.

Extensions
and improve-
ments.

The supply channels to Barur tank and masonry works on them were repaired.
The channels were cleared of silt.

Maintenance
and repairs.

The charges for establishment amounted to Rs. 1,218 as shown below:—

Establish-
ment.

33 per cent. on Expenditure	Rs. 625
10 do. on Direct revenue	3
6 do. on Indirect revenue	590
Total	1,218

The receipts collected in the Public Works Department amounted to Rs. 26.

Receipts in
the Public
Works De-
partment.

The irrigated area and revenue compare as follows with those of the preceding
year:—

Area
irrigated and
revenue
derived.

—				Area occupied.	Area charged as irrigated.	Irrigation revenue.
				Acres.	Acres.	Rs.
First crop ..	1894-95	..	..	2,656	2,666	9,699
	1893-94	..	..	2,406	2,406	8,707
Second crop ..	1894-95	..	..	1,824	1,824	2,141
	1893-94	..	..	1,918	1,918	2,333

The share of enhanced land revenue due to the works amounted to Rs. 2 as shown
below:—

Enhanced
share of land
revenue.

Land assessment on waste lands irrigated	Rs. 1
Do. on miscellaneous items	1
Total	2

The average rates of revenue and charges per acre irrigated for 1894-95 compare
with those of the previous year as follow:—

		1894-95.	1893-94.
Total area irrigated, both first and second crops	Acres.	4,480	4,324
Total gross revenue	Rs.	11,868	11,079
Average revenue per acre	..	2-65	2-56
Total working expenses exclusive of collection charges in the Civil Department	..	4,370	4,460
Average working expenses per acre	..	0-97	1-08
Total working expenses inclusive of collection charges in the Civil Department	..	4,862	4,912
Average working expenses per acre	..	1-09	1-14

BAER TANK PROJECT.

The following statement shows the financial results :—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 4,169	Rs. 29,629	Direct receipts in the Public Works Department	Rs. 36	Rs. 217
Indirect charges	201	1,206	Irrigation revenue	11,840	66,765
Collection charges in the Civil Department	492	2,026	Share of enhanced land revenue	4	23
Interest on capital outlay—			Total receipts	11,880	67,005
Direct charges	15,879	1,43,408	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	1,860	15,080
Total expenditure and charges	20,741	1,76,268	Net Total	10,018	41,925
Surplus revenue	— 10,723	— 1,44,343			
Total	10,018	41,925			

The working expenses inclusive of interest charges for the year exceeded the revenue by Rs. 10,723.

No. 7.—CAUVERY DELTA SYSTEM.

CAPITAL ACCOUNT.

Against a grant of Rs. 6,700, Rs. 5,309 were spent during the year on works on open capital account of the system. The total capital outlay, including indirect charges, to the end of the year was Rs. 17,84,258 against a sanctioned estimate of Rs. 19,00,351.

In the Tanjore division screw-gearing shutters for the three central arches of the Kodamurti regulator were provided. In the Negapatam division the reconstruction of the Rajen Voikal and Elayalar head sluices, an incomplete work of the previous year, was completed. Sheds at the Koraiyar head and an inspection shed at Muthupet were also constructed.

REVENUE ACCOUNT.

The charges on Revenue Account for the year were—

Departmental heads.	Grant.*	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 6,560	Rs. 8,108	Rs. ..	Rs. 8,108
Maintenance and repairs	— 27,972	— 77,720	— 1,06,684	— 27,914
Establishment	40,636	2,53,881	2,44,604	9,277
Tools and plant	— 1,408	— 108	— 1,603	— 1,405
Indirect charges	Total	17,321	5,69,557	3,51,841
			89,666	34,244
	Total	4,09,023	8,86,086	24,938

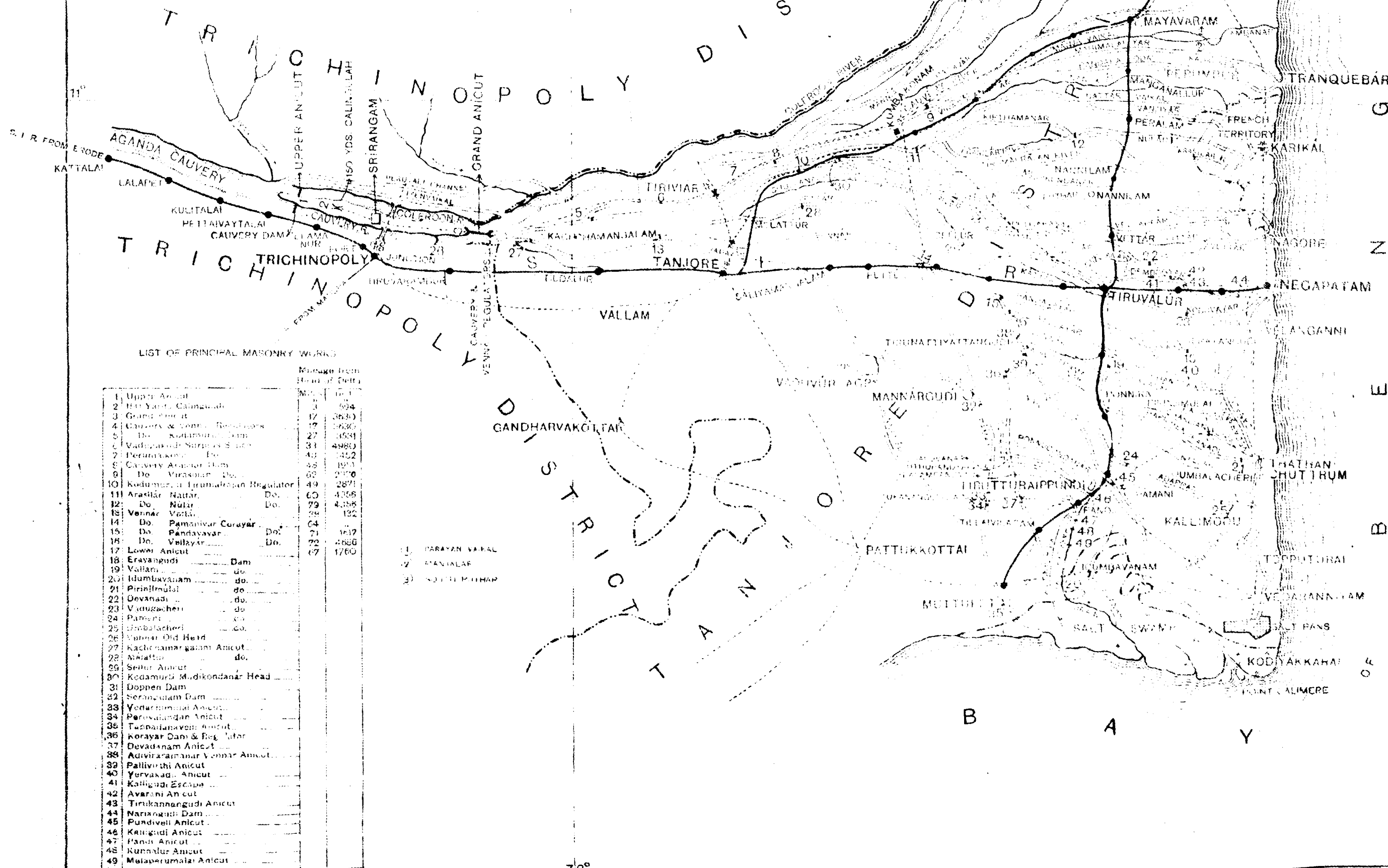
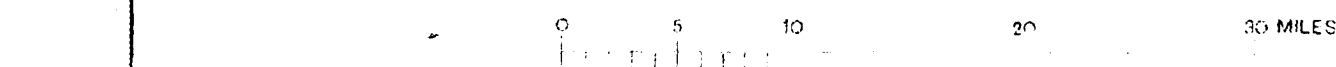
* Exclusive of grant for old maintenance charges.

In the Negapatam division the improvements to the Vadugacherry dam across the Koduvayar and raising its banks, an incomplete work of the previous year, were completed. Nine minor works were in progress, of which 7 were completed. In the Tanjore division 29 minor works were in progress, of which 14 were completed. In the Trichinopoly division a dam was constructed to two of the branch channels and enamelled iron ganges were provided to the head sluices, &c., of the Lower Peruvnai and Panguni channels.

SKETCH MAP
OF THE
CAUVERY DELTA

SHOWING POSITIONS OF
THE PRINCIPAL IRRIGATION WORKS

SCALE OF MILES



Synopsis of results.

The following is a synopsis of the results of the system :—

1. Areas charged as irrigated.	First crop	Total	Rs. 8,86,461
		Assumed old irrigation	744,967
		New irrigation due to works	141,504
	Second crop	Total	108,430
		Assumed old irrigation	88,372
		New irrigation due to works	69,568
2. Net revenue in 1894-95 after deducting interest and all charges.	Total	Rs. 40,23,336	
	Portion taken as due to the works carried out since Capital and Revenue Accounts have been kept exclusive of what is assumed to be due to old irrigation works	7,37,614	
3. Accumulated net surplus revenue (exclusive of all that assumed to be due to old irrigation works) to end of 1894-95		2,02,71,596	
4. Total expenditure on Capital Account, both direct and indirect, which has secured the results shown above		17,84,258	
5. Year from which amounts against items 3 and 4 commenced to be calculated		1886-87	

GENERAL REMARKS.

The highest flood of the year was on the 23rd July 1894 when the water rose on the gauge of the dam at the head of the Cauvery to 10.2 feet and at the Cauvery and Vennar regulators on the 23rd July 1894 to 7.2 feet on the front gauge. The highest flood on record was in 1858 when it rose to 13.25 feet on the gauge at the head of the Cauvery dam.

No. 8.—SRIVAİKUNTAM ANICUT SYSTEM.

CAPITAL ACCOUNT.

Total outlay. Rupees 8,026 were spent during the year on works on open Capital account against a grant of Rs. 2,730. The total capital outlay including indirect charges to the end of the year was Rs. 14,61,028.

Progress of works. The raising of the crest of the Srivaikuntam anicut was completed, and the construction of a rest-house and out-houses at Puthukudi nearly so.

REVENUE ACCOUNT.

The charges on Revenue Account were—

Particulars.	Grant. *	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 601	Rs. 953	Rs. 352	Rs. 601
Maintenance and repairs	9,062	14,286	5,208	9,062
Establishment	8,432	14,190	6,010	8,171
Tools and plant	78	78	78	78
Total	18,017	29,411	11,667	17,744
Indirect charges	..	1,989	843	1,146
Total	..	31,400	12,500	18,900

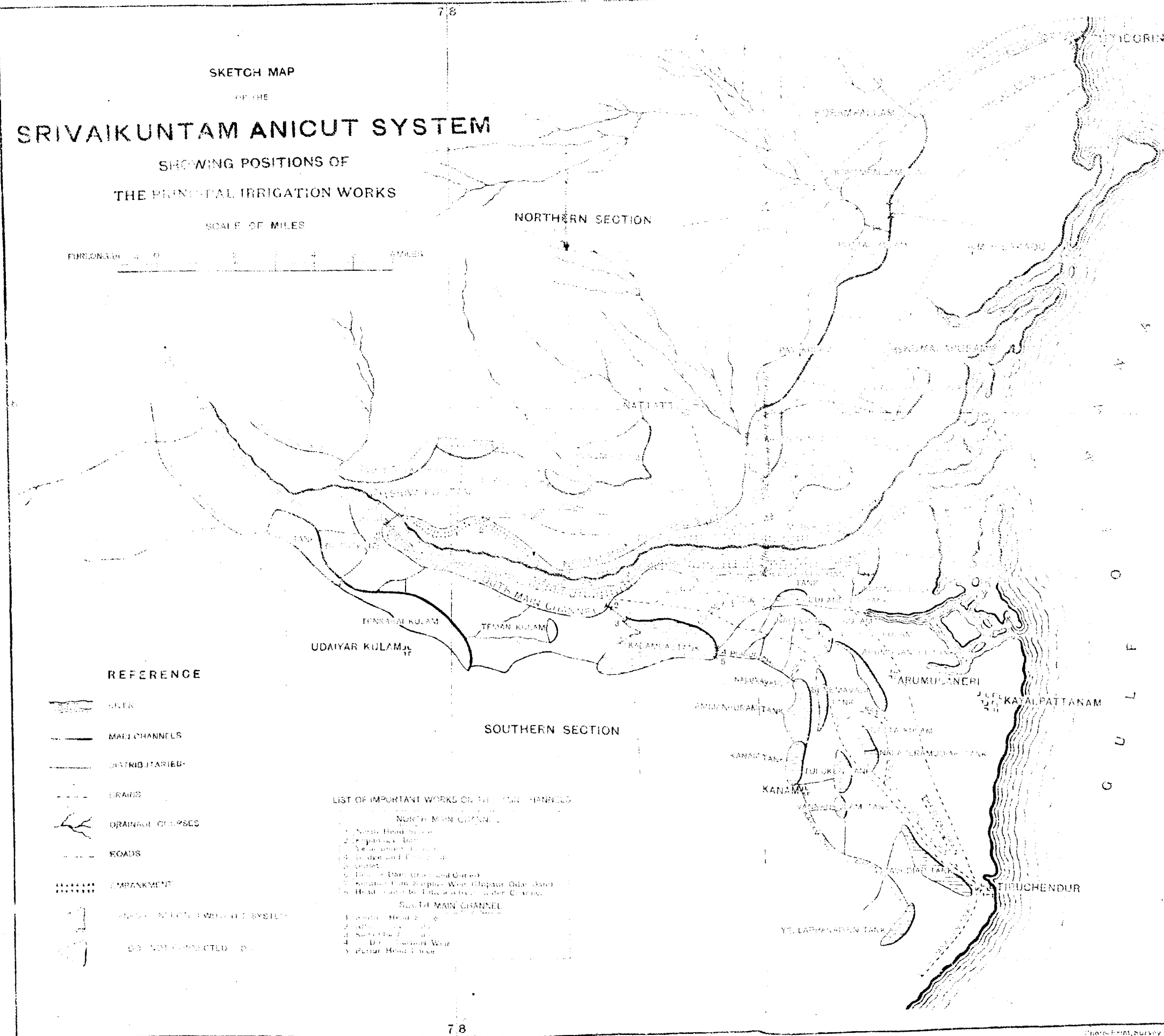
* Exclusive of grant for old maintenance charges.

Four works were completed and one work was in progress.

Sixteen repair works were completed and ten were in progress.

The charges for establishment amounted to Rs. 8,171 as shown below :—

22 per cent. on Expenditure	Rs. 2,323
10 do. on Direct revenue	156
6 do. on Indirect revenue	5,793
Total	8,171

Extensions and improvements.
Maintenance and repairs.
Establishment.

GENERAL REMARKS.

During the year water passed over the Srivaikuntam anicut for 20 days against 30 days in the preceding year. The highest level attained by the Tambraparni river was 2 feet over the crest on the 17th November 1894, the previous highest known flood being 11.75 feet above the former or 9.75 feet above the present crest level of the anicut.

No. 9.—PERIYAR PROJECT.

CAPITAL ACCOUNT.

The Secretary of State's sanction to the revised estimates for the project, amounting to Rs. 87,50,000, including indirect charges, submitted for sanction in February 1894, was communicated by the Government of India in October 1894.

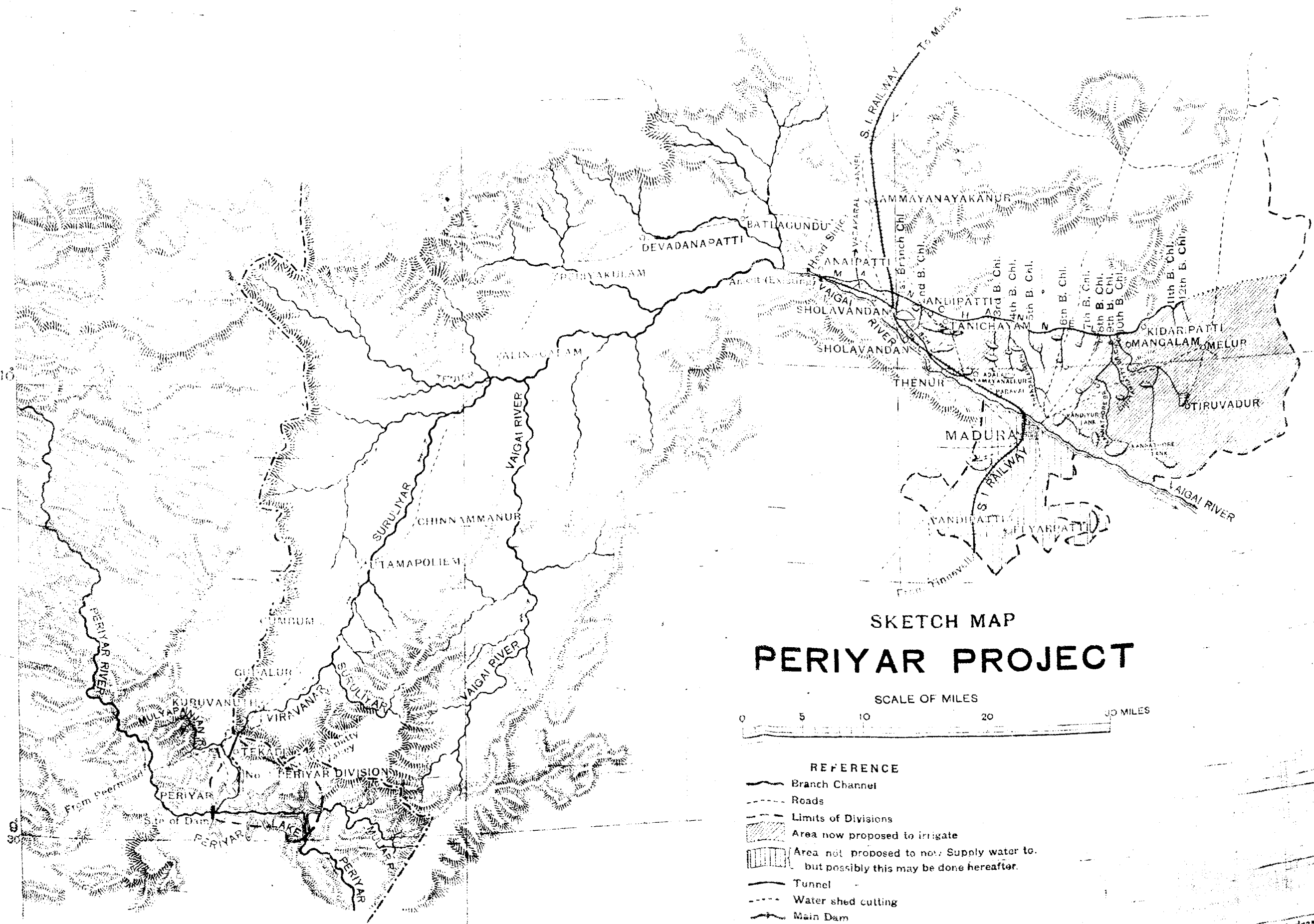
The expenditure on Capital Account of the Periyar project is shown in the sub-joined statement:—

Departmental heads.	Estimate.	Grant for 1894-95.	Expenditure during 1894-95.	Total expenditure to end of 1894-95.
	RS.	RS.	RS.	RS.
Direct charges.				
Works	63,26,000	6,64,102	7,05,915	63,85,595
Establishment	14,01,000	1,50,098	1,59,639	11,92,695
Tools and plant	7,57,000	95,800	97,281	7,89,987
Suspense account	..	..	807	..
Total	84,84,000	9,00,000	9,61,978	78,68,107
Less receipts on Capital Account	13,000	..	2,191	12,071
Net Total	84,71,000	9,00,000	9,59,787	78,56,936
Indirect charges.				
Capitalised abatement of land revenue	82,500	..	497	23,839
Leave and pension allowances	1,98,500	..	22,849	1,49,964
Total	2,79,000	..	22,776	1,84,963
Grand Total	87,50,000	..	9,82,563	75,40,999

The following is an epitome of the work carried out during the year:—

Main dam.—At the close of the season of 1893-94 the average level of the surface of the dam was 68 feet above the Periyar datum, which is 18 feet above the deepest part of the river bed, the lake surplus water passing off through two vents having their floors at 48 and 54 above this datum. During the previous season it had been decided to abandon the system, hitherto adopted, of passing the surplus through the dam by a series of vents having their floors at successive levels, and of raising the lake level *pari passu* with the dam, by closing and building up each vent in succession. Instead, it was decided to form a tunnel through the dam, having its floor at + 60, which should be arched over, and remain as a permanent surplus until the dam should be brought to such a height as should bring 3 vents in the left bank the escape (floor 110) and the watershed cutting (floor 115) into operation as passages for the surplus water. During July and August the tunnel in the dam was got ready, in August the vent at + 48 was closed and built up, and in September the vent at + 54 was closed and the water passed through the tunnel. By the end of March 1895 the levels of the surface of the dam had been brought, by uninterrupted progress, to the following:—

Front rubble wall crest	+ 118	throughout.
Rear do. do.	+ 115	do.
Concrete hearting	+ 114	do.
Average	+ 115	do.



SKETCH MAP
PERIYAR PROJECT

SCALE OF MILES
0 5 10 20 30 MILES

- REFERENCE
- Branch Channel
 - Roads
 - Limits of Divisions
 - Area now proposed to irrigate
 - Area not proposed to now Supply water to, but possibly this may be done hereafter.
 - Tunnel
 - Water shed cutting
 - Main Dam
 - District Boundary

In other words, its average height had been increased 47 feet during the season, representing an actual amount of 1,552,656 cubic feet of rubble and concrete in 256 working days, and giving an average of 6,065 cubic feet of both kinds per diem.

With the levels abovementioned, it was possible, at the end of the season, to permanently close the tunnel in the dam, so as to cause the lake to fill up during the recess of 1895 till it should reach the floor (at + 110) of certain temporary vents abovementioned in the left bank escape. These and the watershed cutting and tunnel would then pass the surplus till the dry weather of 1895-96 when the watershed tunnel would alone suffice for the purpose and the temporary vents in the left bank escape would be built up and the lake allowed to fill to its ultimate full level of + 144. The tunnel in the main dam having admirably served its purpose during the season under review, was accordingly closed in the first week of April 1895, first with the semi-cylindrical caisson which has played a part in several similar operations in the main dam, and, behind the caisson, with wooden shutters. Under this two-fold protection the tunnel was itself built up by electric light. This operation having been begun on the 2nd and completed on the 27th April 1895 does not strictly belong to the year under review, but is here mentioned as concluding the operations of the season 1894-95.

Left bank escape.—The original intention had been to raise the depression in the ground at the left flank of the main dam, by means of a minor masonry dam founded upon rock. The preliminary borings had disclosed what appeared to be rock at a moderate depth below ground level, the experience gained from the multifarious excavations made in connection with the various head works of this project constructed in the Periyar valley, had shown that though faults do occasionally occur in the rock formation these were but rare, and that, on the whole, the surface of the solid rock lies everywhere at a very small depth below the surface. There was, therefore, no reason to anticipate difficulty in obtaining a solid rock foundation for the "left bank escape" dam. Over a great part of the site the rock, as expected, was easily discovered. But at the left or southern flank a deep fault was struck. The excavation was continued into this, in the hope of finding a rock bottom, up to the close of the season under review. But it had by then become very doubtful whether the original plan should be pursued further. The alternative courses were three, viz., (1) to fill in the fault with well rammed earth, and while adhering to the original design of a masonry dam for the right or northern half of the work, where rock had been found, to substitute an earthen bank at the southern end, the bank being tongued into substantial masonry wings thrown out from the northern or masonry part of the work; (2) to construct an earthen bank across the left bank saddle abandoning all masonry and giving up the original design of passing surplus over this saddle; (3) to abandon the original site and all work done on it, and to construct a dam, either of masonry or of earth, or of both according as the foundations should indicate on an altogether different site.

These alternatives were under consideration at the close of the year, and meanwhile temporary arrangements were made to pass the lake surplus over this saddle when—the main dam tunnel having been closed as above described—the lake level should rise to the necessary height. It has since been determined to adopt the first of the three alternatives mentioned.

Watershed tunnel.—On the 31st March 1894 there remained about 280 feet to be pierced in order to complete this work. Work was resumed in July 1894 as soon as water-power became available, and on the 4th October the meeting between the southward and the northward borings was accurately effected with a horizontal error of 0.151 foot and a vertical error of 0.05 foot. The true length of the tunnel was also measured and found to be 5,701.06 feet as against 5,702.21 feet, the previously accepted length obtained by measurements overhead. A beginning was made with the masonry work at the mouth of the tunnel in connection with regulating sluices, and the ironwork for these sluices was received from England at the close of the year under report.

Minor works.—Of minor works the only considerable one was the construction of a bridge across the river below the dam to connect the bazaar, the hospital, the Magistrate's outcherry, the Police station, and the other more important public buildings, with the new site of the cooly camp on the south side of the river.

Madura Division.

Main Channel--1st Reach, 1 to 7½ miles.—Excavation was finished except removing a few barriers; three culverts at ½ mile, at 3 miles 3 furlongs, and at 3 miles 7 furlongs; gravelling the Natchikolan tank bund and repairs to Peranai rest-house and stables were completed. The outlet at 3 miles 2 furlongs, the repairs to surplus sluice at Ramarajapuram, the iron trough at 2 miles 7 furlongs and 3 miles 6 furlongs and the improvements to Natchikolan rest-house were in progress.

2nd Reach, 7½ to 10½ miles.—The main channel bank where low was raised.

3rd Reach, 10½ to 17 miles.—Improvements to the rest-house at Andipatty were completed.

4th Reach, 17 to 18½ miles.—The sheet iron trough at 17 miles 6 furlongs 100 feet was completed.

5th Reach, 18½ to 20½ miles.—The irrigation sluice at 18 miles 6 furlongs was completed.

6th, 7th, 8th, 9th and 10th Reaches, 20½ to 30½ miles.—The maintenance of the main channel was attended to and a stable constructed at Kallandry rest-house.

11th Reach, 30½ to 36 miles.—The excavation of the reach was nearly finished, one culvert and two superpassages were completed, and one fall, one outlet weir, one culvert, one superpassage, three iron troughs and the rest-house at Pullipatty with out-houses were in progress and almost completed.

12th Reach.—The excavation of the channel, which was in abeyance, was commenced at the end of the year.

Dist. Subdivisions.

No. I Branch Channel.—The aqueduct below Shokavandan tank, one culvert and a superpassage were in progress.

No. II and III Branch Channels.—Maintained in good order.

No. IV Branch Channel.—The excavation of the channel, six falls of Thandalay offtake and one road tunnel were completed.

No. V Branch Channel.—Ten falls and one road bridge completed and excavation of the main channel to the required length finished.

No. VI Branch Channel.—Four falls completed, and excavation approaching completion.

No. VII Branch Channel.—In abeyance.

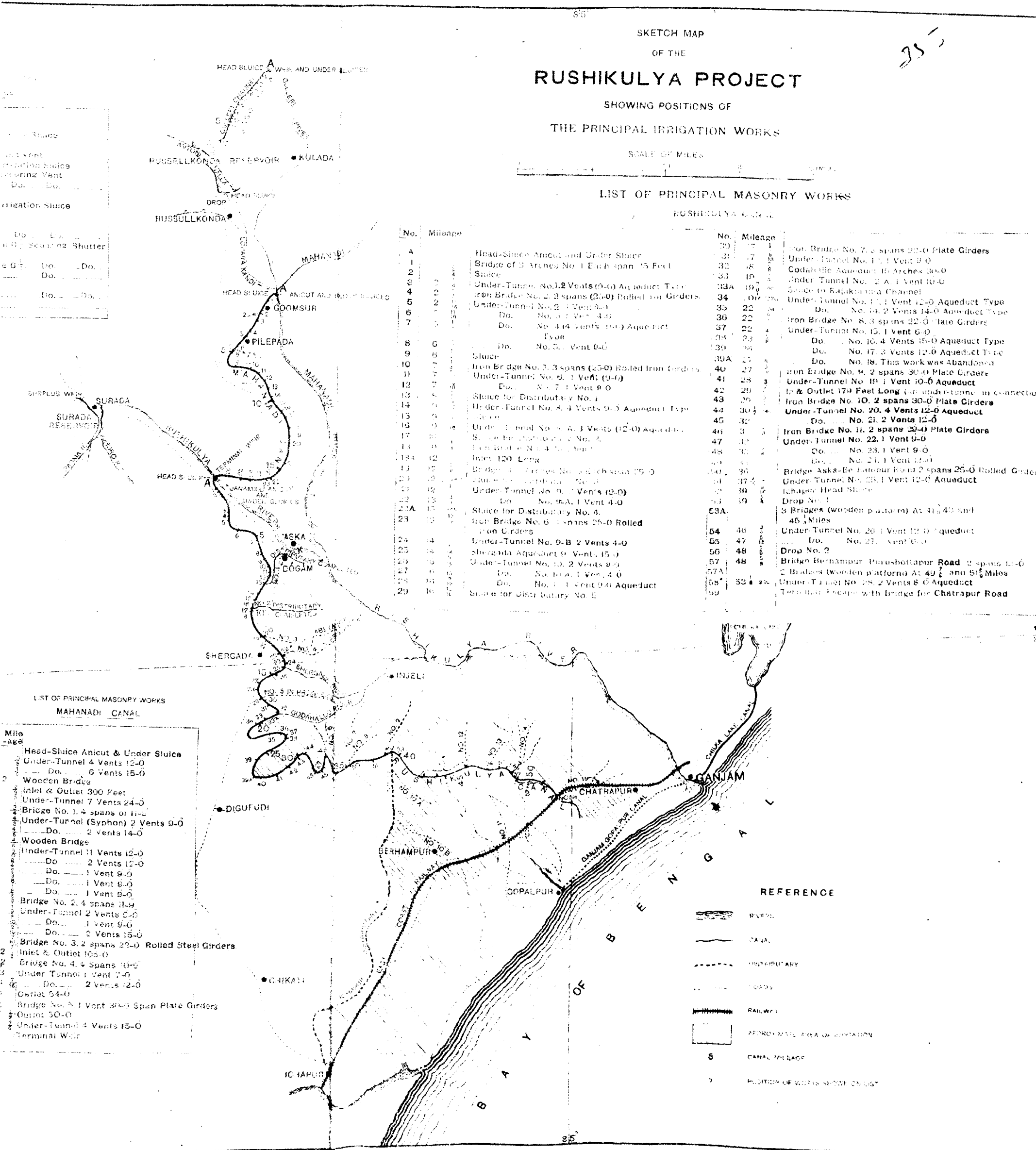
No. VIII Branch Channel.—Seven falls and sluices completed. Excavation of the channel in progress.

No. IX Branch Channel.—Sixteen falls, three road bridges, three superpassages, one skew tunnel and one road culvert completed. Six falls and sluices with bridge in progress. Excavation of the channel almost completed. The Kunuathore and Chittampatty offtakes have been finished, with the exception of some rock blasting. The Pappagudi offtake has been completed.

No. X Branch Channel.—Three falls, one superpassage and two masonry troughs completed. Twelve falls and sluices, four superpassages, one regulator and bridge were in progress. Excavation of the main channel and Tiruvadoor offtake has been finished with the exception of a few breaks at the masonry works.

GENERAL REMARKS.

No. I Periyar Division.—The sudden dispersion of all labour at the beginning of March 1894 had left the Periyar main dam in a state of progress unfit to stand the monsoon floods of the following July. It was therefore necessary, at some extra expense of health and money, to get a considerable amount of masonry work done during May and June, the two unhealthiest months of the year. Although somewhat impeded by a second outbreak of cholera at the end of April, this object was successfully accomplished. The cooly camp at Periyar, which had been entirely burnt down, partly by accident and partly for sanitary reasons at the time of the cholera outbreak in March, was also entirely rebuilt on a new site during the recess. On the 1st July the whole staff of officers and subordinates re-assembled at Periyar. Labour began to



assemble with more rapidity than usual, rising from about 2,000 at the beginning of July to about double that number in October, falling again to about 3,000 at the time of the Pongul festival in January 1895, and again rising to 4,000 in March, at the end of which month the numbers as usual fell in a few days to about 1,000.

Except, unhappily, in the one matter of fatal accidents, the season under review was in every respect by much the most prosperous yet recorded on the works. Of fatal accidents there were no less than six reported during the season. It is difficult to ascribe this unprecedentedly large number to anything but chance, for with the same supervising staff, in circumstances by no means less perilous, and with regulations less—rather than more—rigorous, the previous eighteen months had passed without a single fatal accident. The works were visited by the Chief Engineer in September 1894 and February and April 1895.

Conservancy.—The arrangements for sanitation were still further improved during the year under review, and it was probably for this reason, and possibly in part also from the adoption of the new and clean site for the cooly camp, that, notwithstanding a considerable number of isolated cases of cholera, no epidemic was experienced after the beginning of the working season. The hospital at Thekady was abolished at the end of 1893-94, that at Pariyar greatly increased in popularity, the following being its results for the year :—

Camp.	Average population.	Total treated.	Deaths.	Ratio of sick per 1,000 per annum.	Ratio of deaths per 1,000 per annum.
Pariyar	2,981	14,019	126	4,703	42.3

MAJOR (PROTECTIVE) WORK.

No. 10.—RUSHIKULYA PROJECT.

CAPITAL ACCOUNT.

The Secretary of State's sanction to the revised estimates for the project, amounting to Rs. 47,56,000, including indirect charges, submitted in January 1894, was communicated by the Government of India in September 1894.

The following statement shows the total of the sanctioned estimate, the grant and the outlay during, and up to the end of, the year :—

Departmental heads.	Amount of estimate.	Final grant for 1894-95.	Outlay during 1894-95.	Total outlay to end of 1894-95.
Direct Charges.	Rs.	Rs.	Rs.	Rs.
Works	34,86,000	2,37,217	2,46,169	29,93,397
Establishment	7,29,223	50,783	52,613	6,19,942
Tools and plant	1,51,774	12,000	11,366	1,36,345
Loss by exchange	4,947	..	..	3,409
Total	43,71,944	3,00,000	3,10,178	36,56,093
Less receipts on Capital Account	3,044	..	452	6,410
Net Total, Direct Charges	43,68,000	3,00,000	3,09,726	36,50,677
Indirect Charges.				
Capitalized abatement of land revenue	2,85,909	..	19,336	2,44,355
Leave and pension allowances	1,02,091	..	7,866	65,982
Total, Indirect Charges	3,88,000	..	26,702	3,80,207
Grand Total	47,56,000	..	3,36,428	40,10,684

Revised estimates sanctioned.

Grant and outlay.

The excess expenditure of Rs. 8,982 over the grant for works was due to the works in the Gulleri channel and the distributaries of the Rushikulya canal having been rapidly proceeded with owing to a sudden influx of labour.

Progress of
works.

The following were the principal works in hand :—

Mahánadi Section.

Gulleri anicut.—Completed with the exception of a small portion of revetment in the left upper wing.

Scouring sluice.—Fully completed.

Head sluice.—Completed with the exception of revetment in upper right wing.

Gulleri channel.—Almost all the earthwork was completed.

Syphon at 3½ miles, Gulleri channel.—All masonry work was completed with the exception of pointing and plastering to the arches and revetment.

Drop at 6¾ miles, Gulleri channel.—Work completed with the exception of revetment at the upper portion of parapet platform at the gearings and painting.

Weir at 5½ mile.—Work fully completed.

Minor masonry works of Gulleri channel.—Almost all the masonry works were completed with the exception of a few for which materials have been collected.

Russellkonda reservoir dam.—The whole work was completed with the exception of turbing a portion of slope and graveling the top of bund.

Russellkonda reservoir head sluice.—The whole work was fully completed.

Russellkonda reservoir surplus channel, road dam and road diversion.—Three-fourths of the earthwork of surplus channel was finished, materials for road dam were collected, road diversion was in progress.

Mahánadi canal.—The distributaries of the canal were under investigation and about 10 miles were surveyed and levelled.

Rushikulya Section.

Suradd reservoir dam.—Earthwork. The east dam has been raised to + 305.0 for one-half of the whole length and to + 295.0 for the other half (ultimate top level to be + 310.0).

The extension dam from pegs Nos. 1 to 39 has also been raised to + 305.0, except between pegs Nos. 11 to 22, where the dam is incomplete. Between pegs Nos. 39 and 59 it has been raised on an average to + 302.0 (top level here to be + 307.0), leaving a small gap at the site of the head sluice. From peg Nos. 59 to 110 the extension is practically completed.

Revetment.—In east, dam raised to + 296.0. Top level + 304.0. In extension, peg 1 to 29 raised to full height except between pegs 10 to 22. From peg 29 to 47 raised to + 297.0. From peg 50 to 110 complete slips occurred in the extension dam. These were repaired.

Suradd reservoir head sluice.—Surki, concrete and Portland cement foundations were completed, and the superstructure below the springing line of the arches about two-thirds finished.

Surplus weir, Suradd reservoir.—Practically completed.

Waste weir channel, Suradd reservoir.—About one half the earthwork was finished.

Rushikulya canal.—Work practically completed throughout its whole length (54½ miles). Serugada cutting was nearly completed. All the under-tunnels from Nos. 13 to 28 were fully completed and No. 8 A nearly so.

Bridges Nos. 8 to 15 and 17 to 19 were completed, besides the two drops. The terminal escape on Chatrapur road was nearly completed.

Ichchhāpuram channel.—Eight miles of the channel with masonry works completed. Bridges to carry Berhampur-Aska road and Berhampur-Digupudi road were also completed. Earthwork from 8 to 18 miles, outlets and under-tunnels at 15½ miles and aqueducts over Sonkia nalla and Madapur nalla were in progress. Materials for drops Nos. 1, 2 and 3 were collected and foundations of the drops were excavated.

Distributaries.

No. 7 Distributary.—Preliminary investigation and survey were started.

No. 8 Distributary.—The earthwork of the whole channel was practically completed and masonry works were approaching completion.

No. 9 Distributary.—Earthwork for the main channel and one branch was completed. Materials for masonry works were under collection.

No. 11 or Gumity Gopalpur channel.—Preliminary survey and investigation were in progress.

Nos. 12 and 15 Distributaries.—Investigation completed and land taken up.

No. 13 Distributary.—Investigation completed and two miles of earthwork also completed.

No. 14 Distributary.—Five miles with all masonry works were fully completed and the remaining one mile was in progress.

A Special Deputy Collector with his establishment was sanctioned by Government in June 1892 for acquiring the lands required for the distributaries and Gulleri and Ichchhāpuram channels. The retention of this establishment up to 30th September 1895 was sanctioned in January 1895. A sum of Rs. 11,207 was spent during the year on account of payment for land compensation. The total extent of land acquired during the year was 320 acres.

The budget provision of Rs. 2,000 was increased to Rs. 12,000 in February 1895. The expenditure under this head was incurred in constructing thirty 2nd-class iron ballacuts and in purchasing steel jumpers, crowbars, scientific instruments and on repairs and carriage of tools.

Machinery.—In March 1895, one mile of Decauville's tramway and twenty wagons were transferred to Kistna Western division. The cost of this tramway was originally charged to Russellkonda reservoir dam "Earthwork."

The net amount realized during the year was only Rs. 452, which represents the sale-proceeds of the usufruct of mango and tamarind trees, and firewood in the bed of Suradd and Russellkonda reservoirs, and assessment on lands let out for paddy and tobacco cultivation.

REVENUE ACCOUNT.

The charges on *Revenue Account* for the year were—

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. ..	Rs. ..	Rs. ..	Rs. ..
Maintenance and repairs	11,100	11,239	..	11,239
Establishment	2,553	2,687	..	2,687
Tools and plant	100	48	..	48
Total	13,753	13,974	..	13,974
Indirect charges	..	376	..	376
Total	..	14,350	..	14,350

The Janamilli and Goomsur anicuts and headworks and the completed portions of the Mahánadi and Rushikulya canals and Ichchhāpuram channel were repaired.

Acquisition
of land.

Tools and
plant.

Receipts on
capital
account.

Grant and
outlay.

Maintenance
and repairs.

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RUSHIKULYA PROJECT.

Establishment.

The charges for establishment amounted to Rs. 2,687 as shown below :—

23 per cent. of Expenditure	Rs. 2,585
10 do. on Direct Revenue	802
6 do. on Indirect Revenue	..
Total ..	2,687

Receipts in the Public Works Department.
Area irrigated and revenue derived.

The receipts collected in the Public Works Department amounted to Rs. 1,023.

The area and revenue compare as follows with those of the previous year :—

		Area occupied.	Area charged as irrigated.	Irrigation revenue.
First crop ..	1894-95 ..	27,412	27,380	47,144
	1893-94 ..	8,273	8,195	18,995
Second crop ..	1894-95 ..	9	9	10
	1893-94 ..	..	..	..

Enhanced share of land revenue.

The share of enhanced land revenue due to the works amounted to Rs. 6 as shown below :—

Land assessment on waste lands irrigated	Rs. 6
Do. on miscellaneous items	..
Total ..	6

The gross revenue and working expenses per acre amounted to Rs. 1.76 and Re. 0.57, respectively.

The following statement shows the financial results :—

Financial results.

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 13,974	Rs. 33,400	Direct receipts in the Public Works Department	Rs. 1,023	Rs. 1,023
Indirect charges	376	835	Irrigation revenue	47,154	69,980
Collection charges in the Civil department	1,316	2,194	Share of enhanced land revenue	6	31
Interest on capital outlay—			Total Receipts ..	48,183	71,034
Direct charges	1,41,032	6,71,217	Total Expenditure ..	1,58,698	7,07,756
Total expenditure ..	1,58,698	7,07,756	Deduct portion of revenue assessed to be due to "old irrigation" less old maintenance charges	20,850	34,380
Surplus revenue	1,29,365	6,63,852	Net Total ..	27,333	44,904
Total ..	27,333	44,904			

The working expenses inclusive of interest charges for the year exceeded the revenue by Rs. 1,29,365.

GENERAL REMARKS.

The progress of works during the year may fairly be regarded as satisfactory. The Russellkonda reservoir dam and head sluice were fully completed, and the latter was opened by His Excellency the Governor in October 1894.

PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1894-95.

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RUSHIKULYA PROJECT.

Water was let down the whole length of the Rushikulya canal in the latter part of August 1891.

As the financial success of the project greatly depends on the successful introduction of second crop cultivation, some agricultural experiments were commenced in the latter part of March 1894 and the paddy was reaped in June 1894.

WORKS FOR FAMINE RELIEF.

As the Government of India declined to continue to allot Imperial funds under Famine Relief and Insurance for the investigation of projects, the "A" and "D" project divisions were abolished at the end of the year 1883-84 and the "B" and "C" project divisions were ordered to continue, the cost being met from Provincial funds; but during 1886-87 the latter two divisions were also abolished from want of funds. Owing to the breaking up of the extra divisions, which had been specially appointed to prepare schemes for famine works, it has been impossible to comply with the provisions of the Famine Code, paragraph 27, but the matter has not been lost sight of. Lists of works available, or which possibly might soon be made available, in the Irrigation Branch are now drawn up by Collectors of Districts in communication with the officers of the Public Works Department and submitted to Government.

Programme of relief works.

43. PROVINCIAL—MINOR WORKS AND NAVIGATION.

MINOR WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.

CAPITAL ACCOUNT.

The capital expenditure was as follows :—

Grant and outlay.

Departmental heads.	Sanctioned estimate.	Final grant for 1894-95.	Outlay during 1894-95.	Total outlay to end of 1894-95.
Direct Charges.	Rs.	Rs.	Rs.	Rs.
Works	1,35,52,861	8,39,473	8,26,430	1,20,38,315
Establishment	31,42,421	72,000	73,392	28,07,840
Tools and plant	2,87,981	21,564	11,191	2,08,996
Total ..	1,69,83,213	4,33,036	4,11,013	1,50,64,951
Less receipts on Capital Account	1,966	..	..	3,855
Net Total ..	1,69,81,248	4,33,036	4,11,013	1,50,61,596
Indirect Charges.				
Capitalised abatement of land revenue	8,16,776	..	2,624	6,07,311
Leave and pension allowances	4,68,508	..	10,200	4,34,549
Total ..	12,85,284	..	12,824	10,41,860
Grand Total ..	1,82,66,532	..	4,23,837	1,60,93,456

The budget grant of Rs. 4,95,850 was reduced during the year to Rs. 4,33,036. The outlay fell short of the grant by Rs. 22,023. The short outlay occurred chiefly on the Sagileru project, the Buckingham canal and Thadapalli channel systems.

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MINOR WORKS, PUBLIC WORKS DEPARTMENT.

REVENUE ACCOUNT.

The charges on *Revenue Account* were as shown below :—

Departmental heads.	Grant.*		Outlay.		
	Budget.	Final.	Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 36,618	Rs. 24,596	Rs. 28,994	Rs. 6,120	Rs. 21,974
Maintenance and repairs	2,02,263	2,06,839	2,11,691	6,264	2,05,427
Establishment	66,943	65,821	66,872	2,845	64,027
Tools and plant	2,379	8,979	4,348	126	4,223*
Refunds of Revenue	1,600	..	..	..	..
Total	3,09,800	3,06,334	3,11,005	15,354	2,95,651
Indirect charges	..	..	10,860	896	10,464
Grand Total	..	..	3,21,865	16,750	3,06,105

* Exclusive of grant for old maintenance charges.

The total area irrigated for first and second crops was 463,064 acres against 471,676 acres in the previous year. The total revenue derived was Rs. 18,37,900 and deducting the working expenses which amounted to Rs. 3,66,774, the net revenue amounted to Rs. 14,71,126. Deducting the sum of Rs. 7,94,739 due to old irrigation, there was an increase of Rs. 6,76,387.

No interest is charged to any of the works under this class, and the return shown against them is irrespective of interest charges.

No. 11.—GANJAM MINOR RIVERS SYSTEM.

In November 1893 it was decided by Government that the existing river channels in the Chicacole taluk, Ganjam district, should be brought into the category of "Minor Works for which Capital and Revenue Accounts are kept" from 1st April 1894, and orders were issued for the preparation of plans and estimates for the complete restoration of these channels. During the year Rs. 5,357 were spent on repairs to the channels and Rs. 7,847 on repairs to the tanks connected with them. This outlay having, however, been included in the accounts of the Examiner of Public Works Accounts under "43. Minor Works for which neither Capital nor Revenue Accounts are kept, Public Works Department," the revenue derived from this system is included in the revenue derived from the works under that head.

No. 12.—MUNNIYERU PROJECT.

CAPITAL ACCOUNT.

The capital expenditure on the Munniyeru project was as follows :—

Departmental heads.	Sanctioned estimate.	Grant for 1894-95.	Outlay during 1894-95.	Outlay to end of 1894-95.
<i>Direct Charges.</i>	Rs.	Rs.	Rs.	Rs.
Works	2,95,500	30,325	30,760	30,760
Establishment	67,965	4,675	4,775	4,775
Tools and plant	4,535	..	..	..
Total	3,68,000	25,000	25,535	25,535
<i>Indirect Charges.</i>				
Capitalised abatement of land revenue	12,485	..	..	..
Leave and pension allowances	9,515	..	668	668
Total	22,000	..	668	668
Grand Total	3,90,000	..	26,203	26,203

PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1894-95.

MUNNIYERU PROJECT.

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Materials for constructing the ancient, head sluice and under-sluices were fully collected. The work of excavation for foundations of the ancient and diverting part of the water was commenced.

No. 13.—DONDAPAD TANK PROJECT.

CAPITAL ACCOUNT.

The capital expenditure on the Dondapad tank project was as follows :—

Departmental heads.	Sanctioned estimate.	Grant for 1894-95.	Outlay during 1894-95.	Outlay to end of 1894-95.
<i>Direct Charges.</i>	Rs.	Rs.	Rs.	Rs.
Works	1,04,193	29,399	29,407	29,407
Establishment	21,516	6,761	6,764	6,764
Tools and plant	1,484	..	..	..
Total	1,27,193	36,160	36,171	36,171
<i>Indirect Charges.</i>				
Capitalised abatement of land revenue	7,988	..	946	946
Leave and pension allowances	3,012	..	..	..
Total	11,000	..	946	946
Grand Total	1,38,193	..	37,117	37,117

Raising and strengthening Dondapad tank bund, constructing the surplus weir and head sluice to east side channel and excavating the east side channel were nearly completed. Raising and strengthening Nadigedda tank bund and byewash was two-thirds completed; but owing to failure of the revetment in places, it is anticipated that about half the revetment will have to be repacked after next monsoon. Excavating distributary from Nadigedda tank was in progress. The sluice to Nadigedda tank was nearly completed.

No. 14.—SAGILERU "UPPER PROJECT."

CAPITAL ACCOUNT.

The capital expenditure on the Sagileru "Upper project" is compared with the revised estimate for the project sanctioned by Government in November 1894 in the subjoined statement :—

Departmental heads.	Sanctioned estimate.	Grant for 1894-95.	Outlay during 1894-95.	Outlay to end of 1894-95.
<i>Direct Charges.</i>	Rs.	Rs.	Rs.	Rs.
Works	2,83,000	59,804	57,670	57,670
Establishment	63,753	13,755	13,166	13,166
Tools and plant	14,248	10,825	11,406	11,406
Total	3,61,000	84,384	82,242	82,242
<i>Indirect Charges.</i>				
Capitalised abatement of land revenue	8,925	..	..	..
Leave and pension allowances	7,075	..	1,843	1,843
Total	16,000	..	1,843	1,843
Grand Total	3,77,000	..	84,085	84,085

Progress of works.

The ancient, head and scouring sluices, bridges Nos. I and II, raising and widening Chintalapalli tank, diversion of Cumbum road, bridge over channel crossing Cumbum road and Porumamilla supply channel, were the principal works in progress. Materials were collected for the inlet at 1½ mile, Pulivagu syphon, pipe aqueduct in 0 mile 22 chains and aqueduct in 5th mile 77 chains. Escape No. 1 in 6th mile 22 chains and escape No. 2 in 7th mile 58 chains were completed.

Tools and plant.

The expenditure on tools and plant was incurred on the purchase of two engines of 12 and 8 horse power, a stone mortar mill, surki screens, lous, hand pump, crab-winch, &c.

No. 15.—CUMBUM TANK SYSTEM.

CAPITAL ACCOUNT.

Total outlay.

The construction of a combined scouring sluice and bridge at site of the Sekrail Kuthwa was in progress and an expenditure of Rs. 6,192 was incurred on the work during the year against a grant of Rs. 4,878. The total outlay, including indirect charges, to the end of the year was Rs. 55,875.

REVENUE ACCOUNT.

Grant and outlay.

The charges on *Revenue Account* were—

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 233	Rs. 170	..	Rs. 170
Maintenance and repairs	2,800	2,373	..	2,373
Establishment	697	585	..	585
Tools and plant	..	..	..	..
Total	3,730	3,128	..	3,128
Indirect charges	..	82	..	82
Grand Total	..	3,210	..	3,210

Maintenance and repairs.

Repairs to the Cumbam tank weir, Nakkalagundi, Chinna Cumbam and Pedda Cumbam channels were executed and breaches in the Sekrail Kuthwa channel were closed.

Establishment.

The charges for establishment amounted to Rs. 585 as shown below :—

23 per cent. on Expenditure	Rs. 585
10 do. on Direct revenue	..
Total	585

Area irrigated and revenue derived.

The irrigated area and revenue compare as follows with those of the previous year :—

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop .. { 1894-95	Acres. 5,674	Acres. 4,803	Acres. 846	Acres. 5,649	Rs. 23,502
Second crop .. { 1893-94	5,477	4,803	673	5,476	25,176
.. { 1894-95	5,795	2,646	3,119	4,765	18,615
.. { 1893-94	5,476	2,647	1,929	4,576	18,540

The share of enhanced land revenue due to the works amounted to Rs. 560 as shown below :—

Enhanced share of land revenue.

Land assessment on wastelands irrigated	Rs. 510
Do. on miscellaneous items	50
Total	560

The following statement shows the financial results :—

Financial results.

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 6,128	Rs. 62,317	Receipts in the Public Works Department	Rs. 42,517	Rs. 6,85,154
Indirect charges	82	4,338	Irrigation revenue	560	8,218
Collection charges in the Civil Department	635	8,212	Share of enhanced land revenue	..	..
Total expenditure and charges	8,845	74,867	Total receipts	42,077	6,93,367
Surplus revenue	8,867	88,875	Deduct portion of revenue assumed to be due to "old irrigation" and old maintenance charges	29,975	5,29,122
Total	12,702	1,64,215	Net Total	12,702	1,64,215

The actual return was 15.99 per cent. on the capital outlay.

No. 16.—THADAPALLI CHANNEL SYSTEM.

CAPITAL ACCOUNT.

The work "excavating side distributary along the left bank of the Thadapalli channel" was in progress on an estimate, amounting to Rs. 26,600, for direct charges, sanctioned by Government in November 1893. An expenditure of Rs. 3,219 was incurred on the work against a grant of Rs. 11,686. A sum of Rs. 6,700 reserved for payment of compensation for land was not paid by the Collector pending the disposal of a reference to the District Judge on the subject. The total capital outlay, including indirect charges, to the end of the year amounted to Rs. 93,552.

Grant and outlay.

REVENUE ACCOUNT.

The charges on *Revenue Account* were—

Grant and outlay.

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. ..	Rs. 61	..	Rs. 64
Maintenance and repairs	1,913	1,499	..	1,499
Establishment	453	394	..	394
Tools and plant	..	..	..	..
Total	2,819	1,952	..	1,952
Indirect charges	..	55	..	55
Grand Total	..	1,884	..	1,884

The expenditure under this head was incurred on the annual clearance of the channel, in repairing masonry works and re-constructing sluices.

Maintenance and repairs.

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THADAPALLI CHANNEL SYSTEM.

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Establishment.

The charges for establishment amounted to Rs. 394 as shown below :—

23 per cent. on Expenditure	Rs. 356
10 do. on Direct revenue	38
Total	394

Receipts in the Public Works Department.
Area irrigated and revenue derived.

The receipts collected in the Public Works Department amounted to Rs. 80.

The area irrigated and revenue derived compare with those of the previous year as follows :—

		Area occupied.	Area charged as irrigated.			Irrigation revenue.
			Old irrigation.	New irrigation.	Total.	
First crop	1894-95	14,223	2,979	4,063	14,042	1,01,465
	1893-94	14,261	10,090	4,164	14,164	1,00,744
Second crop	1894-95	603	157	446	603	2,852
	1893-94	465	207	258	465	1,330

Enhanced share of land revenue.

The share of enhanced land revenue due to the works amounted to Rs. 2,652 as shown below :—

Land assessment on waste lands irrigated	Rs. 2,589
Do. on miscellaneous items	63
Total	2,652

Financial results.

The following statement shows the financial results during, and to the end of, the year :—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 1,329	Rs. 2,59,518	Direct receipts in the Public Works Department	Rs. 80	607
Indirect charges	55	7,480	Irrigation revenue	1,03,817	26,41,167
Collection charges in the Civil Department	1,505	28,492	Share of enhanced land revenue	2,652	26,079
Total expenditure and charges	3,389	3,35,438	Total receipts	1,06,549	27,31,183
Surplus revenue	26,791	4,34,895	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	76,368	29,51,420
Total	30,180	7,70,333	Net Total	30,180	7,70,333

The actual return was 28.64 per cent. on the capital outlay.

No. 17.—ARKENKOTA CHANNEL SYSTEM.

CAPITAL ACCOUNT.

Total outlay.

The work of providing scouring sluices in the Mangamari surplus weir of the channel was completed. The total capital expenditure to the end of the year, including indirect charges, amounted to Rs. 1,02,064.

PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1894-95.

ARKENKOTA CHANNEL SYSTEM.

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REVENUE ACCOUNT.

The charges on Revenue Account were—

Grant and outlay.

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 463	Rs. 1	Rs. ..	Rs. 1
Maintenance and repairs	1,066	959	..	107
Establishment	337	216	..	121
Tools and plant	..	..	..	..
Total	1,866	1,206	..	1,206
Indirect charges	..	30	..	30
Grand Total	..	1,236	..	1,236

The annual clearance of the channel was executed.

The charges for establishment amounted to Rs. 216 as shown below :—

23 per cent. on Expenditure	Rs. 216
10 do. on Direct revenue	..
Total	216

Maintenance and repairs.
Establishment.

The area irrigated and revenue derived therefrom compare as follows with those of the previous year :—

Area irrigated and revenue derived.

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop	1894-95	4,120	1,473	4,075	27,734
	1893-94	4,115	1,420	4,070	26,847
Second crop	1894-95	91	86	91	383
	1893-94	48	40	48	159

The share of enhanced land revenue due to the works amounted to Rs. 340 as shown below :—

Enhanced share of land revenue.

Land assessment on waste lands irrigated	Rs. 342
Do. on miscellaneous items	7
Total	349

The following statement shows the financial results :—

Financial results.

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 1,206	Rs. 2,37,073	Direct receipts in the Public Works Department	Rs. ..	Rs. 2
Indirect charges	30	6,205	Irrigation revenue	28,116	8,36,226
Collection charges in the Civil Department	448	11,879	Share of enhanced land revenue	349	9,059
Total expenditure and charges	1,684	2,55,157	Total receipts	28,465	8,45,287
Surplus revenue	7,283	17,576	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	19,498	6,07,766
Total	8,967	2,37,631	Net Total	8,967	2,37,521

The actual return was 7.07 per cent. on the capital outlay.

No. 18.—KALINGAROYAN CHANNEL SYSTEM.

CAPITAL ACCOUNT.

Total
outlay.

There was no expenditure on Capital Account of this system during the year. The outlay, including indirect charges, to the end of the previous year was Rupees 60,278.

REVENUE ACCOUNT.

Grant and
outlay.

The charges on *Revenue Account* were—

Department heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 1,319	Rs. 804	Rs. ..	Rs. 804
Maintenance and repairs	1,900	1,007	..	1,007
Establishment	801	177	..	177
Tools and plant	..	..	..	..
Total	4,020	1,488	..	1,488
Indirect charges	..	25	..	25
Grand Total	..	1,513	..	1,513

The lapse under extensions and improvements is due to mismanagement and want of proper executive arrangements.

Maintenance
and repairs.

The expenditure was incurred on the annual clearance of the channel and on repairs to the main and Murrian anicut.

Establish-
ment.

The amount of establishment charges is made up of the following items:—

25 per cent. on Expenditure	Rs. 177
10 do. on Direct revenue	..
Total	177

Area irrigated
and revenue
derived.

The area irrigated and the revenue derived therefrom during the year compared with those of the previous year as shown below:—

	Area occupied.	Area charged as irrigated			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop .. { 1894-95	Acres. 11,247	Acres. 8,209	Acres. 3,037	Acres. 11,246	Rs. 68,468
{ 1893-94	11,284	8,365	2,918	11,283	67,486
Second crop .. { 1894-95	10,276	6,140	2,136	10,276	38,687
{ 1893-94	10,176	6,144	2,032	10,176	36,353

Enhanced
share of land
revenue.

The share of enhanced land revenue due to the works amounted to Rs. 411 as shown below:—

Land assessment on waste lands brought under irrigation	Rs. 335
Do. on miscellaneous items	26
Total	411

KALINGAROYAN CHANNEL SYSTEM.

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The following statement shows the financial results:—

Financial
results.

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 1,488	Rs. 4,76,984	Direct receipts in the Public Works Department	Rs. ..	Rs. 1,121
Indirect charges	25	12,484	Irrigation revenue	1,06,103	35,42,317
Collection charges in the Civil Department	1,086	26,061	Share of enhanced land revenue	411	8,094
Total expenditure and charges	2,599	5,09,529	Total receipts	1,06,514	35,62,732
Surplus revenue	19,129	1,07,160	Deduct portion of revenue <i>assessed</i> to be due to "old irrigation" less old maintenance charges	84,786	31,50,353
Total	21,728	4,02,379	Net Total	21,728	4,02,379

The actual return was 31.73 per cent. on the capital outlay.

GENERAL REMARKS.

Owing to funds not having been sanctioned by the Government of India, no work was done on the estimate of Rs. 8,71,000 sanctioned in January 1891 under "Major (Productive) Works" by the Secretary of State for further improvements and extension of the channel.

Estimate for
further im-
provements.

No. 19.—PALAR ANICUT SYSTEM.

CAPITAL ACCOUNT.

The capital expenditure on the system was as follows:—

Grant and
outlay.

Departmental heads.	Sanctioned estimate.	Grant for 1894-95.	Outlay during 1894-95.	Outlay to end of 1894-95.
<i>Direct Charges.</i>	Rs.	Rs.	Rs.	Rs.
Works	10,13,120	17,977	17,374	15,06,827
Establishment	4,16,138	3,079	3,734	3,96,132
Tools and plant	34,842	..	..	22,875
Total	14,64,100	21,056	21,108	19,35,314
<i>Indirect Charges.</i>				
Capitalized abatement of land revenue	17,147	..	1,758	18,431
Leave and pension allowances	81,851	..	523	81,633
Total	98,998	..	1,681	1,00,064
Grand Total	20,92,778	..	22,789	20,35,378

Providing screw-gearing shutters to the scouring vents of Palar anicut, extending Paramesvaramangalam weir, widening and deepening Takkolam channel, Peruvaiyayam branch channel head-sluice, under-tunnel and drop, Peruvaiyayam weir and tank regulator, cutting and embanking Peruvaiyayam channel, Nedumballi kondam, Kalapalambathi branch channel, under-tunnel and sluice to Vettankulam Agarvalam supply channel, Uthrapattu kondam, head-sluice to Ganapattupuram tank, weir to Nelvoy tank, head-sluice and sluice to Peddivalam channel, head-sluice and weir to Tennambakam tank, weir and sluice to Tennal tank, sluices, nine inlets and one outlet of Kukundi branch channel and division drops to Siruvalayam and Ulianellore tanks were completed. The rest-house at Panapakam was nearly completed.

Progress of
works.

The construction of a weir and new stone restment to Timrakali tank in the

REVENUE ACCOUNT.

The charges on Revenue Account were—

Departmental heads.	Grant.*	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 7,804	Rs. 7,327	Rs. 178	Rs. 7,149
Maintenance and repairs	86,719	41,408	2,409	38,999
Establishment	10,171	11,045	710	10,335
Tools and plant	4	4	4	4
Total	54,990	59,780	3,801	55,979
Indirect charges	..	8,017	99	2,918
Grand Total	..	62,797	3,900	68,897

* Exclusive of grant for old maintenance charges.

In the North Arcot division the under-tunnel to Kaveripak surplus channel was completed. Shutes and weirs to a few tanks were also constructed.

In the North Arcot division the works damaged by the cyclone of November 1893 were repaired and the usual annual repairs to head-works and channels were carried out. In the Chingleput division, 13 works were in progress, of which 8 were completed.

The charges for establishment amounted to Rs. 10,335 as shown below :—

Rs.	10,327
23 per cent. on Expenditure	103
10 do. on Direct revenue	..
Total	10,335

The receipts collected in the Public Works Department amounted to Rs. 1,077 against a budget and revised estimate of Rs. 1,400 and Rs. 2,300, respectively.

The area irrigated and the revenue derived therefrom during the year compare with those of the previous year as shown below :—

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop .. { 1894-95	ACS. 76,046	ACS. 53,184	ACS. 21,763	ACS. 74,947	Rs. 2,04,238
.. { 1893-94	76,368	52,710	23,016	74,726	2,01,478
Second crop .. { 1894-95	23,589	16,227	8,301	23,428	48,410
.. { 1893-94	26,105	15,408	10,641	26,049	54,156

The share of enhanced land revenue due to the works amounted to Rs. 16,091 as shown below :—

Rs.	16,677
Land assessment on waste lands brought under irrigation	383
Do. on miscellaneous items	31
Four per cent. on sale-proceeds of tank-bed lands	..
Total	16,091

The following statement shows the financial results :—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 52,780	Rs. 16,17,115	Direct receipts in the Public Works Department	Rs. 1,077	Rs. 16,542
Indirect charges	8,017	44,682	Irrigation revenue	2,52,648	62,74,650
Collection charges in the Civil Department	7,187	1,79,774	Share of enhanced land revenue	16,091	4,96,881
Total expenditure and charges	67,984	18,41,571	Total receipts	2,69,816	68,86,883
Surplus revenue	78,787	12,30,849	Deduct portion of revenue assessed to be due to "old irrigation," less old maintenance charges	1,21,106	37,58,170
Total	1,46,771	30,72,419	Net Total	1,48,711	30,98,413

The actual return was 3.87 per cent. on the capital outlay.

No. 20.—POINEY ANICUT SYSTEM.

CAPITAL ACCOUNT.

An expenditure of Rs. 431 was incurred during the year against a grant of Rs. 273 on the improvements to the western channel. The total outlay, including indirect charges, to the end of the year was Rs. 2,31,828.

REVENUE ACCOUNT.

The charges on Revenue Account for the year were—

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 2,500	Rs. 2,589	..	Rs. 2,589
Maintenance and repairs	19,537	19,540	..	19,540
Establishment	5,142	5,151	..	5,151
Tools and plant	..	..	..	..
Total	27,179	27,680	..	27,280
Indirect charges	..	738	..	738
Grand Total	..	28,018	..	28,018

Improvements to weirs to tanks and masonry works were carried out.

The tanks affected by the cyclone of November 1893 were repaired.

The charges for establishment amounted to Rs. 5,151 as shown below :—

Rs.	5,082
23 per cent. on Expenditure	69
10 do. on Direct revenue	..
Total	5,151

The receipts collected in the Public Works Department amounted to Rs. 689 against a budget and revised estimate of Rs. 500 and Rs. 740, respectively.

The area irrigated and revenue derived therefrom compare as follows with those of the previous year :—

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop .. { 1894-95	ACS. 23,784	ACS. 16,033	ACS. 7,028	ACS. 23,061	Rs. 72,347
.. { 1893-94	23,575	16,276	7,304	23,480	74,606
Second crop .. { 1894-95	4,891	2,325	2,495	4,820	14,224
.. { 1893-94	5,623	2,366	2,364	4,620	14,588

The share of enhanced land revenue due to the works amounted to Rs. 5,162 as shown below :—

Rs.	5,013
Land assessment on waste lands brought under irrigation	89
Do. on miscellaneous items	61
Four per cent. on sale-proceeds of tank-bed lands	..
Total	5,162

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POINNEY ANICUT SYSTEM.

Financial results.

The following statement shows the financial results:—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 27,280	Rs. 5,08,627	Direct receipts in the Public Works Department	Rs. 689	Rs. 2,581
Indirect charges	788	13,869	Irrigation revenue	84,971	21,46,368
Collection charges in the Civil Department	2,180	58,491	Share of enhanced land revenue	5,162	1,87,619
Total expenditure and charges.	20,198	5,60,477	Total receipts	90,823	22,87,168
Surplus revenue	14,085	5,92,023	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	46,539	11,14,663
Total	44,283	11,72,500	Net Total	44,283	11,72,500

The actual return was 6.07 per cent. on the capital outlay.

No. 21.—CHEYARU ANICUT SYSTEM.

CAPITAL ACCOUNT.

Total outlay.

The capital expenditure on the Cheyaru anicut system was as follows:—

Departmental heads.	Sanctioned estimate.	Grant for 1894-95.	Outlay during 1894-95.	Outlay to end of 1894-95.
Direct Charges.	Rs.	Rs.	Rs.	Rs.
Works	1,25,270	24,670	24,100	1,11,082
Est. blishment	28,500	5,000	5,391	56,000
Tools and plant	1,000	1,000	1,000	1,000
Total	1,54,770	30,670	30,491	1,68,082
Indirect Charges.				
Capitalized statement of land revenue			63	118
Leave and pension allowance			796	3,795
Total			859	3,913
Grand Total			31,350	1,71,995

Progress of work.

The expenditure during the year was incurred in providing new regulators, bridging the main channel, raising banks and improving sluices.

REVENUE ACCOUNT.

The charges on Revenue Account for the year were:—

Departmental heads.	Grand.	Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 2,327	Rs. 2,327	..	Rs. 2,327
Maintenance and repairs	18,247	18,247	..	18,247
Establishment	8,467	8,467	..	8,467
Total	29,041	29,041	..	29,041
Indirect charges	14,508	14,508	..	14,508
Grand Total	43,549	43,549	..	43,549

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CHEYARU ANICUT SYSTEM.

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Six works were completed.

Twenty-three repair works were completed.

The amount of establishment charges is made up of the following items:—

23 per cent. on Expenditure	Rs. 3,654
10 do. on Direct revenue	13
Total	3,667

Extensions and improvements.
Maintenance and repairs.
Establishment.

The receipts collected in the Public Works Department amounted to Rs. 129 in a budget and revised estimate of Rs. 200 and Rs. 130, respectively.

The area irrigated and revenue derived therefrom compare as follows with those the previous year:—

Receipts in the Public Works Department.
Area irrigated and revenue derived.

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
1st crop .. { 1894-95	ACS. 20,935	ACS. 16,538	ACS. 4,334	ACS. 20,372	Rs. 61,256
2nd crop .. { 1893-94	21,181	15,721	5,437	21,168	62,169
3rd crop .. { 1894-95	12,936	1,740	11,113	12,853	17,039
4th crop .. { 1893-94	14,055	1,769	12,270	14,939	20,194

The share of enhanced land revenue due to the works amounted to Rs. 3,320 as shown below:—

Enhanced share of land revenue.

Land assessment on waste lands irrigated	Rs. 3,192
Do. on miscellaneous items	113
Four per cent. on sale-proceeds of bank-bed lands	15
Total	3,320

The following statement shows the financial results during, and to the end of, year:—

Financial results.

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 19,031	Rs. 5,36,773	Direct receipts in the Public Works Department	Rs. 129	Rs. 1,013
Indirect charges	499	18,064	Irrigation revenue	78,395	19,26,405
Collection charges in the Civil Department	1,868	42,941	Share of enhanced land revenue	3,320	1,09,179
Total expenditure and charges	21,398	5,93,778	Total receipts	81,844	20,36,597
Surplus revenue	16,107	2,66,050	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	44,349	11,76,769
Total	37,505	8,59,828	Net Total	37,495	8,59,828

The actual return was 4.18 per cent. on the capital outlay.

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No. 22.—CHEMBRAMBAKAM TANK.

CAPITAL ACCOUNT.

Total outlay. Against a grant of Rs. 6,504 an expenditure of Rs. 5,902 was incurred during the year on improving the heads of the off-take channels along the old Bungaroo channel and Kuam river, which work was completed. The total outlay, including indirect charges, to the end of the year was Rs. 7,44,038 against a sanctioned estimate of Rs. 7,45,568.

REVENUE ACCOUNT.

Grant and outlay. The charges on Revenue Account were—

Departmental heads.	Grant.*	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements ..	Rs. 1,198	Rs. 1,260	Rs. 2,383	Rs. 1,923
Maintenance and repairs ..	123	3,119	3,097	22
Establishment ..	246	973	1,338	266
Tools and plant ..	199	..	109	109
Total ..	1,480	5,361	6,737	1,376
Indirect charges ..	..	186	173	87
Grand Total ..	..	5,487	6,900	1,413

* Exclusive of grant for old maintenance charges.

Extensions and improvements. Nos. 4 and 8 sluices were provided with screw-gearing shutters, and sluice No. 3 with an equilibrium valve. Maintenance and repairs. In addition to the annual maintenance of the system, the work of revetting the bank of the old Bungaroo channel was in progress. Establishment. The amount of establishment charges is made up of the following items:—

23 per cent. on Expenditure ..	Rs. 271
10 do. on Direct revenue ..	6
Total ..	266

Receipts in the Public Works Department. The receipts collected in the Public Works Department amounted to Rs. 50 against a budget and revised estimate of Rs. 30 and Rs. 10, respectively.

Area irrigated and revenue derived. The area irrigated and revenue derived therefrom compare as follows with those of the previous year:—

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop .. 1894-95 ..	ACR. 12,028	ACR. 10,327	ACR. 1,238	ACR. 11,565	Rs. 58,590
Second crop .. 1893-94 ..	12,344	11,266	1,398	12,664	59,457
First crop .. 1894-95 ..	12,028	1,186	2,789	3,975	19,358
Second crop .. 1893-94 ..	12,344	1,163	4,252	5,415	26,952

Enhanced share of land revenue. The share of enhanced land revenue due to the works amounted to Rs. 882 as shown below:—

Land assessment of waste lands irrigated ..	Rs. 814
Do. on miscellaneous items ..	68
Total ..	882

CHEMBRAMBAKAM TANK.

The following statement shows the financial results:—

Financial results.

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
	Rs.	Rs.		Rs.	Rs.
Direct charges ..	6,351	2,48,616	Direct receipts in the Public Works Department ..	50	1,061
Indirect charges ..	136	11,200	Irrigation revenue ..	88,148	10,34,087
Collection charges in the Civil Department ..	1,151	41,528	Share of enhanced land revenue ..	882	14,038
Total expenditure and charges ..	6,638	3,01,344	Total receipts ..	39,080	10,49,182
Surplus revenue ..	23,342	5,49,002	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges ..	9,100	1,98,836
Total ..	29,980	8,50,346	Net Total ..	29,980	8,50,346

The actual return was 3.14 per cent. on the capital outlay.

No. 23.—MADRAS WATER-SUPPLY AND IRRIGATION EXTENSION.

CAPITAL ACCOUNT.

There was no outlay on Capital Account of this system during the year. The total outlay, including indirect charges, to the end of the previous year was Rupees 17,54,045 against a sanctioned estimate of Rs. 18,25,615. A report on the closure of the construction estimate of the project was forwarded to the Government of India in February 1895.

Total outlay.

REVENUE ACCOUNT.

The charges on Revenue Account were—

Grant and outlay.

	Grant.*	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements ..	Rs. 3,290	Rs. 3,009	Rs. 3,600	Rs. 3,291
Maintenance and repairs ..	6,015	6,214	200	6,014
Establishment ..	1,866	2,613	870	1,973
Tools and plant ..	6	..	10	10
Total ..	4,686	9,366	4,680	4,686
Indirect charges ..	..	398	120	278
Grand Total ..	..	9,764	4,800	4,964

* Exclusive of grant for old maintenance charges.

Weirs in rear of the sluices in the Red Hills tank were constructed for the purpose of determining the actual quantity of water required for irrigation.

Three repair works were completed.

The charges for establishment amounted to Rs. 1,973 as shown below:—

23 per cent. on Expenditure ..	Rs. 627
10 do. on Direct revenue ..	1,346
Total ..	1,973

Extensions and improvements. Maintenance and repairs. Establishment.

ADMINISTRATION REPORT OF THE
TIRUKKOVILUR ANICUT SYSTEM.
REVENUE ACCOUNT.

Grant and
outlay.

The charges on Revenue Account for the year were—

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 2,453	Rs. 2,516	Rs. ..	Rs. 2,516
Maintenance and repairs	9,400	8,898	..	8,898
Establishment	2,789	2,628	..	2,628
Tools and plant	..	..	..	..
Total	14,652	13,514	..	13,514
Indirect charges	..	..	..	268
Grand Total	..	14,203	..	14,308

Extensions
and improve-
ments.
Maintenance
and repairs.
Establish-
ment.

A weir to Arasur-Mamandur tank and a rough stone escape in Koovagam tank were constructed. Six other works were in progress. Seventeen works were in progress.

The charges for establishment amounted to Rs. 2,628 as shown below :—

28 per cent. on Expenditure	Rs. 2,579
10 do. on Direct revenue	49
Total	2,628

Receipts in
the Public
Works
Department.
Area irriga-
ted and
revenue
derived.

*The receipts in the Public Works Department amounted to Rs. 494 against a revised estimate of Rs. 300.

The area irrigated and revenue derived therefrom compare with those of the previous year as follows :—

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop .. (1894-95)	ACS. 22,828	ACS. 16,023	ACS. 6,773	ACS. 22,796	Rs. 12,048
.. (1893-94)	23,688	17,009	6,636	23,644	10,531
Second crop .. (1894-95)	8,533	15	3,521	8,536	194
.. (1893-94)	4,356	14	4,340	4,354	350

Enhanced
share of land
revenue.

The share of enhanced land revenue due to the works amounted to Rs. 3,171 as shown below :—

Increments to the land assessment after the lands were brought under irrigation	Rs. 2,991
Land assessment on waste lands brought under irrigation	180
Total	3,171

Financial
results.

The following statement shows the financial results :—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 12,840	Rs. 8,61,536	Direct receipts in the Public Works Department	Rs. 494	Rs. 1,095
Indirect charges	368	9,495	Irrigation revenue	93,899	20,78,704
Collection charges in the Civil Department	1,926	35,387	Share of enhanced land revenue	3,171	72,645
Total expenditure and charges	15,134	9,06,418	Total receipts	97,564	21,46,044
Surplus revenue	22,278	3,04,023	Deduct portion of revenue accounted to be due to "old irrigation" less old maintenance charges	58,551	14,35,008
Total	37,412	7,10,441	Net Total	39,013	7,10,441

The actual return was 8.99 per cent. on the capital outlay.

No. 26.—MEHAMATTUR ANICUT SYSTEM.

CAPITAL ACCOUNT.

There was no expenditure on Capital Account of this system during the year. Total outlay. The total expenditure, including indirect charges, remained, as at the end of the previous year, at Rs. 71,047.

REVENUE ACCOUNT.

The charges on Revenue Account were—

Grant and
outlay.

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 230	Rs. 186	Rs. ..	Rs. 186
Maintenance and repairs	2,400	2,354	..	2,354
Establishment	608	540	..	540
Tools and plant	..	..	..	..
Total	3,238	3,080	..	3,080
Indirect charges	..	76	..	76
Grand Total	..	3,156	..	3,156

The reconstruction of two sluices in the Sothakodal tank was in progress.

Extensions
and improve-
ments.

Five works were carried out, including closing breaches and embanking the ancient main channel, to prevent flooding of the Salem frontier road.

Maintenance
and repairs.

The charges for establishment amounted to Rs. 540 as shown below :—

Establish-
ment.

28 per cent. on Expenditure	Rs. 538
10 do. on Direct revenue	2
Total	540

The receipts collected in the Public Works Department amounted to Rs. 20.

Receipts in
the Public
Works
Department.

The area irrigated and revenue derived therefrom compare as follows with those of the previous year :—

Area irrigated
and revenue
derived.

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop .. (1894-95)	ACS. 2,552	ACS. 447	ACS. 2,405	ACS. 2,852	Rs. 12,048
.. (1893-94)	2,533	447	2,936	2,533	10,531
Second crop .. (1894-95)	65	..	65	65	194
.. (1893-94)	94	..	94	94	350

The share of enhanced land revenue due to the works amounted to Rs. 36 as shown below :—

Enhanced
share of land
revenue.

Land assessment on waste lands irrigated	Rs. 9
Do. on miscellaneous items	27
Total	36

ADMINISTRATION REPORT OF THE

MEHAMATTUR ANICUT SYSTEM.

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Financial results.

The following statement shows the financial results :—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 3,040	Rs. 1,22,317	Receipts in the Public Works Department	Rs. 20	Rs. 2
Indirect charges	76	3,310	Irrigation revenue	12,342	2,11,3
Collection charges in the Civil Department	515	8,774	Share of enhanced land revenue	86	1,7
Total expenditure and charges	3,631	1,34,301	Total receipts	12,398	2,13,2
Surplus revenue	6,643	41,316	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	2,084	37,6
Total	10,314	1,75,617	Net Total	10,314	1,75,6

The actual return was 9.35 per cent. on the capital outlay.

No. 27.—VRIDDHACHALAM ANICUT SYSTEM.

CAPITAL ACCOUNT.

Total outlay. There was no expenditure on Capital Account of this system during the year. The total expenditure including indirect charges remained, as at the end of the previous year, at Rs. 49,737.

REVENUE ACCOUNT.

Grant and outlay. The charges on Revenue Account were—

Departmental heads.	* Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 490	Rs. 440	..	Rs. 440
Maintenance and repairs... ..	3,000	2,978	..	2,978
Establishment	807	792	..	792
Tools and plant	..	..	..	..
Total	4,297	4,210	..	4,210
Indirect charges	..	111	..	111
Grand Total	..	4,321	..	4,321

Extensions and improvements. A road dam on the 4th mile of the road from Vriddhachalam to Porto Novo was constructed.

Maintenance and repairs. The rough stone apron in rear of the anicut and the weir of the Sathapadi tank were repaired. The anicut, channels and tanks under the system were maintained in good order.

Establishment. The amount of establishment charges is made up of the following items :—

25 per cent. on Expenditure	Rs. 787
10 do. on Direct revenue	5
Total	792

PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1894-95.

VRIDDHACHALAM ANICUT SYSTEM.

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* The receipts collected in the Public Works Department amounted to Rs. 55 against a revised estimate of Rs. 50.

The area irrigated and revenue derived therefrom compare as follows with those of the previous year :—

Receipts in the Public Works Department. Area irrigated and revenue derived.

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
	ACS.	ACS.	ACS.	ACS.	RS.
First crop .. (1894-95)	6,363	2,395	3,968	6,363	21,311
.. (1893-94)	6,002	2,416	3,586	6,002	22,056
Second crop .. (1894-95)	217	..	247	247	777
.. (1893-94)	257	..	357	357	1,196

The share of enhanced land revenue due to the works amounted to Rs. 276 as shown below :—

Enhanced share of land revenue.

Land assessment on waste lands irrigated	Rs. 184
Do. on miscellaneous items	92
Total	276

The following statement shows the financial results :—

Financial results.

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 4,210	Rs. 1,17,001	Direct receipts in the Public Works Department	Rs. 55	Rs. 171
Indirect charges	111	3,091	Irrigation revenue	25,088	4,32,654
Collection charges in the Civil Department	845	14,974	Share of enhanced land revenue	276	11,683
Total expenditure and charges	5,166	1,35,156	Total receipts	25,419	4,44,508
Surplus revenue	11,790	1,61,480	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	8,463	1,44,872
Total	16,956	2,96,636	Net Total	16,956	2,99,636

The actual return was 23.7 per cent. on the capital outlay.

No. 28.—SHATIATOPE ANICUT SYSTEM.

CAPITAL ACCOUNT.

Against a grant of Rs. 17,008 for works on Capital Account, an outlay of Rupees 16,547 was incurred. The total outlay, including indirect charges, to the end of the year was Rs. 1,36,047. The construction estimate of the system was closed on the 31st March 1895.

Total outlay.

A road dam at the 133rd mile of trunk road No. 9 and a store-shed at the Shatiatope anicut were constructed. Materials to the value of Rs. 357 were collected for constructing sheds for the Superintendent and lascars at the anicut.

Progress of works.

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SHATTAPORE ANICUT SYSTEM.

REVENUE ACCOUNT.

The charges on Revenue Account were—

Grant and outlay.

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 904	Rs. 804	.. .. .	Rs. 904
Maintenance and repairs	6,300	6,200	.. .. .	6,300
Establishment	1,681	1,612	.. .. .	1,612
Tools and plant .. .. .	.. .. .	.. .. .	.. .. .	.. .. .
Total	8,885	8,716	.. .. .	8,716
Indirect charges .. .. .	.. .. .	226	.. .. .	226
Grand Total .. .. .	.. .. .	8,941	.. .. .	8,941

A masonry dam at the head of the Veenai voikal and five irrigation sluices at the head of the main branches in the left branch of the Manambatham channel were constructed and the Kalliankuppam channel was extended.

Clearing silt and improving Alamalungapuram branch channel, cutting a head to Alachigudi branch channel and constructing revetment in connection with the Komaraoduppu were carried out, besides the maintenance of the channel and tanks.

The charges for establishment amounted to Rs. 1,612 as shown below :—

23 per cent. on Expenditure	Rs. 31
10 do. on Direct revenue	1,581
Total	1,612

The receipts collected in the Public Works Department amounted to Rs. 315 against a revised estimate of Rs. 250.

The area irrigated and revenue derived therefrom compare as follows with those of the previous year :—

		Area charged as irrigated.			Irrigation revenue.
		Area occupied.	Old irrigation.	New irrigation.	
First crop	1894-95	Acres. 28,658	Acres. 7,200	Acres. 21,318	Rs. 28,608
Second crop	1894-95	Acres. 28,342	Acres. 7,244	Acres. 21,018	Rs. 28,207
.. .. .	1894-95	Acres. 28,388	Acres. 7,318	Acres. 21,018	Rs. 28,207
.. .. .	1894-95	Acres. 28,342	Acres. 7,244	Acres. 21,018	Rs. 28,207

The share of enhanced land revenue due to the works amounted to Rs. 15,141 as shown below :—

Land assessment on waste lands irrigated	Rs. 14,617
Do. on miscellaneous items	524
Total	15,141

The following statement shows the financial results :—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 8,716	Rs. 4,70,124	Direct receipts in the Public Works Department	Rs. 315	Rs. 247
Indirect charges	226	12,312	.. .. .	.. .. .	.. .. .
Collection charges in the Civil Department	6,071	1,18,527	.. .. .	.. .. .	.. .. .
Total expenditure and charges	14,012	5,91,038	.. .. .	.. .. .	.. .. .
Surplus revenue	87,716	17,71,843	.. .. .	.. .. .	.. .. .
Total	1,01,728	23,72,876	Total receipts	1,21,750	28,53,577
			Deduct portion of revenue assessed to be due to "old irrigation" less old maintenance charges	20,027	4,70,701
			Net Total	1,01,728	23,72,876

The actual return was 64.47 per cent. on the capital outlay.

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No. 29.—PELANDORAI ANICUT SYSTEM.

CAPITAL ACCOUNT.

Rupees 1,952 were spent during the year in reconstructing the store and lasears' sheds at the anicut. The total outlay, including indirect charges, to the end of the year was Rs. 4,53,931 against a sanctioned estimate of Rs. 4,62,286.

REVENUE ACCOUNT.

The charges on Revenue Account were—

Grant and outlay.

Departmental heads.	Grant.*	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 303	Rs. 322	Rs. 30	Rs. 363
Maintenance and repairs	6,062	6,721	68	6,663
Establishment	1,646	1,670	27	1,613
Tools and plant	2	.. .. .	2	.. .. .
Total	8,669	8,815	126	8,667
Indirect charges .. .. .	.. .. .	254	1	240
Grand Total .. .. .	.. .. .	9,047	126	8,897

* Rs. 303 of grant for old maintenance charges.

Three works were completed

Alterations and repairs to the anicut, repairs to lasears' sheds along the main channel and repairs to the inspection bungalow at the anicut were executed. Breaches in tanks and channels were closed, and the maintenance of the anicut head-sluice, main and branch channels and tanks were carried out.

The amount of establishment charges is made up of the following items :—

23 per cent. on Expenditure	Rs. 27
10 do. on Direct revenue	1,616
Total	1,643

The receipts collected in the Public Works Department amounted to Rs. 273 against a budget and revised estimate of Rs. 200 and Rs. 300, respectively.

The area irrigated and revenue derived therefrom compare as follows with those of the previous year :—

		Area occupied.	Area charged as irrigated.			Irrigation revenue.
			Old irrigation.	New irrigation.	Total.	
First crop	1894-95	Acres. 8,700	Acres. 2,062	Acres. 6,638	Acres. 8,700	Rs. 21,398
Second crop	1894-95	Acres. 8,445	Acres. 2,069	Acres. 6,376	Acres. 8,445	Rs. 21,109
.. .. .	1894-95	Acres. 101	Acres. 85	Acres. 16	Acres. 101	Rs. 248
.. .. .	1894-95	Acres. 222	Acres. 95	Acres. 127	Acres. 222	Rs. 542

The share of enhanced land revenue due to the works amounted to Rs. 183 as shown below :—

Land assessment on waste lands irrigated	Rs. 126
Do. on miscellaneous items	57
Total	183

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PELANDORAI ANICUT SYSTEM.

Financial results.

The subjoined statement exhibits the financial results :—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
	RS.	RS.		RS.	RS.
Direct charges	8,815	4,28,328	Direct receipts in the Public Works Department ..	273	1,517
Indirect charges	234	16,065	Irrigation revenue	31,540	2,63,370
Collection charges in the Civil Department	1,451	10,065	Share of enhanced land revenue ..	182	2,361
Total expenditure and charges	10,499	4,55,358			
Surplus revenue	18,048	2,47,403			
			Total receipts	32,992	2,67,248
			Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	2,450	69,293
Total	20,446	2,97,955	Net Total	29,440	2,97,955

The actual return was 4.17 per cent. on the capital outlay.

No. 30.—LOWER COLEROON ANICUT SYSTEM.

CAPITAL ACCOUNT.

Total outlay.

Against a grant of Rs. 7,608, an expenditure of Rs. 8,089 was incurred during the year in fitting screw-gearing shutters to the regulators across Khan Sahib's canal, for compensation for land taken up for the improvements to the Oosi voikal to supplement the supply to the Pudumanayar and for putting an experimental set of shutters into the Lower Coleroon anicut. Compensation for land taken up in the bed of the Veeranam tank was also paid. The total capital outlay, including indirect charges, to the end of the year was Rs. 5,73,826.

REVENUE ACCOUNT.

Grant and outlay.

The charges on Revenue Account were—

Departmental heads.	Grant.	Charges.	Deduct old maintenance charges.	Net.
	RS.	RS.	RS.	RS.
Extensions and improvements	3,875	3,931	..	3,934
Maintenance and repairs	18,860	18,739	..	18,739
Establishment	5,387	5,061	..	5,061
Tools and plant	..	..	..	..
Total	28,062	27,734	..	27,734
Indirect charges	..	709	..	709
Grand Total	..	28,443	..	28,443

PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1894-95.

LOWER COLEROON ANICUT SYSTEM.

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In the South Arcot division six works were in progress. In the Tanjore division five works were in progress, of which one work was completed, viz., "Providing screw-gearing shutters to south Rajan voikal."

In the South Arcot division 10 works were carried out, in addition to the maintenance of the main and branch channels of the Veeranam tank. In the Tanjore division 16 works were in progress, of which 11 were completed.

The charges for establishment amounted to Rs. 5,061 as shown below :—

23 per cent. on Expenditure	Rs. 4,339
10 do. on Direct revenue	162
	5,061

The receipts collected in the Public Works Department amounted to Rs. 1,619 against a budget and revised estimate of Rs. 900 and Rs. 1,100, respectively.

The area irrigated and revenue derived therefrom compare as follows with those of the previous year :—

	Area occupied.	Area changed as irrigated.			
		Old irrigation.	New irrigation.	Total.	Irrigation revenue.
	ACS.	ACS.	ACS.	ACS.	RS.
First crop .. (1894-95	167,035	44,837	62,680	107,917	3,70,930
.. (1893-94	106,691	44,419	62,026	106,145	3,63,984
Second crop .. (1894-95	4,651	..	4,849	4,849	14,869
.. (1893-94	6,215	..	6,215	6,215	19,214

The share of enhanced land revenue due to the works amounted to Rs. 53,933 as shown below :—

Land assessment on waste lands irrigated	Rs. 53,401
Do. on miscellaneous items	532
	53,933

The following statement shows the financial results :—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
	RS.	RS.		RS.	RS.
Direct charges	27,734	9,96,941	Direct receipts in the Public Works Department ..	1,619	5,211
Indirect charges	709	29,144	Irrigation revenue	2,85,789	2,31,38,665
Collection charges in the Civil Department	14,721	4,95,602	Share of enhanced land revenue ..	53,933	21,26,476
Total expenditure and charges	42,164	15,21,687	Total receipts	4,41,341	1,62,70,352
Surplus revenue	2,62,875	83,85,665	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	1,45,802	53,53,100
Total	2,96,039	99,17,252	Net Total	2,96,039	99,17,252

The actual return was 44.07 per cent. on the capital outlay.

GENERAL REMARKS.

The greatest depth of water over the Lower Coleroon anicut during the year was 5 feet on the north, and 5 feet on the south branch. The highest flood recorded is 11.5 feet on the north, and 12.0 feet on the south branch and this occurred in 1858.

No. 31.—NANDYAR CHANNEL.

CAPITAL ACCOUNT.

Classification
of work.

The Government of India decided in February 1895 that the Nandyar channel should be brought into the category of "Minor Works for which Capital and Revenue Accounts are kept." The outlay during the year and that previously incurred on the extension of the channel under "Minor Works for which neither Capital nor Revenue Accounts are kept, Public Works Department," has not been written back to the former head in the accounts of the Examiner of Public Works Accounts. A revised estimate for the work amounting to Rs. 55,000, including indirect charges, was sanctioned by Government in March 1895.

Progress of
work.

The head sluice and the extension of the channel were nearly half finished. Two drops were three-fourths completed. The construction of the aqueduct over Mandai was commenced. Three bridges were almost completed. The earth-work improvements to the channel were three-fourths done.

No. 32.—MARADUR ANICUT SYSTEM.

CAPITAL ACCOUNT.

Total outlay.

There was neither grant nor outlay on Capital Account of this system during the year. The outlay to the end of the previous year amounted to Rs. 41,135.

REVENUE ACCOUNT.

Grant and
outlay.

The charges on Revenue Account were—

Departmental heads.	Grant.	Gross.	Less old maintenance charges.	Net.
Extensions and improvements	Rs. 496	Rs. 496	..	Rs. 496
Maintenance and repairs	10,000	10,000	..	10,000
Establishment	2,434	2,434	..	2,434
Tools and plant	..	..	..	..
Indirect charges	12,945	12,945	..	12,945
Grand Total	..	13,276	..	13,276

Extensions
and improve-
ments.

The improvements to Appenkulam tank were in progress and those to Nedungulam tank were completed.

Maintenance
and repairs.

Several petty repairs to channels, bunds and masonry works of the tanks connected with the system were carried out.

Establish-
ment.

The charges for establishment amounted to Rs. 2,434 as shown below:—

25 per cent. on Expenditure	Rs. 2,415
do. on Direct Revenue	19
Total	2,434

Receipts in
the Public
Works
Department.

The receipts collected in the Public Works Department amounted to Rs. 192 against a budget and revised estimate of Rs. 300 and Rs. 250, respectively.

MARADUR ANICUT SYSTEM.

The area irrigated and revenue derived therefrom compare as follows with those of the previous year:—

Area irrigated
and revenue
derived.

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop .. 1894-95	ACS. 17,569	ACS. 15,875	ACS. 549	ACS. 17,415	Rs. 1,17,504
Second crop .. 1894-95	17,576	16,315	511	17,526	1,13,426
.. 1893-94	16,500	17,528	..	19,128	68,419
.. 1893-94	15,816	400	12,895	19,945	68,459

The share of enhanced land revenue due to the works amounted to Rs. 243 as shown below:—

Enhanced
share of land
revenue.

Land assessment on waste lands irrigated	Rs. 158
Do. on miscellaneous items	45
Total	243

The following statement shows the financial results:—

Financial
results.

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 12,975	Rs. 3,44,281	Direct receipts in the Public Works Department	Rs. 192	Rs. 2,119
Indirect charges	344	6,229	Share of enhanced land revenue	1,85,653	11,95,455
Collection charges in the Civil Department	3,582	73,059	Share of enhanced land revenue	243	4,329
Total expenditure and charges	16,858	1,22,809	Total receipts	1,86,058	12,02,073
Surplus revenue	54,966	11,31,094	Indirect portion of revenue assessed to be due to "old irrigation" less old maintenance charges	3,14,261	76,18,023
Total	71,824	13,53,903	Net Total	71,824	15,82,903

The actual return was 133.62 per cent. on the capital outlay.

No. 33.—CHILKA LAKE CANAL (TIDAL).

CAPITAL ACCOUNT.

There was no expenditure on Capital Account of this canal during the year. The Total outlay, outlay to the end of the previous year amounted to Rs. 31,027.

REVENUE ACCOUNT.

The expenditure on Revenue Account compares as follows with the grants of the year:—

Grant and
outlay.

	Grant.	Expenditure.
Extensions and improvements	Rs. 120	Rs. 113
Maintenance and repairs	634	496
Establishment	..	..
Tools and plant	..	..
Indirect charges	..	..
Total	634	609
Total	..	625

The banks and inlets of the canal were repaired.

Maintenance
and repairs.

No. 34.—BUCKINGHAM CANAL (NAVIGATION).

CAPITAL ACCOUNT.

Redistribution of direct charges.
Grant and outlay.

A redistribution of the amount sanctioned by the Secretary of State for the canal under Direct charges was sanctioned by the Government of India in December 1894.

The capital expenditure was as follows:—

Departmental funds.	Sanctioned estimate.	Grant 1894-95.	Outlay during 1894-95.	Outlay to end of 1894-95.
<i>Direct Charges.</i>	Rs.	Rs.	Rs.	Rs.
Works	67,87,997	1,32,234	1,81,715	68,48,011
Establishment	16,20,967	27,194	39,048	16,18,658
Tools and plant	2,69,153	10,724	238	1,46,111
Total	86,78,117	1,70,152	1,82,017	80,06,780
Less receipts on Capital Account				1,169
Net Total	86,78,117	1,70,152	1,82,017	80,06,780
<i>Indirect Charges.</i>				
Capitalized abatement of land revenue	4,18,256		1,228	2,60,796
Leave and pension allowances	2,29,799		4,207	2,13,607
Total	6,48,055		5,435	4,74,403
Grand Total	93,26,172		1,87,452	84,70,914

Progress of works.

The locks at Musi north flood gate, Mudigundi south flood gate, Kandleru river south bank, Coromandal flood gate, Penner north and south flood gates and Covelong north flood gate were completed. The Sadras lock was improved by additional gates and other alterations. All these locks were brought into operation. A training bund on the left border and a flood bank on the right of Maneru river were constructed. The new east bank in 163rd mile of North canal was raised. The Musi, Sadras and Penner north and south gates were sheathed with copper. The Penner south diversion was completed. Improvements and diversion in miles 43 V to 65 V, and diversion of canal from Chintamony backwater to Pulicat lake were approaching completion.

REVENUE ACCOUNT.

Grant and outlay.

The charges on Revenue Account were—

	Grant.	Outlay.
	Rs.	Rs.
Extensions and improvements	4,553	4,556
Maintenance and repairs	23,000	62,886
Establishment	26,337	26,654
Tools and plant	1,100	4,348
Total	55,000	98,584
Indirect charges		5,053
Total		1,03,637

Sixteen works were taken up and fifteen of them were completed.

The charges for establishment amounted to Rs. 26,091 as shown below:—

23 per cent. on Expenditure	Rs.
10 do. on Direct revenue	15,144
Total	26,091

BUCKINGHAM CANAL (NAVIGATION).

The following statement shows the value and the cost of upkeep of the floating plant:—

	Number.	Original value.	Actual cost of upkeep.
Staff boats	4	Rs. 4,552	Rs. 354
Special boats	2	1,400	430
Punts	5	8,726	813
Ferry boats	34	..	..
Total	45	15,678	1,597

The total receipts were Rs. 1,09,427 against Rs. 1,08,291 in the preceding year as shown below:—

	1894-95.	1893-94.
License fees	Rs. 64,345	Rs. 64,416
Toll fees	9,178	8,907
Wharfage fees	31,761	28,030
Sundries	4,244	6,986
Total	1,09,438	1,08,339
Deduct refunds of revenue	71	48
Net Total	1,09,427	1,08,291

The following statement shows the financial results:—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 97,983	Rs. 27,89,138	Direct receipts—	Rs.	Rs.
Indirect charges	8,553	87,726	Navigation receipts	1,07,784	13,30,128
Total expenditure	1,06,536	28,76,864	Miscellaneous receipts	1,714	14,52,301
Surplus revenue	7,891	1,12,157	Total	1,09,498	27,82,429
Net Total	1,09,427	27,64,706	Deduct refunds of revenue	71	17,123
			Net Total	1,09,427	27,61,706

The financial result during the year was a surplus revenue of Rs. 7,891 against a deficit of Rs. 16,202 in the previous year, which is primarily due to the construction of locks and the consequent facility for navigation and growth of revenue, as also to a considerable reduction of working expenses.

GENERAL REMARKS.

In connection with the improvement of the Cooum river, the investigation of a project for connecting the Madras basin of the Buckingham canal with the Harbour was sanctioned by Government and an Executive Engineer was posted for the preparation of the necessary plans and estimates. The investigation was in progress.

No. 35.—VEDARANNIYAM CANAL (TIDAL).

REVENUE ACCOUNT.

The canal was cleared of silt at an outlay of Rs. 6,420. The total outlay was Rs. 2,934 against a grant of Rs. 4,420. A sum of Rs. 3,486, being the moiety of the difference between the traffic receipts and the cost of the maintenance of the canal, was debited to "Incorporated Local Funds."

The traffic on the canal other than salt was very small.

The amount of license fees collected during the year was Rs. 1,126 against Rs. 1,170 in the previous year.

No. 36.—GANJAM-GOPALPUR CANAL.

CAPITAL ACCOUNT.

Total outlay. Nothing was done during the year on this canal which was put in hand in January 1889, owing to scarcity in the Ganjam district. The work was stopped in November 1890, as it was no longer required for famine relief purposes and as the advantages to be gained from completing it were not commensurate with the probable cost. The total expenditure, including indirect charges, to the end of the year was Rs. 1,55,193 against a sanctioned estimate of Rs. 4,51,145.

PROVINCIAL—MINOR WORKS AND NAVIGATION.

MINOR WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.

Grant and outlay. The grants and outlay under this head compare as follow :—

	Grant for 1894-95.		Outlay during 1894-95.
	Budget.	Final.	
	RS.	RS.	RS.
<i>Ordinary Works.</i>			
Minor Works, Public Works Department—			
Original Works—			
Major	1,76,973	1,76,937	1,97,896
Minor	1,33,619	1,18,305	1,13,306
Repairs	4,11,500	4,32,790	4,13,625
Establishment	1,63,407	1,68,394	1,63,895
Tools and plant	10,801	10,930	10,699
Total	8,99,800	9,10,656	8,99,421
Minor Works, Revenue Department—			
Original works	..	10,325	7,156
Repairs	..	12,211	7,370
Establishment	..	5,134	3,340
Tools and plant	..	..	216
Total	..	27,667	18,082
Total, Ordinary Works	8,99,800	9,37,623	9,17,504
<i>Old Maintenance Charges.</i>			
Original works	10,281	30,381	19,881
Repairs	1,42,850	1,42,850	1,42,650
Establishment	2,09,065	2,87,441	2,87,479
Tools and plant	1,868	1,808	1,868
Total	3,64,162	4,42,540	4,42,577
<i>Tank Restoration Scheme.</i>			
Investigation—			
Original works	..	..	216
Establishment	58,400	68,288	55,341
Tools and plant	600	600	579
Total	59,000	68,888	56,136
Execution—			
Original works	2,33,658	2,39,004	2,41,375
Repairs	1,21,693	1,21,083	1,18,652
Establishment	81,704	82,820	82,355
Tools and plant	6,329	5,400	5,392
Total	4,42,286	4,48,306	4,48,774
Total, Tank Restoration Scheme	5,01,286	5,07,194	5,04,910
Grand Total	17,04,750	18,87,597	18,64,991

The following works, estimated to cost Rs. 2,500 or more each, were carried out :—

Vizagapatam division.—The extension of the Koppaka anicut and reconstructing its wing walls, a work put in hand in 1891-92, was completed. Owing to the very heavy percolation under the anicut, work could only be carried on for a few months during the early part of each year; hence the delay in completion. The anicut was extended on the right side for 80 feet and the right wing rebuilt. The rough stone aprons were repacked. The reconstruction of the Peddakathu anicut across the Kothakota river, which was commenced in 1892-93, was completed. The improvements to the Neelanagaram and Venkannabattai channels were in progress.

Goddavari Eastern Division.—The work of narrowing the tail lock at Dumagudem was in progress but was stopped.

Goddavari Western Division.—The breach in Parimpudi Bhimudu tank was completely closed. The surplus channel of Medavarapu tank of Sattinarigudem was completed. The stop bank between the surplus channel was raised nearly to full height and the earthwork was in progress.

Nellore Division.—The improvements to three tanks were completed and those to four tanks were in progress.

Bellary Division.—The construction of a rest-house in connection with the improvements to the Dasanoor channel was in progress and the improvements to the Kampli, Bellagodal, Roya, Thoortha, Ramasagar and Basavaanna channels were completed. The improvements to the Roddam big tank were in progress.

Kurnool Division.—The improvements to the Kungal tank were in progress. Preliminary expenses were incurred on the investigation of the Thokapalli project and the construction of a temporary inspection shed was commenced.

Chingleput Division.—The improvements to the Kunavakam tank were completed and those to the Kuam and Utukotai tanks were practically completed. Constructing a weir in Kattur madugu, a weir and revetment in Santhavepur tank, and the improvements to the Vylakkavur tank and channel were in progress.

North Arcot Division.—The improvements to the Sattur tank, the excavation of a channel from Govindavasi channel to Nangumangalam and the restoration of the Padavedu tank were completed. The improvements to the Kadalady tank were in progress.

South Arcot Division.—A weir to Veeranam tank and another to Orathur tank were constructed.

Salem Division.—The construction of an anicut and the improvements to the channel to supply the Sungambasavam tank and the improvements to the Periyeri tank were completed.

Coimbatore Division.—Excavating a trial trench at the centre line of the proposed Bhavani reservoir dam, excavating a trench at Muthikolam, restoring the Kadathur anicut and repairing the escape below the head, constructing a head-sluice at the head of Vangal channel and constructing a head-sluice at the head of Nerur channel were carried out.

West Coast Division.—The restoration of the Enamakal dam was in progress.

Trichinopoly Division.—The improvements to the Kolagudi, Arumbavur and Mullipadi tanks and to Thottiem Chinnavaikal were completed, and those to the Venkolam large and small tanks were in progress.

Madura Division.—The improvements to the Paravai tank and Nandiapuram anicut were completed and those to the Korikadavoo anicut channel and the Vyravanar anicut were in progress.

Tinnevely Division.—The improvements to the Peranjeri channel, Vembakotai-Periyakulam tank, Gengakondan Sirukulam tank, and Palicottai channel and Pala-

The following statement gives the particulars of the general nature of the minor original works, or works estimated to cost less than Rs. 2,500 each executed during the year:—

Divisions.	Grant.		Outlay.	Tanks.				Channels.				Number of surplus works to tanks completed from 1873-74 to 1894-95.
	Budget.	Final.		Number of sluices.		Number of surplus works.		Number of sluices.		Number of surplus works.		
				Completed.	In progress.	Completed.	In progress.	Completed.	In progress.	Completed.	In progress.	
Rachikudla ..	Rs. 250	Rs. 250	151	..	..	..	..	..	..	..	..	..
Ganjam ..	8,000	8,000	7,812	1	1	1	3	2	3	1	3	47
Vizagapatam ..	4,000	4,000	2,046	..	..	..	..	3	1	1	2	52
Godavari Eastern ..	1,000	1,000	1,145	..	1	1	1	..	..	..	..	64
Do. Western ..	2,000	2,000	1,792	..	2	3	1	1	1	1	..	14
Kistna Northern ..	..	..	1,767	..	3	..	..	..	..	..	1	5
Do. Eastern ..	..	..	11	..	..	..	..	..	..	..	..	..
Nellore ..	8,050	8,254	9,032	4	7	2	1	..	..	..	..	136
Cuddapah ..	5,000	3,700	4,024	8	..	3	..	..	..	1	..	79
Kurnool ..	1,000	976	74	..	..	..	..	..	..	..	..	84
Bellary ..	6,000	3,000	1,509	4	1	2	3	1	1	..	..	67
West Coast ..	..	..	78	..	..	..	..	1	..	..	..	..
Coimbatore ..	3,000	3,000	1,897	..	..	..	1	1	4	..	..	114
Salem ..	3,000	4,000	4,153	12	26	17	14	2	2	1	4	188
North Arcot ..	13,000	9,000	6,561	1	5	7	5	1	1	1	..	416
Chingleput ..	20,000	29,018	28,844	14	7	7	1	2	..	..	..	287
South Arcot ..	13,500	8,208	8,418	6	12	8	..	..	..	..	..	138
Tanjore ..	..	..	..	..	..	..	..	..	..	..	..	7
Nagapattinam ..	..	..	..	..	..	..	..	..	..	..	..	10
Trichinopoly ..	5,000	10,000	10,716	2	..	2	6	2	..	4	..	69
Madura ..	9,000	11,180	11,087	6	3	..	..	1	3	1	..	260
Tinnevely ..	8,000	15,291	11,433	..	..	..	..	..	..	..	..	194
Buckingham canal ..	..	35	35	..	..	..	..	..	..	..	..	..
Reserve ..	24,819	..	..	..	..	..	..	..	..	..	..	..
Total ..	1,23,619	1,18,905	1,13,306	52	84	48	42	21	19	10	11	2,203
Minor Works, Revenue Department, executed by Public Works Department.												
Salem ..	..	4,692	2,013	..	..	..	..	..	..	..	..	..
North Arcot ..	..	2,140	2,247	2	..	..	..	..	..	..	..	..
South Arcot ..	..	925	794	..	..	..	..	..	..	..	..	..
Trichinopoly ..	..	2,370	1,902	..	..	..	..	..	..	..	..	..
Tinnevely ..	..	..	199	..	..	..	..	..	..	..	..	..
Total ..	..	10,125	7,155	..	..	..	..	..	..	..	..	..

The following statement shows the grant and outlay under repairs:—

Divisions.	Grant.		Outlay.	Total number of works.		Number of works repaired.	
	Budget.	Final.		Tanks.	Channels.	Tanks.	Channels.
Minor Works for which neither Capital nor Revenue Accounts are kept, Public Works Department.							
	RS.	RS. &	RS.				
Ganjam	16,000	13,000	12,800	115	67	17	19
Vizagapatam	12,000	19,200	19,163	68	148	5	32
Godavari Eastern	23,000	28,400	23,342	102	6	22	6
Do. Western	5,000	5,000	4,925				
Kistna Eastern	7,000	4,000	3,986	44	..	29	..
Do. Northern	..	3,500	1,978	..	..	..	..
Nellore	50,000	50,648	37,868	231	14	66	14
Cuddapah	25,000	27,800	21,316	97	38	34	13
Kurnool	10,000	10,000	10,467	68	1	24	1
Bellary	40,000	37,600	37,131	176	11	41	11
West Coast	2,000	2,000	1,820	..	..	..	..
Coimbatore	15,000	11,785	11,915	34	39	10	34

Divisions.	Grant.		* Outlay.	Total number of works.		Number of works repaired.	
	Budget.	Final.		Tanks.	Channels.	Tanks.	Channels.
<i>Minor Works for which neither Capital nor Revenue Accounts are kept, Public Works Department—cont.</i>							
Salem	12,000	15,913	15,870	172	8	55	4
Chingleput	35,000	48,043	47,494	654	62	124	4
North Arcot	25,000	28,000	24,061	218	15	88	6
South Arcot	55,500	59,686	59,531	349	26	85	10
Tanjore	2,000	1,400	1,409	13	..	1	..
Nagapatam	..	1,200	1,202	38	..	5	..
Trichinopoly	22,000	21,200	20,213	74	72	10	45
Madura	12,000	15,520	15,810	174	47	27	28
Tinnevelly	45,000	41,000	41,220	282	33	24	15
Total ..	4,11,609	4,32,790	4,18,325	2,904	587	617	231
<i>Minor Works, Revenue Department, executed by Public Works Department.</i>							
Cuddapah	..	2,550	2,291	..	..	..	..
Kurnool	..	1,552	547	..	..	..	..
Bellary	..	677	899	..	..	..	..
Chingleput	..	500	472	..	..	..	..
North Arcot	..	2,881	1,383	..	..	..	..
South Arcot	..	1,866	1,439	..	..	..	..
Salem	..	..	73	..	..	..	..
Trichinopoly	..	1,140	804	..	..	..	..
Madura	..	640	..	..	..	..	..
Tinnevelly	..	865	..	..	..	..	..
Total ..	..	12,211	7,370	..	..	..	..

The expenditure shown against Godavari Eastern division under Minor Works, Public Works Department, includes also the cost of maintenance of Dumagudem ancient and canal which latter was closed for repairs from 15th March 1894 to 15th June 1894. Four hundred and twenty boats passed through the canal during the year against 451 in the previous year.

The following statement shows the outlay incurred by Civil officers on Minor Works, Revenue Department, but not included in the accounts of the Public Works Department:—

Districts.	Grant.		Outlay.	Total number of works.		Number of works repaired.
	Budget.	Final.		Tanks.	Channels.	
Ganjam ..	15,000	15,000	14,342	2,478	270	205
Vizagapatam ..	13,000	13,000	12,589	1,333	42	162
Godavari ..	12,000	12,000	11,554	1,829	83	74
Kistna ..	14,000	7,300	6,673	335	26	35
Nellore ..	15,000	17,588	26,174	1,883	6	61
Cuddapah ..	31,000	21,400	21,043	1,842	801	65
Anantapur ..	25,000	24,000	21,513	1,433	1,499	41
Bellary ..	8,000	7,900	7,808	211	32	30
Kurnool ..	7,000	6,138	6,287	349	254	21
Prasidney ..	100	100	99	8	..	..
Chingleput ..	40,000	40,000	34,350	1,768	271	158
North Arcot ..	37,000	50,000	49,049	2,319	1,037	161
South Arcot ..	70,000	67,500	66,732	362	221	166
Tanjore ..	6,000	6,280	5,787	601	..	42
Trichinopoly ..	17,000	17,000	10,480	372	17	83
Madura ..	25,000	22,432	22,290	5,332	440	84
Tinnevely ..	60,000	55,000	55,314	1,712	86	145
Coimbatore ..	4,000	8,500	2,904	74	29	16
Salem ..	20,000	14,732	12,897	1,699	688	45
Mahab ..	50	50	30	..	..	1
Reserve ..	16,570	..	..	..	..	..
Total ..	4,50,000	4,00,000	3,98,431	23,650	5,745	1,586

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MINOR WORKS, PUBLIC WORKS DEPARTMENT.

The following statement shows the work done in repairing the tanks in charge of the Public Works Department affecting railways:—

Divisions.	Total number of tanks affecting railways.	Number of tanks in good order.	Number of tanks repaired.	Number of tanks for which estimates have been prepared.	Number of tanks still requiring attention.
Ganjam	14	1	..	5	8
Vizagapatam	1	..	1	..	..
Godavari Eastern	8	..	..	3	..
Do. Western	5	4	1	..	1
Kistna Northern	2	..	1	..	1
Nellore	20	..	9	..	11
Bollary	22	21	1	..	..
Cuddapah	25	15	1	4	5
Kurnool	18	17	..	1	..
North Arcot	97	64	20	8	..
South Arcot	32	24	..	8	..
Chingleput	241	121	9	54	67
Salem	20	13	7	..	..
Coimbatore	20	16	2	2	..
Madam	56	36	8	7	4
Tanjore	6	4	..	1	1
Trichinopoly	16	7	..	..	9
Tinnevely	6	2	1	..	3
Total	603	345	60	93	105

Repairs to tanks in charge of Public Works Department affecting railways.

Minor, zemindari and private tanks affecting railways.

The following statement shows the number of minor tanks, Revenue Department, and of zemindari and private tanks immediately affecting railways and the arrangements made for rendering them safe:—

Districts.	Number of minor tanks under the charge of the Revenue Department.	Number of zemindari and mitta tanks.	Number of private and shrotrium tanks.	Total.	Arrangements for rendering the tanks efficient.			
					Number inspected and found in good order.	Number of tanks inspected and their state communicated to the Collector or other officers concerned.	Number of tanks not yet inspected.	Total.
<i>East Coast Railway.</i>								
Ganjam	33	73	97	203	51	151	..	302
Vizagapatam	5	82	63	140	50	77	13	140
Godavari	151	175	183	409	216	281	12	488
Kistna	..	..	202	202	..	..	202	202
Total	189	326	544	1,032	316	489	227	1,033
<i>Madras Railway.</i>								
Kurnool	5	..	2	7	5	2	..	7
Cuddapah	9	..	10	19	10	9	..	19
Bollare	7	..	4	11	11	..	..	11
North Arcot	60	70	23	159	40	..	119	159
Chingleput	1	..	9	10	2	..	8	10
Salem	..	..	131	131	77	23	31	131
Total	88	70	179	327	145	34	158	327
<i>South Indian Railway.</i>								
Nellore	10	28	1	39	11	..	28	39
Cuddapah	145	..	208	353	81	273	7	359
North Arcot	9	..	1	10	3	..	7	10
Chingleput	21	..	40	61	13	3	45	61
South Arcot	130	..	7	137	115	11	11	137
Tanjore	167	6	..	173	..	6	167	173
Trichinopoly	161	2	111	274	..	214	..	274
Madam	229	23	18	270	129	105	..	270
Tinnevely	81	42	23	146	63	93	..	146
Total	894	101	464	1,459	405	796	268	1,469

PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1894-95.

MINOR WORKS, PUBLIC WORKS DEPARTMENT.

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Districts.	Number of minor tanks under the charge of the Revenue Department.	Number of zemindari and public tanks.	Number of private and short-term tanks.	Total.	Arrangements for rendering the tanks efficient.			
					Number inspected and found in good order.	Number of tanks inspected and their state communicated to the Collector or other officers concerned.	Number of tanks not yet inspected.	Total.
<i>Southern Maratha Railway.</i>								
Bilga	13	..	41	54	6	68	10	84
Kurnool	44	..	5	49	40	2	..	42
Kantapur	9	..	2	11	11	..	..	11
Total	66	..	48	114	57	70	10	134
<i>Pilappuram-Gundakal Railway.</i>								
North Arcot	145	..	34	189	64	..	115	189
South Arcot	10	..	..	10	18	3	..	21
Total	155	..	34	201	82	3	115	201
<i>Cuddapah-Nellore State Railway.</i>								
North Arcot	91	..	31	122	38	..	14	52
Total	21	..	31	52	38	..	14	62

The charges for establishment amounted to Rs. 1,67,235 as shown below:—

23 per cent. on Expenditure	Rs. 1,67,235
10 do. on Direct Revenue	969
Total ..	1,67,235

Establishment.

The charge for tools and plant amounted to Rs. 10,917* calculated at 1½ per cent. on the expenditure on works and repairs.

Tools and plant.

TANK RESTORATION SCHEME.

The Tank Restoration Scheme parties, with the exception of No. III (late No. VII) Party, which on the 1st May 1894 resumed investigation in the Chingleput district, and No. VIII Party which was abolished from the 1st July 1894 on completion of the minor basins it had taken up in the Vizagapatam district, continued to work in the districts in which they had been engaged during the previous year.

Investigation establishment.

The area of minor basins entered upon at the beginning of the year was 33,198 square miles, of which 29,563 square miles had been completely investigated. These figures were, during the year, increased by 2,378 and 1,700 bringing the totals up to 35,576 square miles of area entered upon, and 31,377 square miles investigated.

Extent of investigation operations.

The amount of estimates for Government works sanctioned during the year was Rs. 4,07,047 against a corresponding figure of Rs. 4,04,025 for the previous year. The cost of investigation during the year was Rs. 56,136 or 13.8 per cent. of the amount of estimates sanctioned.

Amount of estimates sanctioned.

The total amount of estimates sanctioned for Government works from the commencement of the operations up to the end of the year was Rs. 45,66,193 against which the total expenditure incurred on "works" was Rs. 33,19,717, or Rs. 11,24,193 including establishment and tools and plant charges.

Grants and
outlay.

The following statement shows the grants and outlay :—

	Grant for 1894-95.					Expenditure during 1894-95.					Outlay to end of 1894-95.
	Works.	Repairs.	Estab- lish- ment.	Tools and plant.	Total.	Works.	Repairs.	Estab- lish- ment.	Tools and plant.	Total.	
<i>Investigation.</i>	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
No. I Party ..	..	..	10,000	..	10,000	51	..	8,148	138	8,317	..
No. II ..	..	..	8,000	..	8,000	..	..	11,015	..	11,015	..
No. III ..	..	..	..	..	..	..	..	6,242	120	6,362	..
No. IV ..	..	..	10,400	..	10,400	180	..	11,394	232	11,606	..
No. V ..	..	..	8,000	..	8,000	..	..	8,095	63	7,084	..
No. VII ..	..	..	8,800	..	8,800	..	..	99	..	104	..
No. VIII ..	..	..	1,453	..	1,453	..	..	1,488	..	1,488	..
Central Office ..	..	..	11,000	..	11,000	..	..	9,966	..	9,966	..
Total ..	..	..	58,288	600	58,888	216	..	55,341	579	56,136	12,26,470
<i>Execution.</i>											
Vizagapatam ..	15,763	500	3,740	244	20,247	15,867	451	2,633	237	20,188	..
Gódvári Eastern ..	3,250	500	863	56	4,669	3,431	501	883	58	4,843	..
Do. Western ..	800	900	371	75	2,115	1,134	223	613	20	1,083	..
Kistna Northern ..	22,201	5,000	6,325	112	34,237	24,031	3,038	6,225	406	33,698	..
Kurnool ..	512	320	152	10	824	319	440	175	11	945	..
Salem ..	10,905	6,000	3,580	210	19,920	10,648	5,812	3,763	245	20,369	..
North Arcot ..	32,787	2,681	8,158	382	44,158	37,730	2,388	8,916	525	43,649	..
Chingleput ..	16,503	32,000	11,155	727	60,382	17,250	31,966	11,806	737	61,399	..
South Arcot ..	19,372	17,158	8,336	547	45,393	19,125	17,230	8,362	545	45,262	..
Narasipatam ..	60,000	28,000	10,700	1,095	99,495	49,955	23,061	16,731	1,695	90,892	..
Madura ..	41,733	22,993	14,900	972	80,556	40,600	21,713	14,952	975	81,336	..
Tinnevely ..	26,000	10,000	8,250	540	44,820	26,264	9,301	7,907	538	44,700	..
Total ..	3,39,004	1,21,082	52,820	5,400	4,48,306	2,31,375	1,19,602	82,755	5,302	4,48,774	41,24,193
Grand Total ..	3,39,004	1,21,082	1,41,108	6,000	5,07,194	2,31,591	1,19,662	1,37,696	5,971	5,04,910	52,49,663

Progress of
investigation.

Progress of Investigation.—The progress made during the year in investigating the requirements of tanks is as follows :—

No. I Party.—The area investigated in the Madura district was 189 square miles. Estimates for 94 works amounting to Rs. 1,43,331 were sanctioned; and eleven estimates for Rs. 22,096 were under disposal at the end of the year. The amount of sanctioned estimates includes the estimate of Rs. 70,260 for the Nilayár channel and the tanks connected with it, which having been submitted to Government in the previous year, was sanctioned in the year under review.

No. II Party.—The area investigated in Tinnevely was 404 square miles. Estimates for seventeen works, amounting to Rs. 15,479, were sanctioned and eight estimates aggregating Rs. 10,788 were under disposal at the end of the year.

No. III (late No. VII) Party.—This party resumed operations in the Chingleput district on 1st May 1894 at the request of the Revenue Department, and investigated an area of 210 square miles. Estimates for 52 works amounting to Rs. 65,813 were sanctioned during the year, and 26 estimates aggregating Rs. 23,739 were under disposal at the end of the year.

No. IV Party.—In Salem this party investigated an area of 444 square miles. Estimates for ninety Government works amounting to Rs. 39,654 were sanctioned, and thirty estimates of Rs. 30,577 were under disposal at the end of the year.

No. V Party.—In North Arcot this party investigated an area of 432 square miles and estimates for 82 works, amounting to Rs. 40,559, were sanctioned during the year, leaving 29 estimates aggregating Rs. 16,669 under disposal at the head office.

No. VIII Party.—This party continued to work under the Executive Engineer, Vizagapatam Division, and investigated an area of 30 square miles up to end of June 1895, when it was abolished. Estimates for 49 works, amounting to Rs. 36,998, were sanctioned during the year.

The following statement shows the work done by the Tank Restoration Scheme during and up to the end of 1894-95 by districts :—

Work done
by districts.

Parties.	Districts.	Approximate area investigated.		Number of works estimated for		Amount of esti- mates sanctioned.		Remarks.
		During the year 1894-95.	To the end of the year 1894-95.	During the year 1894-95.	To the end of the year 1894-95.	During the year 1894-95.	To the end of the year 1894-95.	
		SQ. MLS.	SQ. MLS.			RS.	RS.	
No. I Party ..	Madura ..	189	3,511	94	1,074	1,43,331	10,72,130	
No. II Party ..	Tinnevely ..	404	1,566	17	188	15,479	2,81,806	
Nos. II and III Parties.	Chingleput ..	210	1,386	52	823	65,813	10,29,821	
Nos. III and VI Parties.	Kurnool ..	..	6,695	..	225	..	2,18,196	
	Cuddapah ..	..	..	..	22	..	19,109	
	Bellary ..	..	..	..	15	..	5,264	
	Anantapur ..	..	100	..	4	..	16,241	
No. IV Party ..	Coinabatore ..	..	8,664	..	147	..	3,09,318	
	Salem ..	444	2,513	90	564	39,654	2,36,099	Of which three works amounting to Rs. 995 are dambandan.
No. V Party ..	North Arcot ..	432	1,436	82	418	40,559	4,80,088	Of which 36 works amounting to Rs. 7,140 are dambandan.
Nos. IV and V Parties.	South Arcot ..	..	256	..	102	14,190	2,61,148	
	Tanjore ..	..	903	28	231	45,736	2,53,940	
No. VII Party ..	Gódvári ..	..	748	5	172	1,847	90,851	
No. VIII Party.	Kistna ..	..	3,636	2	192	3,410	1,48,672	
	Vizagapatam ..	30	563	49	126	36,998	1,45,606	
Total ..		1,702	31,377	419	3,315	4,07,047	45,66,193	

The following statement shows the progress made in the preparation of plates and memoirs :—

Plates and
memoirs.

Memoirs for minor basins printed		Plates for minor basins printed		Memoirs and plates in press on 31st March 1895.	
To end of		To end of		Memoirs.	Plates.
1893-94.	1894-95.	1893-94.	1894-95.		
21	23	24	26	8	..

Vizagapatam Division.—The restoration of the Pedda Uppalam tank and repairs and improvements to the Kudli anicut and channel and Vonkamma Krishnasagaram tank were completed. The work of repairing and improving Krishnamma channel and head works was in progress; the repairs to the anicut were completed. The head sluice extension was built up to springing line. Four branch channels with their masonry works and the tidal dam at end of the main channel were completed. Materials for further work were also collected. The improvements to the Goparazu channel were completed in the second reach. The improvements to Mamidivada anicut were completed and the new head sluice built up to springing line. The improvements to the Vakapadu river channel were completed. Ten minor repair works were completed and fourteen were in progress.

Gódvári Eastern Division.—The repairs to the Chinna and Pedda tank at Kesavaram and to the Razu tank of Bolladupalem were in progress, besides two other petty repairs.

Gódvári Western Division.—The construction of a weir and a sluice to Gokavaram Pedda tank was completed. Four petty repair works were completed and five were in progress.

Kistna Northern Division.—The restoration of 106 tanks was in hand, of which that of 51 tanks was completed.

North Arcot Division.—Fifty-five works were completed and 52 were in progress.

Progress of
execution.

Chingleput Division.—One hundred and thirty-three works were in progress, of which 81 were completed. All the estimates sanctioned for the Kovalam, Red Hills and Tiruttani minor basins have been worked out. In the Adyar minor basin three works remained to be completed. Work was in progress in the Arani and Chembrambakam minor basins.

South Arcot Division.—The improvements to the Alangal channel and tanks depending on it, and those to the Pallinellianur tank channel, Kangayanur tank and channel, Tiruvamathur tank and channel, and Kottanur channel were in progress. Besides the above, 59 petty works were completed and 30 were in progress.

Negapatam Division.—Two hundred and eighty-five works were in progress, of which 15 were completed.

Madura Division.—The improvements to the Anuppanadi periyakommi and channel, Panayur tank and channel, Sindamony periyakommi and channel, Chatrapaliangulam periyakommi and channel, Thevankurichi periyakommi and 85 Vickramangalam tank were in progress and those to the Ayettankommi, Orappanoor periyakommi and Kollaneri periyakommi and channel were completed.

Tinnevely Division.—The improvements to the Nuthampatti periyakulam and to Nedungulam tank were completed, and those to the Sivenerikulam, Periyakulam of Pudukottai and its supply channel, Kovenarikulam and its supply channel, Alangulam of Maharajapuram and Vilvarayankulam were in progress. Besides the above, 29 petty works were completed and 15 were in progress.

INVESTIGATION OF PROJECTS.

In the Kistna Northern division steps were taken to gauge the supply in the Nagileru in connection with the Mellavagu project and register the rainfall in the catchment basin, but the water registers were maintained for only part of the monsoon.

A special survey staff was sanctioned during the year for the investigation of the Atmakur and Manchikalla projects, both of which are promising, and the field work was carried out.

The following are the particulars of receipts collected in the Public Works Department from Minor Works for which neither Capital nor Revenue Accounts are kept:—

Budget estimate	Rs. 8,000
Revised do.	8,000
Actuals	9,638

The total area charged as irrigated for first and second crops under all works for which neither Capital nor Revenue Accounts are kept was 3,234,633 acres against 3,573,871 acres in the previous year. The revenue derived from these works was Rs. 84,38,855 exclusive of deductions and remissions of Rs. 9,15,639. There was a decrease both in the area irrigated and revenue derived owing to deficient rainfall chiefly in the Cuddapah, Anantapur, Chingleput, North Arcot, Madura and Tinnevely districts.

The area irrigated under, and the revenue derived from, (1) Works for which a continuous record of expenditure is kept individually, (2) Other Minor Works, Public Works Department, and Minor Works, Revenue Department, compare as follow with those of the previous year:—

	Area irrigated.		Irrigation revenue.	
	1894-95.	1893-94.	1894-95.	1893-94.
Minor Works for which neither Capital nor Revenue Accounts are kept, Public Works Department.	ACS.	ACS.	RS.	RS.
(1) Works for which a continuous record of expenditure is kept individually	230,949	235,588	8,02,518	8,09,153
(2) Other Minor Works, Public Works Department	1,323,053	1,406,744	3,762,115	38,39,513
Minor Works, Revenue Department	1,678,631	1,931,539	33,84,222	44,20,507
Total	3,234,633	3,573,871	84,38,855	90,69,303

The total irrigation revenue derived from works for which neither Capital nor Revenue Accounts are kept, together with the miscellaneous revenue collected in the Public Works Department, was Rs. 84,48,495 and the total charges incurred on these works amounted to Rs. 22,83,508, viz., Rs. 18,87,047 in the Public Works Department, and Rs. 3,96,461 in the Revenue Department, leaving Rs. 61,64,987 as the net revenue.

The following statement shows by districts the area irrigated, the irrigation revenue derived, and the expenditure incurred on each class of works:—

STATEMENT showing the area irrigated under, and the irrigation revenue derived from, Minor Works for which neither Capital nor Revenue Accounts are kept, Public Works and Revenue Departments, during the fiscal year 1894 and the expenditure incurred on them during the official year 1894-95.

	Area charged as irrigated and revenue derived during the fiscal year 1894 (1894-95).			Outlay during the official year 1894-95.				
	Area.		Total irrigation revenue.	Original works.	Repairs.	Establishment.	Tools and plant.	Total.
	First crop.	Second crop.						
MINOR WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT, P.W.D.	ACS.	ACS.	RS.	RS.	RS.	RS.	RS.	RS.
Ganjam.								
Langulia river, two channels	13,856	917	29,916	..	..	..	..	..
Vamsadbara river, six channels	40,471	2,571	84,934	..	..	..	..	..
Ganibala Gedda	1,555	123	2,242	..	..	..	..	..
Vizagapatam.								
Sarala river, six anicuts	11,910	8,809	30,387	..	58	812	53	4,392
Varaha river, four do.	7,065	5,713	23,145	14	3,455	..	..	..
Salem.								
Pennagandapuram tank	435	423	1,465	116	377	113	7	613
Coimbatore.								
Amravati river, twenty-two channels	25,371	19,537	1,38,297	28	4,763	1,192	72	5,965
Chingleput.								
Madurantakam tank	4,379	1,204	11,241	159	264	97	6	526
South Arcot.								
Myeroddy-Kattumailar anicut.	439	25	1,933	..	398	..	..	..
Gadilam river, Tiruvadi anicut	7,090	2,013	36,126	..	..	..	..	..
Vanamadevi anicut	736	209	4,739	223	2,604	851	56	4,505
Tiruvendipuram anicut	1,839	735	10,722	..	..	..	..	..
Kullar river, Vikravandy anicut.	2,248	179	8,277	..	473	..	..	..
Tinnevely.								
Tambraparni river, six anicuts	36,739	33,933	4,19,084	2,255	13,516	3,627	237	19,635
Total	164,253	76,896	8,02,518	2,795	24,968	5,692	431	35,735
"Other Minor Works," P.W.D.								
Ganjam	72,308	1,910	1,33,011	8,190	12,859	4,823	346	26,231
Vizagapatam	32,140	28,913	1,02,196	28,332	16,100	11,053	627	54,112
Godevari	44,384	2,937	89,714	9,283	28,991	8,539	553	47,369
Kistna	18,400	..	46,902	25,812	9,008	8,097	525	43,442
Nellore	85,303	7,331	8,10,401	46,142	37,856	18,785	1,230	1,04,923
Cuddapah	56,925	27,530	2,66,480	4,024	21,315	3,751	578	31,468
Anantapur	38,006	6,341	1,27,745	..	..	..	..	..
Bellary	30,020	6,363	1,88,197	37,415	37,131	17,281	1,125	92,955
Karnool	22,919	6,310	91,152	5,944	15,907	3,793	213	20,893
West Coast	..	..	..	4,247	1,820	1,395	92	7,554
Coimbatore	30,921	13,117	1,43,436	14,589	7,152	4,571	299	26,611
Salem	29,489	28,657	1,34,228	16,595	21,355	8,868	567	47,335
North Arcot	55,434	21,123	2,07,030	47,850	26,330	35,053	1,320	1,10,574
Chingleput	223,027	37,690	6,65,365	80,639	79,137	44,904	2,546	2,07,217
South Arcot	78,219	15,955	3,06,663	32,107	73,286	24,114	1,577	1,31,114
Tanjore	17,676	1,299	43,156	49,955	25,642	..	..	..
Trichinopoly	85,902	37,041	4,81,324	24,813	29,213	47,193	1,136	93,320
Madura	71,556	27,866	3,11,880	57,424	40,529	40,007	1,548	1,39,548
Tinnevely	41,484	23,834	2,43,335	58,638	37,553	21,859	1,449	1,19,641
Head office, Tank Restoration Scheme	..	..	..	..	..	9,960	..	9,960
Total	10,34,083	293,970	37,52,115	5,49,998	5,07,369	2,94,980	16,239	13,68,555

* This amount includes the expenditure on Tank Restoration works.

Statement showing the area irrigated under, and the irrigation revenue derived from, Minor Works, &c.—*cont.*

	Area charged as irrigated and revenue derived during the full year 1894-1895.			Outlay during the official year 1894-95.				
	Area.		Total irrigation revenue.	Original works.	Repairs.	Establishment.	Tools and plant.	Total.
	First crop.	Second crop.						
"Minor Works," Revenue Department.	ACS.	ACS.	RS.	RS.	RS.	RS.	RS.	RS.
Gangam	67,251	8,414	80,196	..	14,342	..	..	14,342
Vizagapatam	47,111	42,372	1,33,008	..	12,559	..	..	12,559
Krishna	51,517	1,879	7,481	..	11,854	..	..	11,854
Kistna	25,899	294	8,117	..	5,873	..	..	5,873
Nellore	32,141	4,174	1,92,192	..	26,174	..	..	26,174
Cuddapah	111,612	49,370	4,72,335	..	23,300	627	34	23,961
Amuntapur	61,321	19,528	2,52,216	..	2,218	..	..	2,218
Bellary	31,295	6,294	62,035	..	8,198	90	6	8,294
Barnool	28,460	4,271	57,736	..	6,331	123	8	6,462
Channarayana	19,489	4,151	41,028	..	2,991	..	..	2,991
Salim	74,837	70,339	2,49,979	2,013	12,419	480	31	15,194
North Arcot	154,290	67,789	5,71,351	2,247	60,112	830	54	63,543
Presidency	..	..	..	..	99	..	..	99
Chingleput	119,119	17,197	2,32,119	..	31,802	108	7	34,917
South Arcot	190,991	39,111	7,08,720	791	62,212	511	34	69,551
Tanjore	35,827	1,620	71,899	..	5,787	..	..	5,787
Trichinopoly	42,831	14,273	1,66,346	1,902	20,281	622	41	22,849
Madura	102,332	18,957	2,96,336	..	22,290	..	..	22,290
Tinnevely	62,107	32,065	2,72,658	199	55,311	46	3	55,562
Malabar	..	..	..	..	30	..	..	30
Total	1,278,778	396,358	38,84,222	7,155	3,45,831	3,310	218	3,49,359
Grand Total	2,487,139	757,521	81,38,835	5,59,548	3,49,359	3,01,931	16,888	3,49,359

(a) Inclusive of Rs. 100,161, the outlay incurred by Civil officers—see statement in page 71.

PROVINCIAL—MINOR WORKS AND NAVIGATION.

AGRICULTURAL WORKS.

Grants and outlay.

The following statement shows the outlay on Agricultural works, i.e., river conservancy and embankments as compared with the grants:—

	Grants for 1894-95.			Outlay during 1894-95.
	Budget.		Final.	
	RS.	RS.	RS.	
Original Works.				
Major	50,864	54,242	64,916	
Minor	12,455	34,485	18,953	
Total	63,319	88,727	83,869	
Repairs	1,83,000	2,02,089	2,12,205	
Establishment	54,440	65,660	64,323	
Tools and plant	3,341	4,062	4,032	
Total	3,04,600	3,60,478	3,65,589	

Major original works.

The progress, made during the year on some of the chief works under this head is as follows:—

In the Vizagapatam division the work of constructing the left flood bank to Nagavalli river just above Nandivada agraaharam was completed. Constructing left flood bank to Nagavalli river at Gothamangalapuram was practically completed.

In the Gôdâvari Eastern division Rs. 975 were paid for land taken up for raising the left flood embankment of Gowtami Gôdâvari from Rajahmundry to Yanam.

In the Gôdâvari Western division the raising of the river embankment from Vijeshweram to Polaveram was completed, but compensation for land remained to be adjusted. The diversion of Vasista left bank at Râmachandrapuram and protecting Vasista left bank at Nagullanka set were completed. Raising Vasista left bank from head to junction of Gannaram canal and raising Vasista Gôdâvari right bank from ancient to Chichinada ferry were in progress. Earthwork was done to the extent of Rs. 5,141 during the year on raising right bank of Bendamurlanka canal from Indupalli weir to Vakalagaram breach.

In the Kistna Eastern division the Kistna river left bank was raised for one mile at Vallur and work in two other miles was in progress. The rest-house at Sreekakulam was built up and roofed, concrete floor remained to be done and materials were collected for the rest-house at Vallur. A cut from Budameru aqueduct from 9 miles 6 furlongs to 19 miles 6 furlongs was completed and lowering the drop wall of Kesurapalli aqueduct was in progress.

In the Kistna Western division raising the flood bank of Kistna river on right side from 41 to 55½ miles was commenced.

In the Nellore division the improvements to the first four miles of the Moldevi drain and flood bank to protect, and syphon culvert to drain, Musunur lands were carried out.

In the Buckingham Canal division the construction of groynes on the right border of the Mannuru river was completed.

In the Tanjore division raising Cauvery both banks from road No. 4 to Kumbakonam bridge, raising and widening Cauvery right bank from Vennar head to Kodamurti head and the left bank from Grand Ancient to Tiruviyar bridge and the improvements to both banks of Mudikondamar were in progress. Fixing bench mark and furlong stones along main rivers and branches and re-aligning the Coleroon were completed.

In the Trichinopoly division raising and strengthening the Coleroon left bank, an incomplete work of the previous year, was completed.

The grants and outlay on "Minor original works" and "Repairs"—Agricultural, are shown in the following statement:—

Minor original works and repairs.

Divisions.	Minor original works.		Repairs.	
	Grant.	Outlay.	Grant.	Outlay.
	RS.	RS.	RS.	RS.
Bushikudiya	500	275	1,000	872
Gangam	1,000	1,023	2,725	2,725
Vizagapatam	313	313	2,979	2,981
Gôdâvari Eastern	..	..	26,095	30,275
Do. Western	3,000	4,173	18,609	14,278
Kistna Eastern	..	..	9,300	9,459
Do. Northern	..	..	1,900	1,197
Do. Western	10,000	..	25,069	33,807
Nellore	4,880	2,568	6,920	6,047
Buckingham Canal	5,800	..	1,200	1,201
Cuddapah	700	710	2,807	2,759
Channarayana	1,455	3,291	4,560	4,147
Salim	400	414	900	911
North Arcot	..	..	500	287
Chingleput	..	194	1,500	1,530
South Arcot	..	..	6,400	6,227
Tanjore	1,400	1,370	42,475	42,375
Nagapatam	1,037	980	18,753	19,118
Trichinopoly	4,000	3,532	30,110	30,585
Tinnevely	..	..	2,500	2,485
Periyar No. 1	..	5	..	..
Total	31,485	18,953	2,02,089	2,13,205

Establishment.

The charge for establishment amounted to Rs. 64,423 as shown below :—

	Rs.
23 per cent. on Expenditure	6,571 1/4
10 do. on Direct revenue	2,769
Total	94,423

Tools and plant.

The charge for tools and plant is the contribution to "45. Civil Works" on account of general tools and plant, there being no expenditure on special tools and plant.

Receipts collected in the Public Works Department.

The receipts realized by the sale of plantations and produce of trees along the river embankments amounted to Rs. 26,979 against a budget and a revised estimate of Rs. 32,000 and Rs. 43,000, respectively.

GENERAL.

The charts and registers of the Kistna river having been finally approved by Government in May 1894, the "River Conservancy Act" was brought into operation in the Kistna district from the 1st September 1894.

LOCAL—MINOR WORKS AND NAVIGATION.

Grant and outlay.

In Trichinopoly and Salem districts, an irrigation cess is collected from the ryots holding land under some of the principal channels in those districts, the money so collected being expended by the Revenue Department. The objects to which it has hitherto been devoted have chiefly been the construction of banks of sand, grass, &c., thrown across the river beds at the bunds of channels when the supply in the rivers is low, the clearance of channels and the payment of an establishment for the regulation and distribution of water. In some instances the expenditure on these and similar items left considerable balances, and it was decided by Government in the Revenue Department in February 1888, on the representation of the Chief Engineer for Irrigation, that there was no objection to such balances being used for the construction of much-needed sluices by the Public Works Department. Accordingly, since 1888-89 expenditure has been incurred under this head.

The grants for, and the expenditure during, the year are shown below :—

Divisions.	Original grant for 1894-95.	Final grant for 1894-95.	Outlay, 1894-95.
Salem	Rs. 5,000	Rs. 5,000	Rs. 4,969
Trichinopoly	7,000	7,320	5,515
Total	12,000	12,320	10,484

Progress of works.

In the Salem division a few minor works and repairs were executed to the Canvery channels for their efficient upkeep at a cost of Rs. 4,382. The construction of a rest-house at Velur was started and Rs. 586 were spent on the work.

In the Trichinopoly division the improvements to the Ponneri branch No. 1 were practically completed and land compensation remained to be paid for. The construction of regulating dams in the Musiri Nattuvoikal was completed.

ESTATE WORKS EXECUTED BY THE PUBLIC WORKS DEPARTMENT.

The outlay incurred on irrigation works carried out by the Public Works Department in the estates under the charge of the Court of Wards is compared in the subjoined statement with the grants for the year :—

Grant and outlay.

Estates.	Original works.		Repairs.	
	Revised grant.	Outlay.	Revised grant.	Outlay.
<i>Ganjām Division.</i>	Rs.	Rs.	Rs.	Rs.
Aska .. .. .	.. .. .	525	.. .. .	.. .. .
Bodagada	2,200	2,102	1,100	1,100
Dhārākōta	2,000	2,000	2,250	2,250
Total, Ganjām Division	4,200	3,567	3,350	3,350
<i>Gōdāvari Western Division.</i>				
Tangellamūdi	219	187	273	241
Total, Gōdāvari Western Division	219	187	273	241
<i>Vizagapatam Division.</i>				
Chidakada Jagannathapuram .. .. .	.. .. .	.. .. .	226	226
Total, Vizagapatam Division .. .. .	.. .. .	.. .. .	226	226

In the Bodagada estate, of eight irrigation original works in progress six were completed. Six repair works were in progress, of which four were completed.

In the Dhārākōta estate, fourteen works were in progress of which eight were completed; while out of eleven repair works in progress, six were completed.

In the Tangellamūdi estate of the Gōdāvari district, the construction of a new surplus weir in place of a ruined calingula of Tangellamūdi pedda tank was completed. The construction of a new sluice for Kolaparru Kamini tank was in progress. Repairs to No. 2 sluice of Tangellamūdi pedda tank and to sluice of Kokirapadu kotta cheruvu were completed. Repairs to No. 1 sluice of Tangellamūdi pedda tank were in progress.

In the Chidakada estate of the Vizagapatam division, repairs to the Bodderu aicut were executed.

Progress of works.

APPENDIX A.

Descriptive note of the Kistna Delta System illustrated by photographs.

The river Kistna has a course of about 800 miles from its source in latitude $18^{\circ} 1'$ and longitude $73^{\circ} 14'$ down to the sea about 45 miles south of Masulipatam on the Coromandel Coast. Its drainage area may be taken at 97,050 square miles, and its maximum flood discharge at 820,000 feet per second.

2. The idea of damming this river by an anicut at Bezwada where the configuration of the country lent itself in an exceptional manner to the construction of such a work was first mooted in the year 1792, but nothing was definitely decided until 1847 when Major (now Sir Arthur) Cotton and Captain (now Sir Atwell) Lake submitted a joint report on the proposed anicut and on the scheme of irrigation for the eastern and western deltas.

3. After considerable discussion the Court of Directors sanctioned the construction of the anicut, together with subsidiary works on the 5th January 1850 for a sum of $15\frac{1}{2}$ lakhs of rupees. The head sluices and locks were commenced in 1852 and completed in the following year. The anicut itself was commenced in November 1853 and completed in 1855, in spite of great delays and losses caused by an extraordinary flood and an outbreak of cholera. The height of the completed anicut was $15\frac{1}{2}'$ above the level of the top of the foundations, which consists of a double row of wells $4\frac{1}{2}'$ diameter and 7' deep. The crest was 6' wide and coped with stone. The total width of rough stone apron forming a talus below the dam is 257 feet.

4. The data upon which the size of the head sluices and main canals were calculated was 2 cubic yards per hour per acre, or a duty of 66 acres per cubic foot per second. This, it was calculated, could be maintained for the ultimate proposed area of irrigation of 470,000 acres throughout the irrigation season except for about forty days in the year. Experience, however, has proved that, owing to the heavy clayey nature of the delta soil and care taken in the distribution of the water and its utilization by the ryots, that a duty of 90 acres per cubic foot per second may be reckoned upon, pointing to an ultimate development of no less than 700,000 acres or 50 per cent. in excess of the originally calculated irrigable area.

5. The lengths of navigable canals in the deltas are for the Eastern 161 miles, for the Western 146 miles. The area irrigated according to the last returns furnished for the fasli 1304 (1894-95) was 519,976 acres and the net return after paying interest charges was 9.08 per cent. on the total capital outlay, thus fully realizing the anticipations held by the originators of this magnificent scheme of irrigation, which, after paying interest at 4 per cent. on the capital outlay, has already repaid to Government Rs. 1.33 for every rupee borrowed.

Plate I.—Head sluices at 13 miles of the Main Canal Western delta. On the right, Commamur canal head sluice of nine vents. In the centre head sluice of west side channel of the Nizampatam canal of two vents. On the left, head sluice of Nizampatam weir channel.

Plates II and III.—Front and rear views of the Duggirala lock at the head of the Nizampatam canal at 13 miles of the main canal, western delta. The lock is of the pattern ordinarily in use on the Kistna canals.

Plates IV and V.—East and West Tamiheru escapes. The East Tamiheru escape or Chattaparru outlet at 40 miles 20 chains, Ellore canal, eastern delta, was built in 1890-91 to provide for passing the flood water of the east branch of the Tamiheru out of the canal. The work consists of four arches 20 feet span each at either end, and eleven small arches between, $7\frac{1}{2}$ feet span each, the latter fitted with screw-gearing shutters. There is a foot-bridge over the entire work.

COMMAMUR CANAL HEAD SLUICE
NIZAMPATAM CANAL, { WEST SIDE CHANNEL HEAD SLUICE.
WEIR CHANNEL HEAD SLUICE

West Tamileru escape at 37 miles 40 chains was built in 1890-91 to pass the flood water of the west branch of the Tamileru. It consists of 12 arches of 16 feet span fitted with screw-gearing shutters, each span being divided into two by a double-grooved iron standard, in which the shutters work. At each end of the escape there are flood gates to prevent the Tamileru entering the canal during floods; one of these, at the east side of the river, is shown in the photograph. With this arrangement of flood gates, care has to be taken that the gates do not violently open in the event of the river falling suddenly while the canal is running full.

Plate VI.—The Kistna in moderate flood from the Bezwada or left bank.

Plate VII.—The Kistna in moderate flood from the Sitanagaram or right bank.

The anicut is 3,714 feet long, the average level of crest $+ 49.25$ M.S.L., and the maximum recorded flood 17 feet above the crest or $+ 66.25$ M.S.L.

The crest having been raised 2 feet, since the date of the record flood, it is expected that a maximum flood hereafter will register about 6 inches higher.

Plate VIII.—Owing to the raising of the crest by 2 feet in 1894-95, the floods of that year damaged the apron of the anicut very severely and extensive repairs were necessary. It is probable that the drop from the crest on to the apron, which varies from 2 to 3 feet, may have to be eliminated; but no definite opinion can be framed until the effect of this year's flood is known which will be about January 1896.

The illustration shows a portion of the under-sluice on the Bezwada side and gives some idea of the damage done to the apron.

Statement showing the outlay during 1894-95 on Irrigation and Navigation Minor Works, &c.—*cont.*

District.	Executive division.	Description of work.	Amount of estimate.	Grant for 1894-95.	Outlay during 1894-95.	Outlay to end of 1894-95.
TANK RESTORATION WORKS.						
<i>Original Works.</i>						
Madura ..	Madura ..	No. 69, Annapuram-Pariyakommai and channel, raising and strengthening tank channel bunds ..	8,170	2,900	2,105	7,105
Do.	Do.	No. 69, Annapuram-Pariyakommai and channel, raising and strengthening the tank channel ..	5,923	2,360	495	4,743
Do.	Do.	No. 39, Avarattankommai, repairing and improving ..	2,780	2,700	2,370	2,370
Do.	Do.	No. 56, Sindhanur-Pariyakommai channel, improvement ..	7,100	3,000	1,912	1,912
Do.	Do.	No. 47, Thevarkumudi-Pariyakommai channel, improvement ..	5,280	4,500	4,477	4,477
Do.	Do.	No. 96, Deppanur-Pariyakommai, improvements ..	9,440	481	282	9,577
Do.	Do.	No. 85, Vokurumalai tank channel, improvements and repairs ..	4,720	..	1,161	4,611
Do.	Do.	Kallapur-Pariyakommai channel, extension and improvement ..	3,590	..	335	3,594
Do.	Do.	Sathiyaputhur tank and channel, providing a weir and regulating sluice ..	3,745	..	545	3,740
Do.	Do.	Sathiyaputhur tank and channel, constructing two surplus weirs ..	3,320	..	31	3,408
Do.	Do.	No. 64, Sathiyaputhur-Pariyakommai, constructing a head sluice ..	2,330	..	295	2,378
Total ..			..	15,881	13,948	..
Chingleput ..	Chingleput ..	No. 39, Puttur tank, improving ..	3,005	..	1,781	1,781
Do.	Do.	Puttur tank ..	3,420	..	2,564	2,564
Total ..			..	..	4,345	..
Salem ..	Salem ..	Allapurem tank, repairs and improvements ..	11,240	..	2,000	7,824
North Arcot ..	North Arcot ..	Thoppur tank and channel ..	7,650	8,000	2,822	2,822
Do.	Do.	Ayuram tank and channels, Nos. 2, 3 and 4, reconstructing sluice No. 2 ..	4,020	..	163	3,967
Do.	Do.	No. 1, Arivam tank, providing tower heads to sluices Nos. 2 and 4, &c. ..	3,000	..	2,531	2,531
Do.	Do.	No. 1, Pallikottai tank bund, raising and strengthening ..	5,588	..	1,693	1,693
Do.	Do.	No. 1, Sathiyaputhur tank and channel, extension and improvement ..	2,530	..	2,354	2,354
Do.	Do.	No. 5, Beduvolai tank supply channel, providing head sluice ..	7,500	..	1,700	1,700
Do.	Do.	No. 6, Beduvolai tank, raising and strengthening the bund and repairing masonry works ..	2,800	..	1,410	1,410
Total ..			..	2,000	12,073	..
South Arcot ..	South Arcot ..	Alengal channel, improvements ..	47,600	7,000	7,506	14,773
Do.	Do.	Kangayam channel and four tanks depending on it, improvements ..	13,240	3,000	2,939	2,939
Do.	Do.	Thiruvamithur tank and channel, improvements ..	2,585	2,000	1,440	1,738
Do.	Do.	Pallinelliyam tank and channel, improvements ..	7,116	2,300	4,180	5,191
Do.	Do.	Kolondore channel, improvements ..	4,110	2,000	889	2,748
Total ..			..	16,200	17,055	..
Godavari ..	Godavari Eastern.	Chinna Pedda tank bund, raising and strengthening ..	2,770	..	369	2,963
Do.	Godavari Western.	Gokavaram Pedda tank weir and sluice, construction ..	4,510	50	50	4,573
Kistna ..	Kistna North-eastern.	Atmakur tank ..	3,170	..	749	749

Statement showing the outlay during 1894-95 on Irrigation and Navigation Minor Works, &c.—*cont.*

District.	Executive division.	Description of work.	Amount of estimate.	Grant for 1894-95.	Outlay during 1894-95.	Outlay to end of 1894-95.
TANK RESTORATION WORKS—<i>cont.</i>						
<i>Original Works—<i>cont.</i></i>						
Vizagapatam ..	Vizagapatam ..	Nos. 1 and 2, Kandi ancient and channel and Vokumma Kachimasingam tank ..	12,500	6,000	5,938	11,703
Do.	Do.	Pedla Uppalam tank, restoration ..	10,650	1,800	1,828	10,686
Do.	Do.	Katobolu channel and its branches, repairing and improving ..	7,000	4,450	..	..
Do.	Do.	No. 10, Goparazu channel, constructing a head sluice, two surplus weirs, &c. ..	9,180	3,000	1,311	1,311
Do.	Do.	No. 33, Babakan channel, repairing and improving ..	5,450	2,200	..	..
Do.	Do.	Kistnamah channel and its branches, repairs ..	8,600	..	2,462	4,296
Do.	Do.	Vakapada river channel, reconstructing Lutchirazu dam ..	3,230	..	1,691	3,103
Total ..			..	16,949	12,080	..
Tinnevely ..	Tinnevely ..	Vilvarayankulam tank, improvements ..	6,270	4,200	2,753	4,774
Do.	Do.	Nattampatti-Pariyakulam tank, improvements ..	6,870	..	791	6,285
Do.	Do.	Srivilliputtur-Pariyakulam tank, improvements ..	4,000	2,100	..	..
Do.	Do.	Sivanurikulam tank, improvements ..	4,020	3,000	2,860	2,860
Do.	Do.	Pudakottai-Pariyakulam and supply channel, improvement ..	9,180	3,000	3,026	3,026
Do.	Do.	Karanthakulam and supply channel, improvements ..	4,390	3,000	2,506	2,506
Do.	Do.	Pedarangulam, improvement ..	3,160	1,428	..	1,732
Do.	Do.	Maharajapuram-Angulam, improvement ..	3,600	3,000	3,627	3,709
Do.	Do.	Nalungulam, improvement ..	3,790	..	482	2,431
Total ..			..	19,728	16,915	..
Tanjore ..	Negapatam ..	No. 1, Periyakota tank channel, providing a head sluice ..	4,550	..	1,193	1,856
Do.	Do.	No. 5, Mayatti tank and channel, repairing and improving ..	5,670	..	2,493	2,893
Do.	Do.	No. 26, Sibthar tank, improving ..	3,960	..	1,087	1,162
Do.	Do.	No. 18, Tadamalai tank and channel, constructing a weir, four masonry sluices, &c. ..	3,720	..	298	1,367
Do.	Do.	No. 35, Ukkar tank and channel, repairs and improvement ..	4,160	..	2,807	2,817
Do.	Do.	No. 1, Narapavakkudi tank channel, repairs and improvement ..	6,660	..	3,620	3,682
Do.	Do.	No. 1, Pongatti tank channel, repairs and improvement ..	4,480	..	182	187
Do.	Do.	No. 1, Nambivoyal-Sitteri tank and channel, constructing a regulator ..	2,510	..	1,145	1,580
Do.	Do.	Volavoyal melori, &c., Perunaguloor tank ..	8,500	..	2,567	2,567
Do.	Do.	Oovavoyal tank group, Olavannur tank ..	2,800	..	691	691
Total ..			..	..	15,438	..
AGRICULTURAL WORKS.						
<i>Original Works.</i>						
Vizagapatam ..	Vizagapatam ..	Nagavalli river, constructing left flood bank ..	3,430	1,855	1,269	2,768
Do.	Do.	Nagavalli river at Gattamangalapuram, constructing left bank ..	4,330	1,574	1,259	3,257
Total ..			..	2,929	2,528	..
Godavari ..	Godavari Eastern.	Cowtami Godavari from Rajahmundry to Yanam, raising ..	45,000	1,000	1,414	52,006
Do.	Do.	Raising Godavari left bank from Rajahmundry to Purnachodapattam ..	14,358	..	17	15,168
Total ..			..	1,000	1,431	..
Do.	Godavari Western.	Raising Godavari right bank between Polavaram and Vijayawaram ..	14,119	..	3,774	21,827
Do.	Do.	Vasista-Godavari right bank raising from ancient to Chinchimada ferry ..	72,900	10,000	1,179	1,753
Do.	Do.	Vasista left bank diversion at Ramachandrapuram set ..	23,700	..	1,779	14,966

I.A.—Statement of Canals in the Madras Presidency—cont.

	Chennai ancient system No. 21.	Valluvar ancient system No. 24.	Trunkali ancient system No. 25.	Mahanth ancient system No. 26.	Vaidhar ancient system No. 27.	Shrinaga ancient system No. 28.	Ranbar ancient system No. 29.	Lower coleroon ancient system No. 30.	Mandur ancient system No. 32.	Chikka lake canal No. 33.	Pachig lake canal No. 34.	Vedhar ancient canal No. 35.	Ganjim ancient canal No. 36 (a).
Source of supply of water ..	River Chennai No.	River Kottar No.	River Ponnai No.	River Narmadha No.	River Mahanth No.	River Vaidhar No.	River Shrinaga No.	River Ranbar No.	River Mandur No.	River Chikka No.	River Pachig No.	River Vedhar No.	River Ganjim No.
Minimum discharge of river, cubic feet per second.	1,463	113	1,271	Not known	Not known	Not known	Not known	Not known	Not known	Not known	Not known	Not known	Not known
Maximum discharge of river, cubic feet per second.	515	40.43	40.11	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15
Do. during the year ..	42.53	40.43	40.11	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15	20.15
Average annual rainfall ..	75.00	8.64	20.33	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13
Gross area commanded ..	18,251	4,664	20,479	8,153	8,153	8,153	8,153	8,153	8,153	8,153	8,153	8,153	8,153
Culturable ..	18,251	4,664	20,479	8,153	8,153	8,153	8,153	8,153	8,153	8,153	8,153	8,153	8,153
Area irrigable by complete project ..	18,251	4,664	20,479	8,153	8,153	8,153	8,153	8,153	8,153	8,153	8,153	8,153	8,153
Do. at present ..	15,568	3,843	19,488	7,153	7,153	7,153	7,153	7,153	7,153	7,153	7,153	7,153	7,153
Sanctioned estimate ..	3,89,836	62,177	244,176	84,153	84,153	84,153	84,153	84,153	84,153	84,153	84,153	84,153	84,153
Direct charges ..	1,848	1,848	5,610	1,848	1,848	1,848	1,848	1,848	1,848	1,848	1,848	1,848	1,848
Indirect ..	5,81,806	60,329	2,47,566	71,305	71,305	71,305	71,305	71,305	71,305	71,305	71,305	71,305	71,305
Total, Estimate ..	5,77,125	62,177	2,49,736	73,153	73,153	73,153	73,153	73,153	73,153	73,153	73,153	73,153	73,153
Expenditure to ..	5,77,125	62,177	2,49,736	73,153	73,153	73,153	73,153	73,153	73,153	73,153	73,153	73,153	73,153
end of 1894-95. (Indirect do. ..)	5,77,125	62,177	2,49,736	73,153	73,153	73,153	73,153	73,153	73,153	73,153	73,153	73,153	73,153
Total, Expenditure ..	5,77,125	62,177	2,49,736	73,153	73,153	73,153	73,153	73,153	73,153	73,153	73,153	73,153	73,153
Works as now sanctioned—													
Main canals, irrigation ..	20	5	67	7	7	7	7	7	7	7	7	7	7
Branch do. ..	40	10	80	15	15	15	15	15	15	15	15	15	15
Distributaries ..	120	30	240	45	45	45	45	45	45	45	45	45	45
Of above—													
Navigable canals ..	20	5	67	7	7	7	7	7	7	7	7	7	7
Works completed at end of 1894-95—													
Main canals, irrigation ..	20	5	67	7	7	7	7	7	7	7	7	7	7
Branch do. ..	40	10	80	15	15	15	15	15	15	15	15	15	15
Distributaries ..	120	30	240	45	45	45	45	45	45	45	45	45	45
Of above ..													
Navigable ..	20	5	67	7	7	7	7	7	7	7	7	7	7

(a) Work carried on only for famine purposes and abandoned—see page 98 of report.

December 1895.

(Signed) R. B. E. DRAKE-BROCKMAN, Colonel, R.E.,
Chief Engineer for Irrigation.

II.A.—Statement of Reservoir Projects in the Madras Presidency.

	Barar Tank project No. 8.	Pottir project No. 9.	Rushikulya project No. 10.	Dondapudi Tank project No. 13.	Comber Tank project No. 14.	Cheruvu Tank project No. 15.	Madras Water supply and irrigation project No. 16.
Source of supply of water ..	(a) Perumbar river and rainfall.	(b) Perumbar river and rainfall.	(c) Malankudi and Rushikulya rivers.	Rainfall.	(d) Comber Tank and Cheruvu rivers.	(e) Cheruvu Tank and Cheruvu rivers.	(f) Madras Water supply and irrigation project.
If supplied by rainfall ..	(d) 5,682 Sq. miles.	(d) 5,682 Sq. miles.	(d) 5,682 Sq. miles.	85	85	85	85
Contents of tank between levels of surface of fall ..	58,000	58,000	58,000	24	24	24	24
Area of surface of fall ..	603	603	603	43	43	43	43
Gross area commanded ..	10,756	10,756	10,756	2,550	2,550	2,550	2,550
Culturable ..	10,756	10,756	10,756	2,550	2,550	2,550	2,550
Area irrigable by complete project ..	10,756	10,756	10,756	2,550	2,550	2,550	2,550
Do. at present ..	10,756	10,756	10,756	2,550	2,550	2,550	2,550
Sanctioned estimate ..	10,756	10,756	10,756	2,550	2,550	2,550	2,550
Direct charges ..	4,11,303	4,11,303	4,11,303	1,27,103	1,27,103	1,27,103	1,27,103
Indirect ..	2,55,000	2,55,000	2,55,000	11,600	11,600	11,600	11,600
Total, Estimate ..	4,36,803	4,36,803	4,36,803	1,38,703	1,38,703	1,38,703	1,38,703
Expenditure to end of 1894-95—							
Direct charges ..	4,36,803	4,36,803	4,36,803	1,38,703	1,38,703	1,38,703	1,38,703
Indirect ..	2,55,000	2,55,000	2,55,000	11,600	11,600	11,600	11,600
Total, Expenditure ..	4,36,803	4,36,803	4,36,803	1,38,703	1,38,703	1,38,703	1,38,703
Works as now sanctioned—							
Dam, (earth or masonry), total height ..	28	155	60	22	22	22	22
Canals ..	28	155	60	22	22	22	22
Distributaries ..	28	155	60	22	22	22	22
Works completed at the end of 1894-95—							
Dam (height completed) ..	28	155	60	22	22	22	22
Canals ..	28	155	60	22	22	22	22
Distributaries ..	28	155	60	22	22	22	22

(a) The supply from the river is obtained by means of an outlet.

(b) The supply is to be obtained from two reservoirs, "Rushikulya" and "Suakki" as well as from the rivers which will have outlets across them.

(c) The Canbar tank receives its supply direct from drainage basin, being diverted into the tank by means of a dam on the two rivers.

(d) This is the drainage area of the river at the National amount. The drainage area of the Barar tank itself is 7 square miles.

(e) Rushikulya reservoir dam has been completed. The east dam of Barar reservoir has been raised to + 305.0 for one half of the whole length and to + 295.0 for the other half, and the reservoir built to + 295.0.

December 1895.

(Signed) R. B. E. DRAKE-BROCKMAN, Colonel, R.E.,
Chief Engineer for Irrigation.

I.B.—CAPITAL ACCOUNT OF IRRIGATION AND NAVIGATION WORKS, "MAJOR" (PRODUCTIVE AND PROTECTIVE) AND "ORDINARY MINOR," FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT IN THE MADRAS TREASURY FOR AND TO END OF 1894-95.

APPENDIX TO THE ADMINISTRATION REPORT OF THE

APPENDIX C.

Works or systems	Direct charges for expenditure.					Total.	Indirect charges excluding interest.	Total capital excluding interest.	Single interest.
	Works.	Establishment.	Tools and plant.	Suspense account.	Rs.				
PRODUCTIVE PAUKA WORKS.									
No. 1. Chikara delta system ..	Rs. 89,58,714	Rs. 1,79,107	Rs. 5,45,000	..	1,00,13,828	1,28,08,322	1,28,08,322	1,28,08,322	1,17,23,559
" 2. Kinnia do. ..	79,41,111	1,00,20,000	6,44,000	..	1,00,20,000	1,11,68,000	1,11,68,000	1,11,68,000	77,92,885
" 3. Pennar ancient system ..	3,54,108	11,888	11,888	..	1,75,175	1,29,997	1,29,997	1,29,997	4,48,009
" 4. Baugan do. ..	21,11,111	4,87,773	11,11,111	..	1,11,111	1,11,111	1,11,111	1,11,111	1,11,111
" 5. Kurnool-Cuddapah canal ..	2,11,111	9,000	..	..	1,11,111	1,11,111	1,11,111	1,11,111	1,11,111
" 6. Barur tank ..	1,11,111	1,11,111	1,11,111	..	1,11,111	1,11,111	1,11,111	1,11,111	1,11,111
" 7. Cauvery delta system ..	1,11,111	1,11,111	1,11,111	..	1,11,111	1,11,111	1,11,111	1,11,111	1,11,111
" 8. Srirangapatnam ancient system ..	1,11,111	1,11,111	1,11,111	..	1,11,111	1,11,111	1,11,111	1,11,111	1,11,111
" 9. Periyar project ..	1,11,111	1,11,111	1,11,111	..	1,11,111	1,11,111	1,11,111	1,11,111	1,11,111
Total, Productive Pauka Works ..	1,11,111	1,11,111	1,11,111	..	1,11,111	1,11,111	1,11,111	1,11,111	1,11,111
PROTECTIVE IRRIGATION WORKS.									
No. 10. Ruzhikalya project ..	1,11,111	1,11,111	1,11,111	..	1,11,111	1,11,111	1,11,111	1,11,111	1,11,111
ORDINARY IRRIGATION, MINOR WORKS AND NAVIGATION.									
No. 12. Munneyara project ..	1,11,111	1,11,111	1,11,111	..	1,11,111	1,11,111	1,11,111	1,11,111	1,11,111
" 13. Dondapada tank project ..	1,11,111	1,11,111	1,11,111	..	1,11,111	1,11,111	1,11,111	1,11,111	1,11,111
" 14. Sagilera project ..	1,11,111	1,11,111	1,11,111	..	1,11,111	1,11,111	1,11,111	1,11,111	1,11,111
" 15. Gumbam tank system ..	1,11,111	1,11,111	1,11,111	..	1,11,111	1,11,111	1,11,111	1,11,111	1,11,111
" 16. Thadapalli channel system ..	1,11,111	1,11,111	1,11,111	..	1,11,111	1,11,111	1,11,111	1,11,111	1,11,111
" 17. Arkenkote do. ..	1,11,111	1,11,111	1,11,111	..	1,11,111	1,11,111	1,11,111	1,11,111	1,11,111

I.B.—Capital Account of Irrigation and Navigation Works, "Major" (Productive and Protective) and "Ordinary Minor," &c.—cont.

Works or systems.	Direct charges (net expenditure).					Indirect charges excluding interest.	Total capital excluding interest.	Simple interest.
	Tools and plant.				Total.			
	Rs.	Establishment.	Rs.	Suspense account.				
ORDINARY IRRIGATION, MINOR WORKS AND NAVIGATION—cont.								
No. 18. Kalingarayan channel system ..	47,756	10,984	..	..	58,740	1,538	60,278	..
" 19. Palur ancient system ..	14,91,453	8,92,878	29,875	..	19,14,206	38,373	20,12,579	..
" 20. Polney do. ..	1,83,109	42,114	..	..	2,25,222	1,631	2,31,119	..
" 21. Cheyaru do. ..	2,81,588	94,682	..	..	3,46,271	179	3,55,382	..
" 22. Choudambakam tank system ..	23,155	2,874	8,050	..	28,819	118	29,607	..
" 23. Madras water-supply and irrigation extension.	4,91,801	1,24,554	..	..	6,21,435	1,12,164	7,36,589	..
" 24. Vallura ancient system ..	12,97,740	2,12,947	5,491	..	15,16,527	2,38,218	17,54,045	..
" 25. Truhkoyilur ancient system ..	60,550	11,627	..	..	72,177	1,628	73,805	..
" 26. Mahamattur do. ..	1,99,704	45,931	..	..	2,45,635	6,458	2,52,093	..
" 27. Vridhachakam do. ..	1,82,539	12,916	..	..	2,00,455	2,361	2,02,816	..
" 28. Shattatope do. ..	39,495	6,036	..	..	45,531	1,269	46,800	..
" 29. Palandurai do. ..	31,356	21,055	..	..	52,411	2,940	55,351	..
" 30. Lower Coleroon do. ..	16,547	3,413	3,640	..	23,600	478	24,078	..
" 31. Marudur do. ..	8,82,545	73,994	..	..	9,00,539	41,468	9,42,007	..
" 32. Chikla lake canal ..	3,22,952	418	..	..	3,23,370	2,63	3,23,633	..
" 33. Buckingham do. ..	4,47,156	1,02,815	..	..	5,50,000	14,389	5,64,389	..
" 34. Ganjam-Gopalpur canal ..	32,299	7,495	..	..	40,000	164	40,164	..
" 35. Marudur do. ..	24,156	5,324	155	..	30,240	1,049	31,289	..
" 36. Chikla lake canal ..	62,15,261	14,83,603	1,44,794	..	78,43,658	787	78,44,445	..
" 37. Buckingham do. ..	1,37,715	30,619	2,626	..	1,68,960	4,688	1,73,648	..
" 38. Ganjam-Gopalpur canal ..	1,05,975	87,794	..	..	1,93,769	12,393	2,06,162	..
Total, Irrigation and Navigation Works.	1,16,64,801	27,24,798	1,95,485	..	1,45,85,084	10,27,629	1,56,12,713	..

(Signed) D. C. GORDON,
Examiner of Public Works Accounts.

7th December 1895.

[illegible]

Working expenses—cont.															
Works or systems.		Maintenance of works.					Grand total. working expenses.	Deduct old maintenance charges.			Total working expenses on im- prove- ments.	Net revenue.			
		Establishment.		Works.	Repairs.	Tools and plant.		Platation.	Total cost of main- tenance.	Indirect charges.			Total.		
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Productive Public Works.															
No. 1.	10,728	42,911	68,639	20,230	2,21,221	45,582	RS. 471	RS. 3,11,113	RS. 23,914	RS. 6,18,501	RS. 7,450	RS. 1,050	RS. 8,560	RS. 10,80,352	RS. 18,64,852
" 2.	9,894	38,778	48,472	12,439	1,88,845	37,233	6,190	3,03,229	2,310	6,12,215	1,200	1,840	4,909	5,31,215	14,81,568
" 3.	1,194	4,561	5,701	1,435	23,362	182	..	30,129	2,380	31,757	28,456	1,511	30,966	2,77,787	1,88,738
" 4.	1,527	6,169	7,696	3,680	29,449	1,078	..	49,317	8,777	72,209	25,429	1,581	25,100	47,269	1,58,817
" 5.	3,890	15,558	18,948	7,334	68,122	1,078	..	93,528	9,674	1,09,680	126	30	136	1,02,486	3,676
" 6.	125	509	600	600	2,218	..	13	3,436	501	4,862	..	..	4,712	7,066	5,136
" 7.	3,447	17,293	20,740	8,198	77,720	108	..	1,93,459	29,556	4,52,854	3,244	3,560	66,259	40,89,685	8,03,913
" 8.	700	2,201	3,501	955	14,265	..	..	18,722	1,259	36,319	11,657	848	12,509	1,22,639	76,170
Total	32,751	1,29,004	1,53,765	54,031	6,35,193	84,183	7,120	9,52,182	1,16,733	19,23,927	4,27,423	20,912	4,67,185	14,66,752	32,49,212
Protective Irrigation Works.															
No. 10.	517	2,068	2,565	..	11,239	48	..	13,879	376	15,666	..	..	15,863	32,617	11,667
Minor Works and Navigation.															
No. 15.	117	468	585	170	2,873	..	..	3,128	82	3,847	..	..	3,846	38,832	8,857
" 16.	53	361	314	64	1,434	..	..	1,719	55	3,389	..	..	3,389	1,03,110	25,791
" 17.	51	199	1	1	1,434	..	..	1,066	30	1,684	..	..	1,684	26,531	7,583
" 18.	35	142	177	204	1,067	..	..	1,458	125	2,980	..	..	2,980	1,03,315	16,129
" 19.	2,187	10,397	10,397	2,827	41,468	..	..	58,632	3,617	59,984	3,591	3,560	66,084	78,737	78,737
" 20.	1,016	4,066	5,082	2,589	13,549	..	..	27,211	713	30,188	..	..	30,188	1,09,821	14,055
" 21.	711	3,543	3,543	2,227	13,227	..	..	14,905	459	21,685	..	..	21,688	69,467	16,167
" 22.	193	771	967	1,260	3,119	..	..	5,365	176	6,618	6,727	173	6,000	32,142	23,342
" 23.	249	1,148	1,497	309	6,214	..	..	8,610	348	10,813	4,680	129	4,500	6,513	18,937
" 24.	37	116	183	527	288	..	..	966	26	1,225	..	..	1,225	5,353	2,556
" 25.	516	2,063	2,579	2,516	8,696	..	..	13,791	368	16,134	..	..	16,134	22,879	22,879
" 26.	108	430	538	186	2,354	..	..	3,018	76	3,671	..	..	3,671	6,727	6,643
" 27.	157	629	785	410	2,973	..	..	4,294	111	6,196	..	..	6,196	20,253	11,759
" 28.	316	1,264	1,589	894	6,203	..	..	8,683	226	14,912	..	..	14,912	1,01,743	87,716

I.C.—Statement showing the financial results of Irrigation and Navigation Works "Major" (Productive and Protective) and "Ordinary Minor" for which Capital and Revenue Accounts are kept, &c.—cont.

Works or systems.	Revenue account receipts.										Working expenses.					
	Irrigation.		Navigation.		Miscellaneous.		Total.		Less: share of revenue.		Gross revenue.		Deduct share of revenue.		Total revenue.	
	Share of revenue.	Total.	Share of revenue.	Total.	Share of revenue.	Total.	Share of revenue.	Total.	Share of revenue.	Total.	Share of revenue.	Total.	Share of revenue.	Total.	Share of revenue.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Minor Works and Navigation—cont.																
No. 29. Polandera and Navigation system.	81,840	183	39,022	..	..	230	39,022	..	39,022	..	39,022	..	..	..	39,022	..
" 30. Lower Cuddalore canal.	8,537,282	55,945	4,297,722	..	..	..	4,297,722	..	4,297,722	..	4,297,722	..	..	..	4,297,722	..
" 31. Marader.	1,877,722	..	1,877,722	..	..	..	1,877,722	..	1,877,722	..	1,877,722	..	..	..	1,877,722	..
" 32. Chalka lake canal.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" 33. Pookantheen canal.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" 34. Vaidharani canal.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" 35. Ganjam-Gopalpur canal.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	1,03,826	17,08,877	1,03,826	17,08,877	1,03,826	17,08,877	1,03,826	17,08,877	1,03,826	17,08,877	1,03,826	17,08,877	1,03,826	17,08,877	1,03,826	17,08,877

APPENDIX TO THE ADMINISTRATION REPORT OF THE

APPENDIX C.

PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1894-95.

APPENDIX C.

I.C.—Statement showing the financial results of Irrigation and Navigation Works "Major" (Productive and Protective) and "Ordinary Minor" for which Capital and Revenue Accounts are kept, &c.—cont.

Working expenses—cont.																
Works or systems.			Maintenance of works.						Deduct old maintenance charges.				Total working expenses on improvements.	Net revenue.		
			Establishment.		Works.		Repairs.		Tools and plant.		Flotation.			Total net charges.		Grand total.
Direction.	Expenditure.	Total.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
<i>Minor Works and Navigation—cont.</i>																
No. 29. Polandera and Navigation system.	329	1,814	1,243	422	6,721	..	..	253	4,786	253	10,455	146	..	10,348	21,798	19,948
" 30. Lower Cuddalore do.	284	3,519	4,899	3,044	18,725	..	..	27,912	7,709	43,164	..	..	..	43,164	3,98,172	2,62,875
" 31. Marader do.	486	1,932	2,415	486	10,065	..	..	14,905	341	15,858	..	..	..	16,893	1,62,930	51,925
" 32. Chalka lake canal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" 33. Pookantheen do.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" 34. Buckingham do.	209	12,115	16,114	4,668	69,865	4,648	..	3,663	86,933	3,663	1,01,596	..	..	1,01,596	7,891	835
" 35. Vaidharani canal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" 36. Ganjam-Gopalpur canal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
" 37. Total ..	10,783	45,018	43,336	28,074	2,11,691	4,248	..	2,11,691	20,869	2,32,560	2,32,560	16,759	16,759	2,15,801	14,71,125	6,76,386

Note.—In Madras the Irrigation revenue is collected by the Revenue Department with land revenue. The assessments of irrigation revenue are therefore taken as fully collected, except in the case of the Kurnool-Cuddalore canal. The irrigation revenue of this canal is credited as "Direct receipts." The navigation revenue, which forms the principal portion of the receipts in the Public Works Department, are assessed and collected separately, and therefore the assessments agree with the collections.

7th December 1895.

(Signed) D. C. GORDON,
Examiner of Public Works Accounts.

APPENDIX C.

II-C.—STATEMENT showing the financial results of Irrigation and Navigation Works, "Major" (Productive and Protective) and "Ordinary Minor," for which Capital and Revenue Accounts are kept in the Madras Presidency for the year 1894-95, based on actual receipts.

Irrigation works.	Revenue account.					Working expenses.					Percentage of net revenue to total charges.	Surplus revenue after paying interest.	Excess charge, including interest.	
	Direct and indirect capital cost of 1894-95.	Direct revenue from irrigation.	Indirect revenue from irrigation.	Total revenue from irrigation.	Total charges, direct and indirect.	Total charges, direct and indirect.	Net revenue, surplus or deficit.	Percentage of net revenue to total charges.	Amount.	Percentage on total sum at charge.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PRODUCTIVE PUBLIC WORKS.														
In operation.														
No. 1. Gokarnam delta system	1,28,45,544	24,29,526	1,34,000	25,63,526	6,18,567	8,500	15,54,729	31.22	4.67	1,34,000	11.34	..	..	..
" 2. Rameswaram delta system	1,06,25,104	28,89,884	1,11,000	29,00,884	6,42,853	4,000	15,56,884	32.71	4.73	1,11,000	9.08	..	..	..
" 3. V. S. delta system	18,50,000	2,80,000	1,11,000	3,91,000	72,787	10,000	1,50,000	38.15	1.55	1,11,000	3.28	..	..	..
" 4. S. S. delta system	37,50,000	2,22,000	1,35,000	3,57,000	1,02,000	23,900	1,08,100	30.11	3.11	1,35,000	4.1	..	..	..
" 5. K. S. delta system	1,10,00,000	1,10,000	2,000	1,12,000	1,02,000	1,100	1,10,900	99.89	0.01	2,000	0.0018	8,64,382	8.32	..
" 6. P. S. delta system	1,10,00,000	1,10,000	2,000	1,12,000	1,02,000	1,100	1,10,900	99.89	0.01	2,000	0.0018	16,123	2.36	..
" 7. P. S. delta system	1,10,00,000	1,10,000	2,000	1,12,000	1,02,000	1,100	1,10,900	99.89	0.01	2,000	0.0018	..	..	..
" 8. S. S. delta system	1,10,00,000	1,10,000	2,000	1,12,000	1,02,000	1,100	1,10,900	99.89	0.01	2,000	0.0018	..	..	..
" 9. P. S. delta system	1,10,00,000	1,10,000	2,000	1,12,000	1,02,000	1,100	1,10,900	99.89	0.01	2,000	0.0018	2,78,945	3.84	..
Total ..	1,06,25,104	28,89,884	1,11,000	29,00,884	6,18,567	15,54,729	15,54,729	100	..	1,11,000	11.34	11,50,191	..	..
PROTECTIVE IRRIGATION WORKS.														
In operation.														
No. 10. Reddichy project	431,184	20,800	..	20,800	16,000	..	14,800	11.67	..	..	..	..	1,20,000	3.23
MIXED WORKS AND NAVIGATION.														
In operation.														
No. 12. Munivara project system	20,200	..	..	..	..	..	..	..	..	..	..	..	..	..
" 13. D. S. project	95,187	..	..	..	..	..	..	..	..	..	..	..	..	..
" 14. S. S. project	1,03,720	..	..	..	..	..	..	..	..	..	..	..	..	..
" 15. D. S. project	55,875	..	..	..	..	..	..	..	..	..	..	..	..	..
" 16. D. S. project	98,532	..	..	..	..	..	..	..	..	..	..	..	..	..
" 17. A. S. project	1,02,000	..	..	..	..	..	..	..	..	..	..	..	..	..
" 18. K. S. project	1,02,000	..	..	..	..	..	..	..	..	..	..	..	..	..
" 19. P. S. project	20,36,375	..	..	..	..	..	..	..	..	..	..	..	..	..
" 20. P. S. project	2,31,823	..	..	..	..	..	..	..	..	..	..	..	..	..
" 21. Chayara do.	3,84,949	..	..	..	..	..	..	..	..	..	..	..	..	..

II-C.—Statement showing the financial results of Irrigation and Navigation Works, "Major" (Productive and Protective) and "Ordinary Minor," for which Capital and Revenue Accounts are kept in the Madras Presidency for the year 1894-95, based on actual receipts—cont.

Irrigation works.	Direct and indirect capital cost, 1894-95.	Revenue account.				Working expenses.				Net revenue due to improve-ments.	Percentage of net revenue to total charges.		Surplus revenue after paying interest.		Excess charge, including interest.	Percentage on total sum at charge.	
		Direct revenue from irrigation.	Indirect revenue from irrigation.	Total revenue from irrigation.	Total charges, direct and indirect.	Direct charges.	Indirect charges.	Total charges.	Percentage on total sum at charge.		Amount.	Percentage on total sum at charge.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			
PROTECTIVE AND NAVIGATION—cont.																	
In operation—cont.																	
22. Channarayana tank system.	7,44,938	39,950	16,000	16,000	23,080	6,688	6,300	23,842	3.14	..	..	..	..	..			
23. Madras water-supply and irrigation extension.	17,54,045	85,450	11,000	11,000	24,450	10,313	4,300	15,937	1.08	..	..	..	..	..			
24. V. S. delta system.	60,800	5,600	6,732	6,732	3,981	1,225	..	1,225	4.32	..	..	..	..	..			
25. P. S. delta system.	2,54,461	97,563	58,561	58,561	16,134	1,134	..	16,134	8.96	..	..	..	..	..			
26. P. S. delta system.	71,047	12,563	2,981	2,981	10,314	3,611	..	6,643	9.35	..	..	..	..	..			
27. P. S. delta system.	4,07,047	95,475	3,465	3,465	16,399	3,105	..	11,790	23.70	..	..	..	..	..			
28. P. S. delta system.	1,36,947	1,91,753	20,027	20,027	1,01,728	24,032	..	14,012	63.17	..	..	..	..	..			
29. P. S. delta system.	4,65,951	32,596	8,765	8,765	29,536	10,468	..	19,348	4.17	..	..	..	..	..			
30. P. S. delta system.	5,73,893	4,41,133	1,13,382	1,13,382	2,55,032	43,164	..	43,164	23.87	..	..	..	..	..			
31. Madras water-supply and irrigation extension.	17,54,045	1,50,000	11,000	11,000	73,854	18,532	..	16,508	13.82	..	..	..	..	..			
32. Chitra Peta canal.	31,927	..	..	..	1,69,427	229	..	..	7.81	..	..	..	..	..			
33. Durgam Cheruvu canal.	1,69,427	..	..	..	1,01,636	..	..	1,01,636	..	..	..	..	..	..			
34. Yelamancheru canal.	1,55,498	..	..	..	1,185	3,832	..	6,892	..	..	..	..	..	..			
35. Ganjan-Chopur canal.	..	..	..	..	..	13	..	13	..	..	..	..	..	..			
Total ..	1,06,25,104	16,34,904	8,10,479	8,10,479	10,27,416	2,66,774	13,766	3,51,024	6.76	..	..	..	..	..			

13th December 1895.

(Signed) D. C. GORDON,
Examiner of Public Works Accounts.

APPENDIX C.

III.C.—DEMANDS AND REALIZATIONS DURING THE YEAR 1894-95 IN THE MADRAS PRESIDENCY.
"Major" (Productive and Protective) and "Ordinary Minor" Works for which Capital and Revenue Accounts are kept.

Works or systems.	Balance of demands at end of year.	Total.	Net total.	Deduct expenses incurred at close of year.	Actual total receipts of year.	Deduct share due to old irrigation.	Total revenue due to improvements.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Productive Public Works.							
No. 1. Giddari delta system ..	26,07,171	67,07,171	39,98,839	..	22,29,833	1,44,000	25,04,833
" 2. Kistna do. ..	20,09,014	20,09,014	20,09,014	..	20,09,014	71,700	20,18,883
" 3. Ponnaiyandi system ..	2,88,748	2,88,748	2,88,748	..	2,88,748	1,17,000	1,06,015
" 4. Sangam do. ..	3,59,321	3,59,321	1,10,605	..	3,59,321	1,39,000	1,83,095
" 5. Kurnool-Cuddapah canal ..	1,41,419	1,41,419	1,41,419	..	1,41,419	..	1,41,419
" 6. Kurnool-Cuddapah canal ..	2,50,501	2,50,501	2,50,501	..	2,50,501	..	2,50,501
" 7. Canvey delta system ..	1,11,882	1,11,882	1,11,882	..	1,11,882	2,000	9,888
" 8. Srivallur ancient system ..	45,51,714	45,51,714	9,75,505	..	45,51,714	39,11,807	8,79,182
" 9. Srivallur ancient system ..	1,54,520	1,54,520	1,54,520	..	1,54,520	1,75,000	99,495
Total ..	2,25,01	1,03,93,830	95,11,2	..	1,01,78,109	42,06,807	59,09,292
Protective Minor Works.							
No. 10. Renukula project ..	48,551	48,551	368	..	48,183	20,551	27,633
Minor Works and Navigation.							
No. 15. Cambum tank system ..	49,836	49,836	1,095	..	48,741	50,575	12,702
" 16. Thadapali channel system ..	1,07,644	1,07,644	1,095	..	1,06,549	10,260	36,180
" 17. Arankota do. ..	2,88,988	2,88,988	423	..	2,88,565	13,495	8,967
" 18. Kalligroven do. ..	1,06,573	1,06,573	1,095	..	1,05,478	8,750	21,725
" 19. Palar ancient system ..	2,75,597	2,75,597	6,756	..	2,68,841	1,25,000	1,41,511
" 20. Ponnaiyandi do. ..	98,256	98,256	4,334	..	93,922	46,609	44,263
" 21. Cheyaru do. ..	80,102	80,102	4,253	..	75,849	44,319	31,455
" 22. Chembakulam tank system ..	52,572	52,572	13,492	..	39,080	15,000	24,080
" 23. Madras water supply and irrigation extension ..	35,817	35,817	367	..	35,450	11,000	24,450
" 24. Valdiva ancient system ..	9,837	9,837	374	..	9,463	9,289	3,981
" 25. Tirukkalai ancient system ..	12,410	12,410	12	..	12,400	2,684	10,314
" 26. Mohamathur do. ..	26,436	26,436	7	..	26,429	8,493	16,456
" 27. Veddachalam do. ..	1,22,161	1,22,161	306	..	1,21,855	20,000	1,01,728
" 28. Sathapudi do. ..	32,838	32,838	743	..	32,095	31,000	29,276
" 29. Pelandur do. ..	4,41,398	4,41,398	57	..	4,41,341	1,45,302	2,96,039
" 30. Lower Coleroon do. ..	1,80,106	1,80,106	2,007	..	1,78,099	1,15,264	1,69,497
" 31. Marudor do. ..	1,09,496	1,09,496	71	..	1,09,425	..	1,09,425
" 32. Eddingham canal ..	1,136	1,136	..	..	1,136	..	1,136
Total ..	18,73,781	18,73,781	35,835	..	18,37,946	5,10,451	10,27,410

7th December 1895. (Signed) D. C. GORLON,
Examiner of Public Works Accounts.

IV.C.—STATEMENT showing the financial results of Irrigation and Navigation Works, "Major" (Productive and Protective) and "Ordinary Minor" for which Capital and Revenue Accounts are kept in the Madras Presidency for the year ended 1894-95 based on assessments for the year.
Principal results of operations for the year ended 31st March 1895.

Works or systems.	Capital outlay direct and indirect to end of the year.	Receipts received during the year.										Net revenue of the year.		Percentage on capital outlay to end of year (improvements only).				
		Direct revenue.					Total.	Indirect revenue from operations of canal.	Losses from revenue.	Grain of total.	Deduct share due to old irrig. tax.	Total revenue due to improvements.	Working expenses.			Total.	Due to improvements.	
		Opem-plate rate.	Plan-tion.	Navi-gation.	Miscel-laneous.	Total.							Total charges, direct and indirect.		Deduct old maintenance and interest on improvements.			Total working expenses on improvements.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Productive Public Works.																		
No. 1. Giddavari delta system ..	1,28,15,644	..	10,024	1,03,822	11,502	1,06,418	22,01,029	687	2,28,633	1,21,000	25,05,839	6,48,501	8,500	6,40,001	19,80,382	18,84,862	14,81,688	
" 2. Kistna do. ..	1,10,40,104	..	4,755	87,222	11,788	54,745	20,55,154	18	2,08,500	71,000	2,64,883	6,42,215	4,800	27,215	16,47,068	14,81,688	12,74,726	
" 3. Ponnaiyandi system ..	18,80,204	..	..	..	397	297	2,34,118	..	2,08,515	1,11,000	1,06,515	67,787	30,100	27,787	2,22,738	1,88,726	7,63,745	
" 4. Sangam do. ..	27,84,745	..	..	..	500	500	3,24,455	..	3,35,016	1,39,000	1,68,026	72,209	25,000	47,209	2,62,817	1,88,817	3,67,847	
" 5. Kurnool-Cuddapah canal ..	2,15,05,111	1,10,622	1,457	4,457	1,15,338	4,455	390	1,28,553	1,23,500	1,23,500	1,05,500	180	1,05,320	13,853	13,853	60,913	1,73,880	
" 6. Kurnool tank project ..	4,10,713	..	..	..	26	26	4,10,713	..	11,868	2,000	9,868	4,822	100	4,768	7,008	5,158	1,73,880	
" 7. Canvey delta system ..	17,53,558	..	1,246	..	4,322	3,569	46,38,500	..	46,43,880	21,807	8,70,182	4,82,060	3,60,585	66,269	40,89,335	6,03,913	40,661	
" 8. Srivallur ancient system ..	14,21,928	..	..	..	1,666	1,506	1,77,865	..	1,78,340	15,000	99,340	33,819	12,500	23,819	1,42,630	76,130	76,130	
" 9. Periyar project ..	73,43,220	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Total ..	6,30,29,149	1,10,602	15,857	1,42,871	32,635	7,04,635	28,75,854	523	10,48,567	12,08,507	19,39,027	14,77,135	14,56,792	82,52,719	45,25,047	..	..	
Protective Irrigation Works.																		
No. 10. Renukula project ..	48,16,884	..	..	..	1,095	1,095	47,169	..	48,195	20,850	27,345	15,806	..	15,806	11,667	11,667	22	
Minor Works and Navigation.																		
No. 12. Manayaru project ..	38,293	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
" 13. Dordapad tank project ..	95,787	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
" 14. Sathapudi tank system ..	1,43,709	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
" 15. Cambum tank system ..	38,562	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
" 16. Thadapali channel system ..	1,02,984	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
" 17. Arankota do. ..	9,978	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
" 18. Kalligroven do. ..	20,25,378	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
" 19. Palar ancient system ..	2,81,428	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
" 20. Ponnaiyandi do. ..	8,85,919	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
" 21. Cheyaru do. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	

IV-C.—Statement showing the financial results of Irrigation and Navigation Works, "Major," &c.—*cont.*Principal results of operations for the year ended 31st March 1895—*cont.*

Works or systems.	Capital outlay, direct and indirect, to end of the year.	Revenue assessed during the year.										Net revenue of the year.		Percentage on capital outlay to end of year.
		Direct revenue.					Working expenses.					Total.	Due to improvements.	
		Quota per rate.	Plantation.	Navigational.	Miscellaneous.	Total.	Interest on loans.	Grants.	Debit due to improvements.	Total charges and charges on employees.	Debit working expenses on employees.			
1	Rs.	P.	Rs.	P.	Rs.	P.	Rs.	P.	Rs.	P.	Rs.	P.	Rs.	P.
MINOR WORKS AND NAVIGATION—cont.														
No. 22. Chemburakam tank system	7,44,038	..	..	..	..	..	..	..	..	..	..	..	..	..
" 23. Madras water-supply and irrigation extension	17,55,046	..	..	..	..	..	..	..	..	..	..	..	..	..
" 24. Vallur water system	65,905	..	..	..	..	..	..	..	..	..	..	..	..	..
" 25. Trunkvelur do.	2,54,461	..	..	..	..	..	..	..	..	..	..	..	..	..
" 26. Meenattur do.	71,047	..	..	..	..	..	..	..	..	..	..	..	..	..
" 27. Vaidhachanam do.	48,257	..	..	..	..	..	..	..	..	..	..	..	..	..
" 28. Shattur do.	1,85,067	..	..	..	..	..	..	..	..	..	..	..	..	..
" 29. Pandur do.	4,20,231	..	..	..	..	..	..	..	..	..	..	..	..	..
" 30. Lower Coleroon do.	5,73,856	..	..	..	..	..	..	..	..	..	..	..	..	..
" 31. Marudur do.	31,165	..	..	..	..	..	..	..	..	..	..	..	..	..
" 32. Chikla lake canal	31,027	..	..	..	..	..	..	..	..	..	..	..	..	..
" 33. Vedaranyam canal	51,75,914	..	..	..	..	..	..	..	..	..	..	..	..	..
" 34. Ganjam-Gopalspur canal	1,55,453	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	1,70,39,589	..	..	..	..	..	..	..	..	..	..	..	..	..

Note.—In Madras the irrigation revenue is collected in the Revenue Department with land revenue. The assessments of irrigation revenue are therefore taken as fully collected except in the case of the Kurnool-Cuddapah canal. The irrigation revenue of this canal is collected as a part of the land revenue. The navigation revenue, which forms the principal portion of the receipts in the Public Works Department, are assessed and collected simultaneously and therefore the assessments agree with the collections.

7th December 1895.

(Signed) D. C. GORDON.
Examiner of Public Works Accounts.

I-D.—STATEMENT of Traffic on the principal Navigable Canals in the Madras Presidency during the year.

	Goddavari canals, No. 1.	Kistna canals, No. 2.	Kurnool-Cuddapah canal, No. 3.	Buckingham canal, No. 4.	Total.	Remarks.
Length of canal open for navigation	483	367	190	262	1,252	
Receipts—						
License fee and tolls on private boats	76,308	97,153	1,04,715	2,00,208	4,78,384	
do. on Government boats	4,922	5,438	531	10,941	16,925	
do. on rafts	16,292	1,423	..	110	17,825	
Raftage	..	614	..	..	614	
Miscellaneous	12,484	3,259	1,683	17,418	26,844	
Grants	798	2,471	745	4,012	11,026	
Total Receipts	1,02,802	1,07,784	1,07,784	2,48,898	4,67,268	
Maintenance charges, including special Navigation establishment	84,281	64,901	62,885	2,09,107	3,19,174	
Net Revenue of year (a)	18,521	42,883	44,899	1,39,791	2,46,194	
Total number of boats plying cargo	29,867	11,012	28,800	67,489	1,36,168	
do. passengers	21,087	14,095	7,854	46,086	89,122	
Total tonnage, cargo boats	319,777	226,060	274,822	973,280	1,793,939	
do. passenger boats	1,866,378	7,071,611	23,429,265	82,067,252	93,374,206	
Ton mileage, up	10,191,533	4,911,929	2,346,712	17,980,194	25,429,468	
do. down	11,967,929	12,582,540	25,675,277	50,627,446	1,00,853,192	
Estimated value of cargoes, up	92,91,307	59,65,944	1,26,75,342	2,79,32,693	1,98,65,286	
do. down	92,46,744	56,21,921	51,46,282	2,06,78,897	1,00,93,844	
Number of passengers, total	266,012	117,687	93,825	467,774	925,298	
Rafts, tons, up	1,867	3,663	..	9,127	14,657	
do. down	93,111	3,663	..	97,013	1,93,787	
Estimated value of rafts, total	94,978	10,768	..	106,140	2,11,906	
do. on boats per ton per mile	28,50,563	3,87,910	..	42,70,243	36,89,723	
do. on rafts per 100 square feet	8 annas	8 annas	..	..	..	
do. on rafts per 100 square feet	4 "	4 "	..	..	..	

Note.—The figures as regards tonnage, ton-mileage and estimated value of cargoes are merely approximations.
(a) The primary object of the Godavari and Kistna canals is *irrigation*, from which there is large revenue besides that here shown as due to *Navigation*.

(Signed) R. B. E. DRAKE-BROCKMAN, Colonel, R.E.,
Chief Engineer for Irrigation.

December 1895.

c) These exclude the figures relating to the Tychonopoly portion.

December 1895.

a. The irrigation under these systems being supplied mostly from storage works, is a restricting factor of the discharge per cubic foot per second compared with that of the canal systems. The areas shown in column 10 of this statement include the extent of lands irrigated. This is not included in column 6 of statement I-B, the figures in which represent the areas actually irrigated. The revenue information in this statement is taken from a statement received from the Board of Revenue. Columns 11 and 12 include the figures relating to the Panchayat system.

December 1895.

89

1894-95
KISTNA NORTHERN DIVISION KISTNA RIVER

DIAGRAM OF THE RISE AND FALL OF THE RIVER WITH THE PARTICULARS OF THE DISTRIBUTION AND DISPOSAL OF THE WATER SUPPLY AT THE BE

Max. Flood Level in
July 1892 M. S. L. + 66.53

Crest of wall

Hd. Sluice E. On M. S. L.
+ 41.00
Do. W. On M. S. L.
+ 40.00

Under Sluices M. S. L. 137.75

Discharge from Hd. Sluice &c.

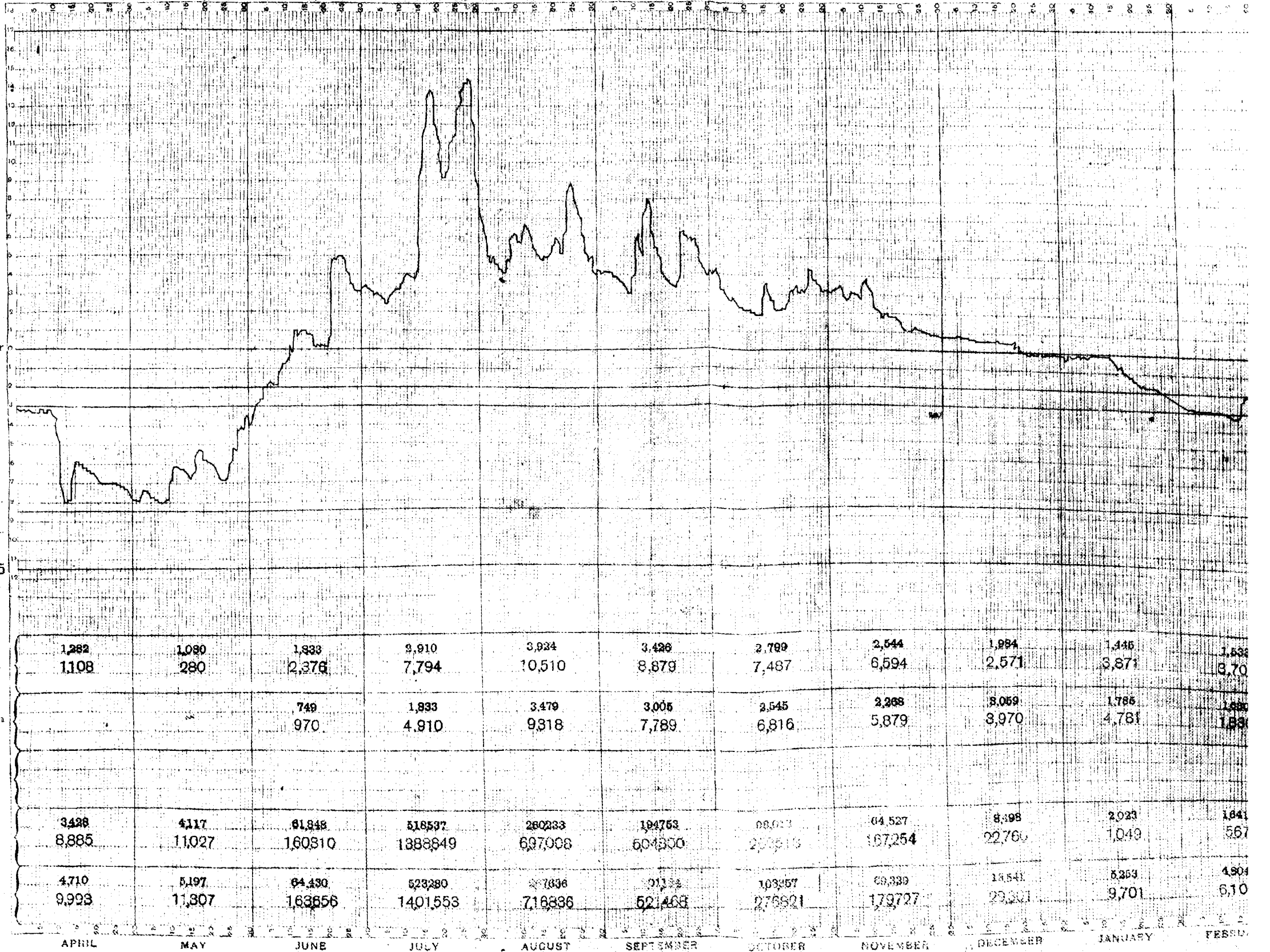
Eastern Delta

Western Delta

Surplus

in River

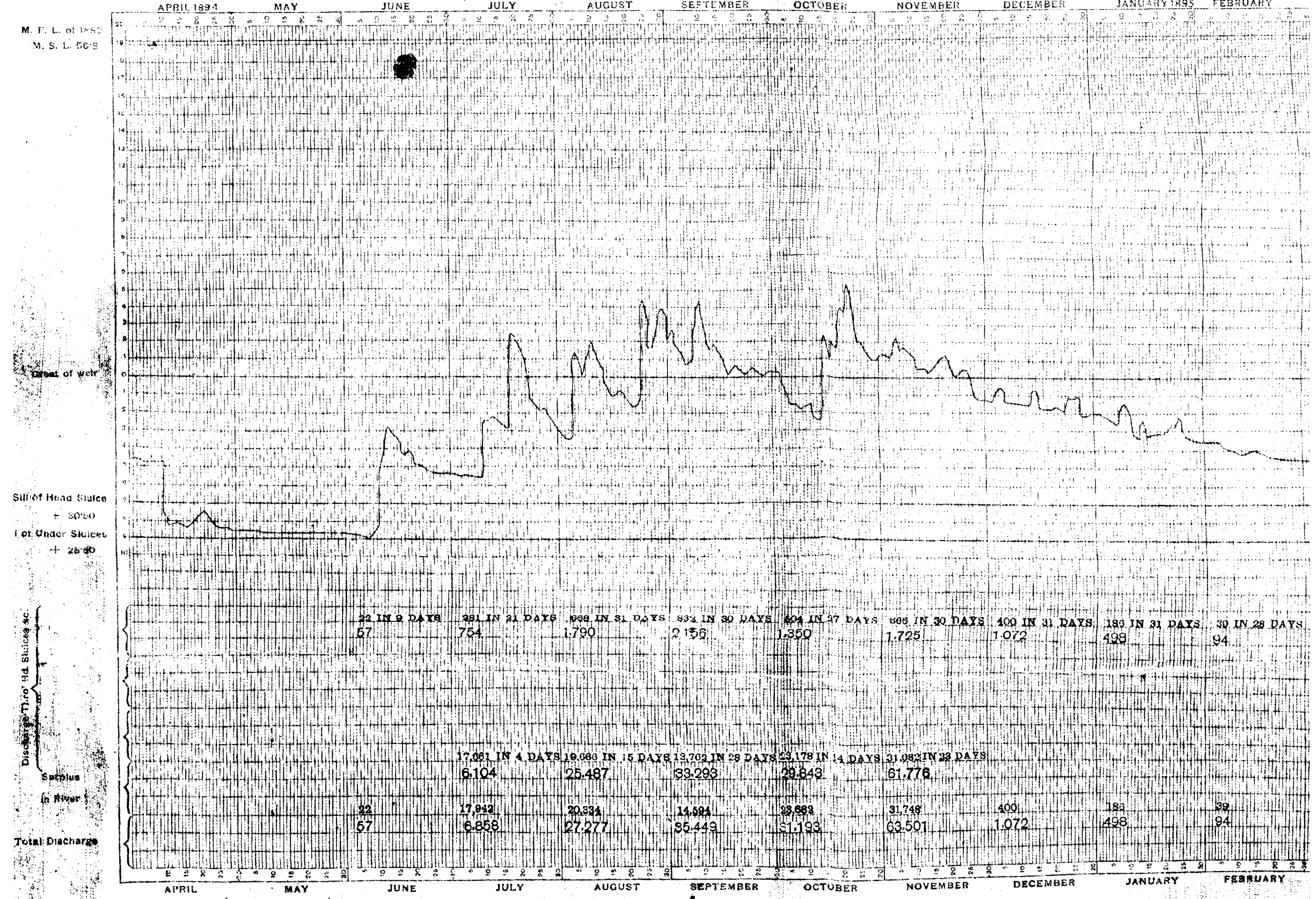
Total Discharge



NELLORE DIVISION

PENNER RIVER

DIAGRAM OF THE RISE AND FALL OF THE RIVER WITH THE PARTICULARS OF THE DISTRIBUTION AND DISPOSAL OF THE WATER SUPPLY AT NELLORE ANICUT



THE RATE OF DISCHARGE IS SHOWN IN CUBIC FEET PER SEC BY SMALL FIGURES AND THE TOTAL DISCHARGE IN THE MONTH IN MILLIONS OF CUBIC FEET BY LARGE FIGURES

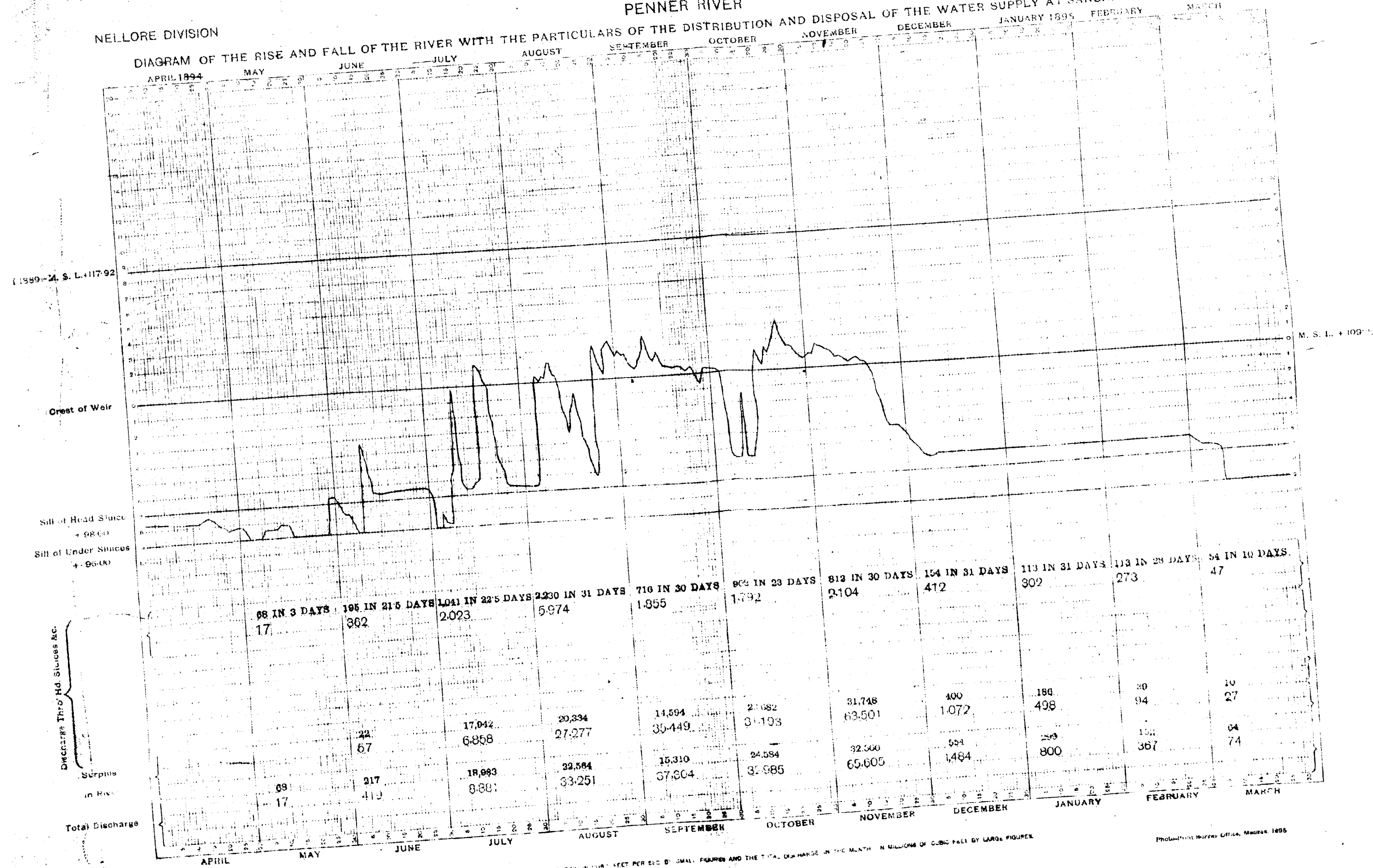
1894-95

PENNER RIVER

NELLORE DIVISION

2nd CIRCLE

DIAGRAM OF THE RISE AND FALL OF THE RIVER WITH THE PARTICULARS OF THE DISTRIBUTION AND DISPOSAL OF THE WATER SUPPLY AT SANGAM ANICUT



KURNOOL DIVISION

1894-95

TUNGABUDDRA RIVER

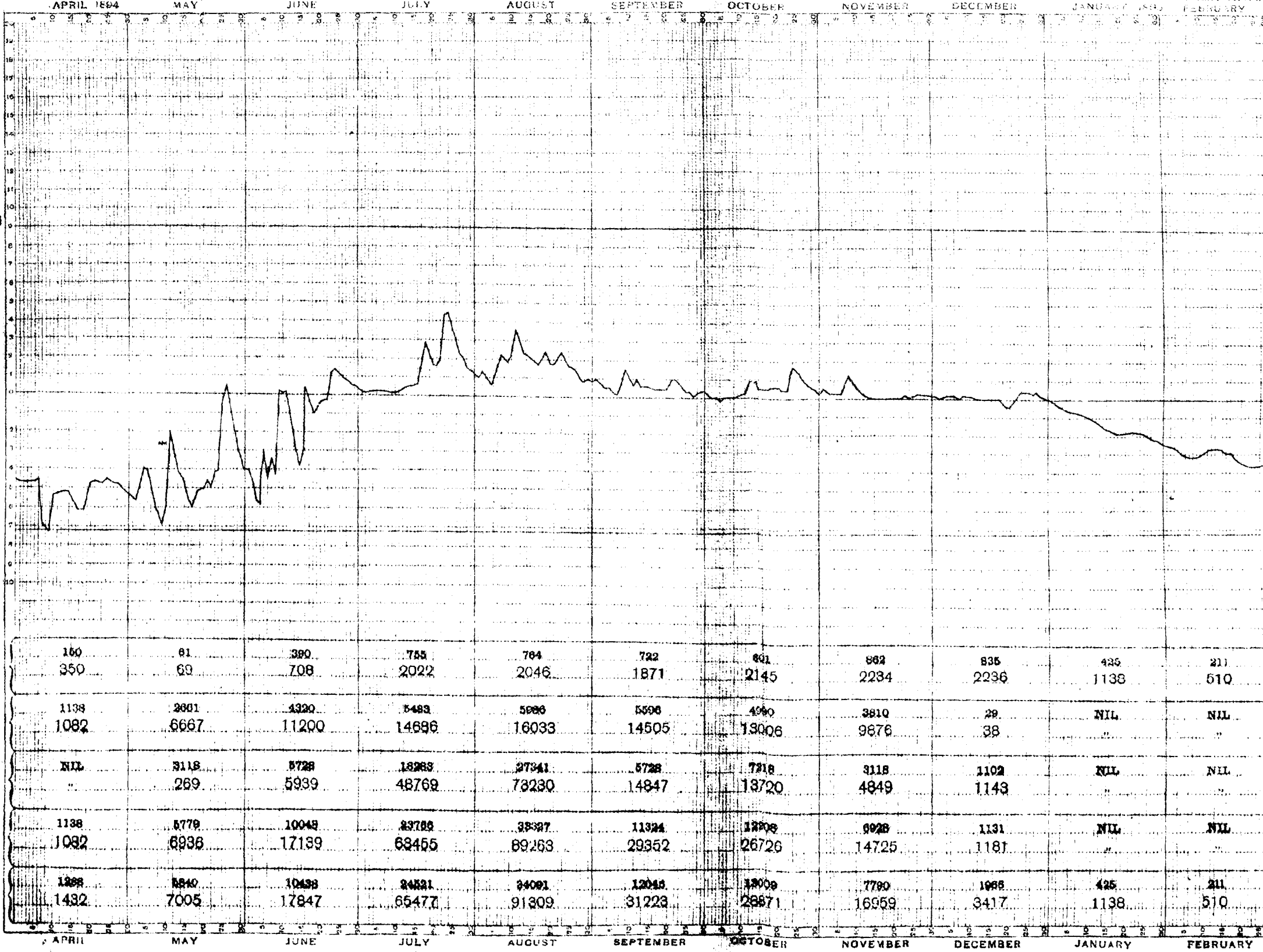
DIAGRAM OF THE RISE AND FALL OF THE RIVER WITH THE PARTICULARS OF THE DISTRIBUTION AND DISPOSAL OF THE WATER SUPPLY AT SUNKESALA ANIC

H. F. L. in October 1899
after Anicut was
lowered M. S. L. 953.81

Crest of weir

Sill of Head Sluice

Discharge from Head Sluices &c.
Head Sluice
Under Sluice
Over Anicut
Surplus
in River
Discharges



Map No. 3386-Copies 250

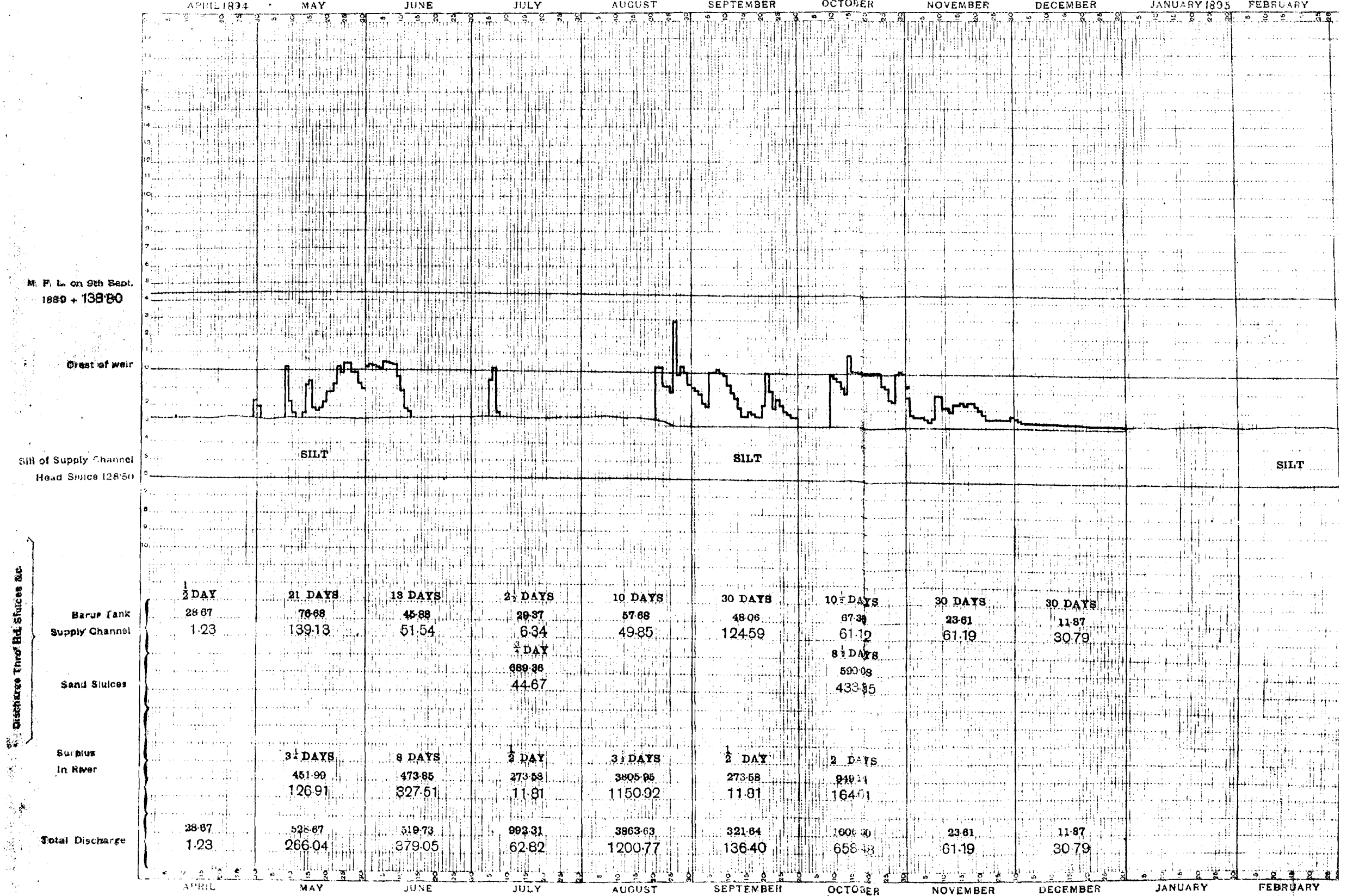
THE RATE OF DISCHARGE IS SHOWN IN CUBIC FEET PER SEC BY SMALL FIGURES AND THE TOTAL DISCHARGE IN THE MONTH IN MILLIONS OF CUBIC FEET BY LARGE FIGURES

Photo-P.

SALEM DIVISION

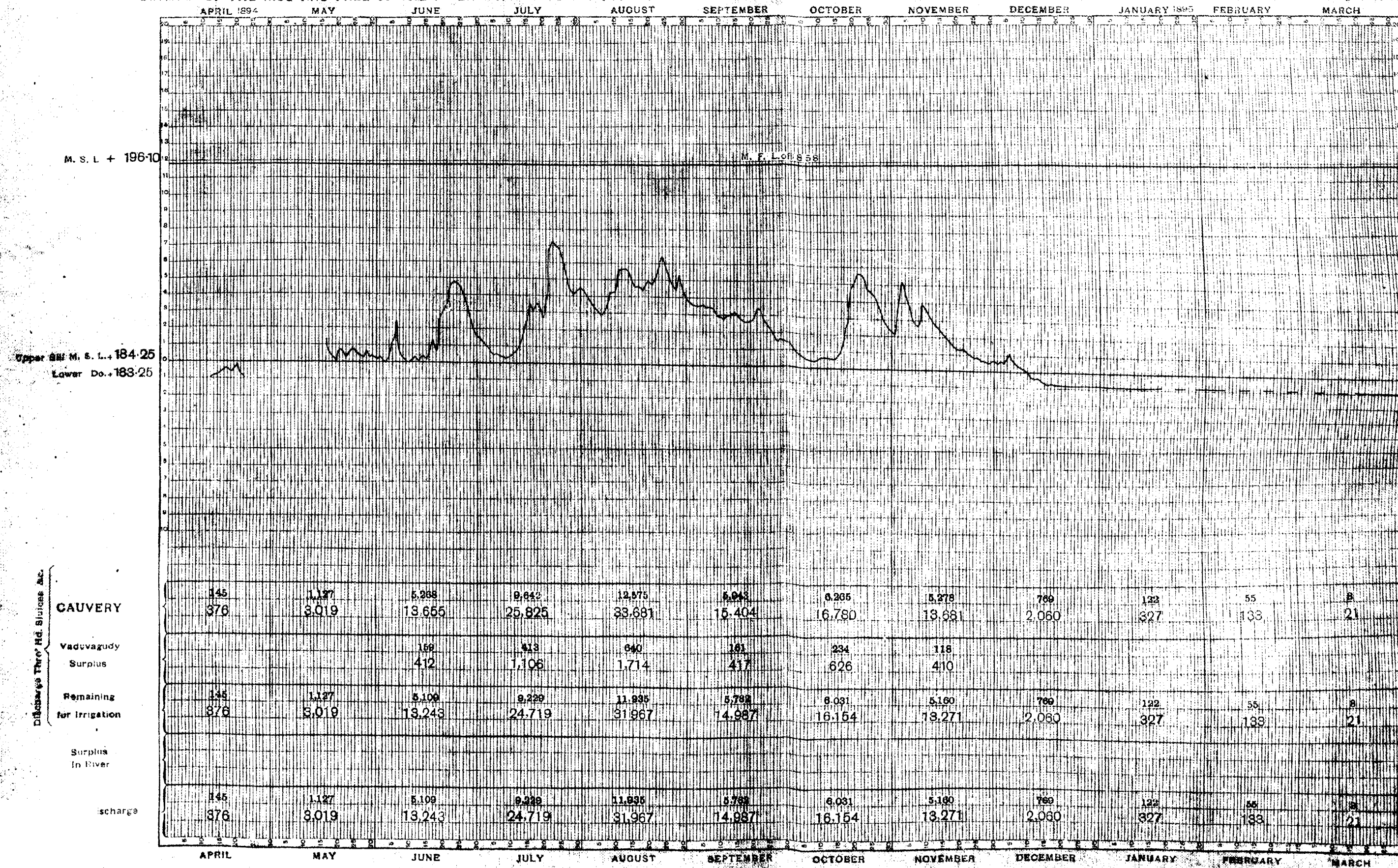
1894-95
PONNIAR RIVER

DIAGRAM OF THE RISE AND FALL OF THE RIVER WITH THE PARTICULARS OF THE DISTRIBUTION AND DISPOSAL OF THE WATER SUPPLY AT NEDINGAL ANICUT



1894-95
CAUVERY RIVER

DIAGRAM OF THE RISE AND FALL OF THE RIVER WITH THE PARTICULARS OF THE DISTRIBUTION AND DISPOSAL OF THE WATER SUPPLY AT CAUVERY VENNAR REGULATORS-CAUVERY

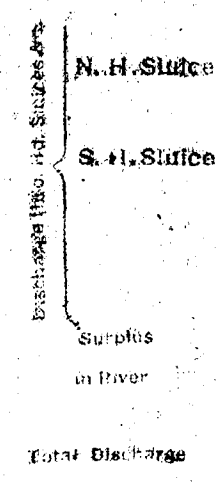


THE RATE OF DISCHARGE IS SHOWN IN CUBIC FEET PER SEC. BY SMALL FIGURES AND THE TOTAL DISCHARGE IN THE MONTH IN MILLIONS OF CUBIC FEET BY LARGE FIGURES.

1894-95
TAMBRAPARNI RIVER

8

Friday 1894 the
crist was raised
from M. S. L. + 87.40
to M. S. L. + 89.40



THE RATE OF DISCHARGE IS SHOWN IN CUBIC FEET PER SEC. BY SMALL FIGURES AND THE TOTAL DISCHARGE IN THE MONTH IN MILLIONS OF CUBIC FEET BY LARGE FIGURES.

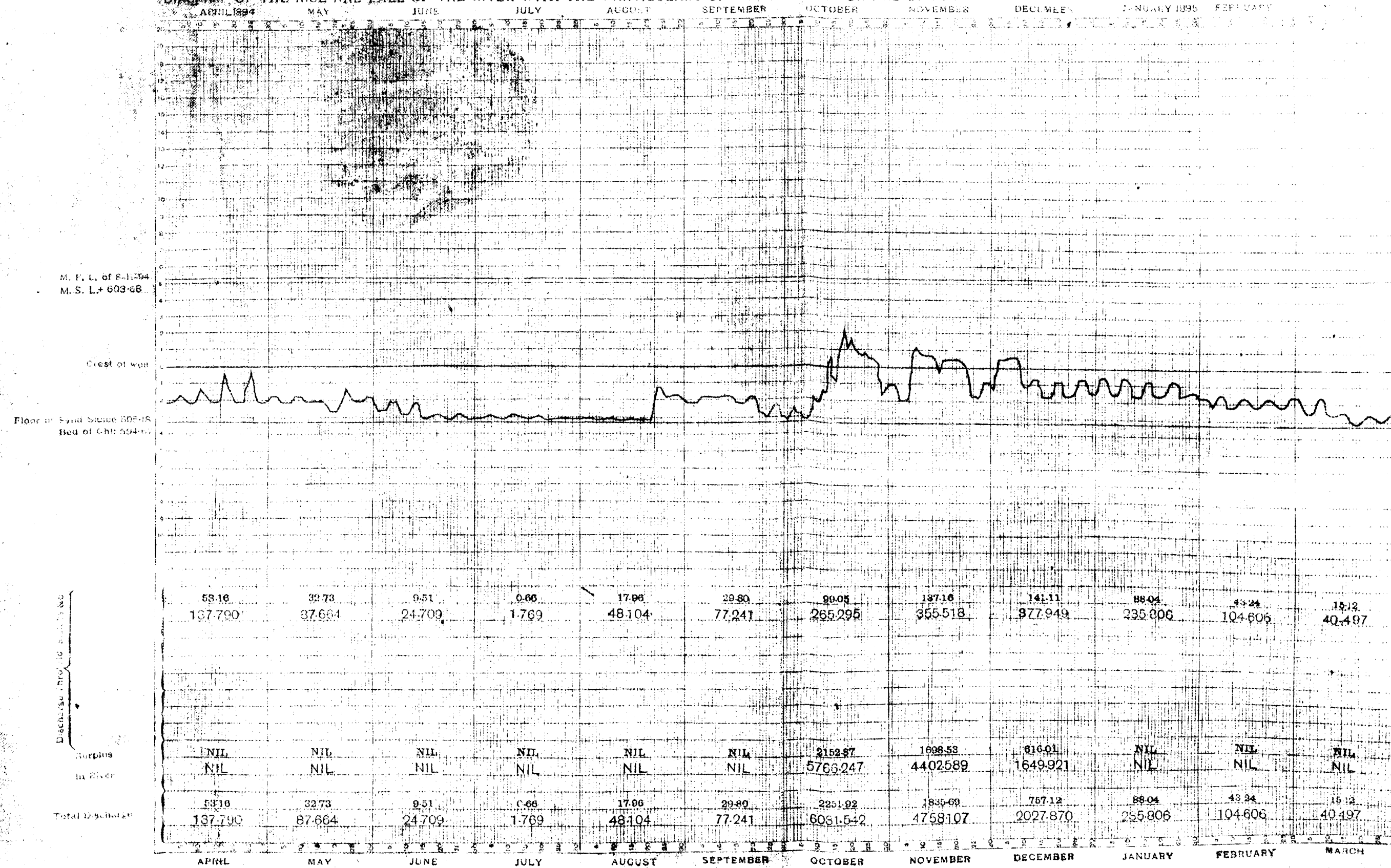
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1894-95

VAIGAI RIVER

MADURA DIVISION

DIAGRAM OF THE RISE AND FALL OF THE RIVER WITH THE PARTICULARS OF THE DISTRIBUTION AND DISPOSAL OF THE WATER SUPPLY AT CHITTANAI



THE PART OF DISCHARGE IS SHOWN IN CUBIC FEET PER SEC. BY SMALL FIGURES AND THE TOTAL DISCHARGE IN THE MONTH IN MILLIONS OF CUBIC FEET BY LARGE FIGURES

Photo-Print Survey Office, Madras 1895

91

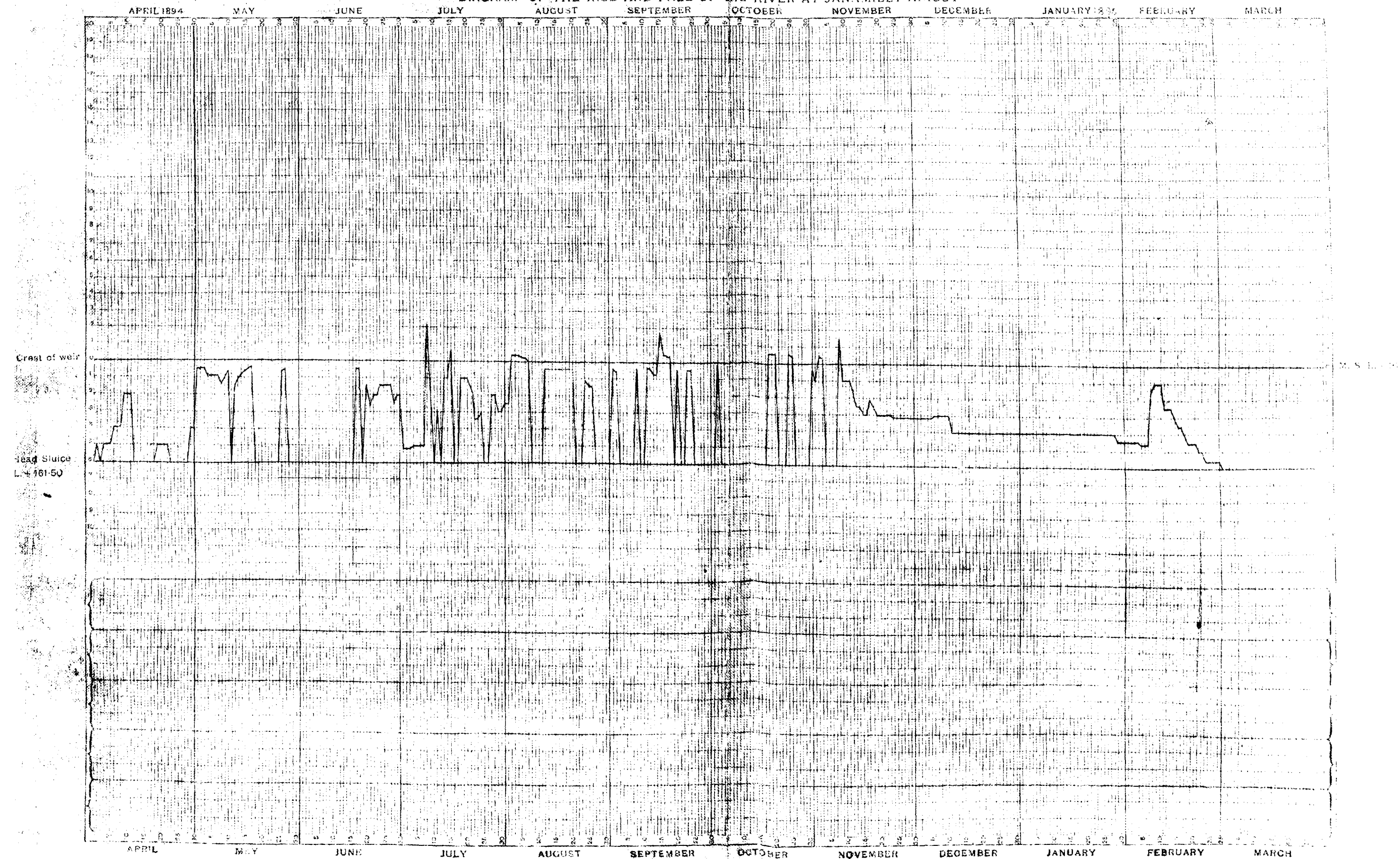
RUSHIKULYA DIVISION

1894-95

RUSHIKULYA RIVER

1st CIRCLE

DIAGRAM OF THE RISE AND FALL OF THE RIVER AT JANAMILLY ANICUT



Crest of weir

Head Sluice
L. 161.50

M. S. L. 10

ADMINISTRATION REPORT OF THE

40

MINOR WORKS, PUBLIC WORKS DEPARTMENT.

REVENUE ACCOUNT.

The charges on *Revenue Account* were as shown below :—

Departmental heads.	Grant.*		Outlay.		
	Budget.	Final.	Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 36,618	Rs. 24,596	Rs. 28,994	Rs. 6,120	Rs. 21,974
Maintenance and repairs	2,02,263	2,06,839	2,11,691	6,264	2,05,427
Establishment	66,943	65,821	66,872	2,845	64,027
Tools and plant	2,379	8,979	4,348	126	4,223*
Refunds of Revenue	1,600	..	..	..	..
Total	3,09,800	3,06,334	3,11,005	15,354	2,95,651
Indirect charges	..	..	10,860	896	10,464
Grand Total	..	..	3,21,865	16,750	3,06,105

* Exclusive of grant for old maintenance charges.

The total area irrigated for first and second crops was 463,064 acres against 471,676 acres in the previous year. The total revenue derived was Rs. 18,37,900 and deducting the working expenses which amounted to Rs. 3,66,774, the net revenue amounted to Rs. 14,71,126. Deducting the sum of Rs. 7,94,739 due to old irrigation, there was an increase of Rs. 6,76,387.

No interest is charged to any of the works under this class, and the return shown against them is irrespective of interest charges.

No. 11.—GANJAM MINOR RIVERS SYSTEM.

In November 1893 it was decided by Government that the existing river channels in the Chicacole taluk, Ganjam district, should be brought into the category of "Minor Works for which Capital and Revenue Accounts are kept" from 1st April 1894, and orders were issued for the preparation of plans and estimates for the complete restoration of these channels. During the year Rs. 5,357 were spent on repairs to the channels and Rs. 7,847 on repairs to the tanks connected with them. This outlay having, however, been included in the accounts of the Examiner of Public Works Accounts under "43. Minor Works for which neither Capital nor Revenue Accounts are kept, Public Works Department," the revenue derived from this system is included in the revenue derived from the works under that head.

No. 12.—MUNNIYERU PROJECT.

CAPITAL ACCOUNT.

The capital expenditure on the Munniyeru project was as follows :—

Departmental heads.	Sanctioned estimate.	Grant for 1894-95.	Outlay during 1894-95.	Outlay to end of 1894-95.
<i>Direct Charges.</i>	Rs.	Rs.	Rs.	Rs.
Works	2,95,500	30,325	30,760	30,760
Establishment	67,965	4,675	4,775	4,775
Tools and plant	4,535	..	..	..
Total	3,68,000	25,000	25,535	25,535
<i>Indirect Charges.</i>				
Capitalised abatement of land revenue	12,485	..	..	..
Leave and pension allowances	9,515	..	668	668
Total	22,000	..	668	668
Grand Total	3,90,000	..	26,203	26,203

PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1894-95.

MUNNIYERU PROJECT.

41

Materials for constructing the ancient, head sluice and under-sluices were fully collected. The work of excavation for foundations of the ancient and diverting part of the water was commenced.

No. 13.—DONDAPAD TANK PROJECT.

CAPITAL ACCOUNT.

The capital expenditure on the Dondapad tank project was as follows :—

Departmental heads.	Sanctioned estimate.	Grant for 1894-95.	Outlay during 1894-95.	Outlay to end of 1894-95.
<i>Direct Charges.</i>	Rs.	Rs.	Rs.	Rs.
Works	1,04,193	29,399	29,407	29,407
Establishment	21,516	6,761	6,764	6,764
Tools and plant	1,484	..	..	..
Total	1,27,193	36,160	36,171	36,171
<i>Indirect Charges.</i>				
Capitalised abatement of land revenue	7,988	..	946	946
Leave and pension allowances	3,012	..	..	2,442
Total	11,000	..	946	2,442
Grand Total	1,38,193	..	37,117	38,613

Raising and strengthening Dondapad tank bund, constructing the surplus weir and head sluice to east side channel and excavating the east side channel were nearly completed. Raising and strengthening Nadigedda tank bund and byewash was two-thirds completed; but owing to failure of the revetment in places, it is anticipated that about half the revetment will have to be repacked after next monsoon. Excavating distributary from Nadigedda tank was in progress. The sluice to Nadigedda tank was nearly completed.

No. 14.—SAGILERU "UPPER PROJECT."

CAPITAL ACCOUNT.

The capital expenditure on the Sagileru "Upper project" is compared with the revised estimate for the project sanctioned by Government in November 1894 in the subjoined statement :—

Departmental heads.	Sanctioned estimate.	Grant for 1894-95.	Outlay during 1894-95.	Outlay to end of 1894-95.
<i>Direct Charges.</i>	Rs.	Rs.	Rs.	Rs.
Works	2,83,000	59,804	57,670	1,04,254
Establishment	63,753	13,755	13,166	23,710
Tools and plant	14,248	10,825	11,406	12,289
Total	3,61,000	84,384	82,242	1,40,253
<i>Indirect Charges.</i>				
Capitalised abatement of land revenue	8,925	..	..	137
Leave and pension allowances	7,075	..	1,843	3,319
Total	16,000	..	1,843	3,456
Grand Total	3,77,000	..	84,085	1,43,709

Progress of works.

The ancient, head and scouring sluices, bridges Nos. I and II, raising and widening Chintalapalli tank, diversion of Cumbum road, bridge over channel crossing Cumbum road and Porumamilla supply channel, were the principal works in progress. Materials were collected for the inlet at 1½ mile, Pulivagu syphon, pipe aqueduct in 0 mile 22 chains and aqueduct in 5th mile 77 chains. Escape No. 1 in 6th mile 22 chains and escape No. 2 in 7th mile 58 chains were completed.

Tools and plant.

The expenditure on tools and plant was incurred on the purchase of two engines of 12 and 8 horse power, a stone mortar mill, surki screens, lous, hand pump, crab-winch, &c.

No. 15.—CUMBUM TANK SYSTEM.

CAPITAL ACCOUNT.

Total outlay.

The construction of a combined scouring sluice and bridge at site of the Sekrail Kuthwa was in progress and an expenditure of Rs. 6,192 was incurred on the work during the year against a grant of Rs. 4,878. The total outlay, including indirect charges, to the end of the year was Rs. 55,875.

REVENUE ACCOUNT.

Grant and outlay.

The charges on *Revenue Account* were—

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 233	Rs. 170	..	Rs. 170
Maintenance and repairs	2,800	2,373	..	2,373
Establishment	697	585	..	585
Tools and plant	..	..	..	..
Total	3,730	3,128	..	3,128
Indirect charges	..	82	..	82
Grand Total	..	3,210	..	3,210

Maintenance and repairs.

Repairs to the Cumbam tank weir, Nakkalagundi, Chinna Cumbam and Pedda Cumbam channels were executed and breaches in the Sekrail Kuthwa channel were closed.

Establishment.

The charges for establishment amounted to Rs. 585 as shown below :—

23 per cent. on Expenditure	Rs. 585
10 do. on Direct revenue	..
Total	585

Area irrigated and revenue derived.

The irrigated area and revenue compare as follows with those of the previous year :—

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop .. { 1894-95	Acres. 5,674	Acres. 4,303	Acres. 846	Acres. 5,699	Rs. 23,502
Second crop .. { 1893-94	5,477	4,303	673	5,476	25,176
.. { 1894-95	5,795	2,646	2,119	4,765	18,615
.. { 1893-94	5,476	2,647	1,929	4,576	18,540

The share of enhanced land revenue due to the works amounted to Rs. 560 as shown below :—

Land assessment on wastelands irrigated	Rs. 510
Do. on miscellaneous items	50
Total	560

Enhanced share of land revenue.

The following statement shows the financial results :—

Financial results.

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 6,128	Rs. 62,317	Receipts in the Public Works Department	Rs. 42,517	Rs. 6,85,154
Indirect charges	82	4,338	Irrigation revenue	560	8,218
Collection charges in the Civil Department	635	8,212	Share of enhanced land revenue	..	..
Total expenditure and charges	8,845	74,867	Total receipts	42,077	6,93,367
Surplus revenue	8,867	88,875	Deduct portion of revenue assumed to be due to "old irrigation" and old maintenance charges	29,975	5,29,122
Total	12,702	1,64,215	Net Total	12,702	1,64,215

The actual return was 15.99 per cent. on the capital outlay.

No. 16.—THADAPALLI CHANNEL SYSTEM.

CAPITAL ACCOUNT.

The work "excavating side distributary along the left bank of the Thadapalli channel" was in progress on an estimate, amounting to Rs. 26,600, for direct charges, sanctioned by Government in November 1893. An expenditure of Rs. 3,219 was incurred on the work against a grant of Rs. 11,686. A sum of Rs. 6,700 reserved for payment of compensation for land was not paid by the Collector pending the disposal of a reference to the District Judge on the subject. The total capital outlay, including indirect charges, to the end of the year amounted to Rs. 93,552.

Grant and outlay.

REVENUE ACCOUNT.

The charges on *Revenue Account* were—

Grant and outlay.

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. ..	Rs. 61	..	Rs. 64
Maintenance and repairs	1,913	1,499	..	1,499
Establishment	453	394	..	394
Tools and plant	..	..	..	..
Total	2,366	1,329	..	1,329
Indirect charges	..	55	..	55
Grand Total	..	1,384	..	1,384

The expenditure under this head was incurred on the annual clearance of the channel, in repairing masonry works and re-constructing sluices.

Maintenance and repairs.

ADMINISTRATION REPORT OF THE

THADAPALLI CHANNEL SYSTEM.

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PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1894-95.

ARRENKOTA CHANNEL SYSTEM.

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Establishment.

The charges for establishment amounted to Rs. 394 as shown below :—

23 per cent. on Expenditure	Rs. 356
10 do. on Direct revenue	38
Total	394

Receipts in the Public Works Department.
Area irrigated and revenue derived.

The receipts collected in the Public Works Department amounted to Rs. 80.

The area irrigated and revenue derived compare with those of the previous year as follows :—

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop	1894-95	14,223	2,979	17,202	1,01,465
	1893-94	14,261	10,090	24,351	1,00,744
Second crop	1894-95	603	157	760	2,852
	1893-94	465	207	672	1,330

Enhanced share of land revenue.

The share of enhanced land revenue due to the works amounted to Rs. 2,652 as shown below :—

Land assessment on waste lands irrigated	Rs. 2,589
Do. on miscellaneous items	63
Total	2,652

Financial results.

The following statement shows the financial results during, and to the end of, the year :—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 1,329	Rs. 2,59,518	Direct receipts in the Public Works Department	Rs. 80	607
Indirect charges	55	7,480	Irrigation revenue	1,03,817	24,41,167
Collection charges in the Civil Department	1,505	28,492	Share of enhanced land revenue	2,652	24,979
Total expenditure and charges	3,389	3,35,438	Total receipts	1,06,549	27,31,183
Surplus revenue	26,791	4,34,895	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	76,368	29,51,420
Total	30,180	7,70,333	Net Total	30,180	7,70,333

The actual return was 28.64 per cent. on the capital outlay.

No. 17.—ARRENKOTA CHANNEL SYSTEM.

CAPITAL ACCOUNT.

Total outlay.

The work of providing scouring sluices in the Mangamari surplus weir of the channel was completed. The total capital expenditure to the end of the year, including indirect charges, amounted to Rs. 1,02,064.

REVENUE ACCOUNT.

The charges on Revenue Account were—

Grant and outlay.

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 463	Rs. 1	Rs. ..	Rs. 1
Maintenance and repairs	1,000	980	..	20
Establishment	337	216	..	121
Tools and plant	..	..	..	..
Total	1,800	1,206	..	1,206
Indirect charges	..	30	..	30
Grand Total	..	1,236	..	1,236

The annual clearance of the channel was executed.

The charges for establishment amounted to Rs. 216 as shown below :—

23 per cent. on Expenditure	Rs. 216
10 do. on Direct revenue	..
Total	216

Maintenance and repairs.
Establishment.

The area irrigated and revenue derived therefrom compare as follows with those of the previous year :—

Area irrigated and revenue derived.

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop	1894-95	4,120	1,473	5,593	27,734
	1893-94	4,115	1,420	5,535	26,847
Second crop	1894-95	91	86	177	383
	1893-94	48	40	88	189

The share of enhanced land revenue due to the works amounted to Rs. 340 as shown below :—

Enhanced share of land revenue.

Land assessment on waste lands irrigated	Rs. 342
Do. on miscellaneous items	7
Total	349

The following statement shows the financial results :—

Financial results.

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 1,206	Rs. 2,37,073	Direct receipts in the Public Works Department	Rs. 2	..
Indirect charges	30	6,205	Irrigation revenue	28,116	8,36,226
Collection charges in the Civil Department	448	11,879	Share of enhanced land revenue	349	9,059
Total expenditure and charges	1,684	2,55,157	Total receipts	28,465	8,45,285
Surplus revenue	7,283	17,576	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	19,498	6,07,766
Total	8,967	2,37,631	Net Total	8,967	2,37,519

The actual return was 7.07 per cent. on the capital outlay.

ADMINISTRATION REPORT OF THE
TIRUKKOVILUR ANICUT SYSTEM.
REVENUE ACCOUNT.

Grant and
outlay.

The charges on Revenue Account for the year were—

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 2,453	Rs. 2,516	Rs. ..	Rs. 2,516
Maintenance and repairs	9,400	8,898	..	8,898
Establishment	2,789	2,628	..	2,628
Tools and plant	..	..	..	..
Total	14,652	13,514	..	13,540
Indirect charges	..	..	..	268
Grand Total	..	14,203	..	14,308

Extensions
and improve-
ments.
Maintenance
and repairs.
Establish-
ment.

A weir to Arasur-Mamandur tank and a rough stone escape in Koovagan tank were constructed. Six other works were in progress. Seventeen works were in progress.

The charges for establishment amounted to Rs. 2,628 as shown below :—

28 per cent. on Expenditure	Rs. 2,579
10 do. on Direct revenue	49
Total	2,628

Receipts in
the Public
Works
Department.
Area irriga-
ted and
revenue
derived.

*The receipts in the Public Works Department amounted to Rs. 494 against a revised estimate of Rs. 300.

The area irrigated and revenue derived therefrom compare with those of the previous year as follows :—

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop .. (1894-95)	ACS. 22,828	ACS. 16,023	ACS. 6,773	ACS. 22,796	Rs. 12,048
.. (1893-94)	23,688	17,009	6,636	23,645	10,531
Second crop .. (1894-95)	8,533	15	3,521	8,536	194
.. (1893-94)	4,356	14	4,340	4,354	350

Enhanced
share of land
revenue.

The share of enhanced land revenue due to the works amounted to Rs. 3,171 as shown below :—

Increments to the land assessment after the lands were brought under irrigation	Rs. 2,991
Land assessment on waste lands brought under irrigation	180
Total	3,171

Financial
results.

The following statement shows the financial results :—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 12,840	Rs. 8,61,536	Direct receipts in the Public Works Department	Rs. 494	Rs. 1,095
Indirect charges	368	9,495	Irrigation revenue	93,899	20,78,704
Collection charges in the Civil Department	1,926	35,387	Share of enhanced land revenue	3,171	72,645
Total expenditure and charges	15,134	4,00,418	Total receipts	97,564	21,46,044
Surplus revenue	22,278	3,04,023	Deduct portion of revenue accounted to be due to "old irrigation" less old maintenance charges	58,551	14,35,008
Total	38,013	7,10,441	Net Total	39,013	7,10,441

The actual return was 8.99 per cent. on the capital outlay.

No. 26.—MEHAMATTUR ANICUT SYSTEM.

CAPITAL ACCOUNT.

There was no expenditure on Capital Account of this system during the year. Total outlay. The total expenditure, including indirect charges, remained, as at the end of the previous year, at Rs. 71,047.

REVENUE ACCOUNT.

The charges on Revenue Account were—

Grant and
outlay.

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 230	Rs. 186	Rs. ..	Rs. 186
Maintenance and repairs	2,400	2,354	..	2,354
Establishment	608	540	..	540
Tools and plant	..	..	..	..
Total	3,238	3,080	..	3,080
Indirect charges	..	76	..	76
Grand Total	..	3,156	..	3,156

The reconstruction of two sluices in the Sothakodal tank was in progress.

Extensions
and improve-
ments.

Five works were carried out, including closing breaches and embanking the ancient main channel, to prevent flooding of the Salem frontier road.

Maintenance
and repairs.

The charges for establishment amounted to Rs. 540 as shown below :—

Establish-
ment.

28 per cent. on Expenditure	Rs. 538
10 do. on Direct revenue	2
Total	540

The receipts collected in the Public Works Department amounted to Rs. 20.

Receipts in
the Public
Works
Department.

The area irrigated and revenue derived therefrom compare as follows with those of the previous year :—

Area irrigated
and revenue
derived.

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop .. (1894-95)	ACS. 2,552	ACS. 447	ACS. 2,405	ACS. 2,852	Rs. 12,048
.. (1893-94)	2,533	447	2,936	2,533	10,531
Second crop .. (1894-95)	65	..	65	65	194
.. (1893-94)	94	..	94	94	350

The share of enhanced land revenue due to the works amounted to Rs. 36 as shown below :—

Enhanced
share of land
revenue.

Land assessment on waste lands irrigated	Rs. 9
Do. on miscellaneous items	27
Total	36

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SHATTAPORE ANICUT SYSTEM.

REVENUE ACCOUNT.

The charges on Revenue Account were—

Grant and outlay.

Departmental heads.	Grant.	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 904	Rs. 804	Rs. ..	Rs. 904
Maintenance and repairs	6,300	6,200	..	6,300
Establishment	1,681	1,612	..	1,612
Tools and plant	..	..	..	..
Total	8,885	8,716	..	8,716
Indirect charges	..	226	..	226
Grand Total	..	8,941	..	8,941

A masonry dam at the head of the Veerai voikal and five irrigation sluices at the head of the main branches in the left branch of the Manambatham channel were constructed and the Kalliankuppam channel was extended.

Clearing silt and improving Alamalungapuram branch channel, cutting a head to Alachigudi branch channel and constructing revetment in connection with the Komaraoduppu were carried out, besides the maintenance of the channel and tanks.

The charges for establishment amounted to Rs. 1,612 as shown below :—

23 per cent. on Expenditure	Rs. 31
10 do. on Direct revenue	1,581
Total	1,612

The receipts collected in the Public Works Department amounted to Rs. 315 against a revised estimate of Rs. 250.

The area irrigated and revenue derived therefrom compare as follows with those of the previous year :—

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop	Acres. 28,658	Acres. 7,200	Acres. 21,318	Acres. 28,608	Rs. 95,976
Second crop	Acres. 28,342	Acres. 7,244	Acres. 21,018	Acres. 28,297	Rs. 95,636
First crop	Acres. 28,342	Acres. 7,244	Acres. 21,018	Acres. 28,297	Rs. 95,636
Second crop	Acres. 28,342	Acres. 7,244	Acres. 21,018	Acres. 28,297	Rs. 95,636

The share of enhanced land revenue due to the works amounted to Rs. 15,141 as shown below :—

Land assessment on waste lands irrigated	Rs. 14,617
Do. on miscellaneous items	524
Total	15,141

The following statement shows the financial results :—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 8,715	Rs. 4,70,124	Direct receipts in the Public Works Department	Rs. 315	Rs. 247
Indirect charges	226	12,312	.. .. .	..	..
Collection charges in the Civil Department	6,971	1,18,527	.. .. .	..	..
Total expenditure and charges	14,912	5,91,038	.. .. .	..	..
Surplus revenue	87,716	17,71,843	.. .. .	..	..
Total	1,01,728	23,72,876	Total receipts	1,21,750	28,53,577
			Deduct portion of revenue assessed to be due to "old irrigation" less old maintenance charges	20,027	4,76,701
			Net Total	1,01,728	23,72,876

The actual return was 64.47 per cent. on the capital outlay.

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No. 29.—PELANDORAI ANICUT SYSTEM.

CAPITAL ACCOUNT.

Rupees 1,952 were spent during the year in reconstructing the store and lasears' sheds at the anicut. The total outlay, including indirect charges, to the end of the year was Rs. 4,53,931 against a sanctioned estimate of Rs. 4,62,286.

REVENUE ACCOUNT.

The charges on Revenue Account were—

Grant and outlay.

Departmental heads.	Grant.*	Outlay.		
		Gross.	Deduct old maintenance charges.	Net.
Extensions and improvements	Rs. 313	Rs. 322	Rs. 39	Rs. 363
Maintenance and repairs	6,062	6,721	38	6,683
Establishment	1,646	1,670	27	1,613
Tools and plant	2	..	2	..
Total	8,669	8,815	146	8,667
Indirect charges	..	254	1	253
Grand Total	..	9,047	150	8,897

* Rs. 313 of grant for old maintenance charges.

Three works were completed

Alterations and repairs to the anicut, repairs to lasears' sheds along the main channel and repairs to the inspection bungalow at the anicut were executed. Breaches in tanks and channels were closed, and the maintenance of the anicut head-sluice, main and branch channels and tanks were carried out.

The amount of establishment charges is made up of the following items :—

23 per cent. on Expenditure	Rs. 27
10 do. on Direct revenue	1,616
Total	1,643

The receipts collected in the Public Works Department amounted to Rs. 273 against a budget and revised estimate of Rs. 200 and Rs. 300, respectively.

The area irrigated and revenue derived therefrom compare as follows with those of the previous year :—

	Area occupied.	Area charged as irrigated.			Irrigation revenue.
		Old irrigation.	New irrigation.	Total.	
First crop	Acres. 8,709	Acres. 2,062	Acres. 6,647	Acres. 8,709	Rs. 21,398
Second crop	Acres. 8,445	Acres. 2,069	Acres. 6,376	Acres. 8,445	Rs. 21,199
First crop	Acres. 8,445	Acres. 2,069	Acres. 6,376	Acres. 8,445	Rs. 21,199
Second crop	Acres. 8,445	Acres. 2,069	Acres. 6,376	Acres. 8,445	Rs. 21,199

The share of enhanced land revenue due to the works amounted to Rs. 183 as shown below :—

Land assessment on waste lands irrigated	Rs. 126
Do. on miscellaneous items	57
Total	183

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PELANDORAI ANICUT SYSTEM.

Financial results.

The subjoined statement exhibits the financial results :—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
	RS.	RS.		RS.	RS.
Direct charges	8,813	4,28,328	Direct receipts in the Public Works Department ..	273	1,517
Indirect charges	234	16,065	Irrigation revenue	31,540	2,63,370
Collection charges in the Civil Department	1,451	10,065	Share of enhanced land revenue ..	182	2,361
Total expenditure and charges	10,498	4,55,358			
Surplus revenue	18,048	2,47,403			
			Total receipts	32,995	2,67,248
			Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	2,450	69,293
Total	20,446	2,97,955	Net Total	29,445	2,97,955

The actual return was 4.17 per cent. on the capital outlay.

No. 30.—LOWER COLEROON ANICUT SYSTEM.

CAPITAL ACCOUNT.

Total outlay.

Against a grant of Rs. 7,608, an expenditure of Rs. 8,089 was incurred during the year in fitting screw-gearing shutters to the regulators across Khan Sahib's canal, for compensation for land taken up for the improvements to the Oosi voikal to supplement the supply to the Pudumanayar and for putting an experimental set of shutters into the Lower Coleroon anicut. Compensation for land taken up in the bed of the Veeranam tank was also paid. The total capital outlay, including indirect charges, to the end of the year was Rs. 5,73,826.

REVENUE ACCOUNT.

Grant and outlay.

The charges on Revenue Account were—

Departmental heads.	Grant.	Charges.	Deduct old maintenance charges.	Net.
	RS.	RS.	RS.	RS.
Extensions and improvements	3,875	3,931	..	3,934
Maintenance and repairs	18,860	18,739	..	18,739
Establishment	5,337	5,061	..	5,061
Tools and plant	..	..	..	..
Total	28,062	27,734	..	27,734
Indirect charges	..	709	..	709
Grand Total	..	28,443	..	28,443

PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1894-95.

LOWER COLEROON ANICUT SYSTEM.

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In the South Arcot division six works were in progress. In the Tanjore division five works were in progress, of which one work was completed, viz., "Providing screw-gearing shutters to south Rajan voikal."

In the South Arcot division 10 works were carried out, in addition to the maintenance of the main and branch channels of the Veeranam tank. In the Tanjore division 16 works were in progress, of which 11 were completed.

The charges for establishment amounted to Rs. 5,061 as shown below :—

23 per cent. on Expenditure	Rs. 4,339
10 do. on Direct revenue	162
	5,061

The receipts collected in the Public Works Department amounted to Rs. 1,619 against a budget and revised estimate of Rs. 900 and Rs. 1,100, respectively.

The area irrigated and revenue derived therefrom compare as follows with those of the previous year :—

	Area occupied.	Area charged as irrigated.		
		Old irrigation.	New irrigation.	Total.
				Irrigation revenue.
First crop .. (1894-95)	167,035	44,837	62,680	107,917
.. (1893-94)	106,691	44,419	62,026	106,145
Second crop .. (1894-95)	4,651	..	4,849	4,849
.. (1893-94)	6,215	..	6,215	6,215

The share of enhanced land revenue due to the works amounted to Rs. 53,933 as shown below :—

Land assessment on waste lands irrigated	Rs. 53,403
Do. on miscellaneous items	532
	53,933

The following statement shows the financial results :—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
	RS.	RS.		RS.	RS.
Direct charges	27,734	9,96,941	Direct receipts in the Public Works Department ..	1,619	5,211
Indirect charges	709	29,144	Irrigation revenue	2,85,789	2,31,38,665
Collection charges in the Civil Department	14,721	4,95,602	Share of enhanced land revenue ..	53,933	21,26,476
Total expenditure and charges	42,164	15,21,687	Total receipts	4,41,341	1,62,70,352
Surplus revenue	2,62,875	83,85,665	Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges	1,45,802	53,53,100
Total	2,96,039	99,17,252	Net Total	2,96,039	99,17,252

The actual return was 44.07 per cent. on the capital outlay.

GENERAL REMARKS.

The greatest depth of water over the Lower Coleroon anicut during the year was 5 feet on the north, and 5 feet on the south branch. The highest flood recorded is 11.5 feet on the north, and 12.0 feet on the south branch and this occurred in 1858.

No. 34.—BUCKINGHAM CANAL (NAVIGATION).

CAPITAL ACCOUNT.

Redistribution of direct charges.
Grant and outlay.

A redistribution of the amount sanctioned by the Secretary of State for the canal under Direct charges was sanctioned by the Government of India in December 1894.

The capital expenditure was as follows:—

Departmental funds.	Sanctioned estimate.	Grant 1894-95.	Outlay during 1894-95.	Outlay to end of 1894-95.
<i>Direct Charges.</i>	Rs.	Rs.	Rs.	Rs.
Works	67,87,997	1,32,234	1,81,715	68,48,011
Establishment	16,20,967	27,194	39,048	16,18,658
Tools and plant	2,69,153	10,724	238	1,46,111
Total	86,78,117	1,70,152	1,82,017	80,06,780
Less receipts on Capital Account	..	..	..	1,169
Net Total	86,78,117	1,70,152	1,82,017	80,06,780
<i>Indirect Charges.</i>				
Capitalized abatement of land revenue	4,18,256	..	1,228	2,60,796
Leave and pension allowances	2,29,799	..	4,207	2,13,607
Total	6,47,055	..	5,435	4,74,403
Grand Total	93,25,172	..	1,87,452	84,70,914

Progress of works.

The locks at Musi north flood gate, Mudigundi south flood gate, Kandleru river south bank, Coromandal flood gate, Penner north and south flood gates and Covelong north flood gate were completed. The Sadras lock was improved by additional gates and other alterations. All these locks were brought into operation. A training bund on the left border and a flood bank on the right of Maneru river were constructed. The new east bank in 163rd mile of North canal was raised. The Musi, Sadras and Penner north and south gates were sheathed with copper. The Penner south diversion was completed. Improvements and diversion in miles 43 V to 65 V, and diversion of canal from Chintamony backwater to Pulicat lake were approaching completion.

REVENUE ACCOUNT.

Grant and outlay.

The charges on Revenue Account were—

	Grant.	Outlay.
	Rs.	Rs.
Extensions and improvements	4,553	4,556
Maintenance and repairs	23,000	62,886
Establishment	26,337	26,654
Tools and plant	1,100	4,348
Total	55,000	98,584
Indirect charges	..	5,053
Total	..	1,01,588

Sixteen works were taken up and fifteen of them were completed.

The charges for establishment amounted to Rs. 26,091 as shown below:—

23 per cent. on Expenditure	Rs.
10 do. on Direct revenue	15,144
Total	30,691

BUCKINGHAM CANAL (NAVIGATION).

The following statement shows the value and the cost of upkeep of the floating plant:—

	Number.	Original value.	Actual cost of upkeep.
Staff boats	4	Rs. 4,552	Rs. 354
Special boats	2	1,400	430
Punts	5	8,726	813
Ferry boats	34	..	..
Total	45	15,678	1,597

The total receipts were Rs. 1,09,427 against Rs. 1,08,291 in the preceding year as shown below:—

	1894-95.	1893-94.
License fees	Rs. 64,345	Rs. 64,416
Toll fees	9,178	8,907
Wharfage fees	31,761	28,030
Sundries	4,244	6,986
Total	1,09,438	1,08,339
Deduct refunds of revenue	71	48
Net Total	1,09,427	1,08,291

The following statement shows the financial results:—

Expenditure.	During 1894-95.	To end of 1894-95.	Receipts.	During 1894-95.	To end of 1894-95.
Direct charges	Rs. 97,983	Rs. 27,89,138	Direct receipts—	Rs.	Rs.
Indirect charges	8,553	87,726	Navigation receipts	1,07,784	13,30,128
Total expenditure	1,01,536	28,76,864	Miscellaneous receipts	1,714	14,52,301
Surplus revenue	7,891	1,12,157	Total	1,09,498	27,82,429
Net Total	1,09,427	27,64,706	Deduct refunds of revenue	71	17,123
			Net Total	1,09,427	27,61,706

The financial result during the year was a surplus revenue of Rs. 7,891 against a deficit of Rs. 16,202 in the previous year, which is primarily due to the construction of locks and the consequent facility for navigation and growth of revenue, as also to a considerable reduction of working expenses.

GENERAL REMARKS.

In connection with the improvement of the Cooum river, the investigation of a project for connecting the Madras basin of the Buckingham canal with the Harbour was sanctioned by Government and an Executive Engineer was posted for the preparation of the necessary plans and estimates. The investigation was in progress.

No. 35.—VEDARANNIYAM CANAL (TIDAL).

REVENUE ACCOUNT.

The canal was cleared of silt at an outlay of Rs. 6,420. The total outlay was Rs. 2,934 against a grant of Rs. 4,420. A sum of Rs. 3,486, being the moiety of the difference between the traffic receipts and the cost of the maintenance of the canal, was debited to "Incorporated Local Funds."

The traffic on the canal other than salt was very small.

The amount of license fees collected during the year was Rs. 1,126 against Rs. 1,170 in the previous year.

No. 36.—GANJAM-GOPALPUR CANAL.

CAPITAL ACCOUNT.

Total outlay. Nothing was done during the year on this canal which was put in hand in January 1889, owing to scarcity in the Ganjam district. The work was stopped in November 1890, as it was no longer required for famine relief purposes and as the advantages to be gained from completing it were not commensurate with the probable cost. The total expenditure, including indirect charges, to the end of the year was Rs. 1,55,193 against a sanctioned estimate of Rs. 4,51,145.

PROVINCIAL—MINOR WORKS AND NAVIGATION.

MINOR WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT.

Grant and outlay. The grants and outlay under this head compare as follow :—

	Grant for 1894-95.		Outlay during 1894-95.
	Budget.	Final.	
	RS.	RS.	RS.
<i>Ordinary Works.</i>			
Minor Works, Public Works Department—			
Original Works—			
Major	1,76,973	1,76,937	1,97,896
Minor	1,33,619	1,18,305	1,13,306
Repairs	4,11,500	4,32,790	4,13,625
Establishment	1,63,407	1,68,394	1,63,895
Tools and plant	10,801	10,930	10,699
Total	8,99,800	9,10,056	8,99,421
Minor Works, Revenue Department—			
Original works	..	10,325	7,156
Repairs	..	12,211	7,370
Establishment	..	5,134	3,340
Tools and plant	..	355	216
Total	..	27,807	18,082
Total, Ordinary Works	8,99,800	9,37,863	9,17,504
<i>Old Maintenance Charges.</i>			
Original works	10,381	30,381	19,881
Repairs	1,42,850	1,42,850	1,42,650
Establishment	2,09,065	2,87,441	2,87,479
Tools and plant	1,868	1,808	1,868
Total	3,64,162	4,42,540	4,42,577
<i>Tank Restoration Scheme.</i>			
Investigation—			
Original works	..	..	216
Establishment	58,400	68,288	55,341
Tools and plant	600	600	579
Total	59,000	68,888	56,136
Execution—			
Original works	2,33,658	2,39,004	2,41,375
Repairs	1,21,693	1,21,083	1,18,652
Establishment	81,704	82,820	82,355
Tools and plant	6,329	5,400	5,392
Total	4,42,286	4,48,306	4,48,774
Total, Tank Restoration Scheme	5,01,286	5,07,194	5,04,910
Grand Total	17,04,750	18,97,597	18,64,591

The following works, estimated to cost Rs. 2,500 or more each, were carried out :—

Vizagapatam division.—The extension of the Koppaka anicut and reconstructing its wing walls, a work put in hand in 1891-92, was completed. Owing to the very heavy percolation under the anicut, work could only be carried on for a few months during the early part of each year; hence the delay in completion. The anicut was extended on the right side for 80 feet and the right wing rebuilt. The rough stone aprons were repacked. The reconstruction of the Peddakathu anicut across the Kothakota river, which was commenced in 1892-93, was completed. The improvements to the Neelanagaram and Venkanmabattai channels were in progress.

Goddavari Eastern Division.—The work of narrowing the tail lock at Dumagudem was in progress but was stopped.

Goddavari Western Division.—The breach in Parimpudi Bhimudu tank was completely closed. The surplus channel of Medavarapu tank of Sattinarigudem was completed. The stop bank between the surplus channel was raised nearly to full height and the earthwork was in progress.

Nellore Division.—The improvements to three tanks were completed and those to four tanks were in progress.

Bellary Division.—The construction of a rest-house in connection with the improvements to the Dasanoor channel was in progress and the improvements to the Kampli, Bellagodal, Roya, Thoortha, Ramasagar and Basavaanna channels were completed. The improvements to the Roddam big tank were in progress.

Kurnool Division.—The improvements to the Kungal tank were in progress. Preliminary expenses were incurred on the investigation of the Thokapalli project and the construction of a temporary inspection shed was commenced.

Chingleput Division.—The improvements to the Kunavakam tank were completed and those to the Kuam and Utukotai tanks were practically completed. Constructing a weir in Kattur madugu, a weir and revetment in Santhavehur tank, and the improvements to the Vylakkavur tank and channel were in progress.

North Arcot Division.—The improvements to the Sattur tank, the excavation of a channel from Govindavasi channel to Nangumangalam and the restoration of the Padavedu tank were completed. The improvements to the Kadalady tank were in progress.

South Arcot Division.—A weir to Veeranam tank and another to Orathur tank were constructed.

Salem Division.—The construction of an anicut and the improvements to the channel to supply the Sungambasavam tank and the improvements to the Periyeri tank were completed.

Coimbatore Division.—Excavating a trial trench at the centre line of the proposed Bhavani reservoir dam, excavating a trench at Muthikolan, restoring the Kadathur anicut and repairing the escape below the head, constructing a head-sluice at the head of Vangal channel and constructing a head-sluice at the head of Nerur channel were carried out.

West Coast Division.—The restoration of the Enamakal dam was in progress.

Trichinopoly Division.—The improvements to the Kolagudi, Arumbavur and Mullipadi tanks and to Thottiem Chinnavaikal were completed, and those to the Venkolam large and small tanks were in progress.

Madura Division.—The improvements to the Paravai tank and Nandiapuram anicut were completed and those to the Korikadavoo anicut channel and the Vyravanar anicut were in progress.

Tinnevely Division.—The improvements to the Peranjeri channel, Vembakotai-Periyakulam tank, Gengakondan Sirukulam tank, and Palicottai channel and Pala-

Chingleput Division.—One hundred and thirty-three works were in progress, of which 81 were completed. All the estimates sanctioned for the Kovalam, Red Hills and Tiruttani minor basins have been worked out. In the Adyar minor basin three works remained to be completed. Work was in progress in the Arani and Chembrambakam minor basins.

South Arcot Division.—The improvements to the Alangal channel and tanks depending on it, and those to the Pallinellianur tank channel, Kangayanur tank and channel, Tiruvamathur tank and channel, and Kottanur channel were in progress. Besides the above, 59 petty works were completed and 30 were in progress.

Negapatam Division.—Two hundred and eighty-five works were in progress, of which 15 were completed.

Madura Division.—The improvements to the Anuppanadi periyakommi and channel, Panayur tank and channel, Sindamony periyakommi and channel, Chatrapaliangulam periyakommi and channel, Thevankurchi periyakommi and 85 Vickramangalam tank were in progress and those to the Ayettankommi, Orappanoor periyakommi and Kollaneri periyakommi and channel were completed.

Tinnevely Division.—The improvements to the Nuthampatti periyakulam and to Nedungulam tank were completed, and those to the Sivenerikulam, Periyakulam of Pudukottai and its supply channel, Kovenarikulam and its supply channel, Alangulam of Maharajapuram and Vilvarayankulam were in progress. Besides the above, 29 petty works were completed and 15 were in progress.

INVESTIGATION OF PROJECTS.

In the Kistna Northern division steps were taken to gauge the supply in the Nagileru in connection with the Mellavagu project and register the rainfall in the catchment basin, but the water registers were maintained for only part of the monsoon.

A special survey staff was sanctioned during the year for the investigation of the Atmakur and Manchikalla projects, both of which are promising, and the field work was carried out.

The following are the particulars of receipts collected in the Public Works Department from Minor Works for which neither Capital nor Revenue Accounts are kept:—

Budget estimate	Rs. 8,000
Revised do.	8,000
Actuals	9,638

The total area charged as irrigated for first and second crops under all works for which neither Capital nor Revenue Accounts are kept was 3,234,633 acres against 3,573,871 acres in the previous year. The revenue derived from these works was Rs. 84,38,855 exclusive of deductions and remissions of Rs. 9,15,639. There was a decrease both in the area irrigated and revenue derived owing to deficient rainfall chiefly in the Cuddapah, Anantapur, Chingleput, North Arcot, Madura and Tinnevely districts.

The area irrigated under, and the revenue derived from, (1) Works for which a continuous record of expenditure is kept individually, (2) Other Minor Works, Public Works Department, and Minor Works, Revenue Department, compare as follow with those of the previous year:—

	Area irrigated.		Irrigation revenue.	
	1894-95.	1893-94.	1894-95.	1893-94.
Minor Works for which neither Capital nor Revenue Accounts are kept, Public Works Department.				
	ACS.	ACS.	RS.	RS.
(1) Works for which a continuous record of expenditure is kept individually	230,949	235,588	8,02,518	8,09,153
(2) Other Minor Works, Public Works Department	1,323,053	1,406,744	3,762,115	38,39,513
Minor Works, Revenue Department	1,678,631	1,931,539	33,84,222	44,20,507
Total	3,234,633	3,573,871	84,38,855	90,69,303

The total irrigation revenue derived from works for which neither Capital nor Revenue Accounts are kept, together with the miscellaneous revenue collected in the Public Works Department, was Rs. 84,48,495 and the total charges incurred on these works amounted to Rs. 22,83,508, viz., Rs. 18,87,047 in the Public Works Department, and Rs. 3,96,461 in the Revenue Department, leaving Rs. 61,64,987 as the net revenue.

The following statement shows by districts the area irrigated, the irrigation revenue derived, and the expenditure incurred on each class of works:—

STATEMENT showing the area irrigated under, and the irrigation revenue derived from, Minor Works for which neither Capital nor Revenue Accounts are kept, Public Works and Revenue Departments, during the fiscal year 1894 and the expenditure incurred on them during the official year 1894-95.

	Area charged as irrigated and revenue derived during the fiscal year 1894 (1894-95).			Outlay during the official year 1894-95.					
	Area.		Total irrigation revenue.	Original works.	Repairs.	Establishment.	Tools and plant.	Total.	
	First crop.	Second crop.							
	ACS.	ACS.	RS.	RS.	RS.	RS.	RS.	RS.	
MINOR WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT, P.W.D.									
<i>Works for which a continuous record of expenditure is kept individually.</i>									
Ganjam.									
Langulia river, two channels	13,856	917	29,916	..	..	..	..	..	..
Vamsadbara river, six channels	40,471	2,571	84,934	..	..	..	..	..	..
Ganibala Gedda	1,555	123	2,242	..	..	..	..	..	..
Vizagapatam.									
Sarala river, six anicuts	11,910	8,809	30,387	..	58	..	..	..	..
Varaha river, four do.	7,065	5,713	23,145	14	3,455	812	53	4,392	..
Salem.									
Pennagandapuram tank	435	423	1,465	116	377	113	7	613	..
Coimbatore.									
Amravati river, twenty-two channels	25,371	19,537	1,38,297	28	4,763	1,192	72	6,965	..
Chingleput.									
Madurantakam tank	4,379	1,204	11,241	159	264	97	6	526	..
South Arcot.									
Myrenady-Kattumailar anicut.	439	25	1,933	..	398	..	..	..	..
Gadilam river, Tiruvadi anicut	7,090	2,013	36,126	..	..	..	..	..	..
Vanamadevi anicut	736	209	4,739	223	2,604	851	56	4,505	..
Tiruvendipuram anicut	1,839	735	10,722	..	..	..	..	..	..
Kullar river, Vikravandy anicut.	2,248	179	8,277	..	473	..	..	..	..
Tinnevely.									
Tambraparni river, six anicuts	36,739	33,933	4,19,084	2,255	13,516	3,627	237	19,635	..
Total	164,253	76,896	8,02,518	2,795	24,968	6,692	431	36,735	
"Other Minor Works," P.W.D.									
Ganjam	72,308	1,910	1,33,011	8,190	12,859	4,823	316	26,231	..
Vizagapatam	32,140	28,913	1,02,196	28,332	16,100	11,053	627	54,112	..
Godevari	44,384	2,937	89,714	9,283	28,991	8,539	553	47,369	..
Kistna	18,400	..	46,902	25,812	9,008	8,097	525	43,442	..
Nellore	85,303	7,331	8,10,401	46,142	37,856	18,785	1,230	1,04,923	..
Cuddapah	56,925	27,530	2,66,480	4,024	21,315	3,751	578	31,468	..
Anantapur	88,006	6,341	1,27,745	..	..	..	..	..	..
Bellary	80,020	6,363	1,88,197	37,415	37,131	17,281	1,125	92,955	..
Karnool	22,919	6,310	91,152	5,944	15,907	3,793	213	20,893	..
West Coast	..	..	..	4,247	1,820	1,395	92	7,554	..
Coimbatore	30,921	13,117	1,43,436	14,589	7,152	4,571	299	26,611	..
Salem	29,489	28,657	1,34,228	16,595	21,335	8,868	567	47,335	..
North Arcot	55,434	21,123	2,07,030	47,850	26,330	35,053	1,320	1,10,571	..
Chingleput	223,027	37,690	6,65,365	80,639	79,137	44,904	2,546	2,07,217	..
South Arcot	78,219	15,955	3,06,663	32,107	73,286	24,114	1,577	1,31,114	..
Tanjore	17,676	1,299	43,156	49,955	25,642	..	..	..	..
Trichinopoly	85,902	37,041	4,81,324	24,813	29,213	47,193	1,136	93,320	..
Madura	71,556	27,806	3,11,880	57,424	40,529	40,007	1,548	1,39,548	..
Tinnevely	41,484	23,834	2,43,335	58,638	37,535	21,859	1,449	1,19,641	..
Head office, Tank Restoration Scheme	..	..	..	..	..	9,960	..	9,960	..
Total	10,34,083	293,970	37,52,115	5,49,998	5,07,369	2,94,980	16,239	13,68,555	

* This amount includes the expenditure on Tank Restoration works.

I.B.—CAPITAL ACCOUNT OF IRRIGATION AND NAVIGATION WORKS, "MAJOR" (PRODUCTIVE AND PROTECTIVE) AND "ORDINARY MINOR," FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT IN THE MADRAS TREASURY FOR AND TO END OF 1894-95.

APPENDIX TO THE ADMINISTRATION REPORT OF THE

APPENDIX C.

Works or systems	Direct charges for expenditure				Indirect charges excluding interest	Total capital excluding interest	Single interest
	Works	Establishment	Tools and plant	Suspense account	Total		
	RS.	RS.	RS.	RS.	RS.	RS.	RS.
PRODUCTIVE PAUKA WORKS.							
No. 1. Chikara delta system ..	89,58,714	1,79,107	5,50,000	..	1,00,13,821	1,28,08,322	1,17,23,559
" 2. Kinnu do. ..	79,10,101	1,00,000	6,00,000	..	1,00,10,101	1,11,10,101	77,02,885
" 3. Pennar ancient system ..	3,50,000	1,00,000	1,00,000	..	1,00,000	1,00,000	4,40,000
" 4. Baugan do. ..	2,00,000	1,00,000	1,00,000	..	1,00,000	1,00,000	1,00,000
" 5. Kurnool-Cuddapah canal ..	2,00,000	1,00,000	1,00,000	..	1,00,000	1,00,000	1,00,000
" 6. Barur tank ..	1,00,000	1,00,000	1,00,000	..	1,00,000	1,00,000	1,00,000
" 7. Cauvery delta system ..	1,00,000	1,00,000	1,00,000	..	1,00,000	1,00,000	1,00,000
" 8. Srirangapatnam ancient system ..	1,00,000	1,00,000	1,00,000	..	1,00,000	1,00,000	1,00,000
" 9. Periyar project ..	1,00,000	1,00,000	1,00,000	..	1,00,000	1,00,000	1,00,000
Total, Productive Pauka Works ..	1,00,00,000	1,00,00,000	1,00,00,000	..	1,00,00,000	1,00,00,000	1,00,00,000
PROTECTIVE IRRIGATION WORKS.							
No. 10. Ruzikalya project ..	1,00,000	1,00,000	1,00,000	..	1,00,000	1,00,000	1,00,000
ORDINARY IRRIGATION, MINOR WORKS AND NAVIGATION.							
No. 12. Munyera project ..	1,00,000	1,00,000	1,00,000	..	1,00,000	1,00,000	1,00,000
" 13. Dondapada tank project ..	1,00,000	1,00,000	1,00,000	..	1,00,000	1,00,000	1,00,000
" 14. Sagilera project ..	1,00,000	1,00,000	1,00,000	..	1,00,000	1,00,000	1,00,000
" 15. Gumbam tank system ..	1,00,000	1,00,000	1,00,000	..	1,00,000	1,00,000	1,00,000
" 16. Thadapalli channel system ..	1,00,000	1,00,000	1,00,000	..	1,00,000	1,00,000	1,00,000
" 17. Arkenkote do. ..	1,00,000	1,00,000	1,00,000	..	1,00,000	1,00,000	1,00,000

I.B.—Capital Account of Irrigation and Navigation Works, "Major" (Productive and Protective) and "Ordinary Minor," &c.—*cont.*

Works or systems	Direct charges (net expenditure)				Indirect charges excluding interest	Total capital excluding interest	Single interest
	Works	Establishment	Tools and plant	Suspense account	Total		
	RS.	RS.	RS.	RS.	RS.	RS.	RS.
ORDINARY IRRIGATION, MINOR WORKS AND NAVIGATION—<i>cont.</i>							
No. 18. Kalingarayan channel system ..	47,756	10,984	..	..	58,740	1,538	..
" 19. Palur ancient system ..	14,91,458	8,92,878	29,875	..	19,11,206	38,373	20,12,579
" 20. Polney do. ..	1,83,109	42,114	..	..	2,25,222	1,631	22,759
" 21. Cheyaru do. ..	2,81,588	94,682	..	..	3,76,270	179	709
" 22. Choudambakam tank system ..	23,155	2,874	8,050	..	28,819	818	29,637
" 23. Madras water-supply and irrigation extension ..	4,91,801	1,24,554	..	..	6,16,355	1,12,164	7,56,519
" 24. Vallura ancient system ..	12,97,740	2,12,947	5,491	..	15,16,178	2,38,218	17,54,045
" 25. Truhkoyilur ancient system ..	60,550	11,627	..	..	72,177	1,628	63,805
" 26. Mahamattar do. ..	1,09,701	45,931	..	..	1,55,632	6,458	2,52,050
" 27. Vridhachakam do. ..	1,83,109	42,114	..	..	2,25,222	1,631	22,759
" 28. Shattatope do. ..	3,82,545	73,994	3,640	..	4,60,179	1,812	71,047
" 29. Palandurai do. ..	1,02,815	1,172	..	..	1,03,987	1,269	49,737
" 30. Lower Coleroon do. ..	4,47,156	7,495	..	..	4,54,651	2,940	1,15,609
" 31. Marudur do. ..	32,299	5,624	..	..	37,923	178	1,00,438
" 32. Chikla lake canal ..	62,15,261	14,83,603	1,44,794	..	78,43,658	41,483	83,12,462
" 33. Buckingham do. ..	1,30,715	30,619	2,626	..	1,63,960	68	5,61,101
" 34. Ganjam-Gopalpur canal ..	1,00,000	87,794	..	..	1,87,794	164	5,422
Total, Irrigation and Navigation Works ..	1,16,60,801	27,24,798	1,95,485	..	1,45,80,884	10,27,629	1,56,08,513

(Signed) D. C. GORDON,
Examiner of Public Works Accounts.

7th December 1895.

