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Administration Report of the  
Public Works Dept

1896-1897



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ADMINISTRATION REPORT

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OF THE

PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH,

IN THE

MADRAS PRESIDENCY,

FOR THE YEAR

1896-97.



MADRAS:  
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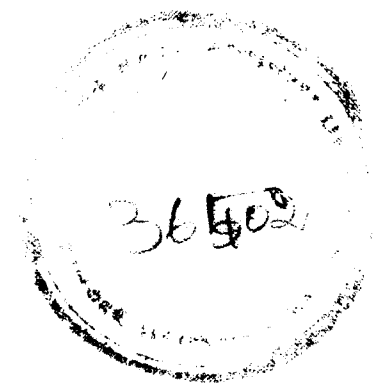
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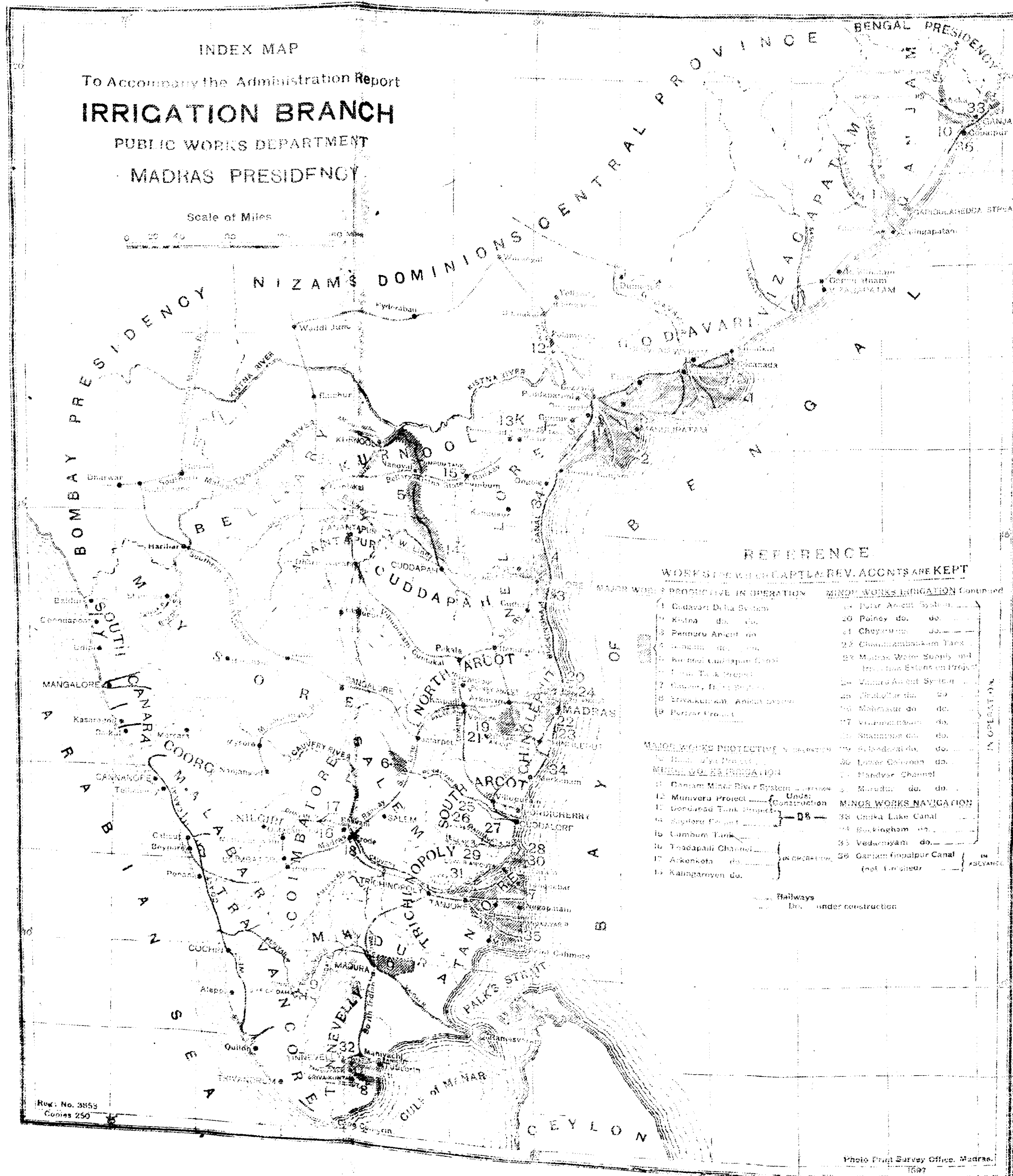
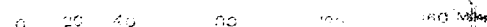
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PUBLIC WORKS DEPARTMENT  
MADRAS PRESIDENCY.

Scale of Miles



## GENERAL.

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# ADMINISTRATION REPORT OF THE

# PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1896-97.

## GRANTS AND EXPENDITURE.

Class II.—“Minor Works and Navigation” are divided under four heads:—

- (1) Minor Works for which Capital and Revenue Accounts are kept.
- (2) Minor Works for which neither Capital nor Revenue Accounts are kept, Public Works Department.
- (3) Minor Works, Revenue Department.
- (4) Agricultural Works.

The “Minor works for which Capital and Revenue Accounts are kept” are 26 in number, viz.:—

- No. 11. Ganjam Minor Rivers system.
12. Munyera project.
13. Dondapad tank project.
14. Sagileru project.
15. Cumbum tank system.
16. Thadapalli channel system.
17. Arkenkota channel system.
18. Kalingarayan channel system.
19. Palur ancient system.
20. Poincy ancient system.
21. Cheyaru ancient system.
22. Chembrambakam tank system.
23. Madras water-supply and irrigation extension.
24. Vallur ancient system.
25. Tirukkogilar ancient system.
26. Mohamattar ancient system.
27. Vriddhachalam ancient system.
28. Shatlatope ancient system.
29. Polanderai ancient system.
30. Lower Coleroon ancient system.
31. Nandyar channel.
32. Maradur ancient system.
33. Chilka Lake canal.
34. Buckingham canal.
35. Vedaranniyam canal.
36. Ganjam-Gopalpur canal.

The first 22 of these are irrigation systems; the remaining four are canals purely for navigation purposes. Works under the three remaining heads in class II are comparatively small individually, but are very numerous.

The final grant for the year from “Imperial” funds was Rs. 25,78,750, and the expenditure Rs. 25,36,421; from “Provincial” the grant was Rs. 38,27,150, and the expenditure Rs. 38,31,078. Rupees 10,361 were spent from the “Local Irrigation Cess fund” against a grant of Rs. 13,584, and Rs. 19,666 were spent from “contributions.” Against a grant of Rs. 31,048 an outlay of Rs. 15,524 was also incurred during the year in the execution of works undertaken for the purposes of famine relief in the Cuddapah, Kurnool and Bellary districts. The total expenditure in the year under all heads was Rs. 64,13,050, or Rs. 3,01,027 more than the expenditure incurred in the previous year.

The following statement No. 1 exhibits the expenditure compared with grants under each budget and departmental head:—

No. 1.

STATEMENT showing the expenditure compared with grants for 1896-97.

| STATEMENT showing the expenditure compared with grants for 1896-97.                         |           |                 |          |                |                  |           |                 |            |                |                  |           |                                   |                              |          |        |     |                                         |  |
|---------------------------------------------------------------------------------------------|-----------|-----------------|----------|----------------|------------------|-----------|-----------------|------------|----------------|------------------|-----------|-----------------------------------|------------------------------|----------|--------|-----|-----------------------------------------|--|
|                                                                                             | Grants.   |                 |          |                |                  |           | Expenditure.    |            |                |                  |           |                                   |                              |          |        |     | Expenditure compared with final grants. |  |
|                                                                                             | Budget.   | Final grants.   |          |                |                  | Total.    | Original works. | Repairs.   | Establishment. | Tools and plant. | Total.    | Less receipts on Capital Account. | Net expenditure of the year. | More.    | Less.  |     |                                         |  |
|                                                                                             |           | Original works. | Repairs. | Establishment. | Tools and plant. |           |                 |            |                |                  |           |                                   |                              |          |        |     |                                         |  |
| 1                                                                                           | 2         | 3               | 4        | 5              | 6                | 7         | 8               | 9          | 10             | 11               | 12        | 13                                | 14                           | 15       | 16     |     |                                         |  |
|                                                                                             | Rs.       | Rs.             | Rs.      | Rs.            | Rs.              | Rs.       | Rs.             | Rs.        | Rs.            | Rs.              | Rs.       | Rs.                               | Rs.                          | Rs.      | Rs.    |     |                                         |  |
| IMPERIAL.                                                                                   |           |                 |          |                |                  |           |                 |            |                |                  |           |                                   |                              |          |        |     |                                         |  |
| MAJOR WORKS.                                                                                |           |                 |          |                |                  |           |                 |            |                |                  |           |                                   |                              |          |        |     |                                         |  |
| 35. CONSTRUCTION OF PROTECTIVE IRRIGATION WORKS.                                            |           |                 |          |                |                  |           |                 |            |                |                  |           |                                   |                              |          |        |     |                                         |  |
| No. 10. Rushikulya project ..                                                               | 1,89,000  | 1,07,317        | ..       | 55,183         | ..               | 2,03,500  | 1,67,744        | ..         | 77,317         | ..               | 90        | 2,04,971                          | 918                          | 2,04,058 | 558    | ..  |                                         |  |
| 42. IRRIGATION—MAJOR WORKS (WORKING EXPENSES).                                              |           |                 |          |                |                  |           |                 |            |                |                  |           |                                   |                              |          |        |     |                                         |  |
| No. 1. Godavari delta system ..                                                             | 5,30,000  | 19,946          | 2,46,327 | 2,18,988       | 68,500           | 5,23,730  | 14,768          | 2,42,089   | 2,25,920       | 38,125           | 5,29,902  | ..                                | 5,36,902                     | 8,142    | 35,955 | 784 |                                         |  |
| 2. Kistna do. ..                                                                            | 3,25,000  | 12,000          | 4,19,071 | 2,69,834       | 48,300           | 7,41,630  | 1,426           | 4,17,721   | 2,34,888       | 51,085           | 7,05,070  | ..                                | 7,05,070                     | ..       | ..     | ..  |                                         |  |
| 3. Pennar ancient system ..                                                                 | 19,000    | ..              | 5,241    | 10,338         | 47               | 10,393    | 851             | 7,293      | 9,428          | 26               | 15,396    | ..                                | 15,396                       | 616      | ..     | ..  |                                         |  |
| 4. Sangam do. ..                                                                            | 43,000    | 4,000           | 20,178   | 15,151         | ..               | 39,831    | 181             | 19,627     | 58,695         | ..               | 49,346    | ..                                | 49,346                       | ..       | 2,055  | ..  |                                         |  |
| 5. Kurnool-Cuddapah canal ..                                                                | 86,000    | ..              | 64,200   | 31,501         | 1,636            | 83,337    | ..              | 62,787     | 34,984         | 1,200            | 84,732    | ..                                | 84,732                       | ..       | 138    | ..  |                                         |  |
| 6. Barur tank system ..                                                                     | 3,800     | 1,000           | 1,109    | 1,176          | ..               | 6,085     | 904             | 1,613      | 1,075          | ..               | 3,542     | ..                                | 3,542                        | ..       | 271    | ..  |                                         |  |
| 7. Cauvery delta system ..                                                                  | 18,200    | 17,531          | 22,202   | 49,882         | 2,778            | 48,264    | 1,576           | 21,771     | 87,774         | 2,444            | 48,028    | ..                                | 48,028                       | ..       | 112    | ..  |                                         |  |
| 8. Srivaikuntam ancient system ..                                                           | 24,000    | 164             | 50,159   | 18,666         | ..               | 73,929    | 69              | 50,189     | 38,008         | ..               | 68,188    | ..                                | 68,188                       | 2,108    | ..     | ..  |                                         |  |
| 9. Periyar project ..                                                                       | 50,000    | ..              | 21,913   | 6,981          | 1,300            | 59,194    | ..              | (a) 40,000 | 2,108          | ..               | 42,108    | ..                                | 42,108                       | 7,652    | ..     | ..  |                                         |  |
| 10. Rushikulya project ..                                                                   | ..        | ..              | ..       | ..             | ..               | ..        | ..              | 31,643     | 7,291          | ..               | 39,701    | ..                                | 39,701                       | ..       | ..     | ..  |                                         |  |
| Total ..                                                                                    | 12,80,000 | 83,469          | 8,26,303 | 6,38,398       | 1,02,419         | 15,89,500 | 6,884           | 8,41,086   | 5,67,071       | 93,557           | 15,68,608 | ..                                | 15,68,608                    | ..       | 79,892 | ..  |                                         |  |
| 49. CAPITAL EXPENDITURE NOT CHARGED TO REVENUE.                                             |           |                 |          |                |                  |           |                 |            |                |                  |           |                                   |                              |          |        |     |                                         |  |
| No. 1. Godavari delta system ..                                                             | 81,000    | 87,021          | ..       | 12,958         | ..               | 80,201    | 5,078           | ..         | 1,834          | ..               | 64,912    | ..                                | 64,912                       | ..       | 15,292 | ..  |                                         |  |
| 2. Kistna do. ..                                                                            | 5,75,000  | 4,18,465        | ..       | 36,158         | 59,411           | 1,50,042  | 4,811           | ..         | 1,821          | 41,650           | 5,84,882  | ..                                | 5,84,882                     | ..       | 10,160 | ..  |                                         |  |
| 3. Pennar ancient system ..                                                                 | 9,000     | 6,900           | ..       | 932            | ..               | 8,932     | ..              | ..         | 804            | ..               | 6,821     | ..                                | 6,821                        | ..       | 131    | ..  |                                         |  |
| 4. Sangam do. ..                                                                            | 19,000    | 15,147          | ..       | 3,659          | ..               | 19,600    | 1,045           | ..         | 2,066          | 1,378            | 17,323    | ..                                | 17,323                       | ..       | 1,677  | ..  |                                         |  |
| 5. Barur tank system ..                                                                     | 1,700     | 1,382           | ..       | 318            | ..               | 1,700     | 255             | ..         | 289            | ..               | 1,544     | ..                                | 1,544                        | ..       | 168    | ..  |                                         |  |
| 6. Cauvery delta system ..                                                                  | 78,100    | 37,310          | ..       | 3,629          | ..               | 86,443    | 8,881           | ..         | 1,741          | ..               | 42,625    | ..                                | 42,625                       | ..       | 747    | ..  |                                         |  |
| 7. Srivaikuntam ancient system ..                                                           | 13,100    | 1,080           | ..       | 235            | ..               | 14,415    | 543             | ..         | 1,255          | ..               | 608       | ..                                | 608                          | ..       | ..     | ..  |                                         |  |
| 8. Periyar project ..                                                                       | 1,63,100  | 1,62,000        | ..       | 21,165         | 60,090           | 33,190    | 1,081           | ..         | 2,434          | ..               | 49,301    | 331                               | 44,970                       | 11,810   | 1,129  | ..  |                                         |  |
| 9. Reserve ..                                                                               | ..        | 4,437           | ..       | 342            | ..               | 1,820     | ..              | ..         | ..             | ..               | ..        | ..                                | ..                           | ..       | ..     | ..  |                                         |  |
| Total ..                                                                                    | 9,41,000  | 6,73,761        | ..       | 1,44,828       | 31,527           | 7,55,750  | 8,746           | ..         | 1,87,714       | 45,174           | 7,84,086  | 331                               | 7,84,086                     | ..       | 21,095 | ..  |                                         |  |
| Total, Imperial ..                                                                          | 24,10,000 | 9,06,478        | 8,33,303 | 7,63,607       | 68,062           | 30,78,750 | 9,0174          | 8,41,086   | 5,67,071       | 47,293           | 25,37,665 | 1,244                             | 25,37,665                    | ..       | 42,329 | ..  |                                         |  |
| PROVINCIAL.                                                                                 |           |                 |          |                |                  |           |                 |            |                |                  |           |                                   |                              |          |        |     |                                         |  |
| 43. MINOR WORKS AND NAVIGATION—MINOR WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT. |           |                 |          |                |                  |           |                 |            |                |                  |           |                                   |                              |          |        |     |                                         |  |
| Capital Account.                                                                            |           |                 |          |                |                  |           |                 |            |                |                  |           |                                   |                              |          |        |     |                                         |  |
| No. 5. Kurnool-Cuddapah canal ..                                                            | 18,450    | 15,300          | ..       | 3,174          | ..               | 16,474    | 11,176          | ..         | 2,298          | ..               | 12,474    | ..                                | 12,474                       | 322      | 4,500  | ..  |                                         |  |
| 11. Ganjam minor rivers system ..                                                           | ..        | 3,217           | ..       | 856            | ..               | 4,073     | 1,011           | ..         | 882            | ..               | 4,894     | ..                                | 4,894                        | ..       | 2,164  | ..  |                                         |  |
| 12. Munyera project ..                                                                      | 1,23,000  | 1,29,034        | ..       | 22,070         | 1,200            | 1,52,304  | 1,504           | ..         | 2,847          | 1,806            | 1,67,736  | 291                               | 1,67,736                     | 1,883    | 608    | ..  |                                         |  |
| 13. Dondapad tank project ..                                                                | 10,850    | 25,335          | ..       | 550            | ..               | 26,735    | 1,319           | ..         | 13,386         | ..               | 28,231    | ..                                | 28,231                       | ..       | ..     | ..  |                                         |  |
| 14. Sagileru project ..                                                                     | 1,10,700  | 99,069          | ..       | 18,779         | ..               | 98,400    | 2,889           | ..         | 18,386         | ..               | 98,968    | ..                                | 98,968                       | ..       | ..     | ..  |                                         |  |
| 15. Cumbum tank project ..                                                                  | ..        | 1,500           | ..       | 245            | ..               | 1,745     | 823             | ..         | 1,237          | ..               | 8,036     | ..                                | 8,036                        | 1,846    | 578    | ..  |                                         |  |
| 16. Thadapalli channel system ..                                                            | 8,610     | 4,000           | ..       | 630            | ..               | 6,640     | 3,633           | ..         | 1,359          | ..               | 8,032     | ..                                | 8,032                        | 535      | 1,408  | ..  |                                         |  |
| 17. Palur ancient system ..                                                                 | 12,800    | 7,500           | ..       | 1,610          | ..               | 8,610     | 3,673           | ..         | 1,359          | ..               | 4,323     | ..                                | 4,323                        | ..       | ..     | ..  |                                         |  |
| 18. Cheyaru do. ..                                                                          | 3,690     | 2,685           | ..       | 450            | ..               | 3,525     | 3,689           | ..         | 1,217          | ..               | 1,160     | ..                                | 1,160                        | 13,050   | ..     | ..  |                                         |  |
| 19. Shatlatope do. ..                                                                       | ..        | 26,265          | ..       | 6,632          | ..               | 32,897    | 15,861          | ..         | 1,462          | ..               | 45,323    | ..                                | 45,323                       | 5,598    | ..     | ..  |                                         |  |
| 20. Palaurduri do. ..                                                                       | ..        | 6,000           | ..       | 1,005          | ..               | 7,005     | 1,005           | ..         | 1,005          | ..               | 4,323     | ..                                | 4,323                        | ..       | ..     | ..  |                                         |  |
| 21. Lower Coleroon ancient system ..                                                        | 78,720    | 65,310          | ..       | 14,823         | ..               | 98,400    | 3,305           | ..         | 1,117          | 13,182           | 98,598    | ..                                | 98,598                       | ..       | ..     | ..  |                                         |  |
| 22. Nandyar channel ..                                                                      | 6,150     | 4,322           | ..       | 921            | ..               | 7,393     | 3,315           | ..         | 1,944          | ..               | 5,215     | ..                                | 5,215                        | ..       | ..     | ..  |                                         |  |
| 23. Maradur ancient system ..                                                               | 1,50,140  | 1,70,157        | ..       | 39,608         | ..               | 2,59,905  | 982             | ..         | 2,226          | ..               | 1,208     | ..                                | 1,208                        | ..       | ..     | ..  |                                         |  |
| 24. Buckingham canal ..                                                                     | 6,09,000  | ..              | ..       | ..             | ..               | ..        | ..              | ..         | ..             | ..               | ..        | ..                                | ..                           | ..       | ..     | ..  |                                         |  |
| Common improvements scheme ..                                                               | ..        | ..              | ..       | ..             | ..               | ..        | ..              | ..         | ..             | ..               | ..        | ..                                | ..                           | ..       | ..     | ..  |                                         |  |
| Total ..                                                                                    | 11,22,610 | 5,16,493        | ..       | 1,18,020       | 52,531           | 7,11,641  | 8,91,906        | ..         | 1,37,819       | 49,466           | 7,18,281  | 2,286                             | 7,18,281                     | 4,942    | ..     | ..  |                                         |  |
| Revenue Account.                                                                            |           |                 |          |                |                  |           |                 |            |                |                  |           |                                   |                              |          |        |     |                                         |  |
| No. 5. Patha Cuddapah tank system ..                                                        | 3,890     | ..              | 1,400    | 822            | ..               | 5,112     | 1,373           | ..         | 292            | ..               | 1,605     | ..                                | 1,605                        | ..       | ..     | 117 |                                         |  |
| 11. Ganjam minor rivers do. ..                                                              | ..        | ..              | 3,015    | 2,082          | ..               | 11,133    | ..              | ..         | 185            | ..               | 11,191    | ..                                | 11,191                       | ..       | ..     | ..  |                                         |  |
| 15. Cumbum tank do. ..                                                                      | 2,000     | ..              | 750      | 181            | ..               | 2,931     | 59              | 745        | ..             | ..               | 889       | ..                                | 889                          | ..       | ..     | ..  |                                         |  |
| 16. Thadapalli channel system ..                                                            | 2,500     | 4,300           | 3,000    | 1,988          | ..               | 10,788    | 4,238           | 3,324      | ..             | ..               | 8,855     | ..                                | 8,855                        | ..       | ..     | ..  |                                         |  |
| 17. Arkenkota do. ..                                                                        | 1,840     | 700             | 1,055    | 620            | ..               | 3,215     | 689             | 1,377      | ..             | ..               | 2,635     | ..                                | 2,635                        | ..       | ..     | ..  |                                         |  |
| 18. Kalingarayan do. ..                                                                     | 2,500     | 180             | 3,500    | 1,418          | ..               | 7,598     | 180             | 5,170      | ..             | ..               | 5,845     | ..                                | 5,845                        | ..       | ..     | ..  |                                         |  |
| 19. Palur ancient system ..                                                                 | 49,602    | 9,367           | 85,811   | 10,515         | ..               | 1,50,295  | 9,866           | 35,865     | ..             | ..               | 6,616     | ..                                | 6,616                        | ..       | ..     | ..  |                                         |  |
| 20. Poincy do. ..                                                                           | 12,235    | 3,060           | 7,100    | 2,100          | ..               | 24,495    | 11,997          | 7,222      | ..             | ..               | 55,966    | ..                                | 55,966                       | ..       | ..     | ..  |                                         |  |
| 21. Cheyaru do. ..                                                                          | 18,610    | 2,500           | 18,620   | 5,108          | ..               | 26,738    | 3,579           | 18,641     | ..             | ..               | 11,867    | ..                                | 11,867                       | ..       | ..     | ..  |                                         |  |
| 22. Chembrambakam tank system ..                                                            | 2,040     | ..              | 100      | 280            | ..               | 2,420     | ..              | ..         | ..             | ..               | 2,101     | ..                                | 2,101                        | ..       | ..     | ..  |                                         |  |

(a) Rent of land, or compensation, paid to the Travancore Government. This is shown under the head “3. Compensation” in the accounts of the Examiner of Public Works Accounts.  
(b) The write-back entered in G.O. No. 576 I. dated 25th June 1897, of the expenditure incurred on the Patha Cuddapah tank from “43. Provincial—Minor Works and Navigation, Revenue Account,” to “42. Major Works (Working Expenses)” not having been carried out in the accounts of the year by the Examiner of Public Works Accounts, the outlay has been added to the Kurnool-Cuddapah Canal under the latter head wherever comparison is made between receipts and expenditure.

# ADMINISTRATION REPORT OF THE

## PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1896-97.

### No. II.

#### STATEMENT showing the Receipts compared with Charges for 1896-97.

Direct receipts

The total of direct receipts collected in the Public Works Department was (exclusive of refunds of revenue) Rs. 3,40,651; that is, Rs. 7,147 more than in the previous year and Rs. 5,249 less than the amount anticipated. The increase during the year was realized chiefly from navigation under the Buckingham canal.

Total area irrigated.

The total area charged as irrigated for both first and second crops was 5,979,044 \* acres against 6,332,482 acres in the previous year.

Of the area irrigated, 2,606,435 acres were under "Major works," 523,424 acres under "Minor works for which Capital and Revenue Accounts are kept," and the remainder under works for which such accounts are not kept.

Total revenue derived.

The total irrigation (indirect) revenue,\* exclusive of deductions and remissions, amounted to Rs. 1,93,14,626 against Rs. 2,05,85,064 of the previous year. The remissions granted during the year amounted to Rs. 17,08,245 against Rs. 7,53,115 in the previous year. Inclusive of Rs. 320, the revenue of the previous year credited in the accounts of the year, the share of enhanced land revenue and the receipts collected in the Public Works Department, the total revenue, both direct and indirect, was Rs. 2,02,19,003, of which Rs. 1,03,02,161 were derived from "Major Works," Rs. 19,80,473 from "Minor Works for which Capital and Revenue Accounts are kept," and the remainder from works for which such accounts are not kept.

The following statement No. II compares the charges during the official year 1896-97 with the area and revenue for the fasli or revenue year 1396 which closed on the 30th June 1897.

\* Exclusive of that for the Anantapur district, particulars for which have not yet been furnished by the Board of Revenue.

|                                                                                 |                                                 | REVENUE DERIVED DURING THE FASLI YEAR ENDING 30th JUNE 1897. |                     |                                     |                                                        | Receipts in the Public Works Department, including the share of the Government. | EXPENDITURE DURING THE OFFICIAL YEAR, 1896-97. |                   |                                       |          |                    | Interest on loans, less old maintenance charges. | Net revenue for the year due to irrigation. | Interest on loans. | Subsidy revenue for Government capital. | Capital outlay including indirect charges. | Percentage of net revenue (column 14) to outlay of Government capital. |       |
|---------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------|---------------------|-------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------|-------------------|---------------------------------------|----------|--------------------|--------------------------------------------------|---------------------------------------------|--------------------|-----------------------------------------|--------------------------------------------|------------------------------------------------------------------------|-------|
|                                                                                 |                                                 | Area irrigated (1st and 2nd crops).                          | Irrigation revenue. | Add share of enhanced land revenue. | Add revenue of the previous year brought into account. | Total.                                                                          | Direct charges.                                | Indirect charges. | Collection in the Revenue Department. | Total.   | Time and material. |                                                  |                                             |                    |                                         |                                            |                                                                        |       |
|                                                                                 |                                                 | Acres.                                                       | Rs.                 | Rs.                                 | Rs.                                                    | Rs.                                                                             | Rs.                                            | Rs.               | Rs.                                   | Rs.      | Rs.                | Rs.                                              | Rs.                                         | Rs.                | Rs.                                     | Rs.                                        |                                                                        |       |
| IRRIGATION.                                                                     |                                                 |                                                              |                     |                                     |                                                        |                                                                                 |                                                |                   |                                       |          |                    |                                                  |                                             |                    |                                         |                                            |                                                                        |       |
| MAJOR WORKS.                                                                    |                                                 |                                                              |                     |                                     |                                                        |                                                                                 |                                                |                   |                                       |          |                    |                                                  |                                             |                    |                                         |                                            |                                                                        |       |
| Productive.                                                                     |                                                 |                                                              |                     |                                     |                                                        |                                                                                 |                                                |                   |                                       |          |                    |                                                  |                                             |                    |                                         |                                            |                                                                        |       |
| No. 1.                                                                          | Godavari delta ..                               | 182,819                                                      | 26,76,408           | 1,47,442                            | ..                                                     | 4,01,545                                                                        | 28,28,396                                      | 5,24,352          | 32,559                                | 1,35,141 | 6,38,637           | 22,81,345                                        | 1,15,435                                    | 21,15,943          | 4,38,581                                | 19,78,362                                  | 1,28,21,341                                                            | 14.41 |
| .. 2.                                                                           | Krishna do ..                                   | 182,820                                                      | 26,76,375           | 1,46,786                            | 320                                                    | 43,667                                                                          | 27,50,008                                      | 7,19,320          | 31,697                                | 1,60,771 | 8,47,801           | 14,98,227                                        | 55,169                                      | 13,43,057          | 4,66,779                                | 8,76,277                                   | 1,27,81,247                                                            | 10.59 |
| .. 3.                                                                           | Pennar do ..                                    | 68,130                                                       | 3,50,635            | 21,672                              | ..                                                     | 468                                                                             | 2,72,175                                       | 11,352            | 1,894                                 | 7,757    | 54,000             | 3,17,932                                         | 87,690                                      | 1,30,242           | 1,56,733                                | 61,550                                     | 1,14,090                                                               | 8.27  |
| .. 4.                                                                           | Sangam do ..                                    | 73,786                                                       | 3,11,835            | 23,053                              | ..                                                     | 531                                                                             | 3,35,121                                       | 1,1785            | 3,753                                 | 5,713    | 77,333             | 2,58,093                                         | 1,14,000                                    | 1,44,093           | 1,21,955                                | 3,650                                      | 68,23,421                                                              | 3.75  |
| .. 5.                                                                           | Kurnool and Godavari ..                         | 47,323                                                       | 1,33,344            | 800                                 | ..                                                     | 8,734                                                                           | 1,15,958                                       | 8,287             | 3,250                                 | 6,718    | 29,733             | 49,743                                           | 15,743                                      | 34,000             | 8,08,195                                | 4,21,133                                   | 7,71,067                                                               | 3.22  |
| .. 6.                                                                           | Barak do ..                                     | 4,418                                                        | 11,533              | 3                                   | ..                                                     | ..                                                                              | 11,536                                         | 7,662             | 175                                   | 471      | 1,300              | 7,324                                            | 1,360                                       | 6,374              | 1,068                                   | 1,068                                      | 1,25,343                                                               | 1.25  |
| .. 7.                                                                           | Coovyer delta ..                                | 97,123                                                       | 11,57,393           | 1,11,351                            | ..                                                     | 3,179                                                                           | 12,68,743                                      | 3,79,504          | 58,230                                | 47,405   | 4,55,023           | 18,23,324                                        | 2,55,797                                    | 8,50,717           | 68,314                                  | 1,71,033                                   | 18,51,108                                                              | 35.75 |
| .. 8.                                                                           | Srividyantham ..                                | 16,147                                                       | 1,81,112            | 1,730                               | ..                                                     | 1,121                                                                           | 1,87,315                                       | 7,815             | 3,361                                 | 68,699   | 88,543             | 68,699                                           | 54,381                                      | 54,381             | 54,381                                  | 54,381                                     | 14,07,183                                                              | 2.99  |
| .. 9.                                                                           | Perini project ..                               | 68,761                                                       | 2,56,480            | 419                                 | ..                                                     | ..                                                                              | 2,56,899                                       | 65,980            | 2,938                                 | 1,771    | 66,941             | 2,60,470                                         | 3,16,423                                    | ..                 | 3,629                                   | 3,77,391                                   | 84,03,141                                                              | ..    |
| No. 10.                                                                         | Rushmilya project ..                            | 68,827                                                       | 1,98,106            | 143                                 | ..                                                     | 891                                                                             | 1,99,999                                       | 39,751            | 1,021                                 | 3,147    | 43,911             | 65,161                                           | 45,308                                      | 19,853             | 1,60,367                                | 1,10,514                                   | 41,10,27                                                               | 0.11  |
| Total ..                                                                        |                                                 | 2,606,435                                                    | 1,01,84,943         | 4,52,642                            | 320                                                    | 1,66,276                                                                        | 1,08,02,161                                    | 19,91,357         | 1,13,154                              | 3,21,103 | 21,84,310          | 30,67,215                                        | 66,87,572                                   | 16,79,663          | 25,57,820                               | 22,01,810                                  | 4,96,03,116                                                            | 5.71  |
| MINOR WORKS AND NAVIGATION.                                                     |                                                 |                                                              |                     |                                     |                                                        |                                                                                 |                                                |                   |                                       |          |                    |                                                  |                                             |                    |                                         |                                            |                                                                        |       |
| (1) Minor works for which Capital and Revenue Accounts are kept.                |                                                 |                                                              |                     |                                     |                                                        |                                                                                 |                                                |                   |                                       |          |                    |                                                  |                                             |                    |                                         |                                            |                                                                        |       |
| No. 11.                                                                         | Ganjam river ..                                 | 64,501                                                       | 1,18,025            | 6,505                               | ..                                                     | 310                                                                             | 1,24,834                                       | 11,194            | 297                                   | 2,047    | 13,536             | 1,11,293                                         | 83,899                                      | 27,911             | ..                                      | 27,911                                     | ..                                                                     | ..    |
| .. 15.                                                                          | Guntur tank ..                                  | 8,119                                                        | 23,122              | 385                                 | ..                                                     | ..                                                                              | 23,507                                         | 889               | 26                                    | 138      | 1,000              | 22,507                                           | 30,948                                      | 3,325              | ..                                      | 3,325                                      | ..                                                                     | ..    |
| .. 16.                                                                          | Thadavathi channel ..                           | 14,531                                                       | 1,04,171            | 2,398                               | ..                                                     | 16                                                                              | 1,06,584                                       | 8,885             | 185                                   | 1,001    | 10,512             | 95,666                                           | 28,516                                      | 67,150             | ..                                      | 67,150                                     | ..                                                                     | ..    |
| .. 17.                                                                          | Adikavathi do ..                                | 4,129                                                        | 27,392              | 332                                 | ..                                                     | 23                                                                              | 27,794                                         | 2,345             | 52                                    | 437      | 3,022              | 24,772                                           | 19,671                                      | 5,101              | ..                                      | 5,101                                      | ..                                                                     | ..    |
| .. 18.                                                                          | Kalipet channel ..                              | 21,515                                                       | 1,05,008            | 416                                 | ..                                                     | ..                                                                              | 1,05,424                                       | 6,645             | 139                                   | 1,023    | 7,803              | 97,621                                           | 84,822                                      | 12,799             | ..                                      | 12,799                                     | ..                                                                     | ..    |
| .. 19.                                                                          | Palka canal ..                                  | 9,727                                                        | 2,37,904            | 16,343                              | ..                                                     | 2,614                                                                           | 2,66,531                                       | 55,707            | 1,586                                 | 6,461    | 27,811             | 1,59,971                                         | 1,21,100                                    | 38,871             | ..                                      | 38,871                                     | ..                                                                     | ..    |
| .. 20.                                                                          | Paimy canal ..                                  | 23,708                                                       | 74,165              | 4,978                               | ..                                                     | 281                                                                             | 75,364                                         | 11,567            | 712                                   | 2,616    | 13,722             | 68,639                                           | 35,130                                      | 33,502             | ..                                      | 33,502                                     | ..                                                                     | ..    |
| .. 21.                                                                          | Chayara canal ..                                | 37,592                                                       | 96,989              | 3,169                               | ..                                                     | 794                                                                             | 97,783                                         | 27,319            | 718                                   | 2,507    | 30,826             | 66,957                                           | 35,130                                      | 31,627             | ..                                      | 31,627                                     | ..                                                                     | ..    |
| .. 22.                                                                          | Chennamangalam ..                               | 15,337                                                       | 45,873              | 872                                 | ..                                                     | 144                                                                             | 46,891                                         | 1,226             | 122                                   | 1,357    | 48,248             | 45,537                                           | 9,100                                       | 36,438             | ..                                      | 36,438                                     | ..                                                                     | ..    |
| .. 23.                                                                          | Madras water supply and irrigation extension .. | 9,743                                                        | 20,798              | 443                                 | ..                                                     | 19,815                                                                          | 41,086                                         | 8,560             | 1,419                                 | 512      | 10,327             | 30,759                                           | 6,200                                       | 24,559             | ..                                      | 24,559                                     | ..                                                                     | ..    |
| .. 24.                                                                          | Valluva canal ..                                | 5,243                                                        | 8,383               | 1,055                               | ..                                                     | 40                                                                              | 9,388                                          | 722               | 19                                    | 215      | 953                | 8,435                                            | 3,022                                       | 5,413              | ..                                      | 5,413                                      | ..                                                                     | ..    |
| .. 25.                                                                          | Tirukkavayal ..                                 | 25,251                                                       | 91,817              | 3,232                               | ..                                                     | 420                                                                             | 95,139                                         | 8,856             | 237                                   | 1,751    | 17,446             | 77,693                                           | 39,333                                      | 38,360             | ..                                      | 38,360                                     | ..                                                                     | ..    |
| .. 26.                                                                          | Madhav ..                                       | 9,519                                                        | 15,141              | 29                                  | ..                                                     | 48                                                                              | 15,218                                         | 3,390             | 89                                    | 657      | 15,875             | 13,823                                           | 2,052                                       | 11,771             | ..                                      | 11,771                                     | ..                                                                     | ..    |
| .. 27.                                                                          | Viddhachan ..                                   | 6,882                                                        | 24,116              | 173                                 | ..                                                     | 78                                                                              | 24,267                                         | 5,066             | 132                                   | 80       | 24,367             | 18,505                                           | 5,862                                       | 18,505             | ..                                      | 18,505                                     | ..                                                                     | ..    |
| .. 28.                                                                          | Shantapet ..                                    | 30,116                                                       | 1,11,741            | 15,596                              | ..                                                     | 232                                                                             | 1,27,569                                       | 16,293            | 125                                   | 5,311    | 2,100              | 1,25,469                                         | 8,491                                       | 11,258             | ..                                      | 11,258                                     | ..                                                                     | ..    |
| .. 29.                                                                          | Pelandara ..                                    | 9,821                                                        | 84,202              | 144                                 | ..                                                     | 243                                                                             | 84,560                                         | 17,248            | 454                                   | 1,357    | 17,605             | 66,955                                           | 2,350                                       | 64,605             | ..                                      | 64,605                                     | ..                                                                     | ..    |
| .. 30.                                                                          | Lower Coleroon ..                               | 108,486                                                      | 3,82,664            | 53,763                              | ..                                                     | 1,656                                                                           | 4,38,122                                       | 30,319            | 796                                   | 14,231   | 44,547             | 3,93,171                                         | 1,52,993                                    | 2,40,178           | ..                                      | 2,40,178                                   | ..                                                                     | ..    |
| .. 31.                                                                          | Nandav ..                                       | 2,568                                                        | 15,361              | 6                                   | ..                                                     | ..                                                                              | 15,367                                         | 2,158             | 43                                    | 4        | 15,371             | 13,413                                           | 1,958                                       | 13,413             | ..                                      | 13,413                                     | ..                                                                     | ..    |
| .. 32.                                                                          | Marud ..                                        | 38,568                                                       | 1,36,112            | 218                                 | ..                                                     | 49                                                                              | 1,36,675                                       | 29,908            | 548                                   | 3,571    | 29,957             | 1,01,947                                         | 1,14,902                                    | 71,945             | ..                                      | 71,945                                     | ..                                                                     | ..    |
| .. 33.                                                                          | Chitla lake ..                                  | ..                                                           | ..                  | ..                                  | ..                                                     | ..                                                                              | ..                                             | 315               | 8                                     | ..       | ..                 | ..                                               | ..                                          | ..                 | ..                                      | ..                                         | ..                                                                     | ..    |
| .. 34.                                                                          | Buckingham canal ..                             | ..                                                           | ..                  | ..                                  | ..                                                     | 1,14,772                                                                        | 1,14,772                                       | 59,310            | 3,710                                 | ..       | ..                 | ..                                               | ..                                          | ..                 | ..                                      | ..                                         | ..                                                                     | ..    |
| .. 35.                                                                          | Vishumanyam ..                                  | ..                                                           | ..                  | ..                                  | ..                                                     | 917                                                                             | 917                                            | 3,216             | 147                                   | ..       | ..                 | ..                                               | ..                                          | ..                 | ..                                      | ..                                         | ..                                                                     | ..    |
| Total ..                                                                        |                                                 | 523,424                                                      | 17,27,509           | 1,19,820                            | ..                                                     | 1,41,137                                                                        | 19,89,416                                      | 5,62,658          | 11,484                                | 46,319   | 4,10,477           | 15,79,995                                        | 3,26,116                                    | 6,77,850           | ..                                      | 6,77,850                                   | ..                                                                     | ..    |
| (2) Minor works for which neither Capital nor Revenue Accounts are kept, P.W.D. |                                                 |                                                              |                     |                                     |                                                        |                                                                                 |                                                |                   |                                       |          |                    |                                                  |                                             |                    |                                         |                                            |                                                                        |       |
| Ordinary works ..                                                               |                                                 | (b)                                                          | (b)                 | ..                                  | ..                                                     | 9,015                                                                           | 39,75,552                                      | 8,51,436          | 22,082                                | 1,98,823 | 10,71,841          | 29,03,739                                        | ..                                          | ..                 | ..                                      | ..                                         | ..                                                                     | ..    |
| Tank restoration works ..                                                       |                                                 | ..                                                           | ..                  | ..                                  | ..                                                     | ..                                                                              | ..                                             | 5,49,777          | 14,136                                | ..       | ..                 | ..                                               | ..                                          | ..                 | ..                                      | ..                                         | ..                                                                     | ..    |
| (3) Minor Works, Revenue Department.                                            |                                                 |                                                              |                     |                                     |                                                        |                                                                                 |                                                |                   |                                       |          |                    |                                                  |                                             |                    |                                         |                                            |                                                                        |       |
| Total ..                                                                        |                                                 | 1,506,511                                                    | 31,37,657           | ..                                  | ..                                                     | ..                                                                              | 31,37,657                                      | 4,82,286          | 637                                   | 1,71,933 | 6,87,550           | 26,21,891                                        | ..                                          | ..                 | ..                                      | ..                                         | ..                                                                     | ..    |
| (4) Agricultural Works.                                                         |                                                 |                                                              |                     |                                     |                                                        |                                                                                 |                                                |                   |                                       |          |                    |                                                  |                                             |                    |                                         |                                            |                                                                        |       |
| Total ..                                                                        |                                                 | 2,849,185                                                    | 71,04,191           | ..                                  | ..                                                     | 28,235                                                                          | 71,14,299                                      | 18,36,499         | 36,925                                | 3,79,298 | 22,43,633          | 61,09,377                                        | ..                                          | ..                 | ..                                      | ..                                         | ..                                                                     | ..    |
| Grand Total ..                                                                  |                                                 | 5,979,044                                                    | 1,93,14,626         | 5,64,472                            | 320                                                    | 3,40,651                                                                        | 2,02,19,003                                    | 69,24,729         | 1,50,135                              | 7,19,532 | 69,23,190          | 1,91,36,063                                      | ..                                          | ..                 | ..                                      | ..                                         | ..                                                                     | ..    |

Old irrigation revenue ..  
Deduct old maintenance charges, direct and indirect ..

Net ..

Note.—In all cases of minor figures shown in column 14, no percentage is given in column 18. (a) Inclusive of Rs. 4,68,029, the outlay incurred by civil officers and not included in the accounts of the Revenue Department. (b) Exclusive of the Anantapur district.



## ADMINISTRATION REPORT OF THE

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No. I.

Statement showing the expenditure compared with grants for 1896-97—cont.

| Grants.        |                  |         | Expenditure.    |           |                |                  |           |                                   |                              | Expenditure compared with final grants. |       |
|----------------|------------------|---------|-----------------|-----------|----------------|------------------|-----------|-----------------------------------|------------------------------|-----------------------------------------|-------|
| Establishment. | Tools and plant. | Total.  | Original works. | Repairs.  | Establishment. | Tools and plant. | Total.    | Less receipts on Capital account. | Net expenditure of the year. | Mora.                                   | Loss. |
| Rs.            | Rs.              | Rs.     | Rs.             | Rs.       | Rs.            | Rs.              | Rs.       | Rs.                               | Rs.                          | Rs.                                     | Rs.   |
| 1,626          | 10               | 2,317   | 2,281           | 4,860     | 2,311          | 10               | 3,880     | 3,880                             | 3,880                        | 1,063                                   | ..    |
| 124            | ..               | 656     | 119             | 465       | 158            | ..               | 722       | ..                                | 722                          | 66                                      | ..    |
| 1,089          | ..               | 8,783   | 2,010           | 5,123     | 1,690          | 3                | 8,856     | ..                                | 8,856                        | 72                                      | ..    |
| 637            | ..               | 3,389   | 803             | 1,950     | 637            | ..               | 3,390     | ..                                | 3,390                        | 1                                       | ..    |
| 926            | ..               | 4,830   | 1,504           | 2,672     | 945            | 45               | 5,066     | ..                                | 5,066                        | 136                                     | ..    |
| 3,065          | ..               | 16,269  | 2,167           | 11,048    | 3,037          | 41               | 16,293    | ..                                | 16,293                       | 34                                      | ..    |
| 3,219          | 2                | 17,105  | 2,449           | 11,439    | 3,216          | 2                | 17,102    | ..                                | 17,102                       | ..                                      | 3     |
| 5,996          | ..               | 31,616  | 2,421           | 22,226    | 5,622          | 50               | 30,319    | ..                                | 30,319                       | 1,297                                   | ..    |
| 492            | ..               | 2,252   | ..              | 1,750     | 308            | 100              | 2,158     | ..                                | 2,158                        | 94                                      | ..    |
| 3,286          | 100              | 20,940  | ..              | 16,894    | 3,914          | ..               | 20,908    | ..                                | 20,908                       | 39                                      | ..    |
| 69             | ..               | 370     | ..              | 256       | 59             | ..               | 315       | ..                                | 315                          | 65                                      | ..    |
| 26,664         | 1,800            | 68,714  | 3,089           | 64,113    | 26,501         | 5,683            | 69,310    | ..                                | 69,310                       | 596                                     | ..    |
| 1,992          | 500              | 6,817   | ..              | 4,171     | 1,961          | 994              | 6,216     | ..                                | 6,216                        | 399                                     | ..    |
| 72,904         | 6,276            | 368,937 | 31,839          | 2,28,196  | 72,186         | 6,694            | 3,38,909  | ..                                | 3,38,909                     | 272                                     | ..    |
| 3,68,523       | 1,868            | 427,622 | 10,381          | 1,42,850  | 2,81,392       | 1,868            | 1,33,491  | ..                                | 4,36,451                     | 12,669                                  | ..    |
| 36,566         | 10,179           | 871,590 | 2,73,689        | 4,09,816  | 1,67,750       | 10,391           | 8,51,436  | ..                                | 8,51,436                     | ..                                      | 154   |
| 1,02,352       | 6,678            | 554,037 | ..              | 4,42,072  | 1,01,112       | 6,593            | 5,49,777  | ..                                | 6,19,777                     | ..                                      | 1,230 |
| 6,076          | 337              | 12,829  | 12,925          | 9,162     | 4,906          | 324              | 27,257    | ..                                | 27,257                       | ..                                      | 6,632 |
| 33,516         | 18,190           | 186,138 | 2,36,895        | 10,61,340 | 5,45,149       | 10,086           | 18,64,961 | ..                                | 18,64,961                    | 2,823                                   | ..    |
| 66,978         | 10,727           | 916,334 | 1,37,212        | 5,99,692  | 1,63,303       | 11,018           | 9,11,225  | ..                                | 9,11,225                     | ..                                      | 4,109 |
| 2,91,418       | 87,368           | 852,716 | 10,17,852       | 18,31,722 | 8,97,948       | 85,854           | 28,33,376 | 2,298                             | 28,31,078                    | 3,926                                   | ..    |
| ..             | ..               | ..      | ..              | ..        | ..             | ..               | ..        | ..                                | ..                           | ..                                      | ..    |
| ..             | ..               | 12,584  | 6,007           | 4,354     | ..             | ..               | 10,361    | ..                                | 10,361                       | ..                                      | 3,222 |
| ..             | ..               | ..      | ..              | ..        | ..             | ..               | ..        | ..                                | ..                           | ..                                      | ..    |
| ..             | ..               | ..      | 424             | 160       | 135            | 9                | 728       | ..                                | 728                          | 728                                     | ..    |
| ..             | ..               | ..      | 906             | ..        | 218            | 15               | 1,229     | ..                                | 1,229                        | 1,229                                   | ..    |
| ..             | ..               | ..      | ..              | ..        | ..             | ..               | ..        | ..                                | ..                           | ..                                      | ..    |
| ..             | ..               | ..      | 34              | 21        | 13             | 1                | 69        | ..                                | 69                           | 69                                      | ..    |
| ..             | ..               | ..      | ..              | ..        | ..             | ..               | ..        | ..                                | ..                           | ..                                      | ..    |
| ..             | ..               | ..      | 2,361           | 2,253     | 492            | 33               | 5,379     | ..                                | 5,379                        | 5,379                                   | ..    |
| ..             | ..               | ..      | 42              | 1,594     | ..             | ..               | 1,594     | ..                                | 1,594                        | 1,594                                   | ..    |
| ..             | ..               | ..      | 293             | 167       | ..             | ..               | 209       | ..                                | 209                          | 209                                     | ..    |
| ..             | ..               | ..      | ..              | 256       | 21             | ..               | 314       | ..                                | 314                          | 314                                     | ..    |
| ..             | ..               | ..      | 251             | ..        | 59             | 4                | 319       | ..                                | 319                          | 319                                     | ..    |
| ..             | ..               | ..      | 150             | ..        | 59             | 4                | 314       | ..                                | 314                          | 314                                     | ..    |
| ..             | ..               | ..      | ..              | 248       | 41             | 3                | 221       | ..                                | 221                          | 221                                     | 224   |
| ..             | ..               | ..      | 2,080           | 60        | 46             | 8                | 2,611     | ..                                | 2,611                        | 2,611                                   | ..    |
| ..             | ..               | ..      | 692             | 490       | 19             | ..               | 1,918     | ..                                | 1,918                        | 1,918                                   | ..    |
| ..             | ..               | ..      | ..              | 4,161     | 957            | 62               | 5,180     | ..                                | 5,180                        | 5,180                                   | ..    |
| ..             | ..               | ..      | 6,739           | 9,410     | 2,377          | 114              | 17,649    | ..                                | 17,649                       | 17,649                                  | ..    |
| ..             | ..               | ..      | 7,193           | 9,591     | 2,748          | 139              | 19,666    | ..                                | 19,666                       | 19,666                                  | ..    |

## PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1896-97.

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No. I.

Statement showing the expenditure compared with grants for 1896-97—cont.

|                                                                             | Grants. |               |        |     |     |        | Expenditure.    |          |                |                  |        |                                   |                              | Expenditure compared with final grants. |        |
|-----------------------------------------------------------------------------|---------|---------------|--------|-----|-----|--------|-----------------|----------|----------------|------------------|--------|-----------------------------------|------------------------------|-----------------------------------------|--------|
|                                                                             | Budget. | Final grants. |        |     |     |        | Original works. | Repairs. | Establishment. | Tools and plant. | Total. | Less receipts on Capital Account. | Net expenditure of the year. | Mora.                                   | Loss.  |
| 1                                                                           | 2       | 3             | 4      | 5   | 6   | 7      | 8               | 9        | 10             | 11               | 12     | 13                                | 14                           | 15                                      | 16     |
| Rs.                                                                         | Rs.     | Rs.           | Rs.    | Rs. | Rs. | Rs.    | Rs.             | Rs.      | Rs.            | Rs.              | Rs.    | Rs.                               | Rs.                          | Rs.                                     | Rs.    |
| PROVINCIAL.                                                                 | ..      | ..            | ..     | ..  | ..  | ..     | ..              | ..       | ..             | ..               | ..     | ..                                | ..                           | ..                                      | ..     |
| 33. FAMINE RELIEF.                                                          | ..      | ..            | ..     | ..  | ..  | ..     | ..              | ..       | ..             | ..               | ..     | ..                                | ..                           | ..                                      | ..     |
| II. Irrigation.                                                             | ..      | ..            | ..     | ..  | ..  | ..     | ..              | ..       | ..             | ..               | ..     | ..                                | ..                           | ..                                      | ..     |
| Construction of Protective Irrigation Works.                                | ..      | ..            | ..     | ..  | ..  | ..     | ..              | ..       | ..             | ..               | ..     | ..                                | ..                           | ..                                      | ..     |
| No. 10. Rushikulya project ..                                               | ..      | ..            | ..     | ..  | ..  | ..     | 36              | ..       | ..             | ..               | 3      | ..                                | 36                           | 36                                      | ..     |
| Major works (Working expenses).                                             | ..      | ..            | ..     | ..  | ..  | ..     | ..              | ..       | ..             | ..               | ..     | ..                                | ..                           | ..                                      | ..     |
| No. 5. Kurnool-Cuddapah canal ..                                            | ..      | 800           | 1,700  | ..  | ..  | 2,500  | ..              | 737      | ..             | ..               | 737    | ..                                | 737                          | ..                                      | 1,763  |
| Minor Works and Navigation.                                                 | ..      | ..            | ..     | ..  | ..  | ..     | ..              | ..       | ..             | ..               | ..     | ..                                | ..                           | ..                                      | ..     |
| Minor Works for which neither Capital nor Revenue accounts are kept, P.W.D. | ..      | ..            | ..     | ..  | ..  | ..     | ..              | ..       | ..             | ..               | ..     | ..                                | ..                           | ..                                      | ..     |
| Giddalur district ..                                                        | ..      | ..            | ..     | ..  | ..  | ..     | 3               | ..       | ..             | ..               | ..     | ..                                | 3                            | 3                                       | ..     |
| Cuddapah do. ..                                                             | ..      | ..            | 5,000  | ..  | ..  | 5,000  | 8               | 1,012    | ..             | ..               | 1,012  | ..                                | 1,015                        | ..                                      | 3,985  |
| Kurnool do. ..                                                              | ..      | ..            | 4,700  | ..  | ..  | 4,700  | 3               | 3,319    | ..             | ..               | 3,319  | ..                                | 3,319                        | ..                                      | 1,383  |
| Bellary do. ..                                                              | ..      | 7,996         | 8,863  | ..  | ..  | 15,859 | 10,234          | 144      | ..             | ..               | 10,378 | ..                                | 10,378                       | ..                                      | 6,470  |
| Shantapur do. ..                                                            | ..      | ..            | ..     | ..  | ..  | ..     | ..              | 37       | ..             | ..               | ..     | ..                                | 37                           | 37                                      | ..     |
| Total ..                                                                    | ..      | 7,996         | 18,553 | ..  | ..  | 26,549 | 10,240          | 4,512    | ..             | ..               | 14,752 | ..                                | 14,752                       | ..                                      | 11,786 |
| Agricultural works.                                                         | ..      | ..            | ..     | ..  | ..  | ..     | ..              | ..       | ..             | ..               | ..     | ..                                | ..                           | ..                                      | ..     |
| Vizagapatam district ..                                                     | ..      | ..            | 2,000  | ..  | ..  | 2,000  | ..              | ..       | ..             | ..               | ..     | ..                                | ..                           | ..                                      | 2,000  |
| Total. 33. Famine Relief ..                                                 | ..      | 8,796         | 22,253 | ..  | ..  | 31,049 | 19,275          | 5,249    | ..             | ..               | 15,524 | ..                                | 15,524                       | ..                                      | 15,524 |

I and II works during fasli 1306:—

1306 (1896-97)—(Proceedings, Board of Revenue, Revenue Settlement, Land Records and Agriculture, Mis. No. 7882, 1897 and Mis. No. 9710, dated 3rd December 1897).

| First crop.          |                          |                |                                |                                    |                |                                     |                      |                          |                |                                |                                    |                |                                     | Second crop. |             |                |  |
|----------------------|--------------------------|----------------|--------------------------------|------------------------------------|----------------|-------------------------------------|----------------------|--------------------------|----------------|--------------------------------|------------------------------------|----------------|-------------------------------------|--------------|-------------|----------------|--|
| Zemindari.           |                          |                |                                |                                    |                | Inam.                               |                      |                          |                |                                |                                    |                |                                     |              |             |                |  |
| Charged.             |                          |                |                                |                                    |                | Charged.                            |                      |                          |                |                                |                                    |                |                                     | 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. | Irrigated free of charge for water. | 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. | Extent.      | Water-rate. | Rate per acre. |  |
| 9                    | 10                       | 11             | 12                             | 13                                 | 14             | 15                                  | 16                   | 17                       | 18             | 19                             | 20                                 | 21             | 22                                  | 23           | 24          | 25             |  |
| ACS.                 | RS.                      | RS.            | ACS.                           | RS.                                | RS.            | ACS.                                | ACS.                 | RS.                      | RS.            | ACS.                           | RS.                                | RS.            | ACS.                                | ACS.         | RS.         | RS.            |  |
| 8,572                | 2,04,12                  | 5-29           | 4,419                          | 14,558                             | 3-29           | 71,792                              | 136,985              | 6,88,081                 | 5-02           | 13,787                         | 42,680                             | 3-09           | 294                                 | 138,948      | 4,51,894    | 3-25           |  |
| 442                  | 3,48,36                  | 1-74           | 5,475                          | 20,706                             | 3-73           | 87,981                              | 66,274               | 3,31,215                 | 5-00           | 3,075                          | 13,377                             | 4-36           | ..                                  | 659          | 2,394       | 3-63           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 13,516                              | 2,247                | 8,966                    | 3-49           | 156                            | 353                                | 2-61           | ..                                  | 3,246        | 8,002       | 2-46           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 10,289                              | 1,247                | 4,882                    | 3-91           | 275                            | 722                                | 2-66           | ..                                  | 7,110        | 21,751      | 3-06           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | ..                                  | 7,278                | 26,612                   | 3-66           | 20,063                         | 24,014                             | 1-20           | ..                                  | 8,149        | 18,638      | 2-29           |  |
| ..                   | ..                       | ..             | 13                             | 66                                 | 4-61           | 129                                 | 29                   | 117                      | 4-03           | 51                             | 196                                | 3-84           | 180                                 | 1,701        | 2,146       | 1-26           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 160,106                             | 6,562                | 25,963                   | 3-96           | 8,213                          | 8,515                              | 2-65           | 7,175                               | 87,927       | 330,306     | 3-76           |  |
| 607                  | 2,36                     | 3-90           | 136                            | 302                                | 2-22           | 1,076                               | 426                  | 1,723                    | 4-05           | 1                              | 5                                  | 5-00           | 481                                 | 19,213       | 63,096      | 3-28           |  |
| 34                   | 10                       | 4-95           | ..                             | ..                                 | ..             | 2,071                               | 472                  | 1,971                    | 4-18           | 65                             | 249                                | 3-83           | 420                                 | 12,416       | 33,644      | 2-71           |  |
| 5,318                | 20,02                    | 2-15           | 119                            | 166                                | 1-89           | 6,756                               | 9,671                | 19,625                   | 2-03           | 1,918                          | 4,220                              | 2-16           | ..                                  | 426          | 643         | 1-61           |  |
| 147                  | 18                       | 1-27           | ..                             | ..                                 | ..             | 14,939                              | 311                  | 774                      | 2-49           | 45                             | 94                                 | 2-09           | ..                                  | 10,770       | 20,362      | 1-83           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 1,766                               | 32                   | 157                      | 4-91           | 6                              | 36                                 | 6-00           | 1,247                               | 2,754        | 10,759      | 3-91           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 471                                 | 95                   | 380                      | 4-00           | 113                            | 433                                | 3-83           | ..                                  | 401          | 1,367       | 3-43           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 103                                 | 64                   | 254                      | 3-97           | 3                              | 7                                  | 2-33           | ..                                  | 43           | 137         | 3-19           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 775                                 | 178                  | 862                      | 4-64           | 622                            | 2,172                              | 3-49           | 755                                 | 9,489        | 36,230      | 3-82           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 11,598                              | 114                  | 357                      | 3-13           | 107                            | 285                                | 2-86           | 3,926                               | 21,146       | 52,157      | 2-47           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 2,655                               | 21                   | 82                       | 3-00           | 59                             | 143                                | 2-51           | 178                                 | 4,102        | 10,972      | 2-67           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 1,815                               | 187                  | 571                      | 3-05           | 67                             | 200                                | 2-99           | 1,699                               | 13,199       | 22,207      | 1-63           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 1,997                               | 11                   | 36                       | 3-27           | 7                              | 7                                  | 1-09           | 123                                 | 2,097        | 5,797       | 2-76           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 1,450                               | 6                    | 16                       | 2-50           | 4                              | 11                                 | 2-75           | 450                                 | 1,891        | 3,869       | 2-05           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 2,786                               | 15                   | 59                       | 3-92           | 80                             | 219                                | 2-74           | 10                                  | 84           | 152         | 2-29           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 1,591                               | 267                  | 661                      | 3-19           | 85                             | 372                                | 4-38           | 14                                  | 2,370        | 7,343       | 3-10           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 29                                  | 253                  | 1,004                    | 3-97           | 7                              | 23                                 | 3-29           | ..                                  | 59           | 210         | 3-56           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 104                                 | 38                   | 152                      | 4-00           | 9                              | 33                                 | 3-67           | ..                                  | 225          | 699         | 3-11           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 1,560                               | 177                  | 795                      | 3-98           | 65                             | 229                                | 3-62           | 14                                  | 2,377        | 10,083      | 2-97           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 436                                 | 478                  | 1,943                    | 4-06           | 9                              | 40                                 | 4-44           | ..                                  | 163          | 516         | 3-07           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 8,285                               | 969                  | 3,762                    | 3-92           | 196                            | 346                                | 3-26           | 114                                 | 1,786        | 5,669       | 3-17           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 43                                  | 39                   | 116                      | 3-87           | 715                            | 2,540                              | 3-55           | ..                                  | 1,679        | 3,523       | 2-28           |  |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 655                                 | ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 466                                 | 16,005       | 68,961      | 4-31           |  |

(Signed) R. V. SRINIVASAR,  
Secretary to the Board of Revenue,  
Revenue Settlement, Land Records and Agriculture.

The following statement compares the rainfall for the years 1896-97 and 1895-96:—

| Districts.      | 1896-97.            |                     |        | 1895-96.            |                     |        |
|-----------------|---------------------|---------------------|--------|---------------------|---------------------|--------|
|                 | South-west monsoon. | North-east monsoon. | Total. | South-west monsoon. | North-east monsoon. | Total. |
| Ganjam ..       | INS.                | INS.                | INS.   | INS.                | INS.                | INS.   |
| Vizagapatam ..  | 32-71               | 3-58                | 36-29  | 44-91               | 9-93                | 54-84  |
| Goddavari ..    | 34-11               | 3-07                | 37-18  | 44-91               | 8-36                | 53-27  |
| Kistna ..       | 22-70               | 4-32                | 27-02  | 33-83               | 10-86               | 44-69  |
| Nellore ..      | 21-65               | 5-53                | 27-18  | 34-03               | 8-39                | 42-42  |
| Cuddapah ..     | 15-75               | 21-97               | 37-72  | 14-39               | 10-55               | 24-94  |
| Kurnool ..      | 11-71               | 6-45                | 18-16  | 20-08               | 11-48               | 31-56  |
| Bellary ..      | 13-37               | 2-59                | 15-96  | 19-44               | 7-68                | 27-12  |
| Anantapur ..    | 11-79               | 2-16                | 13-95  | 19-75               | 7-23                | 26-98  |
| Chingleput ..   | 11-47               | 3-14                | 14-61  | 17-47               | 7-85                | 25-32  |
| North Arcot ..  | 13-77               | 42-24               | 56-01  | 19-52               | 23-21               | 42-73  |
| South Arcot ..  | 17-50               | 17-26               | 34-76  | 21-85               | 17-98               | 39-83  |
| Salem ..        | 12-93               | 30-46               | 43-39  | 24-88               | 33-22               | 58-10  |
| Coimbatore ..   | 19-04               | 12-73               | 31-77  | 25-71               | 12-74               | 38-45  |
| Tanjore ..      | 13-99               | 15-19               | 29-18  | 17-33               | 12-59               | 29-92  |
| Trichinopoly .. | 8-73                | 40-75               | 49-48  | 20-38               | 34-31               | 54-69  |
| Madura ..       | 13-47               | 24-64               | 38-01  | 22-28               | 18-92               | 41-20  |
| Tinnevely ..    | 11-26               | 31-87               | 43-13  | 14-33               | 21-25               | 35-58  |
| Total ..        | 8-41                | 39-36               | 47-77  | 7-36                | 24-09               | 31-45  |
| Average ..      | 16-35               | 16-56               | 32-91  | 23-62               | 16-21               | 39-83  |

Except in the Ganjam, Vizagapatam and Nellore districts and parts of the Bellary, Cuddapah, Kurnool, North Arcot and Salem districts, the season was, on the whole, favourable.

**Ganjam.**—The rainfall during the year was, on the whole, very unsatisfactory resulting in the failure of crops in many places not commanded by either the Rushikulya project or the Ganjam Minor Rivers system.

**Vizagapatam.**—The north-east monsoon was a failure. Many places were seriously affected and the tanks did not receive a sufficient supply of water for the irrigation of lands under them. The season was unfavourable.

**Goddavari.**—The total rainfall of the south-west monsoon was not unfavourable, though much less than the fall of the preceding year which was unusually heavy owing to the cyclone of the 5th September 1895. In the early part of the north-east monsoon, however, when paddy always requires an ample supply of water, there was little or no rain and the river at the same time so low, that full supply could not be obtained in the main canals. There was consequently a very great demand for water when special turns had to be introduced in order to meet requirements. The yield has been, however, well up to the average and over it in some low-lying tracts of the delta. In the Eastern delta, some wet crops under the last reach of the Bank canal below Masakapalli and some under the Bank and Narsapur canals in the Western delta suffered from the floods and breaches in river bank in August 1896. The loss, although not heavy in the Eastern delta, was considerable in the Western. In a great measure, this loss was recouped by dry crops subsequently raised on these same lands, much enriched by silt deposits. The tanks in the upland taluks dried up causing a great scarcity of water. The largest tank in the district—the Timmarazu tank of Lingamparthi—which had never previously been known to become completely exhausted, was perfectly dry for the greater part of the year.

**Kistna.**—In the Kistna Eastern division, the year, on the whole, was favourable for irrigation during transplantation time. A very large area was, however, seriously damaged by the extraordinary floods in the Kistna river in August 1896, by which there was heavy loss of crops on the borders of the Budameru in the Northern sub-division and on about 9,000 acres of land in the Southern sub-division. Practically, the whole Southern sub-division, except a few miles on left of the Masulipatam canal below Panamuru, was submerged for about fifteen days during these abnormal floods. Navigation was suspended from 2nd August 1896 to 21st September 1896 on account of floods, and for a few days in November 1896 and February 1897 owing to scarcity of water. The floods did not affect the Cowtaram sub-division, but temporary inconvenience was caused by reduction of water in the canals after the floods subsided.

## I and II works during fasli 1306:—

1306 (1896-97)—(Proceedings, Board of Revenue, Revenue Settlement, Land Records and Agriculture, Mis. No. 7882, 1897 and Mis. No. 9710, dated 3rd December 1897)

| First crop.          |                          |                |                                |                                    |                |                                     |                      |                          |                |                                |                                    |                | Second crop.                        |         |             |                |
|----------------------|--------------------------|----------------|--------------------------------|------------------------------------|----------------|-------------------------------------|----------------------|--------------------------|----------------|--------------------------------|------------------------------------|----------------|-------------------------------------|---------|-------------|----------------|
| Zamindari.           |                          |                |                                |                                    |                | Inam.                               |                      |                          |                |                                |                                    |                |                                     |         |             |                |
| Charged.             |                          |                |                                |                                    |                | Charged.                            |                      |                          |                |                                |                                    |                | 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. | Irrigated free of charge for water. | 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. | Extent. | Water-rate. | Rate per acre. |
| 9                    | 10                       | 11             | 12                             | 13                                 | 14             | 15                                  | 16                   | 17                       | 18             | 19                             | 20                                 | 21             | 22                                  | 23      | 24          | 25             |
| ACS.                 | RS.                      | RS.            | ACS.                           | RS.                                | RS.            | ACS.                                | ACS.                 | RS.                      | RS.            | ACS.                           | RS.                                | RS.            | ACS.                                | ACS.    | RS.         | RS.            |
| 18,572               | 2,04,418                 | 5-29           | 4,119                          | 14,558                             | 3-29           | 71,792                              | 186,983              | 6,98,981                 | 5-02           | 13,787                         | 42,680                             | 3-09           | 284                                 | 138,948 | 4,51,894    | 3-25           |
| 2,432                | 3,48,361                 | 1-74           | 5,475                          | 20,768                             | 3-78           | 87,981                              | 66,274               | 3,31,315                 | 5-00           | 3,075                          | 13,377                             | 4-36           | ..                                  | 659     | 2,394       | 3-63           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 13,518                              | 2,247                | 8,965                    | 3-29           | 136                            | 353                                | 2-61           | ..                                  | 3,246   | 8,002       | 2-46           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 19,289                              | 1,247                | 4,882                    | 3-91           | 275                            | 782                                | 2-66           | ..                                  | 7,110   | 21,751      | 3-05           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 7,278                               | 26,612               | 3-65                     | 20,063         | 24,014                         | 1-20                               | ..             | 8,149                               | 18,633  | 2-29        |                |
| ..                   | ..                       | ..             | 13                             | 66                                 | 4-61           | 139                                 | 29                   | 117                      | 4-93           | 51                             | 106                                | 3-84           | 130                                 | 1,701   | 2,145       | 1-23           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 160,106                             | 6,362                | 25,933                   | 3-96           | 3,213                          | 3,515                              | 2-65           | 7,175                               | 87,927  | 330,306     | 3-76           |
| 607                  | 2,36                     | 3-50           | 136                            | 302                                | 2-22           | 1,076                               | 126                  | 1,723                    | 1-55           | 1                              | 5                                  | 5-00           | 481                                 | 19,213  | 62,096      | 3-28           |
| 24                   | 1E                       | 4-25           | ..                             | ..                                 | ..             | 2,071                               | 472                  | 1,971                    | 4-18           | 65                             | 249                                | 3-83           | 420                                 | 12,116  | 33,644      | 2-71           |
| 2,318                | 20,00                    | 2-13           | 119                            | 166                                | 1-39           | 6,756                               | 9,671                | 19,925                   | 2-03           | 1,943                          | 4,220                              | 2-16           | ..                                  | 426     | 643         | 1-61           |
| 147                  | 18                       | 1-27           | ..                             | ..                                 | ..             | 14,939                              | 311                  | 774                      | 2-49           | 45                             | 94                                 | 2-09           | ..                                  | 10,770  | 20,362      | 1-89           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 1,766                               | 32                   | 157                      | 4-91           | 6                              | 36                                 | 5-00           | 1,247                               | 2,754   | 10,769      | 3-91           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 471                                 | 95                   | 530                      | 4-00           | 113                            | 433                                | 3-83           | ..                                  | 401     | 1,367       | 3-43           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 103                                 | 64                   | 254                      | 3-97           | 3                              | 7                                  | 2-33           | ..                                  | 43      | 137         | 3-19           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 775                                 | 173                  | 362                      | 4-63           | 622                            | 2,172                              | 3-43           | 753                                 | 9,489   | 36,230      | 3-82           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 11,596                              | 114                  | 357                      | 3-13           | 107                            | 285                                | 2-86           | 3,926                               | 21,146  | 52,157      | 2-47           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 2,656                               | 21                   | 82                       | 3-20           | 69                             | 143                                | 2-51           | 178                                 | 4,103   | 10,972      | 2-67           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 1,815                               | 187                  | 571                      | 3-65           | 67                             | 260                                | 2-99           | 1,699                               | 12,169  | 22,207      | 1-63           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 1,997                               | 11                   | 36                       | 3-27           | 7                              | 7                                  | 1-09           | 123                                 | 2,097   | 5,797       | 2-76           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 1,450                               | 6                    | 16                       | 2-50           | 4                              | 11                                 | 2-75           | 450                                 | 1,891   | 3,860       | 2-05           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 2,736                               | 15                   | 59                       | 3-93           | 30                             | 219                                | 2-54           | 10                                  | 84      | 192         | 2-29           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 1,501                               | 207                  | 661                      | 3-19           | 35                             | 372                                | 4-38           | 14                                  | 2,370   | 7,343       | 3-10           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 29                                  | 253                  | 1,004                    | 3-97           | 7                              | 23                                 | 3-22           | ..                                  | 59      | 210         | 3-56           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 104                                 | 38                   | 162                      | 4-00           | 9                              | 33                                 | 3-67           | ..                                  | 225     | 699         | 3-11           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 1,950                               | 177                  | 793                      | 3-93           | 65                             | 219                                | 3-52           | 14                                  | 2,377   | 10,033      | 2-97           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 436                                 | 478                  | 1,943                    | 4-56           | 9                              | 40                                 | 4-44           | ..                                  | 163     | 516         | 3-07           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 3,285                               | 959                  | 3,762                    | 3-92           | 196                            | 346                                | 3-26           | 114                                 | 1,786   | 5,669       | 3-17           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 43                                  | 30                   | 116                      | 3-87           | 715                            | 2,540                              | 3-55           | ..                                  | 1,679   | 3,523       | 2-28           |
| ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 655                                 | ..                   | ..                       | ..             | ..                             | ..                                 | ..             | 468                                 | 16,005  | 68,961      | 4-31           |

(Signed) R. V. SRINIVASIAH,  
Secretary to the Board of Revenue,  
Revenue Settlement, Land Records and Agriculture.

The following statement compares the rainfall for the years 1896-97 and 1895-96:—

General character of the season.

| Districts.      | 1896-97.            |                     |        | 1895-96.            |                     |        |
|-----------------|---------------------|---------------------|--------|---------------------|---------------------|--------|
|                 | South-west monsoon. | North-east monsoon. | Total. | South-west monsoon. | North-east monsoon. | Total. |
| Ganjam ..       | 188                 | 188                 | 188    | 188                 | 188                 | 188    |
| Vizagapatam ..  | 32-73               | 3-58                | 36-26  | 4-91                | 3-33                | 8-24   |
| Giddavari ..    | 33-11               | 3-07                | 36-18  | 11-01               | 3-56                | 14-57  |
| Kistna ..       | 22-70               | 4-32                | 27-02  | 30-80               | 10-85               | 41-65  |
| Nellore ..      | 21-63               | 5-53                | 27-16  | 34-93               | 8-39                | 43-32  |
| Cuddapah ..     | 15-75               | 21-97               | 37-72  | 14-39               | 16-53               | 30-92  |
| Kurnool ..      | 11-71               | 9-45                | 21-16  | 19-68               | 11-40               | 31-08  |
| Bellary ..      | 13-37               | 2-56                | 15-93  | 16-44               | 7-68                | 24-12  |
| Anantapur ..    | 11-79               | 2-16                | 13-95  | 16-75               | 7-23                | 23-98  |
| Chingleput ..   | 11-17               | 3-14                | 14-31  | 17-47               | 7-36                | 24-83  |
| North Arcot ..  | 13-77               | 42-24               | 56-01  | 19-52               | 28-21               | 47-73  |
| South Arcot ..  | 17-50               | 17-26               | 34-76  | 21-95               | 17-98               | 39-93  |
| Salem ..        | 12-93               | 30-46               | 43-39  | 33-22               | 12-58               | 45-80  |
| Coimbatore ..   | 19-04               | 12-73               | 31-77  | 25-71               | 12-79               | 38-50  |
| Tanjore ..      | 13-99               | 15-19               | 29-18  | 17-33               | 12-58               | 30-91  |
| Trichinopoly .. | 8-73                | 40-75               | 49-48  | 20-25               | 34-21               | 54-46  |
| Madurai ..      | 13-47               | 24-64               | 38-11  | 24-28               | 18-92               | 43-20  |
| Tinnevely ..    | 11-29               | 30-87               | 42-16  | 14-33               | 21-25               | 35-58  |
| ..              | 8-41                | 30-36               | 38-77  | 7-50                | 24-09               | 31-59  |
| Total ..        | 291-27              | 265-20              | 556-47 | 425-10              | 291-36              | 716-46 |
| Average ..      | 16-35               | 16-56               | 32-91  | 23-62               | 16-21               | 39-83  |

Except in the Ganjam, Vizagapatam and Nellore districts and parts of the Bellary, Cuddapah, Kurnool, North Arcot and Salem districts, the season was, on the whole, favourable.

**Ganjam.**—The rainfall during the year was, on the whole, very unsatisfactory resulting in the failure of crops in many places not commanded by either the Rushikulya project or the Ganjam Minor Rivers system.

**Vizagapatam.**—The north-east monsoon was a failure. Many places were seriously affected and the tanks did not receive a sufficient supply of water for the irrigation of lands under them. The season was unfavourable.

**Giddavari.**—The total rainfall of the south-west monsoon was not unfavourable, though much less than the fall of the preceding year which was unusually heavy owing to the cyclone of the 5th September 1895. In the early part of the north-east monsoon, however, when paddy always requires an ample supply of water, there was little or no rain and the river at the same time so low, that full supply could not be obtained in the main canals. There was consequently a very great demand for water when special turns had to be introduced in order to meet requirements. The yield has been, however, well up to the average and over it in some low-lying tracts of the delta. In the Eastern delta, some wet crops under the last reach of the Bank canal below Masakapalli and some under the Bank and Narsapur canals in the Western delta suffered from the floods and breaches in river bank in August 1896. The loss, although not heavy in the Eastern delta, was considerable in the Western. In a great measure, this loss was recouped by dry crops subsequently raised on these same lands, much enriched by silt deposits. The tanks in the upland taluks dried up causing a great scarcity of water. The largest tank in the district—the Timmarazu tank of Lingamparthi—which had never previously been known to become completely exhausted, was perfectly dry for the greater part of the year.

**Kistna.**—In the Kistna Eastern division, the year, on the whole, was favourable for irrigation during transplantation time. A very large area was, however, seriously damaged by the extraordinary floods in the Kistna river in August 1896, by which there was heavy loss of crops on the borders of the Budameru in the Northern sub-division and on about 9,000 acres of land in the Southern sub-division. Practically the whole Southern sub-division, except a few miles on left of the Masulipatnam canal below Panurru, was submerged for about fifteen days during these abnormal floods. Navigation was suspended from 2nd August 1896 to 21st September 1896 on account of floods, and for a few days in November 1896 and February 1897 owing to scarcity of water. The floods did not affect the Cowluram sub-division, but temporary inconvenience was caused by reduction of water in the canals after the floods subsided.

Towards the latter part of the irrigation season, a scarcity of water was felt in the Cowtaram sub-division. Consequently, a few drains were bunded and the drainage water utilized for irrigation. The outturn of crop was, however, fair; and on the Collair tanks, the yield was good on account of low water level in the lake during the year. In the Southern sub-division, great difficulty was experienced in November 1896 in supplying water owing to the low state of the river and the failure of the north-east monsoon. The outturn of the crops in the Northern sub-division was favourable though there had been scarcity of water in the river and water had to be distributed to the main canals by turns. In the Kistna Western division, the rain was very deficient till the end of November, when timely heavy rainfall saved the crops which were in a critical condition owing to the shortness of supply of water in the river.

**Nellore.**—Owing to the partial failure of the south-west monsoon and the lateness of the north-east monsoon, the year was, as regards the river, the worst that has occurred since the Sangam anicut system was commenced, with the exception of the year 1891-92 when there also was a partial failure of both monsoons. The fields that were not sown in August and September obtained a three-month's crop during January, February and March. The area irrigated was fully up to the average, which augurs well for the future of the project. The rainfall in the northern portion of Kandukur sub-division was fairly copious, and the tanks in the Ongole taluk received nearly full supply. The rainfall in the southern portion of the sub-division comprising Kavali and Kandukur taluks up to the middle of November was light and scanty. Some of the tanks in these taluks received a small supply and the remainder none at all, and it was feared that the north-east monsoon would fail altogether. However, there occurred a heavy and continuous fall of rain from the 18th to 29th November which filled most of the tanks in these two taluks. A few of the tanks in the Kandukur taluk received about three-fourths supply only.

**Bellary.**—The south-west monsoon failed almost entirely in the Bellary district, and in the Anantapur district none of the large tanks to the north of the district received any water, and only a few tanks in the Southern taluks received a scanty supply. The season was, as usual, favourable under the Tungabhadra channels. The river is a splendid one and never-failing. The new reservoir constructed by the Mysore Government at Periasamudram has caused a great deal of damage to the irrigation under the Chitravati, where a large number of anicuts depend on its supply and which used to be practically constant. The Bukkapatnam large tank received very little water during the year from the Chitravati and has never surplussed since the construction of this reservoir.

**Cuddapah.**—Except in the Pullampett taluk, it has been a very bad year all over the district. There was very little tank-filling rain, and hardly any of the tanks filled. The level of the sub-soil water fell very much and most of the spring channels ceased running much earlier than usual. In the Pullampett taluk, there was very heavy rain in November and again in December, and all the tanks in the eastern part of the taluk were filled, resulting in good crops.

**Kurnool.**—Both the monsoons were scantier than in an average year. Dry crops were sown late and suffered severely and were completely lost over a large portion of all, except Cumbum and Markapur, taluks. Late sowings attempted after the rains of November were also lost except for the fodder yielded. Wet crops under the canal fared extremely well in many places yielding bumper crops. The season was favourable for the execution of works.

Owing to the failure of the monsoon, several relief-works were started in all the three divisions of Bellary, Cuddapah and Kurnool, few of them, however, being irrigation works, owing to the fact that big irrigation projects suitable for employing large numbers of people are almost non-existent in those divisions.

**Chingleput.**—The season was not so favourable as that of the previous year, the south-west monsoon having failed and the north-east monsoon being late. But about the end of November, abnormally heavy rain fell throughout the district and dispelled all fears of distress.

**North Arcot.**—The rainfall during the year was below the average and unequally distributed, and, owing to the late rains, the first crop failed generally throughout the division except in parts of Polur and Wandiwash taluks, and the second crop was carried on with comparatively poor outturn. The tanks in Polur, Wallajah and Wandiwash taluks mostly had a good supply, whilst those in other taluks received in

many cases only one-fourth of their full supply. The freshes in the Pálár were very scanty. The general supply to tanks lying 10 to 12 miles below the Pálár anicut was insufficient, but the tanks beyond received a good supply by local drainage and heavy rain. None of the tanks connected with the Pálár anicut system received a full supply; the Kaveripák tank only received 19.40 feet instead of a full supply of 30.90 feet. The tanks under the Poiney anicut system received a fair supply from the river and local rain. The tanks under the Cheyáru anicut system received a full supply.

**South Arcot.**—The south-west monsoon was scanty, and the north-east was not as copious as that of the previous year, though heavy rain fell in November and December 1896, and there was no scarcity of water, as the rains in September and subsequent months were sufficient and fairly distributed. The floods in the Coleroon were unprecedented and caused damage to cultivation.

**Salem.**—The rainfall was less than in the previous year and the season was not favourable for cultivation except in Atur taluk.

**Coimbatore.**—The state of the season for cultivation purposes and for the prosecution of works was favourable. Most of the tanks received a fair supply. The crops fed by the channel supply were satisfactory and yielded a good harvest. The total rainfall in Coimbatore was 29.18 inches against 29.91 inches in 1895-96, and that in Ootacamund was 59.64 inches against 47.98 inches in 1895-96.

**Tanjore.**—The south-west monsoon was scanty. The north-east was heavier than in the previous year. Generally, the rainfall was moderate and there was no scarcity. The rain about the middle of February was slightly injurious to standing crops in some parts of the district and the full outturn was not realized.

**Negapatam.**—The rainfall of the year was fair. Except early in the season, there was a steady supply in the rivers, due partly to recent alterations in the rules for regulation. Some heavy rain in December caused blight, and the unusually heavy showers in February resulted in slight damage to the crops before harvest. On the whole, the season was favourable in the deltaic tracts.

**Trichinopoly.**—The rainfall during the year was very favourable for cultivation and there were heavy and continued freshes both in the Cauvery and the Coleroon. The first considerable flood which came on in June 1896 reached a height of 221.3 + M.S.L. at the Cauvery bridge gauge and 242.40 + M.S.L. at the Upper anicut, and the floods which occurred on the 31st July and 1st August 1896 reached a height of 223.22 at the Cauvery bridge and 249.90 at the Upper anicut above M.S.L. Both were purely river floods, there being no local rain at the time. The flood of 1858, though  $\frac{3}{4}$  feet lower than the last of these at the Upper anicut, is still the greatest of which there is any record. The river banks were lower than now and the waterspread all over the country, a great portion passing over the Tanjore delta. The tanks and channels generally having been full throughout the year, cultivation operations progressed fairly well, but the progress of ordinary works was retarded.

**Madura.**—The average rainfall during the year was 43.13 inches against 36.08 inches registered in 1895-96. The heaviest fall registered was on 14th November 1896, when 6.36 inches were gauged at Ramnad. There were unusual floods in the Vaigai river on several occasions during October and November 1896.

**Tinnevely.**—In all the taluks, the season was generally favourable for both early and late crops. The rainfall was good, particularly in the north-east monsoon. The progress of works was, however, hindered to some extent by the rains.

#### ACCIDENTS.

The highest flood during the year in the Gódávári river occurred on 1st August 1896, when the river banks in all the three deltas were badly breached. At Mallavaram and Masakapalli in the Eastern delta, considerable lengths of the Bank canal were carried away involving diversions of the canal. Immediate steps were taken to divert the Bank canal and the river bank, in order to restore irrigation and communication. In the Central delta, the Vasista left flood bank breached at 13 miles 1 furlong when the river pouring across Gunnavaram canal scoured out its bed to a depth of over 30 feet and flooded the land to the left of the canal. On the 20th August, the river having fallen to some extent, the work of closing this breach was started and, by the

Accidents.



24th, the canal was re-opened for navigation and irrigation. In the Western delta, the Vasista right bank breached in four places in the 14th mile. As the floods continued, the breaches enlarged and ultimately attained an aggregate length of 1,270 feet. The accident is attributed to leakage through cracks in the flood bank caused by the unusually prolonged drought immediately preceding the sudden rise of the river. The sections of the bank were also too light for the kind of soil available. The flood water poured through the breaches across country towards Narsapur, doing great damage to crops and irrigation channels on the way. As the outfall sluices in the river bank near Narsapur were incapable of discharging so much extra water, it was necessary to cut breaches in the bank. The floods continued from 1st to 20th August. From the latter date, the work of closing breaches was pushed on and all canals were again opened by 3rd September. The total damage done to irrigation works was Rs. 38,140 in the Eastern delta, Rs. 45,500 in the Central delta, and Rupees 25,000 in the Western delta.

In August 1896, the Kistna river at Bezwada rose to an unprecedented height, causing considerable anxiety for the safety of the headworks. The left bank of the Kistna above the anicut was breached and the country between the Budameru and Kistna below Ibrahimpatam was flooded, the main road to Hyderabad and the Nizam's State Railway were badly breached and a good deal of damage was done. The breach in the river bank was closed at a cost of Rs. 4,785, excluding land compensation. During the floods which continued for a fortnight, several minor failures occurred. The basin wall between Seetanagaram old and new head sluices on the right side slipped forward and the revetment above it failed. Less important slips of revetment on the left side occurred and there was a good deal of percolation of water from the river into the canal round the left wing of the old sluice. The revetment below Bezwada under-sluices also slipped in places, and the bank above the retaining wall immediately below the under-sluices was badly eroded. These damages were rectified by re-building the chamber walls at Seetanagaram and repairing and grouting the revetment elsewhere. The nose of earth above the Bezwada lock bungalow was a good deal eroded and is now being protected by a revetment the toe of which rests against a row of casuarina piles 14 feet long. As a further consequence of the floods, the raising of the headworks to + 72.5 was decided on and also raising the head gates of the locks at Bezwada and Seetanagaram, which works were either completed or well advanced. In the Kistna Western division, the flood of August caused extensive damages to the river bank and irrigation works and crops. The river bank was breached in about twenty places. The Bank canal and Iskapalli channel suffered very seriously and many minor channels were breached. The total area submerged between the Bank and Nizampatam canals was about 227 square miles. About 18,000 acres of wet cultivation were either destroyed or not transplanted owing to the flood, of which 5,000 acres were cultivated with dry crops. The estimate for closing breaches in the river bank amounted to Rs. 12,200, and for closing breaches in the Bank canal and distributaries to Rs. 22,160.

In the Kurnool and Bellary divisions, except small breaches in the Kurnool-Cuddapah canal banks and the destruction of the Rampur channel flood bank by a heavy fresh in the Tungabhadra, there were no accidents. The former were closed without much difficulty. The latter will not be re-made.

In the North Arcot division, there were seven breaches to works in the Poiney anicut system, and three in the southern section of the Palár anicut system, but they were not of importance.

In the Chingleput division, three masonry sluices collapsed and fifty-seven tanks were breached or otherwise damaged during the heavy rains of November 1896. At the Korattur anicut a couple of scour holes formed; some damage was sustained by the Narayanavaram and Cortelliar embankments, and the Kambakal channel breached.

In the South Arcot division, the Coleroon left bank, the Rajah Voikal Vyvoor main channel, Rajah Voikal Komaratchi, Khan Saib's canal, Vadavar, Old Coleroon bank and Pombai channel right bank were breached in several places. Eight tanks, the left flood bank of the Tiruvandipuram anicut and the Thiruvanamuthur dam left wing also breached. The coping of the Pelandorai anicut for 43 feet was washed away, and the third apron damaged. The breaches in the Rajah Voikal and Old Coleroon flooded the foundations of the drainage works at Komaratchi, and washed away and damaged some material collected there.

In the Tanjore division, the floods of the year were the highest recorded in the history of the delta, and breaches occurred in the Coleroon river, Muniyar, South Rajan Voikal and Palavar.

In the Negapatam division, leaks in the Koraiyar banks and a small breach in the Morakakarayar channel occurred.

In the Trichinopoly division, during the heavy and abnormal floods of 31st July and 1st August 1896, several breaches occurred in the river and canal banks, resulting in 1,672 acres of wet and 174 acres of dry lands being damaged with a loss of revenue to the extent of Rs. 7,595.

In the Madura division, the partial destruction of the Vyravan anicut occurred, due primarily to a failure to anticipate the deepening of the river by the Periyár water, which undermined the work.

In the Tinnevely division, the cyclone of the 14th November 1896 caused serious damages to several irrigation works. Many tanks and irrigation channels in almost all the taluks were breached. The bunds and revetments in the Vizianarayanam tank in Nángunéri taluk, the Sundarapandiaperi Periyakulam tank in the Tenkasi taluk and the Perunkulam tank in Srivaikuntam taluk and in some other important tanks, were seriously damaged and the tanks were in danger of breaching. But the greatest injury was sustained by the Uppar Odai dam in Korampallam tank, the terminal tank of the North main channel, Srivaikuntam anicut system. Eight of the forty-eight vents of the dam fell, and one or two of the adjacent ones were damaged. The cost of restoring the Uppar Odai dam, including temporary works, is about Rs. 6,000, and that of improvements to it to guard against similar accidents in future, about Rs. 5,000. The approximate cost of repairing the damages to all other works in the division is Rs. 27,000.

## MAJOR (PRODUCTIVE) WORKS.

## CAPITAL ACCOUNT.

Under 49. Capital Expenditure not charged to Revenue, Irrigation Works, the cost of construction as now estimated, grants and outlay during, and to the end of, the year were as shown below:—

| Departmental heads.                           | Cost of construction as now estimated. | Budget grant for 1896-97. | Final grant for 1896-97. | Outlay during 1896-97. | Total outlay to end of 1896-97. |
|-----------------------------------------------|----------------------------------------|---------------------------|--------------------------|------------------------|---------------------------------|
|                                               | RS.                                    | RS.                       | RS.                      | RS.                    | RS.                             |
| <i>Direct Charges.</i>                        |                                        |                           |                          |                        |                                 |
| Works .. .. .                                 | 4,98,26,037                            | 7,46,762                  | 6,75,761                 | 5,58,732               | 4,78,16,093                     |
| Establishment .. .. .                         | 75,63,758                              | 1,62,518                  | 1,41,326                 | 1,39,012               | 70,10,454                       |
| Tools and plant .. .. .                       | 25,03,568                              | 31,750                    | 31,337                   | 46,174                 | 24,05,739                       |
| Loss by exchange .. .. .                      | 40,80,318                              | ..                        | ..                       | ..                     | 40,97,245                       |
| Total .. .. .                                 | 6,38,74,281                            | 9,41,000                  | * 7,85,750               | 7,76,500               | 6,13,81,540                     |
| Less: receipts on Capital Account .. .. .     | 2,48,203                               | ..                        | ..                       | 331                    | 2,67,032                        |
| Net Total .. .. .                             | 6,36,30,078                            | 9,41,000                  | * 7,85,750               | 7,76,229               | 6,10,74,458                     |
| <i>Indirect Charges.</i>                      |                                        |                           |                          |                        |                                 |
| Capitalized abatement of land revenue .. .. . | 89,30,448                              | ..                        | ..                       | 10,231                 | 28,08,009                       |
| Leave and pension allowances .. .. .          | 12,78,738                              | ..                        | ..                       | 19,462                 | 12,94,277                       |
| Total .. .. .                                 | 48,09,186                              | ..                        | ..                       | 29,693                 | 41,42,286                       |
| Grand Total .. .. .                           | 6,79,50,294                            | ..                        | ..                       | 6,05,902               | 6,52,10,744                     |

\* Exclusive of Rs. 16,974 included under "Provincial, Minor Works and Navigation—Capital Account," vide footnote on page 14.

† Includes Rs. 12,941 incurred on the Kurnool-Cuddapah canal, under 442. Minor Works and Navigation—Provincial.

The direct charges during the year were Rs. 5,66,479 less than in the previous year, and Rs. 9,521 less than the final grant.

The decrease in expenditure during the year occurred on the Periyár project, the outlay on which was only Rs. 44,970 against Rs. 7,29,011 in 1895-96.

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## MAJOR (PRODUCTIVE) WORKS.

### REVENUE ACCOUNT.

Charges on Revenue Account.

The charges under "42. Major Works (Working Expenses)" were as shown below:—

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| Departmental heads.                         | Grant.*  |           | Outlay.   |                                 |               |
|---------------------------------------------|----------|-----------|-----------|---------------------------------|---------------|
|                                             | Budget.  | Final.    | Gross.    | Deduct old maintenance charges. | Net.          |
| <i>Direct Charges.</i>                      | RS.      | RS.       | RS.       | RS.                             | RS.           |
| Extensions and improvements .. ..           | 57,712   | 63,400    | 72,518    | 4,261                           | 68,257        |
| Maintenance and repairs .. ..               | 5,71,224 | 8,35,383  | 2,77,682  | 1,36,586                        | 8,41,096      |
| Establishment .. ..                         | 5,56,121 | 5,88,298  | 8,45,857  | 2,78,654                        | 5,37,203      |
| Tools and plant .. ..                       | 94,943   | 1,02,419  | 95,300    | 1,743                           | 93,557        |
| Total .. ..                                 | 2,80,000 | 15,89,500 | 19,91,357 | 4,21,144                        | 15,70,213     |
| <i>Indirect Charges</i>                     |          |           |           |                                 |               |
| Capitalized abatement of land revenue .. .. | ..       | ..        | 671       | ..                              | 671           |
| Leave and pension allowances .. ..          | ..       | ..        | 1,18,483  | 39,061                          | 79,422        |
| Total .. ..                                 | ..       | ..        | 1,19,154  | 39,061                          | 80,093        |
| Grand Total .. ..                           | ..       | ..        | 21,10,511 | 4,60,205                        | (a) 16,50,306 |

\* Exclusive of grant for old maintenance charges.

(a) Inclusive of Rs. 1,537 incurred on the Kurnool-Cuddapah canal from "43. Minor Works and Navigation" side footnote (d) to statement in page 3.

The expenditure during the year under direct charges exceeded that of the preceding year by Rs. 2,54,330.

The increase was chiefly due to the extensive repairs carried out during the year in restoring the works of the Godavari, Kistna and Cauvery deltas and of the Srivai-kuntam anicut which were damaged by floods during the year.

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

Area irrigated and revenue derived.

|               | Area occupied. | Area charged as irrigated. | Irrigation revenue. | Average rate per acre. |
|---------------|----------------|----------------------------|---------------------|------------------------|
|               | ACS.           | ACS.                       | RS.                 | RS.                    |
| 1895-97 .. .. | 2,681,076      | 2,606,435                  | 101,82,923          | 3.91                   |
| 1895-96 .. .. | 2,488,458      | 2,406,390                  | 95,62,919           | 3.91                   |

Financial results.

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

|                                                                             | 1895-97.    | 1895-96.    |
|-----------------------------------------------------------------------------|-------------|-------------|
|                                                                             | RS.         | RS.         |
| Irrigation revenue .. ..                                                    | 1,01,82,923 | 95,62,919   |
| Add share of enhanced land revenue .. ..                                    | 4,52,642    | 4,50,895    |
| Add revenue of previous year brought into account .. ..                     | 320         | 2,46,713    |
| Direct receipts in the Public Works Department .. ..                        | 1,66,276    | 1,78,234    |
| Total .. ..                                                                 | 1,08,02,161 | 1,05,38,761 |
| Deduct working expenses and collection charges in the C.W. Department .. .. | 24,31,916   | 21,61,524   |
| Total net revenue .. ..                                                     | 83,67,245   | 83,77,237   |
| Deduct old irrigation revenue minus old maintenance charges .. ..           | 36,75,579   | 36,43,526   |
| Net revenue .. ..                                                           | 46,79,666   | 47,33,711   |
| Deduct interest charges .. ..                                               | 25,87,820   | 22,28,009   |
| Surplus revenue .. ..                                                       | 20,91,846   | 25,05,702   |

The net revenue amounted to 6.71 per cent. on the capital outlay of the works in operation, and this percentage would be 9.65, 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.

Extensions  
and improve-  
ments.

In the Eastern and Central sections, several minor masonry works were either improved or constructed. In the Western section, several masonry works were completed. The right and left side parallel channels from above Chintaparru dam on Jennur channel were in progress.

Maintenance  
and repairs.

The annual ordinary repairs to head works, canals, distributaries and drains were carried out. New lower gates to Masakapalli and upper gates to Tallarevu locks were n. d. New lower gates for Ellore lock were made up in the Dowlaishweram workshops. The diversion of the French channel at Pillanka and of Bendamurlanka canal at Godi were completed.

Establish-  
ment.

The charges for establishment amounted to Rs. 2,20,920 and are made up of the following items:—

|                                                                                                                                             |          |
|---------------------------------------------------------------------------------------------------------------------------------------------|----------|
| 23 per cent. on Expenditure                                                                                                                 | Rs.      |
| 10 per cent. on Direct revenue for services rendered by Public Works Department in collection of navigation and other miscellaneous revenue | 57,436   |
| 6 per cent. on Indirect revenue for services rendered by Public Works Department in distribution of water for Irrigation                    | 19,160   |
|                                                                                                                                             | 1,53,324 |
| Total                                                                                                                                       | 2,20,920 |

Tools and  
plant.

The floating plant and machinery of the delta were kept in good order.

In the Western division, one first-class and two second-class ballacuts (ferry flats) were built during the year. In the Central division, one second-class ballacut was 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. 4,379              |
| Steam dredgers ("Bucket")     | 6       | 1,61,176        | 4,140                            | 2,494                  |
| Do. (Priestman's)             | 3       | 46,138          | 500                              | 19                     |
| Dredge punts                  | 4       | 9,246           | 830                              | 4,153                  |
| Iron double trap dredge punts | 3       | 12,430          | 3,115                            | 1,568                  |
| Wooden boats                  | 21      | 51,544          | 890                              | 2,424                  |
| Iron boats                    | 11      | 15,559          | 410                              | 252                    |
| Iron flats                    | 3       | 18,311          | 167                              | 429                    |
| Iron punts                    | 17      | 37,947          | 2,060                            | 2,424                  |
| Steel barges                  | 3       | 10,500          | 1,020                            | 252                    |
| Staff boats                   | 12      | 13,993          | 2,280                            | 3,204                  |
| Jolly boats                   | 6       | 970             | 167                              | 429                    |
| Total                         | 93      | 5,12,367        | 17,832                           | 18,924                 |

As repairs actually found necessary were executed, the actual expenditure exceeded the estimated cost of upkeep on some items. The cost of upkeep in the previous year was Rs. 30,337.

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

| Names of steamers. | Book value. | Earnings.                                                                      |                                                                    |           | Balance.                               |          |          |
|--------------------|-------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------|----------------------------------------|----------|----------|
|                    |             | Amount paid by private parties and nominal earnings for towing material boats. | Amount charged for hire of steamers used by Public Works officers. | Total.    | Working expenses exclusive of repairs. | Surplus. | Deficit. |
| "Shamrock"         | Rs. 6,790   | Rs. 1,699                                                                      | Rs. 340                                                            | Rs. 2,039 | Rs. 1,324                              | Rs. 715  | ..       |
| "Arthur Cotton"    | 6,072       | 38                                                                             | 1,364                                                              | 1,402     | 926                                    | 476      | ..       |
| "Victoria"         | 16,415      | 464                                                                            | 2,138                                                              | 2,602     | 1,598                                  | 1,004    | ..       |
| "John Mullins"     | 16,476      | 1,522                                                                          | 1,253                                                              | 2,805     | 1,586                                  | 1,225    | ..       |
| Total              | 45,753      | 3,693                                                                          | 5,155                                                              | 8,548     | 5,428                                  | 3,420    | ..       |

Earnings  
of delta  
steamers

The receipts collected in the Public Works Department compare as follows with the amounts entered in the budget and revised estimates for 1896-97:—

|                 |              |
|-----------------|--------------|
| Budget estimate | Rs. 1,26,000 |
| Revised         | 1,14,000     |
| Actuals         | 1,01,935     |

Receipts in  
the Public  
Works  
Department

The principal portion of these receipts is derived from navigation, the receipts from which amounted to Rs. 90,227 against Rs. 87,043 in the previous year. The charges (which are chiefly arbitrary) amounted to Rs. 70,749 against Rs. 77,270 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 statement II-B). | Irrigation revenue. |
|-------------|--------------------|-------------------------------------------------|---------------------|
| First crop  | 1896-97 .. 639,306 | 1896-97 .. 632,298                              | Rs. 22,44,043       |
|             | 1896-96 .. 585,860 | 1896-96 .. 531,524                              | 20,80,433           |
| Second crop | 1896-97 .. 139,242 | 1896-97 .. 137,551                              | 4,36,360            |
|             | 1896-96 .. 124,788 | 1896-96 .. 121,602                              | 3,67,024            |

The increase in the area irrigated of 56,723 acres and in the revenue derived of Rs. 2,31,951 during the year occurred chiefly under "dry converted to wet," "inams irrigated and charged" and "second crop." The increase would have been greater but for the fact that floods in the Godavari river caused damage to the crops in several villages in the Narsapur, Amalapuram and Ramachandrapuram taluks and in the Cocanada division, and in consequence large remissions had to be granted, amounting to Rs. 2,65,000, against Rs. 1,49,500 in the previous year.

The extent of sugarcane cultivation during 1896-97 compares with that of the previous year as shown below:—

|                 | 1896-97. | 1895-96. |
|-----------------|----------|----------|
| Eastern section | 6,002    | 6,019    |
| Central ..      | 465      | 471      |
| Western ..      | 609      | 625      |
| Total           | 7,076    | 7,115    |

The share of enhanced land revenue due to the works amounted Rs. 1,47,443 as shown below:—

Enhanced  
share of land  
revenue.

|                                                         |              |
|---------------------------------------------------------|--------------|
| Land assessment on waste lands brought under irrigation | Rs. 1,44,066 |
| Miscellaneous items                                     | 2,105        |
| 4 per cent. on sale-proceeds of tank-bed lands          | 1,272        |
| Total                                                   | 1,47,443     |

The gross revenue and working expenses per acre amounted to Rs. 3.96 and Re. 0.84, respectively, against Rs. 3.96 and Re. 0.96 in the previous year. The following statement shows the financial results:—

Financial  
results.

| Expenditure.                                  | During 1896-97. | To end of 1896-97. | Receipts.                                                                                       | During 1896-97. | To end of 1896-97. |
|-----------------------------------------------|-----------------|--------------------|-------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Direct charges ..                             | Rs. 5,28,352    | Rs. 1,40,31,279    | Direct receipts in the Public Works Department ..                                               | Rs. 1,01,545    | Rs. 25,02,566      |
| Indirect ..                                   | 82,559          | 2,72,874           | Irrigation revenue ..                                                                           | 22,79,408       | 6,18,02,450        |
| Collection charges in the Civil department .. | 1,35,142        | 39,43,521          | Share of enhanced land revenue ..                                                               | 1,47,443        | 59,18,311          |
| Interest on capital outlay ..                 | 4,88,581        | 1,39,36,100        | Total ..                                                                                        | 22,28,396       | 7,92,78,317        |
| Total expenditure and charges ..              | 11,34,634       | 3,28,92,774        | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. | 1,15,590        | 48,02,962          |
| Surplus revenue ..                            | 18,79,285       | 3,20,92,581        | Net Total ..                                                                                    | 22,12,806       | 6,39,75,355        |
| Total                                         | 28,12,899       | 6,59,76,355        |                                                                                                 |                 |                    |

# ADMINISTRATION REPORT OF THE

18

## GODAVARI DELTA SYSTEM.

The net revenue from the system during the year, after paying interest charges, was 13.01 per cent. on the capital outlay, "Direct" and "Indirect," against 11.67 per cent. in the previous year. The anticipated ultimate return was 9.3 per cent. per annum on the capital outlay.

Synopsis of results.

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

|                                                                                                                           |                                                                                                                                                                   |                                |                           |               |              |
|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------------|---------------|--------------|
|                                                                                                                           |                                                                                                                                                                   | Total ..                       | Assumed old irrigation .. | ..            | ACS. 602,298 |
|                                                                                                                           |                                                                                                                                                                   |                                |                           | ..            | 151,451      |
| 1. Areas charged as irrigated.                                                                                            | First crop ..                                                                                                                                                     | New irrigation due to works .. | ..                        | 450,847       |              |
|                                                                                                                           | Second crop ..                                                                                                                                                    | ..                             | ..                        | 137,551       |              |
|                                                                                                                           |                                                                                                                                                                   | Total ..                       | ..                        | Rs. 17,93,762 |              |
| 2. Net revenue in 1896-97 after deducting interest and all charges.                                                       | 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 .. | ..                             | 16,78,262                 |               |              |
| 3. Accumulated net surplus revenue (exclusive of all that assumed to be due to old irrigation works) to end of 1896-97 .. |                                                                                                                                                                   | ..                             | 3,30,92,581               |               |              |
| 1. Total expenditure on Capital Account, both direct and indirect, which has secured the results shown above ..           |                                                                                                                                                                   | ..                             | 1,28,97,345               |               |              |
| 2. Year from which amounts against items 3 and 4 commenced to be calculated ..                                            |                                                                                                                                                                   | ..                             | 1848-49                   |               |              |

### GENERAL REMARKS.

State of the river.

The Godavari river rose above the crest of the anicut on the 19th June 1896 and did not fall below it till the 25th January 1897. The number of days the water stood at or 3 feet above the anicut crest was 83 against an average of 112 days for the previous forty-four years; and at or above 4 feet, 57 days against an average of 66 days for the same period. The maximum flood of the year was 13.8 on the anicut crest against the previous recorded maximum of 17 feet. The state of the river was favourable for irrigation.

Inspection of the Inspector-General of Irrigation.

In November-December 1896, the Godavari delta works were inspected by the Inspector-General of Irrigation accompanied by the Chief Engineer for Irrigation.

Engineering History of the Godavari delta works.

In November 1896, an Engineering history of the Godavari delta works prepared by Mr. G. T. Walch, late Chief Engineer and Secretary to Government, Public Works Department, was published.

## No. 2.—KISTNA DELTA SYSTEM.

### CAPITAL ACCOUNT.

Grant and outlay.

The subjoined statement exhibits the estimates sanctioned and the outlay incurred during, and up to the end of, the year on Capital Account of the Kistna delta system :—

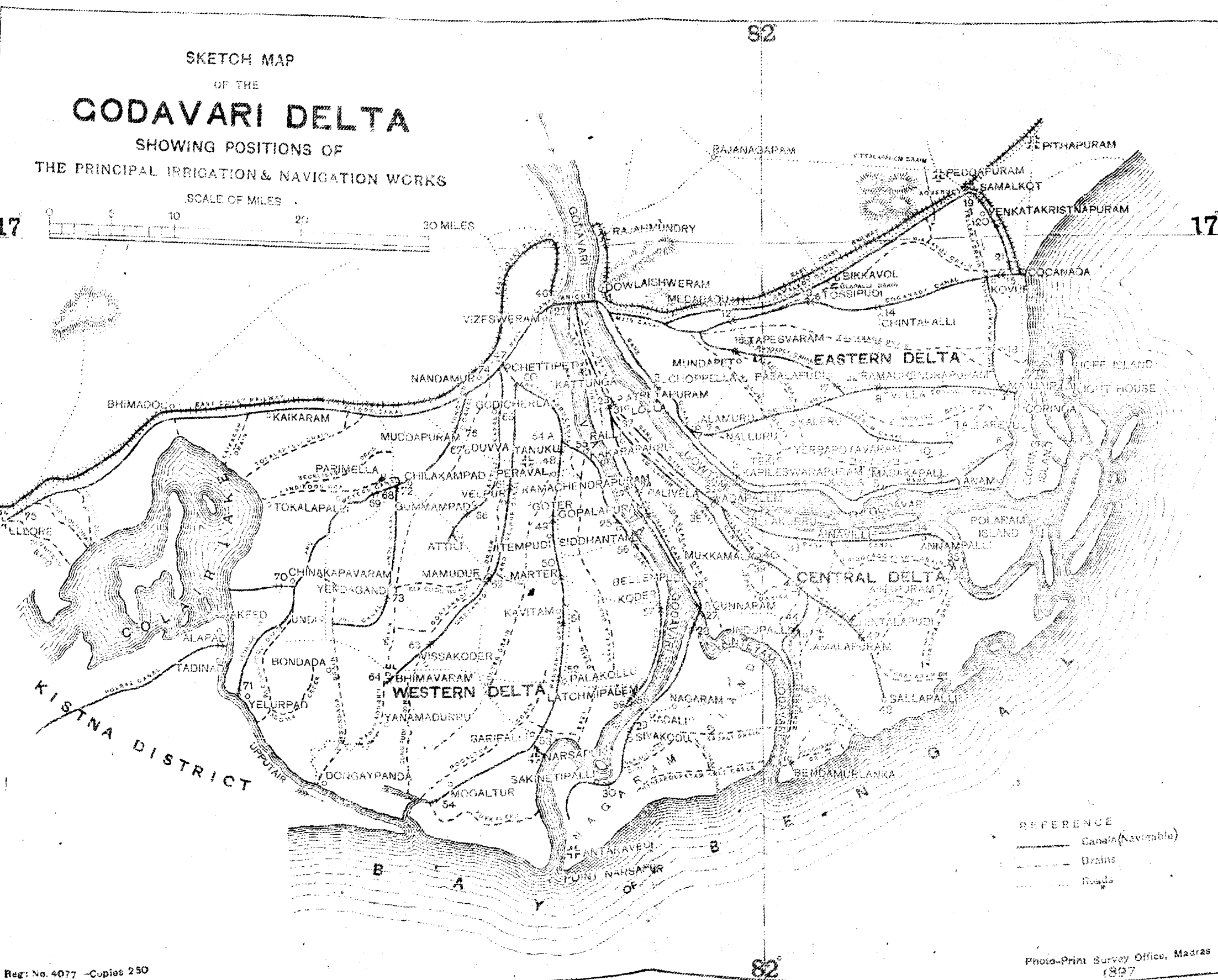
| Departmental heads.                      | Amount of estimate. | Grant for 1896-97. | Outlay during 1896-97. | Total outlay to end of 1896-97. |
|------------------------------------------|---------------------|--------------------|------------------------|---------------------------------|
| <b>Direct Charges.</b>                   |                     |                    |                        |                                 |
| Works ..                                 | Rs. 1,07,30,994     | Rs. 4,43,465       | Rs. 4,51,411           | Rs. 92,06,167                   |
| Establishment ..                         | 25,97,268           | 96,166             | 91,821                 | 21,81,140                       |
| Tools and plant ..                       | 6,68,042            | 55,411             | 41,650                 | 6,09,795                        |
| Loss by exchange ..                      | 20,000              | ..                 | ..                     | ..                              |
| Total ..                                 | 1,39,26,805         | 5,95,042           | 5,84,882               | 1,49,77,102                     |
| Less receipts on Capital Account ..      | 8,821               | ..                 | ..                     | 15,400                          |
| Net total, Direct Charges ..             | 1,39,19,784         | 5,95,042           | 5,84,882               | 1,49,61,702                     |
| <b>Indirect Charges.</b>                 |                     |                    |                        |                                 |
| Capitalized abatement of land revenue .. | 5,52,200            | ..                 | 5,107                  | 4,42,044                        |
| Leave and pension allowances ..          | 4,24,860            | ..                 | 12,855                 | 3,39,501                        |
| Total, Indirect Charges ..               | 9,81,160            | ..                 | 17,962                 | 8,22,645                        |
| Grand Total ..                           | 1,49,00,944         | ..                 | 6,02,844               | 1,27,84,247                     |



# SKETCH MAP OF THE CODAVARI DELTA

SHOWING POSITIONS OF  
THE PRINCIPAL IRRIGATION & NAVIGATION WORKS

SCALE OF MILES



REFERENCE  
Canals (Navigable)  
Locks  
Weirs  
Dams

Photo-Print Survey Office, Madras  
(1897)

| EASTERN DELTA            |                                               |    | M  | Ch. |
|--------------------------|-----------------------------------------------|----|----|-----|
| No.                      | NAME                                          |    |    |     |
| 1                        | Dowlaisweram Head Sluice and head double lock |    |    |     |
| BANK CANAL               |                                               |    |    |     |
| 2                        | Choppella Lock                                | 8  | 77 |     |
| 3                        | Kapileswarapuram Lock                         | 16 | 0  |     |
| 4                        | Kulla Lock                                    | 21 | 5  |     |
| 5                        | Masakapalli Lock                              | 23 | 37 |     |
| 6                        | Tallarevu Tidal Lock                          | 39 | 40 |     |
| CORINGA CANAL            |                                               |    |    |     |
| 7                        | Surplus Weir                                  | 14 | 10 |     |
| 7A                       | Alamuru Lock                                  | 14 | 11 |     |
| 8                        | Vella Lock                                    | 25 | 26 |     |
| 9                        | Manjair Tidal Lock                            | 35 | 18 |     |
| INJERAM CANAL            |                                               |    |    |     |
| 10                       | Yerrapottavaram Lock                          | 30 | 4  |     |
| 11                       | Weir at end of Canal                          | 32 | 76 |     |
| COCANADA CANAL           |                                               |    |    |     |
| 12                       | Medapadu Lock                                 | 9  | 38 |     |
| 13                       | Tossipudi Lock                                | 15 | 73 |     |
| 14                       | Chintapalli Lock                              | 20 | 41 |     |
| 15                       | Kuvur Tidal Lock                              | 29 | 28 |     |
| MUNDAPET CANAL           |                                               |    |    |     |
| 16                       | Tapeswaram Lock                               | 11 | 39 |     |
| 17                       | Pasalapudi Lock                               | 18 | 0  |     |
| KOVUR-MANJAI CANAL       |                                               |    |    |     |
| 18                       | Tullabaga Drain Aqueduct                      | 33 | 67 |     |
| SAMALKOT CANAL           |                                               |    |    |     |
| 19                       | Samalkot Double Lock                          | 30 | 37 |     |
| 20                       | Venkatkrishnapuram Lock                       | 32 | 68 |     |
| 21                       | Cocanada Tidal Lock                           | 37 | 9  |     |
| CENTRAL DELTA            |                                               |    | M  | Ch. |
| No.                      | NAME                                          |    |    |     |
| 22                       | Bahberlank Head Sluice and Double Lock        |    |    |     |
| CUNNAM CANAL             |                                               |    |    |     |
| 23                       | Ralli Lock                                    | 2  | 4  |     |
| 24                       | Ramachendrapuram S. Weir                      | 10 | 37 |     |
| 25                       | Gopalapuram Lock                              | 17 | 20 |     |
| 26                       | Gulhemudi Surplus Weir                        | 20 | 2  |     |
| 27                       | Gunnaram Aqueduct                             | 27 | 1  |     |
| 28                       | Monnepulanka Lock                             | 29 | 8  |     |
| 29                       | Sivakodu Lock                                 | 38 | 72 |     |
| 30                       | Sakinetipalli Tidal Lock                      | 45 | 10 |     |
| BANK CANAL               |                                               |    |    |     |
| 31                       | Lolla Lock                                    | 8  | 4  |     |
| 32                       | Vasupalem Lock                                | 20 | 0  |     |
| 33                       | Chintil Lanka Lock                            | 27 | 0  |     |
| 34                       | Annapalli Lock                                | 38 | 51 |     |
| 35                       | Vridhagowdram Drain under Tunnel              | 42 | 40 |     |
| 36                       | Kundaleswaram Weir                            | 43 | 8  |     |
| AMALAPUR CANAL           |                                               |    |    |     |
| 37                       | Rali Surplus Weir                             | 11 | 48 |     |
| 38                       | Panyola Lock                                  | 19 | 60 |     |
| 39                       | Mukkamala Surplus Weir                        | 26 | 40 |     |
| 40                       | De Lock                                       | 26 | 0  |     |
| 41                       | Nadupudi Lock                                 | 49 | 60 |     |
| 42                       | Chintalapudi Lock                             | 34 | 28 |     |
| 43                       | Savapalli Weir                                | 39 | 70 |     |
| BENDAMUR-LANKA CANAL     |                                               |    |    |     |
| 44                       | Indupalli Weir                                | 32 | 34 |     |
| 45                       | Bendamur Lanka Surplus Weir                   | 38 | 5  |     |
| WESTERN DELTA            |                                               |    | M  | Ch. |
| No.                      | NAME                                          |    |    |     |
| 46                       | Vizveswaram Head Sluice and Head Lock         |    |    |     |
| 47                       | Chettipet Weir                                | 8  | 0  |     |
| NARSAPUR CANAL           |                                               |    |    |     |
| 48                       | Pervali Lock                                  | 15 | 30 |     |
| 49                       | Thampudi Lock                                 | 21 | 0  |     |
| 50                       | Marter Lock                                   | 25 | 30 |     |
| 51                       | Kavim Lock                                    | 26 | 42 |     |
| 52                       | Palakudi Lock                                 | 33 | 27 |     |
| 53                       | Narsapur Tidal Lock                           | 37 | 28 |     |
| 54                       | Mogatur Tidal Lock                            | 46 | 16 |     |
| BANK CANAL               |                                               |    |    |     |
| 54A                      | Kakraparru new Weir                           | 10 | 3  |     |
| 55                       | Kakraparru Surplus Weir (old)                 | 17 | 3  |     |
| 56                       | Siddhantham Lock                              | 25 | 7  |     |
| 57                       | Koder Lock                                    | 31 | 45 |     |
| 58                       | Latchmipalem Tidal Lock                       | 40 | 39 |     |
| 59                       | Nakkala Out Fall Sluice                       | 40 | 39 |     |
| GOSTANADI & VELPUR CANAL |                                               |    |    |     |
| 60                       | Gostanadi Lock                                | 7  | 32 |     |
| 61                       | Venur Weir                                    | 21 | 50 |     |
| 62                       | Manugur Lock                                  | 30 | 79 |     |
| 63                       | Vissakoder Lock                               | 37 | 34 |     |
| 64                       | Bhimavaram Tidal Lock                         | 41 | 17 |     |
| ATTILI CANAL             |                                               |    |    |     |
| 65                       | Cadicherla Lock                               | 11 | 1  |     |
| 66                       | Gummampad Lock                                | 20 | 41 |     |
| VENKIAH & WEYERU CANAL   |                                               |    |    |     |
| 67                       | Guvva Weir                                    | 14 | 1  |     |
| 68                       | Choppella Double Lock                         | 21 | 1  |     |
| 69                       | Chintakravaram Lock                           | 25 | 35 |     |
| 70                       | Yellurudi Tidal Lock                          | 15 | 18 |     |
| UNDI CANAL               |                                               |    |    |     |
| 71                       | Thayyampudi Lock & Head Sluice                | 17 | 78 |     |
| 72                       | Thayyampudi Lock                              | 17 | 78 |     |
| ELLERE CANAL             |                                               |    |    |     |
| 73                       | Nandaram Aqueduct                             | 1  | 53 |     |
| 74                       | Ellere Lock                                   | 40 | 37 |     |
| JUNCTION CANAL           |                                               |    |    |     |
| 75                       | Muddanuram Double Lock                        | 17 | 40 |     |

N. D. - The figures on the Map indicate the position of the works specified above.

PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1896-97.

## No. 1.—GODAVARI DELTA SYSTEM.

### CAPITAL ACCOUNT.

The following statement exhibits the grant of, and expenditure incurred during, the year:—

| Departmental heads.              |    | Grant for 1896-97. | Outlay during 1896-97. |
|----------------------------------|----|--------------------|------------------------|
| Direct Charges.                  |    | Rs.                | Rs.                    |
| Works                            | .. | 67,081             | 51,078                 |
| Establishment                    | .. | 12,968             | 10,834                 |
| Tools and plant                  | .. | 160                | ..                     |
| Suspense accounts                | .. | ..                 | ..                     |
| Total                            | .. | 80,209             | 64,912                 |
| Less receipts on Capital Account | .. | ..                 | ..                     |
| Net Total                        | .. | 80,209             | 64,912                 |

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 1897. The total capital outlay to the end of 1896-97 was Rs. 1,28,97,445 against Rs. 1,31,01,900, the cost of construction as now estimated.

**Godavari Eastern Division.**—On the estimate of Rs. 1,33,000 sanctioned by the Government of India in January 1896 for raising the crest of the Godavari anicut by 2 feet, the anicut crest was raised 2 feet at the left end for a length of 312 feet and 1 foot for a length of 264 feet. The work was stopped on the inspection of the Inspector-General of Irrigation in December 1896 when, in accordance with his suggestion, it was decided to fit the anicut with falling shutters instead of permanently raising it. Nine hundred and forty-nine iron falling shutters, each of 12 feet length, have to be provided. Some of the shutters were made up in the workshops and twenty of them fixed on the Dowlaisweram branch by the end of the year. The masonry works of the Muramanda channel were completed, as also the excavation of the channel except a portion to be diverted. The temporary diversion of the Bank canal at Masakapalli, the temporary diversion of the Kulla side channel and the permanent diversion of the Bank canal at Mallavaram were all completed.

**Godavari Central Division.**—The excavation of Mukkamala East side channel and of Indupalli drain and the diversion of the Bank canal at Gedallanka set were completed.

**Godavari Western Division.**—The rest-house at Chettipett and the Peddamallam channel were in progress during the year and the Kaza branch of Vaddilanka channel, Atsanta minor branch of Atsanta channel, and branches Nos. 1 and 2 of Rameswaram channel were completed.

### REVENUE ACCOUNT.

The charges on Revenue Account were as shown below:—

| Departmental heads.         |    | Grant, 1896-97. | Outlay during 1896-97. |                                 |          |
|-----------------------------|----|-----------------|------------------------|---------------------------------|----------|
|                             |    |                 | Gross.                 | Deduct old maintenance charges. | Net.     |
| Extensions and improvements |    | Rs.             | Rs.                    | Rs.                             | Rs.      |
| Maintenance and repairs     | .. | 19,945          | 19,768                 | ..                              | 19,768   |
| Establishment               | .. | 2,40,327        | 2,42,089               | ..                              | 2,42,089 |
| Tools and plant             | .. | 2,18,988        | 2,28,370               | 7,450                           | 2,20,920 |
|                             | .. | 35,509          | 38,125                 | ..                              | 38,125   |
| Indirect charges            | .. | ..              | ..                     | ..                              | ..       |
| Total                       | .. | 5,12,769        | 5,28,352               | 7,450                           | 5,20,902 |
| Grand Total                 | .. | ..              | 5,60,911               | 8,500                           | 5,52,411 |

\* Exclusive of grant for old maintenance charges.

SKETCH MAP  
OF THE  
**KISTNA DELTA SYSTEM**  
SHOWING POSITIONS OF  
THE PRINCIPAL IRRIGATION & NAVIGATION WORKS

SCALE OF MILES  
0 5 10 20 30 MILES

- (1) DOPPALAPUDI CANAL
- (2) KOLLIMERLA DO.
- (3) PONDRAHAD DO.
- (4) PUNULA DO.
- (5) NALLAMADA DO.
- (6) SAKIKALVA DO.
- (7) KANENCHERU DO.
- (8) SWARNNA DO.
- (9) ALLERU DO.
- (10) APPERU DO.
- (11) EMILERU DO.

LIST OF PRINCIPAL IRRIGATION WORKS

| No.                      | Particulars                         | Mf. | Ch. |
|--------------------------|-------------------------------------|-----|-----|
| <b>EASTERN SECTION</b>   |                                     |     |     |
| <b>MAIN CANAL</b>        |                                     |     |     |
| 1                        | Head Lock and Head Sluice           |     |     |
| <b>ELLORE CANAL</b>      |                                     |     |     |
| 2                        | Bridge at Head                      | 45  |     |
| 3                        | Bridge (New)                        | 1   | 5   |
| 4                        | Bunathara Aqueduct                  | 7   | 53  |
| 5                        | Kasragalli Do.                      | 10  | 70  |
| 6                        | Perked Bridge                       | 27  | 9   |
| 7                        | West Tammilur Aqueduct              | 37  | 40  |
| 8                        | Order Bridge                        | 39  | 5   |
| 9                        | East Tammilur Outlet                | 40  | 20  |
| <b>RYVES CANAL</b>       |                                     |     |     |
| 10                       | Bridge at Head                      | 51  |     |
| 11                       | Do. of 2 Bridges                    | 1   | 28  |
| 12                       | Regulator                           | 1   | 51  |
| 13                       | Tidamam Bridge                      | 8   | 19  |
| 14                       | Uppalur under Tunnel                | 11  | 55  |
| 15                       | Konathanta Weir                     | 14  | 21  |
| 16                       | Kanduru Bridge                      | 17  | 51  |
| 17                       | K. Javakodu Bridge                  | 19  | 49  |
| 18                       | Chendrayakodu under Tunnel          | 20  | 68  |
| <b>BANTUMILLI CANAL</b>  |                                     |     |     |
| 19                       | Kowtaram Lock and Weir              | 39  | 28  |
| 20                       | Komalapuram Lock and Weir           | 45  | 5   |
| 21                       | Tidal Lock and Weir                 | 68  | 5   |
| <b>MASULIPATAM CANAL</b> |                                     |     |     |
| 22                       | Kankipudi Weir                      | 12  | 48  |
| 23                       | Do. Lock                            | 12  | 52  |
| 24                       | Do. Bridge                          | 12  | 55  |
| 25                       | Vayavanki Lock                      | 24  | 42  |
| 26                       | Do. Weir                            | 24  | 45  |
| 27                       | Inampudi Under Tunnel               | 28  | 16  |
| 28                       | Nidumala Lock                       | 37  | 21  |
| 29                       | Do. Weir                            | 37  | 21  |
| 30                       | Akamaru Lock and Weir               | 43  | 8   |
| 31                       | Sultanpalem Under Tunnel            | 45  | 55  |
| 32                       | Chintagantapalem Iron Girder Bridge | 46  | 26  |
| 33                       | Tidal Lock                          | 49  | 20  |
| <b>PULLERU CANAL</b>     |                                     |     |     |
| 34                       | Old Head Sluice                     | 12  | 48  |
| 35                       | New do. do.                         | 12  | 51  |
| 36                       | Wiyur Bridge                        | 21  | 27  |
| 37                       | Pamuru Lock and Weir                | 35  |     |
| <b>POLRAZ CANAL</b>      |                                     |     |     |
| 38                       | Head Lock and Weir                  | 39  | 27  |
| 39                       | Mudinoballe Bridge                  | 45  | 27  |
| 40                       | Veniram Lock and Weir               | 54  | 73  |
| 41                       | Tadinada do. do.                    | 64  | 71  |
| <b>WESTERN SECTION</b>   |                                     |     |     |
| <b>MAIN CANAL</b>        |                                     |     |     |
| 42                       | Sitanagaram Lock & Head Sluice      |     |     |
| 42 A                     | New Reserve Head Sluice Sitanagaram |     |     |
| 43                       | Old escape at Duggirala             | 12  | 1   |
| <b>NIZAMPATAM CANAL</b>  |                                     |     |     |
| 44                       | Nizampatam Weir                     | 13  | 1   |
| 45                       | Duggirala Lock                      | 13  | 2   |
| 46                       | Nandivada Bridge                    | 14  | 51  |
| 47                       | Perash Gadge                        | 18  | 47  |
| 48                       | Kuchipudi Lock                      | 22  |     |
| 49                       | Intur do.                           | 31  | 2   |
| 50                       | Nallavada Surplus Weir              | 36  | 33  |
| 51                       | do. Lock                            | 36  | 40  |
| 52                       | Tidal Lock Surplus Weir             | 41  | 5   |
| 53                       | Tidal Lock                          | 41  | 7   |
| <b>GANK CANAL</b>        |                                     |     |     |
| 54                       | Revendrapad Lock                    | 7   | 58  |
| 55                       | do. Weir                            | 7   | 63  |
| 56                       | Kandur Lock and Weir                | 28  |     |
| 57                       | Vallatur Lock and Weir              | 32  | 54  |
| 57 A                     | Uncur Tunnel                        | 41  | 30  |
| 58                       | Mortola Lock and Weir               | 45  | 44  |
| <b>COMMAMUR CANAL</b>    |                                     |     |     |
| 59                       | Commamur Lock                       | 11  | 75  |
| 60                       | Kilakatur Bridge                    | 15  | 9   |
| 61                       | Uppalur Nalla or Jager-lamudi       | 20  | 19  |
| 62                       | Uppalur Weir & 2 Under Tunnel       | 20  | 73  |
| 63                       | Jagerlamudi Lock and Weir           | 26  | 7   |
| 64                       | Chintala Bridge                     | 31  | 42  |
| 65                       | Konimera Aqueduct                   | 31  | 54  |
| 66                       | do. Lock and Weir                   | 31  | 54  |
| 67                       | Pondrapad Surplus Canalsulah        | 33  | 61  |
| 68                       | Pondrapad Bridge                    | 33  | 63  |
| 69                       | Nallamada Surplus Sluices           | 40  | 77  |
| 70                       | do. Lock and Weir                   | 43  | 36  |
| 71                       | Sakicalva Aqueduct                  | 45  | 78  |
| 72                       | Panchoru Vagu Surplus Sluices       | 48  | 14  |
| 73                       | Kanichettu Aqueduct                 | 51  | 45  |
| 74                       | do. Bridge                          | 52  | 8   |
| 75                       | Swarna Aqueduct                     | 55  | 70  |
| 76                       | Alleru Surplus Sluices              | 58  | 63  |
| 77                       | Santarapur Lock                     | 59  | 51  |
| 78                       | Inkolu Road Bridge                  | 62  | 36  |
| 79                       | Coast Road Bridge                   | 68  | 12  |
| 80                       | Uppalur Vagu Aqueduct               | 69  | 49  |
| 81                       | Pedak Ganjam Tidal Lock             | 70  | 24  |

REFERENCE

- RIVERS
- CANALS
- - - - - DO. IN PROGRESS
- ..... DRAINS
- DRAINAGE COURSE
- ROADS
- RAILWAY LINE
- 5 POSITION OF WORKS SHOWN ON LIST

## KISTNA DELTA SYSTEM.

19

*Kistna Northern Division.*

*Head Works.*—The work "making experimental falling shutters for the Kistna anicut" was in progress. Twelve shutters of various patterns were fixed on the crest of the anicut. Progress of works—Eastern section.

*Masulipatam Canal.*—Land required for Public Works buildings at Bezvada was acquired.

*Ryres' Canal.*—The construction of a wharf wall on the right bank of the canal was completed.

The new head sluice at Sectanagaram, an incomplete work of the previous year, was brought up to platform level. The shutters and screw-gearing were made in the workshops. An alteration involving an extension of the rear wings of the sluice was sanctioned and foundations for the added parts put in. The materials required for the improvements to the basin between the old and new head sluice at Sectanagaram were collected. Western section.

*Kistna Eastern Division.*

*Ellore Canal.*—The following works were completed :—

Sectioning Viravalli channel No. 2, inlets at 19 miles 10 chains and 19 miles 70 chains,

Extension of Ponukumad Main channel,

Excavating Chirivada channel,

Raising Telaprole inlet and outlet at 21 miles  $5\frac{1}{2}$  chains,

Extending the existing inlet and outlet 22 miles  $5\frac{1}{2}$  chains,

Extending inlet 30 miles 5 furlongs 50 chains,

Inlet and outlet at 31 miles 5 chains,

Do. at 35 " 5 "

Do. at 36 " 7 "

The following were nearly completed :—

Inlet and outlet at 25 miles 1 chain,

Do. at 27 " 4 furlongs.

Do. at 29 " 5 "

The extension of Watlur right side channel was in progress and materials were collected for revetment.

The extension of Ponukumad left side channel and towpath bridge in front of West Tammilern escape were nearly completed, but the latter was subsequently damaged by the floods of August 1896.

*Masulipatam Canal.*—Widening Masulipatam canal, first reach, was completed except from 2 miles 6 furlongs to 6 miles 1 furlongs on left side for which materials for fixing demarcation stones were collected.

The new gates for Kankipad lock were brought to site.

Bhimanadi channel was excavated, except the last 3 furlongs. Of its branches seven were fully excavated. The headsluice, drops 1 and 2 and culvert at  $3\frac{1}{2}$  miles were completed and materials were collected for the remaining masonry works.

Road culvert over Urutur left side channel at Pamarru was completed.

Headsluice to Manager main and left side channel was completed.

Road culvert over channel at 2 furlongs was completed.

Materials for the 3rd branch sluice of main channel were partially collected.

Materials were collected for Nibhanapudi main and left side channels and drop on Daggumilli channel.

*Manager Codu.*—Main channel was fully excavated from head to 3 furlongs and from  $2\frac{3}{4}$  to tail  $6\frac{1}{2}$ ; the portion between  $0\frac{1}{3}$  and  $2\frac{3}{4}$  which mainly consists of improving the existing channel was put in hand during the last week of March 1897. Headsluices to Maddipatta channel and Kanchakodur channel were completed. Kanchakodur channel was fully excavated. Materials were also collected and concrete laid for road culvert over side channel at Nidumole and branch sluices at  $37\frac{1}{2}$  and  $37\frac{7}{8}$ .

Mallavole main channel was excavated with the exception of a few gaps in 3rd mile.

Tail escape to Mallavole left side channel was completed.

*Pullara and Gudivada Channels.*—The following works were completed and brought into use during the year :—

- Sepadi Mallapalli channel,
- Sepadi channel,
- Dodapad side channel from 10/7 miles of Gudivada channel,
- Rudrapaka channel from 14th mile of Gudivada channel.
- Improvements to Gudivada channel.

The following branches of Pedalanka channel—Vennar Codu right and left branches, Mattegutta right and left branches, Tumma Codu left branch, Butchilanka Codu at 27 miles 7 feet right and left branches, Kodangi channel branch and Kalidiindi channel at 22 miles,

Improvements to existing Nandirazu Codu and Savamdravaram Codu,

The Pedalanka channel was almost completed.

*Bantunilli Canal.*—Mattam channel—Anadalapalli channel was almost completed except masonry works. Annavaram and Cheviur affluents, Vinuacota and Kalidiindi drains and the drain from Ilur road near Chinamukkeni to Inam drain were excavated and brought into use. The walls of the rest-house at Lakshmipuram were raised to full height.

*Potna Canal.*—The rest-house walls at Vadali were raised to full height and the roofing was in progress. The walls of the out-houses were built up to 5 feet above ground.

*Ryves' Canal.*—The rest-house at Komatigunta weir was completed except out-houses. The following works were completed : Culvert across Perikced road on north side channel, culvert and tail escape on north side channel, road culvert on Singavaram channel across Perikced, tail escape on Dosapad channel at 10 miles 300 feet, headsluice to Arapirala Panta Codu, improvements to a bridge to convert it into a regular at 3rd mile of Kunderu channel, improvements to Dosapad channel headsluice, excavating Bhumiocodu of Dosapad channel, tail escape on Lingavaram channel, improvements to drop in the 6th mile of Kunderu channel and excavation of left side channel from above drop in the 6th mile of Kunderu channel.

#### Kistna Western Division.

*Main Canal.*—Widening the canal, wharf wall in right bank at Seetanagaram, wall in the right side of lock channel in rear of Seetanagaram lock, and improvements to and extension of No. 1 branch of Inani channel and drainage inlet in 4th mile were completed. The work "forming an approach ramp to wharf wall on right bank at 0/5 mile," was put in hand during the year and nearly completed. Cattle-crossings originally put in hand under "maintenance and repairs," but subsequently transferred to "Capital account" were completed with the exception of towpath bridges.

*Bank Canal.*—"Diversion of canal in 7 and 8 miles near Vallabhapuram, and headsluice to Kollur and Varahapuram channels were completed. Lock establishment sheds at Vellattur lock and excavation of Varahapuram channel and other works connected therewith were in progress. Earthwork from 0/0 to 4/5 miles was completed and from 4/5 to end was in progress. Earthwork for Iskapalli channel and its branches was almost completed except sectioning in some portions of side channels. Bridges and irrigation sluices were in fair progress. The earthwork of Allapuram, Vullipalem and Aravapalli and Kuchinapudi branch channels was in progress. The wooden fender piles foot bridge in front of headsluice, Bank canal, was completed during the closure. Materials required for improving the headsluice channel were collected. Rest-house at Kollur was completed except flooring, and the wood-work of that at Sivangulapalem was in progress.

*Commamur Canal.*—The following works were completed :—

- Side walls in rear channel of Commamur lock,
- Widening and constructing revetment in 1st mile,
- Lock establishment sheds at Nallamada and Kollimerla,
- Reconstructing and extending revetment in rear of Kollimerla weir channel,
- Opening vents in east side wall of Kollimerla aqueduct,
- Under-tunnel at 8 miles 1/2 furlong, at Jagerlamudi, and
- Masonry bridge over Santaravur side channel.

#### KISTNA DELTA SYSTEM.

The following works were in progress: Lock establishment sheds at Nallamada, Puchurvagu, Aleru, Peddaganjam and Jagerlamudi, rest-house at Karlapalem, Bapatla tank project works, and improvements to A. B. channel.

*Nizampatam Canal.*—The bridge at Turumalla over west side channel was completed. The works—Improvements to west side channel, Rambhltlapalem channel, lock establishment sheds at Intur, Nallavada and Nizampatam tidal locks and rest-house at Kuchipudi and wharf wall at Tenali—were in progress.

*Romperu Drain.*—The excavation of side drain, cutting and raising the left flood bank and drainages 1 and 2 were completed and fixing bench-mark stones was nearly finished.

*Kopalli Drain.*—All works in this drain were completed.

*Tenali Drain.*—Excavation of drain was completed. Bridges on the drain at Ponnur, Intur and Ponnur-Isandole roads were completed except parapet walls for the latter. Fixing bench-mark stones was in progress.

*Repalli Main Drain.*—The straight cut was excavated to its true level. Aqueduct to carry Vellatur channel was nearly completed. Foundations were got in for the iron-girder bridge to carry Nandivelugu-Ilur road at 9 miles.

*Tungabhadra Drain.*—Machavaram straight cut was made for about 2 1/2 miles from tail end and for about a mile from Mulukuduru road bridge at the head.

*Allapuram and Kuchinapudi Drains.*—The former was completed to end, except forming slopes in a few places; and the latter up to 6 furlongs from head.

*Pedapalli Drain.*—Earthwork was in good progress.

*Nallamada Drain.*—Much of the materials required for extending the bridge at 7 miles 15 chains (Yarrakalva bridge) were collected at site.

The expenditure under this head was incurred in constructing two Godavari pattern punts, two stern-wheel steamers in the Kidderpore Dockyard and single and double punt scouring dams for the Kistna Northern division. In the Kistna Eastern division, 18 iron ballcuts (ferry-flats) were completed.

#### REVENUE ACCOUNT.

The charges on Revenue Account were as shown below :—

| Departmental heads.         | Grant.*  | Outlay.  |                                 |          |
|-----------------------------|----------|----------|---------------------------------|----------|
|                             |          | Gross.   | Deduct old maintenance charges. | Net.     |
|                             | RS.      | RS.      | RS.                             | RS.      |
| Extensions and improvements | 14,000   | 14,426   | ..                              | 14,426   |
| Maintenance and repairs     | 4,18,004 | 4,17,721 | ..                              | 4,17,721 |
| Establishment               | 2,50,326 | 2,26,098 | ..                              | 2,21,838 |
| Tools and plant             | 68,300   | 51,085   | ..                              | 51,085   |
| Total                       | 7,41,020 | 7,09,330 | 4,260                           | 7,05,070 |
| Indirect charges            | ..       | 31,697   | 640                             | 31,057   |
| Grand Total                 | ..       | 7,41,027 | 4,900                           | 7,36,127 |

\* Exclusive of grant for old maintenance charges.

In the Kistna Eastern division a cattle-crossing at Aminapuram, improvements to Proddatur channel, drop across Nambigunta and Idupugollu channels, tail escape to the latter channel, a cattle-crossing at Avatapalli and one on Pedapad channel, road culvert opposite Buddavaram crossing on Ungutur left side channel, packing revetment on four sides of Sanivarapett crossing, excavation of right side channel of



KISTNA DELTA SYSTEM.

Dosapad channel from Rachakodu head sluice to 2½ miles downwards, extension of right side channel of Dosapad channel from Tummalapalli to Vennavapudi, Kudaravalli drain, improvements to Kuramaddali channel head sluice and to regulator to Butlercodu and Mamillacodu, ramp to Chevur crossings at 1st mile, pipe sluices along Rantumilli channel, pipe-sluices to Vaivaka channel, pipe-sluice to Gorricodu and tunnel across Rallagunta codu were completed. In the Kistna Western division, 8 works were completed and 11 were in progress.

In the Kistna Northern division, the headworks, the Main, Masulipatam, Ellore and Ryves' canals were maintained. The special repairs in connection with the raising of the groyne opposite the headsluice at Seetanagaram and for filling in the scour-hole in the apron near Bezwada under-sluice were carried out. Special repairs were also carried out to the headworks on both sides of Bezwada and Seetanagaram on account of the abnormal floods in the river during the month of August 1896. In the Kistna Eastern division, in addition to the ordinary and annual repairs carried out as usual during the working season, very heavy expenditure was incurred in closing the breaches caused by the floods of August 1896. In the Kistna Western division, ordinary and special repairs to canals, distributaries and drains were executed, and a sum of Rs. 21,000 was spent in partially closing breaches in the Bank and Nizam-patam canals and in Repalli main drain and Iskapalli channel.

The charges for establishment amounted to Rs. 2,21,838 and are made up of the following items:—

|                                     |                 |
|-------------------------------------|-----------------|
| 23 per cent. on Expenditure .. .. . | Rs. 97,576      |
| 10 " " on Direct revenue .. .. .    | 4,959           |
| 6 " " on Indirect revenue .. .. .   | 1,18,303        |
| <b>Total .. .. .</b>                | <b>2,21,838</b> |

The floating plant of the delta was repaired and kept in good order. The ferry ballants both in the Kistna Eastern and Western divisions were also repaired.

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         | 13,131          | 2,510                            | 1,385                  |
| Dredgers .. .. .                         | 4         | 69,000          | 2,175                            | 3,570                  |
| Iron punts .. .. .                       | 40        | 93,907          | 11,680                           | 12,536                 |
| Composite punts .. .. .                  | 33        | 79,319          | 13,330                           | 17,684                 |
| Iron punt small .. .. .                  | 1         | 250             | 250                              | 119                    |
| Trap punt .. .. .                        | 1         | 3,652           | 220                              | ..                     |
| Circular trap punt .. .. .               | 1         | 1,200           | 2,170                            | ..                     |
| Arched punt boat .. .. .                 | 1         | 900             | 350                              | 447                    |
| Engine for Arched Superintendent .. .. . | 1         | 224             | 55                               | 174                    |
| Engine for Arched Superintendent .. .. . | 11        | 17,758          | 2,210                            | 3,998                  |
| Staff boats .. .. .                      | 1         | 265             | ..                               | 38                     |
| Superintendent Engineer's dinghy .. .. . | 1         | 162             | ..                               | ..                     |
| Executive Engineer's pinnace .. .. .     | 1         | ..              | ..                               | ..                     |
| <b>Total .. .. .</b>                     | <b>96</b> | <b>2,85,768</b> | <b>31,880</b>                    | <b>29,950</b>          |

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. |
|                     | Rs.              | Rs.                                                           | Rs.                                                                | Rs.    | Rs.               | Rs.      | Rs.      |
| "Alexandra" .. .. . | 13,131           | 956                                                           | 265                                                                | 1,161  | 690               | 471      | ..       |

KISTNA DELTA SYSTEM.

The receipts collected in the Public Works Department amounted to Rs. 49,557, against a budget and revised estimate of Rs. 48,000 and Rs. 50,200, respectively, and are made up of the following items:—

|                                      |               |
|--------------------------------------|---------------|
| Receipts from plantations .. .. .    | Rs. 2,285     |
| " " from other canal produce .. .. . | 11,550        |
| " " from navigation .. .. .          | 21,679        |
| Rents of buildings .. .. .           | 1,889         |
| Water-supply of towns .. .. .        | 1,864         |
| Miscellaneous .. .. .                | 420           |
| <b>Total .. .. .</b>                 | <b>43,587</b> |
| Deduct refunds of Revenue .. .. .    | 30            |
| <b>Net total .. .. .</b>             | <b>49,557</b> |

The navigation charges (chiefly arbitrary) amounted to Rs. 89,692 against Rs. 64,961 during the previous year.

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

|                                  | Area occupied. | Area charged as irrigated. | Irrigation revenue. |
|----------------------------------|----------------|----------------------------|---------------------|
| First crop .. (1896-97 .. .. .)  | ACS. 501,857   | ACS. 482,017               | RS. 26,57,151       |
| Second crop .. (1896-97 .. .. .) | ACS. 608,916   | ACS. 481,114               | RS. 20,91,146       |
|                                  | 659            | 616                        | 2,221               |
|                                  | 281            | 291                        | 1,150               |

The revenue of the year was Rs. 32,920 less than that derived in the previous year. The decrease occurs chiefly under receipts under zemindari and inams and is due to remissions granted during the year, which amounted to Rs. 24,106 and Rs. 25,695, respectively, against Rs. 8,626 and Rs. 10,772 in the previous year.

The share of enhanced land revenue due to the works amounted to Rs. 1,46,786 as shown below:—

|                                                                                         |                 |
|-----------------------------------------------------------------------------------------|-----------------|
| Increments to the land assessment after the lands were brought under irrigation .. .. . | Rs. 46,115      |
| Land assessment on waste lands brought under irrigation .. .. .                         | 74,088          |
| " " on miscellaneous items .. .. .                                                      | 18,502          |
| 4 per cent. on sale-proceeds of tank-bed lands .. .. .                                  | 6,381           |
| <b>Total .. .. .</b>                                                                    | <b>1,46,786</b> |

The gross revenue and working expenses amounted to Rs. 4.67 and Rs. 1.76 per acre against Rs. 4.76 and Rs. 1.49, respectively, in the previous year.

The following statement shows the financial results:—

| Expenditure.                                       | During 1896-97.  | To end of 1896-97. | Receipts.                                                                                            | During 1896-97.  | To end of 1896-97. |
|----------------------------------------------------|------------------|--------------------|------------------------------------------------------------------------------------------------------|------------------|--------------------|
| Direct charges .. .. .                             | Rs. 7,09,330     | Rs. 99,61,909      | Direct receipts in the Public Works Department .. .. .                                               | Rs. 49,557       | Rs. 9,19,090       |
| Indirect charges .. .. .                           | 31,697           | 5,78,442           | Irrigation revenue .. .. .                                                                           | 20,59,375        | 3,73,31,667        |
| Collection charges in the Civil department .. .. . | 1,06,774         | 22,88,668          | Share of enhanced land revenue .. .. .                                                               | 1,46,786         | 44,09,478          |
| Interest on capital outlay—                        | .. .. .          | .. .. .            | Add revenue of the previous year brought into accounts .. .. .                                       | 320              | 320                |
| Direct charges .. .. .                             | 4,66,770         | 91,29,021          | <b>Total receipts .. .. .</b>                                                                        | <b>22,56,038</b> | <b>4,26,93,555</b> |
| <b>Total expenditure and charges .. .. .</b>       | <b>13,14,571</b> | <b>2,19,58,040</b> | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. .. . | 66,100           | 32,93,036          |
| Surplus revenue .. .. .                            | 8,75,367         | 1,74,42,480        | <b>Net total .. .. .</b>                                                                             | <b>21,89,938</b> | <b>3,94,00,520</b> |
| <b>Total .. .. .</b>                               | <b>21,89,938</b> | <b>3,94,00,520</b> |                                                                                                      |                  |                    |

The net return, after paying interest charges, was 6.85 per cent. on the total capital outlay against 8.71 per cent. in the previous year.

## KISTNA DELTA SYSTEM.

## ADMINISTRATION REPORT OF THE

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## KISTNA DELTA SYSTEM.

*Pulleru and Gudivada Channels.*—The following works were completed and brought into use during the year :—

Sepudi Mallapalli channel,  
Sepudi channel,  
Dodapad side channel from 10/7 miles of Gudivada channel,  
Rudrapaka channel from 14th mile of Gudivada channel.  
Improvements to Gudivada channel.

The following branches of Pedalanka channel—Vennar Codu right and left branches, Mattegunta right and left branches, Tumma Codu left branch, Butchilanka Codu at 27 miles 7 feet right and left branches, Kodangi channel branch and Kalidindi channel at 22 miles,

Improvements to existing Nandirazu Codu and  
Savandravaram Codu,  
The Pedalanka channel was almost completed.

*Bantumilli Canal.*—Mattam channel—Anadalapalli channel was almost completed except masonry works. Annavaram and Cheviur affluents, Vinuacota and Kalidindi drains and the drain from Ilur road near Chinamukkeni to Inam drain were excavated and brought into use. The walls of the rest-house at Lakshmipuram were raised to full height.

*Poira Canal.*—The rest-house walls at Vadali were raised to full height and the roofing was in progress. The walls of the out-houses were built up to 5 feet above ground.

*Ryges Canal.*—The rest-house at Komatigunta weir was completed except out-houses. The following works were completed: Culvert across Perikeed road on north side channel, culvert and tail escape on north side channel, road culvert on Singavaram channel across Perikeed, tail escape on Dosapad channel at 10 miles 300 feet, headsluice to Arapirala Punta Codu, improvements to a bridge to convert it into a regular at 3rd mile of Kunderu channel, improvements to Dosapad channel headsluice, excavating Bhumiocodu of Dosapad channel, tail escape on Lingavaram channel, improvements to drop in the 6th mile of Kunderu channel and excavation of left side channel from above drop in the 6th mile of Kunderu channel.

## Kistna Western Division.

*Main Canal.*—Widening the canal, wharf wall in right bank at Seetanagaram, wall in the right side of lock channel in rear of Seetanagaram lock, and improvements to and extension of No. 1 branch of Imani channel and drainage inlet in 4th mile were completed. The work "forming an approach ramp to wharf wall on right bank at 0/5 mile" was put in hand during the year and nearly completed. Cattle-crossings originally put in hand under "maintenance and repairs," but subsequently transferred to "Capital account" were completed with the exception of towpath bridges.

*Bank Canal.*—"Diversion of canal in 7 and 8 miles near Vallabhapuram, and headsluice to Kollur and Varahapuram channels were completed. Lock establishment sheds at Vellattur lock and excavation of Varahapuram channel and other works connected therewith were in progress. Earthwork from 0/0 to 4/5 miles was completed and from 4/5 to end was in progress. Earthwork for Iskapalli channel and its branches was almost completed except sectioning in some portions of side channels. Bridges and irrigation sluices were in fair progress. The earthwork of Allapuram, Vullipalem, Aravapalli and Kuchinapudi branch channels was in progress. The wooden fender piles foot bridge in front of headsluice, Bank canal, was completed during the closure. Materials required for improving the headsluice channel were collected. Rest-house at Kollur was completed except flooring, and the wood-work of that at Sivangulapalem was in progress.

*Commamur Canal.*—The following works were completed :—

Side walls in rear channel of Commamur lock,  
Widening and constructing revetment in 1st mile,  
Lock establishment sheds at Nallamada and Kollimerla,  
Reconstructing and extending revetment in rear of Kollimerla weir channel,  
Opening vents in east side wall of Kollimerla aqueduct,  
Under-tunnel at 8 miles  $\frac{1}{2}$  furlong, at Jagerlamudi, and  
Masonry bridge over Santaravur side channel.

The following works were in progress: Lock establishment sheds at Nallamada, Puchurvagu, Aleru, Peddaganjam and Jagerlamudi, rest-house at Karlapalem, Bapatla tank project works, and improvements to A. B. channel.

*Nizampatam Canal.*—The bridge at Turumalla over west side channel was completed. The works—Improvements to west side channel, Rambhthlapalem channel, lock establishment sheds at Intur, Nallavada and Nizampatam tidal locks and rest-house at Kuchipudi and wharf wall at Tenali—were in progress.

*Romperu Drain.*—The excavation of side drain, cutting and raising the left flood bank and drainages 1 and 2 were completed and fixing bench-mark stones was nearly finished.

*Kopalli Drain.*—All works in this drain were completed.

*Tenali Drain.*—Excavation of drain was completed. Bridges on the drain at Ponnur, Intur and Ponnur-Isandole roads were completed except parapet walls for the latter. Fixing bench-mark stones was in progress.

*Repalli Main Drain.*—The straight cut was excavated to its true level. Aqueduct to carry Vellatur channel was nearly completed. Foundations were got in for the iron-girder bridge to carry Nandivelugu-Ilur road at 9 miles.

*Tungabhadra Drain.*—Machavaram straight cut was made for about 2 $\frac{1}{2}$  miles from tail end and for about a mile from Mulukuduru road bridge at the head.

*Allapuram and Kuchinapudi Drains.*—The former was completed to end, except forming slopes in a few places; and the latter up to 6 furlongs from head.

*Pedapalli Drain.*—Earthwork was in good progress.

*Nallamada Drain.*—Much of the materials required for extending the bridge at 7 miles 15 chains (Yarakalva bridge) were collected at site.

The expenditure under this head was incurred in constructing two Godavari pattern punts, two stern-wheel steamers in the Kidderpore Dockyard and single and double punt scouring dams for the Kistna Northern division. In the Kistna Eastern division, 18 iron ballacuts (ferry-flats) were completed.

## REVENUE ACCOUNT.

The charges on Revenue Account were as shown below :—

| Departmental heads.         | Grant.*  | Outlay.  |                                 |          |
|-----------------------------|----------|----------|---------------------------------|----------|
|                             |          | Gross.   | Deduct old maintenance charges. | Net.     |
|                             | rs.      | rs.      | rs.                             | rs.      |
| Extensions and improvements | 14,000   | 14,426   | ..                              | 14,426   |
| Maintenance and repairs     | 4,18,094 | 4,17,721 | ..                              | 4,17,721 |
| Establishment               | 2,50,626 | 2,26,098 | ..                              | 2,21,838 |
| Tools and plant             | 58,300   | 51,085   | ..                              | 51,085   |
| Total                       | 7,41,020 | 7,09,330 | 4,260                           | 7,05,070 |
| Indirect charges            | ..       | 31,687   | 640                             | 31,067   |
| Grand Total                 | ..       | 7,41,027 | 4,900                           | 7,36,127 |

\* Exclusive of grant for old maintenance charges.

In the Kistna Eastern division a cattle-crossing at Aminpuram, improvements to Proddatur channel, drop across Nambigunta and Idupugollu channels, tail escape to the latter channel, a cattle-crossing at Avatapalli and one on Pedapad channel, road culvert opposite Buddavaram crossing on Ungutur left side channel, packing revetment on four sides of Sanivarapett crossing, excavation of right side channel of



## KISTNA DELTA SYSTEM.

Synopsis of results.

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

|                                                                                                                        |             |                                                                                                                                                                |       |             |
|------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------|
| 1. Areas charged as irrigated.                                                                                         | First crop. | Total                                                                                                                                                          | aca.  | 482,017     |
|                                                                                                                        |             | Assumed old irrigation                                                                                                                                         | .. .. | 68,894      |
|                                                                                                                        |             | New irrigation due to works                                                                                                                                    | .. .. | 413,123     |
|                                                                                                                        | Second crop | .. ..                                                                                                                                                          | .. .. | 616         |
| 2. Net revenue in 1895-97 after deducting interest and all charges.                                                    | Total       | .. ..                                                                                                                                                          | Rs.   | 9,41,467    |
|                                                                                                                        |             | 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 | .. .. | 8,75,367    |
| 3. Accumulated net surplus revenue (exclusive of all that assumed to be due to old irrigation works) to end of 1895-97 | .. ..       | .. ..                                                                                                                                                          | .. .. | 1,74,42,480 |
| 4. Total expenditure on Capital Account, both direct and indirect, which has secured the results shown above           | .. ..       | .. ..                                                                                                                                                          | .. .. | 1,27,84,247 |
| 5. Year from which amounts against items 3 and 4 commenced to be calculated                                            | .. ..       | .. ..                                                                                                                                                          | .. .. | 1855-56     |

## GENERAL REMARKS.

Difficulty in procuring labour.

There was the usual difficulty in procuring labour, especially along the lower half of the Bank canal section.

Epidemics.

There was a sudden outbreak of cholera in a few villages adjoining the Tungabhadra drain in February 1897 in the Kistna Western division, chiefly among the coolies working on the drain, resulting in four deaths. The camp was put in order by the hospital assistant at Duggirala.

Tank-bed lands.

During the year, 2,393 acres of tank-bed lands rendered available for cultivation by the delta works were sold by auction for Rs. 1,10,209 and 1,000 acres of the Bapatla tank-bed were granted to the Nabob of Masulipatam at a nominal rate of Rs. 10 per acre.

Floods of August 1896.

In August 1896, there was an unprecedented flood in the Kistna river which exceeded the maximum flood previously recorded by 1.02 feet. The incidence of the maximum recorded flood-level in the Kistna in this year has brought to the front several points of interest. The anicut crest was raised by a solid wall 1 foot high in 1891 and again by another 2 feet in 1894. The Kistna railway bridge, about half a mile below the anicut, was completed in 1893. The bridge and anicut which are about the same length are not opposite each other, but as it were *en echelon*, the centre of the bridge being about 250 feet to the south or right of the centre of the anicut. The left under-slucies of the anicut and adjacent length of weir are thus apparently masked by the training bank connecting the bridge end with the left flank of the anicut. The effect of these works on the anicut as evidenced by the floods of August, was the subject of considerable discussion and a question arose whether the bridge should not be lengthened.

Inspection of the Inspector-General of Irrigation.

The works were inspected by Mr. T. Higham, Inspector-General of Irrigation in India, in November 1896, and whose note is published with G.O., No. 231 I., dated 6th March 1897. The conclusions come to were that, rather than lengthen the bridge, it would be preferable to remove the upper 2 feet of the anicut and substitute falling shutters, that the anicut apron should be extended and the training bank strengthened. On the Seetanagaram side of the anicut, a second regulator was commenced a chain or two below the existing one, in 1895. This, although incomplete, was of service in diminishing the head against the upper regulator and it has been proposed to construct a second or ancillary regulator also on the Bezawada side with the same object.

## No. 3.—PENNER ANICUT SYSTEM.

## CAPITAL ACCOUNT.

Total outlay.

An expenditure of Rs. 6,017 was incurred on works during the year against a grant of Rs. 6,000. The total capital outlay, including indirect charges to the end of the year, was Rs. 18,96,667 against Rs. 18,97,570, the cost of construction as now estimated.

Progress of works.

The Kudithipalem channel diversion works were completed. The surplus weir of Venkannapalem tank was in progress and land compensation for Pudiparti drainage channel was paid.

## 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. — 64 | Rs. 2,713 | Rs. 3,564                       | Rs. — 851 |
| Maintenance and repairs .. .. .     | 6,361    | 21,133    | 13,860                          | 7,293     |
| Establishment .. .. .               | 10,338   | 20,465    | 11,027                          | 9,428     |
| Tools and plant .. .. .             | 45       | 31        | 5                               | 26        |
| Total .. .. .                       | 16,680   | 44,352    | 28,456                          | 15,896    |
| Indirect charges .. .. .            | ..       | 2,864     | 1,544                           | 1,320     |
| Grand Total .. .. .                 | ..       | 47,216    | 30,000                          | 17,216    |

Grant and outlay.

\* Exclusive of grant for old maintenance charges.

Six minor works were completed and eight were in progress.

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

The charges for establishment amounted to Rs. 9,428 as shown below :—

|                                     |           |
|-------------------------------------|-----------|
| 23 per cent. on Expenditure .. .. . | Rs. 1,864 |
| 13 " on Direct revenue .. .. .      | 44        |
| 6 " on Indirect revenue .. .. .     | 8,020     |
| Total .. .. .                       | 9,428     |

Extensions and improvements.

Maintenance and repairs.

Establishment.

The receipts in the Public Works Department amounted to Rs. 438 against a budget and revised estimate of Rs. 400 and Rs. 700, respectively, realized chiefly by sales of grass on canal and channel banks.

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 .. { 1896-97 .. .. .  | 67,105         | 64,907                     | 2,42,833            |
| .. { 1895-96 .. .. .             | 65,548         | 67,892                     | 2,57,731            |
| Second crop .. { 1896-97 .. .. . | 8,246          | 8,248                      | 3,002               |
| .. { 1895-96 .. .. .             | 2,286          | 2,238                      | 5,667               |

The decrease in the revenue during the year was due to the grant of remissions owing to the unfavourable character of the season amounting to Rs. 13,000 against Rs. 4,000 in the previous year.

The share of enhanced land revenue due to the works amounted to Rs. 21,072 as shown below :—

Enhanced share of land revenue.

|                                                                 |            |
|-----------------------------------------------------------------|------------|
| Land assessment on waste lands brought under irrigation .. .. . | Rs. 19,594 |
| " " on miscellaneous items .. .. .                              | 923        |
| 4 per cent. on sale-proceeds of tank-bed lands .. .. .          | 555        |
| Total .. .. .                                                   | 21,072     |

The gross revenue and working expenses per acre amounted to Rs. 3.99 and Re. 0.81, respectively, against Rs. 4.07 and Re. 0.85 in the previous year.

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# ADMINISTRATION REPORT OF THE

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## PENNER ANICUT SYSTEM.

Financial results.

The following statement shows the financial results:—

| Expenditure.                                     | During 1896-97. | To end of 1896-97. | Receipts.                                                                                          | During 1896-97. | To end of 1896-97. |
|--------------------------------------------------|-----------------|--------------------|----------------------------------------------------------------------------------------------------|-----------------|--------------------|
|                                                  | RS.             | RS.                |                                                                                                    | RS.             | RS.                |
| Direct charges .. ..                             | 44,352          | 12,60,062          | Direct receipts in the Public Works Department ..                                                  | 438             | 8,461              |
| Indirect charges .. ..                           | 2,864           | 1,00,222           | Irrigation revenue .. ..                                                                           | 2,50,665        | 67,44,587          |
| Collection charges in the Civil Department .. .. | 7,737           | 2,10,231           | Share of enhanced land revenue ..                                                                  | 21,072          | 5,04,021           |
| Interest on capital outlay—                      |                 |                    | Total receipts .. ..                                                                               | 2,72,175        | 72,56,869          |
| Direct charges .. ..                             | 65,763          | 18,26,489          | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. .. | 87,000          | 28,27,282          |
| Total expenditure and charges ..                 | 1,20,716        | 33,97,004          | Net Total .. ..                                                                                    | 1,85,175        | 44,29,587          |
| Surplus revenue .. ..                            | 64,459          | 10,32,583          |                                                                                                    |                 |                    |
| Total .. ..                                      | 1,85,175        | 44,29,587          |                                                                                                    |                 |                    |

The net return, after paying interest charges, was 3.40 per cent. on the total capital outlay against 3.87 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 .. ..                       | Ac. | 64,907    |
|                                                                                                                           |                | Assumed old irrigation .. ..      | "   | 40,680    |
|                                                                                                                           | Second crop .. | New irrigation due to works .. .. | "   | 24,227    |
|                                                                                                                           |                | Total .. ..                       | "   | 3,246     |
| 2. Net revenue in 1896-97 after deducting interest and all charges.                                                       | Total .. ..    | Assumed old irrigation .. ..      | "   | 454       |
|                                                                                                                           |                | New irrigation due to works .. .. | "   | 2,792     |
| 3. Accumulated net surplus revenue (exclusive of all that assumed to be due to old irrigation works) to end of 1896-97 .. | Total .. ..    | Assumed old irrigation .. ..      | "   | 1,51,459  |
|                                                                                                                           |                | New irrigation due to works .. .. | "   | 64,159    |
| 4. Total expenditure on Capital Account, both direct and indirect, which has secured the result shown above ..            | Total .. ..    | Assumed old irrigation .. ..      | "   | 10,32,583 |
|                                                                                                                           |                | New irrigation due to works .. .. | "   | 18,96,667 |
| 5. Year from which amounts against items 3 and 4 commenced to be calculated .. ..                                         | Total .. ..    | Assumed old irrigation .. ..      | "   | 1860-61   |
|                                                                                                                           |                | New irrigation due to works .. .. | "   |           |

### GENERAL REMARKS.

State of the river.

The highest fresh in the Pennér during the year occurred on the 29th November 1896, when the depth of water over the Pennér anicut crest was only 2.90. The highest flood on record was 19' 3", which occurred on 30th November 1892.

## No. 4.—SANGAM ANICUT SYSTEM.

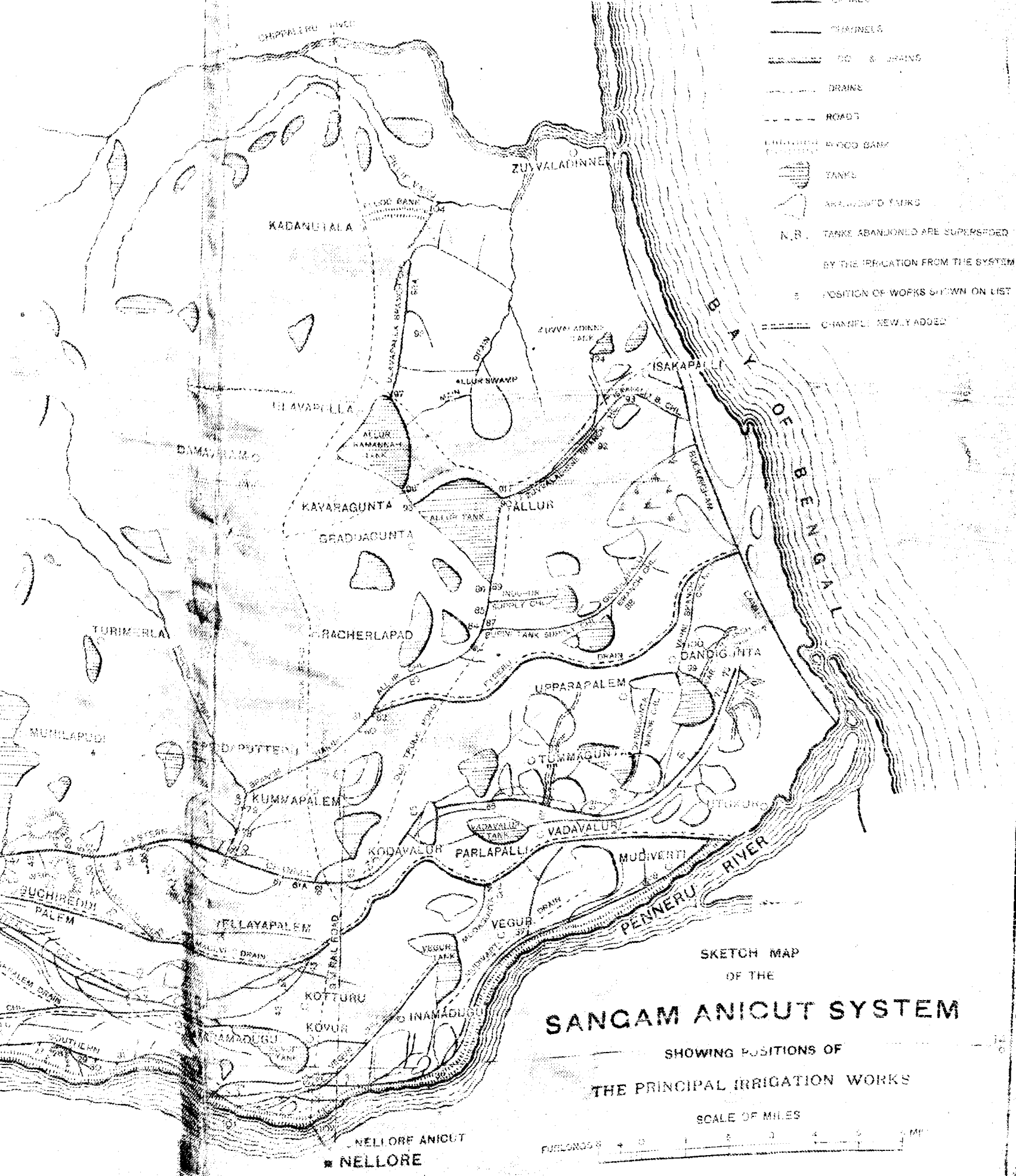
### CAPITAL ACCOUNT.

Grant and outlay.

The following statement exhibits the grant of, and outlay during, the year:—

| Departmental heads.                         | Grant. | Outlay. |
|---------------------------------------------|--------|---------|
|                                             | RS.    | RS.     |
| <b>Direct Charges.</b>                      |        |         |
| Works .. ..                                 | 15,447 | 16,015  |
| Establishment .. ..                         | 3,553  | 2,666   |
| Tools and plant .. ..                       | ..     | 1,378   |
| Less by exchange .. ..                      | ..     | ..      |
| Total .. ..                                 | 19,000 | 17,333  |
| <b>Indirect Charges.</b>                    |        |         |
| Capitalized statement of land revenue .. .. | ..     | 273     |
| Leave and pension allowances .. ..          | ..     | 273     |
| Total .. ..                                 | ..     | 546     |
| Grand Total .. ..                           | ..     | 17,700  |

| NORTH CHANNEL |      | SOUTH CHANNEL |      |
|---------------|------|---------------|------|
| 1. Head Dam   | 1.00 | 1. Head Dam   | 1.00 |
| 2. Head Dam   | 1.00 | 2. Head Dam   | 1.00 |
| 3. Head Dam   | 1.00 | 3. Head Dam   | 1.00 |
| 4. Head Dam   | 1.00 | 4. Head Dam   | 1.00 |
| 5. Head Dam   | 1.00 | 5. Head Dam   | 1.00 |
| 6. Head Dam   | 1.00 | 6. Head Dam   | 1.00 |
| 7. Head Dam   | 1.00 | 7. Head Dam   | 1.00 |
| 8. Head Dam   | 1.00 | 8. Head Dam   | 1.00 |
| 9. Head Dam   | 1.00 | 9. Head Dam   | 1.00 |
| 10. Head Dam  | 1.00 | 10. Head Dam  | 1.00 |
| 11. Head Dam  | 1.00 | 11. Head Dam  | 1.00 |
| 12. Head Dam  | 1.00 | 12. Head Dam  | 1.00 |
| 13. Head Dam  | 1.00 | 13. Head Dam  | 1.00 |
| 14. Head Dam  | 1.00 | 14. Head Dam  | 1.00 |
| 15. Head Dam  | 1.00 | 15. Head Dam  | 1.00 |
| 16. Head Dam  | 1.00 | 16. Head Dam  | 1.00 |
| 17. Head Dam  | 1.00 | 17. Head Dam  | 1.00 |
| 18. Head Dam  | 1.00 | 18. Head Dam  | 1.00 |
| 19. Head Dam  | 1.00 | 19. Head Dam  | 1.00 |
| 20. Head Dam  | 1.00 | 20. Head Dam  | 1.00 |
| 21. Head Dam  | 1.00 | 21. Head Dam  | 1.00 |
| 22. Head Dam  | 1.00 | 22. Head Dam  | 1.00 |
| 23. Head Dam  | 1.00 | 23. Head Dam  | 1.00 |
| 24. Head Dam  | 1.00 | 24. Head Dam  | 1.00 |
| 25. Head Dam  | 1.00 | 25. Head Dam  | 1.00 |
| 26. Head Dam  | 1.00 | 26. Head Dam  | 1.00 |
| 27. Head Dam  | 1.00 | 27. Head Dam  | 1.00 |
| 28. Head Dam  | 1.00 | 28. Head Dam  | 1.00 |
| 29. Head Dam  | 1.00 | 29. Head Dam  | 1.00 |
| 30. Head Dam  | 1.00 | 30. Head Dam  | 1.00 |
| 31. Head Dam  | 1.00 | 31. Head Dam  | 1.00 |
| 32. Head Dam  | 1.00 | 32. Head Dam  | 1.00 |
| 33. Head Dam  | 1.00 | 33. Head Dam  | 1.00 |
| 34. Head Dam  | 1.00 | 34. Head Dam  | 1.00 |
| 35. Head Dam  | 1.00 | 35. Head Dam  | 1.00 |
| 36. Head Dam  | 1.00 | 36. Head Dam  | 1.00 |
| 37. Head Dam  | 1.00 | 37. Head Dam  | 1.00 |
| 38. Head Dam  | 1.00 | 38. Head Dam  | 1.00 |
| 39. Head Dam  | 1.00 | 39. Head Dam  | 1.00 |
| 40. Head Dam  | 1.00 | 40. Head Dam  | 1.00 |
| 41. Head Dam  | 1.00 | 41. Head Dam  | 1.00 |
| 42. Head Dam  | 1.00 | 42. Head Dam  | 1.00 |
| 43. Head Dam  | 1.00 | 43. Head Dam  | 1.00 |
| 44. Head Dam  | 1.00 | 44. Head Dam  | 1.00 |
| 45. Head Dam  | 1.00 | 45. Head Dam  | 1.00 |
| 46. Head Dam  | 1.00 | 46. Head Dam  | 1.00 |
| 47. Head Dam  | 1.00 | 47. Head Dam  | 1.00 |
| 48. Head Dam  | 1.00 | 48. Head Dam  | 1.00 |
| 49. Head Dam  | 1.00 | 49. Head Dam  | 1.00 |
| 50. Head Dam  | 1.00 | 50. Head Dam  | 1.00 |
| 51. Head Dam  | 1.00 | 51. Head Dam  | 1.00 |
| 52. Head Dam  | 1.00 | 52. Head Dam  | 1.00 |
| 53. Head Dam  | 1.00 | 53. Head Dam  | 1.00 |
| 54. Head Dam  | 1.00 | 54. Head Dam  | 1.00 |
| 55. Head Dam  | 1.00 | 55. Head Dam  | 1.00 |
| 56. Head Dam  | 1.00 | 56. Head Dam  | 1.00 |
| 57. Head Dam  | 1.00 | 57. Head Dam  | 1.00 |
| 58. Head Dam  | 1.00 | 58. Head Dam  | 1.00 |
| 59. Head Dam  | 1.00 | 59. Head Dam  | 1.00 |
| 60. Head Dam  | 1.00 | 60. Head Dam  | 1.00 |
| 61. Head Dam  | 1.00 | 61. Head Dam  | 1.00 |
| 62. Head Dam  | 1.00 | 62. Head Dam  | 1.00 |
| 63. Head Dam  | 1.00 | 63. Head Dam  | 1.00 |
| 64. Head Dam  | 1.00 | 64. Head Dam  | 1.00 |
| 65. Head Dam  | 1.00 | 65. Head Dam  | 1.00 |
| 66. Head Dam  | 1.00 | 66. Head Dam  | 1.00 |
| 67. Head Dam  | 1.00 | 67. Head Dam  | 1.00 |
| 68. Head Dam  | 1.00 | 68. Head Dam  | 1.00 |
| 69. Head Dam  | 1.00 | 69. Head Dam  | 1.00 |
| 70. Head Dam  | 1.00 | 70. Head Dam  | 1.00 |
| 71. Head Dam  | 1.00 | 71. Head Dam  | 1.00 |
| 72. Head Dam  | 1.00 | 72. Head Dam  | 1.00 |
| 73. Head Dam  | 1.00 | 73. Head Dam  | 1.00 |
| 74. Head Dam  | 1.00 | 74. Head Dam  | 1.00 |
| 75. Head Dam  | 1.00 | 75. Head Dam  | 1.00 |
| 76. Head Dam  | 1.00 | 76. Head Dam  | 1.00 |
| 77. Head Dam  | 1.00 | 77. Head Dam  | 1.00 |
| 78. Head Dam  | 1.00 | 78. Head Dam  | 1.00 |
| 79. Head Dam  | 1.00 | 79. Head Dam  | 1.00 |
| 80. Head Dam  | 1.00 | 80. Head Dam  | 1.00 |
| 81. Head Dam  | 1.00 | 81. Head Dam  | 1.00 |
| 82. Head Dam  | 1.00 | 82. Head Dam  | 1.00 |
| 83. Head Dam  | 1.00 | 83. Head Dam  | 1.00 |
| 84. Head Dam  | 1.00 | 84. Head Dam  | 1.00 |
| 85. Head Dam  | 1.00 | 85. Head Dam  | 1.00 |
| 86. Head Dam  | 1.00 | 86. Head Dam  | 1.00 |
| 87. Head Dam  | 1.00 | 87. Head Dam  | 1.00 |
| 88. Head Dam  | 1.00 | 88. Head Dam  | 1.00 |
| 89. Head Dam  | 1.00 | 89. Head Dam  | 1.00 |
| 90. Head Dam  | 1.00 | 90. Head Dam  | 1.00 |
| 91. Head Dam  | 1.00 | 91. Head Dam  | 1.00 |
| 92. Head Dam  | 1.00 | 92. Head Dam  | 1.00 |
| 93. Head Dam  | 1.00 | 93. Head Dam  | 1.00 |
| 94. Head Dam  | 1.00 | 94. Head Dam  | 1.00 |
| 95. Head Dam  | 1.00 | 95. Head Dam  | 1.00 |
| 96. Head Dam  | 1.00 | 96. Head Dam  | 1.00 |
| 97. Head Dam  | 1.00 | 97. Head Dam  | 1.00 |
| 98. Head Dam  | 1.00 | 98. Head Dam  | 1.00 |
| 99. Head Dam  | 1.00 | 99. Head Dam  | 1.00 |
| 100. Head Dam | 1.00 | 100. Head Dam | 1.00 |



Progress of works.

Grant and outlay.

Extensions and improvements. Maintenance and repairs.

Establishment.

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

Enhanced share of land revenue.

and

The total capital outlay to the end of the year, including indirect charges, amounted to Rs. 38,28,121 against Rs. 40,48,718, the cost of construction as now estimated.

The masonry dam of the Kanighri reservoir was provided with screw-gearing shutters and the Eastern channel—minor channel, nineteenth mile extension works, the Varni branch channel No. 2 head-sluice, and the excavation of the Allur main drain affluents were completed, and the Varni branch channel No. 2 excavation, three vents and one regulator, drainage scheme for Dampur tank-bed, minor branch channel 1 mile 1,720 feet, and Eastern channel thirteenth mile left bank excavation were in progress.

## 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. 4,020     | Rs. 5,520     | Rs. 345                         | Rs. 5,181     |
| Maintenance and repairs .. .. .     | 20,116        | 31,411        | 11,884                          | 19,527        |
| Establishment .. .. .               | 15,751        | 26,848        | 11,153                          | 15,695        |
| Tools and plant .. .. .             | — 57          | —             | 57                              | — 57          |
| <b>Total .. .. .</b>                | <b>39,930</b> | <b>63,785</b> | <b>23,439</b>                   | <b>40,346</b> |
| Indirect charges .. .. .            | —             | 8,758         | 1,561                           | 2,197         |
| <b>Grand Total .. .. .</b>          | <b>39,930</b> | <b>67,543</b> | <b>25,000</b>                   | <b>42,543</b> |

\* Exclusive of grant for old maintenance charges.

Seven minor works were completed and five were in progress.

Ordinary and special repairs to the anicut, canals and channels were carried out and the works were maintained in good order.

The charges for establishment amounted to Rs. 15,695 as shown below :—

|                                     |               |
|-------------------------------------|---------------|
| 22 per cent. on Expenditure .. .. . | Rs. 5,268     |
| 10 „ „ on Direct revenue .. .. .    | 59            |
| 6 „ „ on Indirect revenue .. .. .   | 10,368        |
| <b>Total .. .. .</b>                | <b>15,695</b> |

The receipts in the Public Works Department amounted to Rs. 561 against a budget and revised estimate of Rs. 600.

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

|                                  | Area occupied. | Area charged as irrigated. | Irrigation revenue. |
|----------------------------------|----------------|----------------------------|---------------------|
| First crop .. (1896-97 .. .. .)  | Rs. 74,868     | Rs. 74,876                 | Rs. 2,90,654        |
| Second crop .. (1895-96 .. .. .) | 75,954         | 78,557                     | 2,95,839            |
| Second crop .. (1896-97 .. .. .) | 7,119          | 7,119                      | 21,751              |
| Second crop .. (1895-96 .. .. .) | 3,796          | 3,796                      | 10,928              |

The share of enhanced land revenue due to the works amounted to Rs. 23,055 as shown below :—

|                                                                 |               |
|-----------------------------------------------------------------|---------------|
| Land assessment on waste lands brought under irrigation .. .. . | Rs. 15,502    |
| „ „ on miscellaneous items .. .. .                              | 391           |
| 4 per cent. on sale-proceeds of tank-bed lands .. .. .          | 7,162         |
| <b>Total .. .. .</b>                                            | <b>23,055</b> |

The gross revenue and working expenses per acre amounted to Rs. 4.29 and Re. 0.97, respectively, against Rs. 4.28 and Re. 1.09 in the previous year.



SHOWING POSITIONS OF  
THE PRINCIPAL IRRIGATION WORKS

SCALE OF MILES

4 3 4 3 4



| Line | Description            | M. | Feet |
|------|------------------------|----|------|
|      | WATER TABLE EL.        |    |      |
| 50   | 10' to 12' HAZ. STRONG | 7  | 4092 |
|      | 10' to 12'             | 12 | 3656 |
| 51   | 10' to 12' HAZ. STRONG | 12 | 4090 |
|      | 10' to 12'             | 13 | 4356 |
| 52   | 10' to 12' HAZ. STRONG | 13 | 3653 |
|      | 10' to 12'             |    |      |
|      | WATER TABLE EL.        |    |      |
| 53   | 10' to 12' HAZ. STRONG | 7  | 4092 |
|      | 10' to 12'             | 12 | 3656 |
| 54   | 10' to 12' HAZ. STRONG | 12 | 4090 |
|      | 10' to 12'             | 13 | 4356 |
| 55   | 10' to 12' HAZ. STRONG | 13 | 3653 |
|      | 10' to 12'             |    |      |
|      | WATER TABLE EL.        |    |      |
| 56   | 10' to 12' HAZ. STRONG | 7  | 4092 |
|      | 10' to 12'             | 12 | 3656 |
| 57   | 10' to 12' HAZ. STRONG | 12 | 4090 |
|      | 10' to 12'             | 13 | 4356 |
| 58   | 10' to 12' HAZ. STRONG | 13 | 3653 |
|      | 10' to 12'             |    |      |
|      | WATER TABLE EL.        |    |      |
| 59   | 10' to 12' HAZ. STRONG | 7  | 4092 |
|      | 10' to 12'             | 12 | 3656 |
| 60   | 10' to 12' HAZ. STRONG | 12 | 4090 |
|      | 10' to 12'             | 13 | 4356 |
| 61   | 10' to 12' HAZ. STRONG | 13 | 3653 |
|      | 10' to 12'             |    |      |
|      | WATER TABLE EL.        |    |      |
| 62   | 10' to 12' HAZ. STRONG | 7  | 4092 |
|      | 10' to 12'             | 12 | 3656 |
| 63   | 10' to 12' HAZ. STRONG | 12 | 4090 |
|      | 10' to 12'             | 13 | 4356 |
| 64   | 10' to 12' HAZ. STRONG | 13 | 3653 |
|      | 10' to 12'             |    |      |
|      | WATER TABLE EL.        |    |      |
| 65   | 10' to 12' HAZ. STRONG | 7  | 4092 |
|      | 10' to 12'             | 12 | 3656 |
| 66   | 10' to 12' HAZ. STRONG | 12 | 4090 |
|      | 10' to 12'             | 13 | 4356 |
| 67   | 10' to 12' HAZ. STRONG | 13 | 3653 |
|      | 10' to 12'             |    |      |
|      | WATER TABLE EL.        |    |      |
| 68   | 10' to 12' HAZ. STRONG | 7  | 4092 |
|      | 10' to 12'             | 12 | 3656 |
| 69   | 10' to 12' HAZ. STRONG | 12 | 4090 |
|      | 10' to 12'             | 13 | 4356 |
| 70   | 10' to 12' HAZ. STRONG | 13 | 3653 |
|      | 10' to 12'             |    |      |
|      | WATER TABLE EL.        |    |      |
| 71   | 10' to 12' HAZ. STRONG | 7  | 4092 |
|      | 10' to 12'             | 12 | 3656 |
| 72   | 10' to 12' HAZ. STRONG | 12 | 4090 |
|      | 10' to 12'             | 13 | 4356 |
| 73   | 10' to 12' HAZ. STRONG | 13 | 3653 |
|      | 10' to 12'             |    |      |
|      | WATER TABLE EL.        |    |      |
| 74   | 10' to 12' HAZ. STRONG | 7  | 4092 |
|      | 10' to 12'             | 12 | 3656 |
| 75   | 10' to 12' HAZ. STRONG | 12 | 4090 |
|      | 10' to 12'             | 13 | 4356 |
| 76   | 10' to 12' HAZ. STRONG | 13 | 3653 |
|      | 10' to 12'             |    |      |
|      | WATER TABLE EL.        |    |      |
| 77   | 10' to 12' HAZ. STRONG | 7  | 4092 |
|      | 10' to 12'             | 12 | 3656 |
| 78   | 10' to 12' HAZ. STRONG | 12 | 4090 |
|      | 10' to 12'             | 13 | 4356 |
| 79   | 10' to 12' HAZ. STRONG | 13 | 3653 |
|      | 10' to 12'             |    |      |
|      | WATER TABLE EL.        |    |      |
| 80   | 10' to 12' HAZ. STRONG | 7  | 4092 |
|      | 10' to 12'             | 12 | 3656 |
| 81   | 10' to 12' HAZ. STRONG | 12 | 4090 |
|      | 10' to 12'             | 13 | 4356 |
| 82   | 10' to 12' HAZ. STRONG | 13 | 3653 |
|      | 10' to 12'             |    |      |
|      | WATER TABLE EL.        |    |      |
| 83   | 10' to 12' HAZ. STRONG | 7  | 4092 |
|      | 10' to 12'             | 12 | 3656 |
| 84   | 10' to 12' HAZ. STRONG | 12 | 4090 |
|      | 10' to 12'             | 13 | 4356 |
| 85   | 10' to 12' HAZ. STRONG | 13 | 3653 |
|      | 10' to 12'             |    |      |
|      | WATER TABLE EL.        |    |      |
| 86   | 10' to 12' HAZ. STRONG | 7  | 4092 |
|      | 10' to 12'             | 12 | 3656 |
| 87   | 10' to 12' HAZ. STRONG | 12 | 4090 |
|      | 10' to 12'             | 13 | 4356 |
| 88   | 10' to 12' HAZ. STRONG | 13 | 3653 |
|      | 10' to 12'             |    |      |
|      | WATER TABLE EL.        |    |      |
| 89   |                        |    |      |

## REFERENCE

|                                                                                       |              |
|---------------------------------------------------------------------------------------|--------------|
|  | RIVER        |
|  | CANAL        |
|  | DRAIN        |
|  | TANK         |
|  | RAILWAY LINE |
|  | ROAD         |
|  | EMBANKMENT   |

5 POSITION OF WORKS SHOWN ON LIST



## KURNOOL-CUDDAPAH CANAL.

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"(ii) In the next five years, half the full water-rate shall be charged on the entire area of the block in addition to the dry assessment.

"(iii) After ten years, full water-rate shall be charged on the entire area of the block in addition to the dry assessment.

"(iv) The charge for water shall be liable to revision, at the discretion of Government, on the expiry of the current term of settlement, provided, however, that the change shall not take effect before the expiration of the ten-year period allowed under the rules."

Note.—The charge prescribed in rules (ii) and (iii) shall be leviable on the entire area of the block, whether irrigated or not, where the omission to irrigate was due solely to the ryots' neglect and not to insufficiency of water or to other unavoidable causes. In the latter case, the charge may be reduced or remitted at the discretion of the jamabandi officers.

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

| Expenditure.                                     | During 1896-97. | To end of 1896-97. | Receipts.                                       | During 1896-97. | To end of 1896-97. |
|--------------------------------------------------|-----------------|--------------------|-------------------------------------------------|-----------------|--------------------|
| Direct charges .. ..                             | Rs. 86,387      | Rs. 21,15,985      | Receipts in the Public Works Department .. ..   | Rs. 8,744       | Rs. 1,53,146       |
| Indirect charges .. ..                           | 3,260           | 89,191             | Revenue collected in the Civil Department .. .. | 1,34,354        | 14,04,817          |
| Collection charges in the Civil Department .. .. | 6,718           | 65,192             | Total .. ..                                     | 1,43,098        | 15,57,963          |
| Interest on capital outlay—                      |                 |                    | Net deficit .. ..                               | 8,21,453        | 1,39,88,339        |
| Direct charges .. ..                             | 8,63,106        | 1,25,65,627        | Total .. ..                                     | 9,64,551        | 1,48,46,295        |
| Total expenditure and charges .. ..              | 9,64,551        | 1,48,46,295        |                                                 |                 |                    |

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. 76,023                         | Rs. 57,387 | ..       | ..               |
| 1883-84 .. .. | 1,33,410                           | 42,896     | 1,38,814 | ..               |
| 1884-85 .. .. | 1,81,710                           | 1,32,255   | 70,234   | ..               |
| 1885-86 .. .. | 2,02,520                           | 86,000     | 1,06,944 | ..               |
| 1886-87 .. .. | 1,00,944                           | 65,964     | 1,18,957 | ..               |
| 1887-88 .. .. | 1,84,021                           | 75,922     | ..       | ..               |
| 1888-89 .. .. | 1,41,440                           | 66,513     | 65,319   | ..               |
| 1889-90 .. .. | 1,43,048                           | 77,727     | 40,607   | ..               |
| 1890-91 .. .. | 1,19,566                           | 78,059     | 26,873   | ..               |
| 1891-92 .. .. | 1,50,439                           | 1,23,666   | ..       | 19,523           |
| 1892-93 .. .. | 1,23,199                           | 1,42,722   | 9,824    | ..               |
| 1893-94 .. .. | 1,58,105                           | 1,48,281   | 3,032    | ..               |
| 1894-95 .. .. | 1,32,772                           | 1,29,440   | ..       | 11,975           |
| 1895-96 .. .. | 1,01,081                           | 1,18,056   | ..       | 40,907           |
| 1896-97 .. .. | 86,387                             | 1,39,731   | ..       | 56,711           |

## GENERAL REMARKS.

The first flood in the Tungabhadra, which went over the crest of the Sunkesala anicut, occurred on the 27th May 1896. It caused the river to rise suddenly from 7.2 feet below crest of anicut to 1.1 foot above and lasted for four days. On the 18th June 1896, the water rose from 0.6 foot below the crest to 0.7 foot above and continued to pass over it at various depths up to 26th December 1896, after which date it began to fall except for seven days in the month of January 1897, during which period (i.e., from 3rd to 9th) the water passed over the crest with an average depth of 0.24 foot. The maximum depth of water discharged during the year was 6.8 feet on 2nd August 1896. A mud dam was placed over the anicut crest on the 21st December 1896 to store water for second-crop irrigation under the canal, but the

# ADMINISTRATION REPORT OF THE

## SANGAM ANICUT SYSTEM.

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The following statement shows the financial results:-

| Expenditure.                               | During 1896-97. | To end of 1896-97. | Receipts.                                                       | During 1896-97. | To end of 1896-97. |
|--------------------------------------------|-----------------|--------------------|-----------------------------------------------------------------|-----------------|--------------------|
| Direct charges                             | Rs. 68,785      | 68,785             | Direct receipts in the Public Works Department                  | Rs. 581         | 8,283              |
| Indirect charges                           | 3,798           | 38,411             | Interest on revenue                                             | 3,11,805        | 29,84,828          |
| Collection charges in the Canal Department | 9,793           | 14,128             | Share of enhanced land revenue                                  | 28,053          | 1,40,680           |
| Interest on capital outlay                 | 1,41,055        | 15,72,810          |                                                                 |                 |                    |
| Direct charges                             |                 |                    | Total receipts                                                  | 2,35,421        | 31,84,044          |
| Total expenditure and charges              | 2,02,291        | 22,14,127          | Deduct portion of revenue assumed to be due to other irrigation | 1,14,000        | 14,19,784          |
| Surplus revenue                            | 12,100          | 6,84,127           | Less old maintenance charges                                    |                 |                    |
| Total                                      | 2,14,391        | 17,28,310          | Net Total                                                       | 2,31,421        | 17,28,310          |

The net return, after paying interest charges, was Rs. 19,130 against Rs. 7,978 in the previous year.

### GENERAL REMARKS.

The greatest depth of water in the year over the Sangam anicut crest was 1-70 feet on the 27th November 1896 and the highest recorded on the 17th October 1889 was 8-79 feet.

### No. 5.—KURNOOL-CUDDAPAH CANAL.

#### CAPITAL ACCOUNT.

No expenditure in India has been incurred from Imperial funds on the Capital Account of the canal since its purchase. The cost of purchase of the canal remains as at the end of the preceding year at Rs. 2,16,38,942.

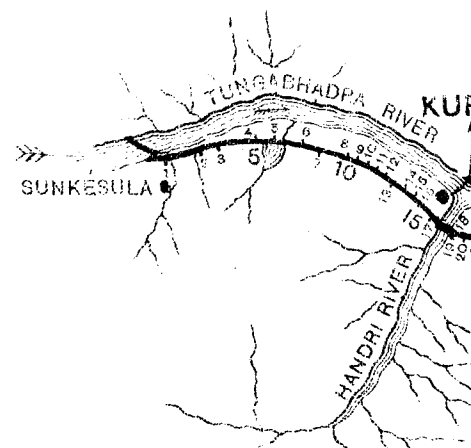
#### REVENUE ACCOUNT.

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

| Departmental heads.         | Grant. | Expenditure. |
|-----------------------------|--------|--------------|
|                             | Rs.    | Rs.          |
| Extensions and improvements | 6,500  | 3,184        |
| Maintenance and repairs     | 56,200 | 52,787       |
| Establishment               | 22,501 | 23,216       |
| Tools and plant             | 1,636  | 1,200        |
| Total                       | 86,837 | 86,387       |
| Indirect charges            |        | 89,637       |
| Grand Total                 |        |              |

The new Chennur Upparapalli channel and the Kambalapalli bungalow were improved. A sluice and channel at 167th mile 30th chain were constructed to irrigate lands in Chopand village, a wooden bridge was built in place of the collapsed culvert below lock No. 41 and the Chopand project channel from Rajoli was carried out. The expenditure on the latter work will have to be written back to "Minor Works" for which Capital and Revenue Accounts are kept —33. Famine Relief, the estimate for the project having been sanctioned by Government in April 1897 under that head.

The outlay under this head was incurred in keeping the canal and its masonry works in order. It fell short of the amount spent in the previous year by Rs. 11,206 as expenditure on maintenance is kept as low as possible.



LIST OF PRINCIPAL MASONRY WORKS

| No. | Description                            | Length | Width | Height | Remarks |
|-----|----------------------------------------|--------|-------|--------|---------|
| 1   | Sunkesula Anicut & Head Works (Bund)   | 0-0    |       |        |         |
| 2   | Self Acting Calingulah                 | 1-35   |       |        |         |
| 3   | Dudayla Bridge                         | 2-29   |       |        |         |
| 4   | Scouring Sluice & Calingulah No. 1     | 5-3    |       |        |         |
| 5   | Yeddur Bridge                          | 5-68   |       |        |         |
| 6   | Scouring Sluice & Calingulah No. 2     | 7-47   |       |        |         |
| 7   | Gupalsingavaram Bridge                 | 8-25   |       |        |         |
| 8   | Calingulah No. 3                       | 9-79   |       |        |         |
| 9   | Calingulah No. 4                       | 10-61  |       |        |         |
| 10  | Do. No. 5                              | 11-13  |       |        |         |
| 11  | Nidur Bridge                           | 11-19  |       |        |         |
| 12  | Calingulah No. 6                       | 11-78  |       |        |         |
| 13  | Do. No. 7                              | 13-3   |       |        |         |
| 14  | Munapalapp Bridge                      | 13-37  |       |        |         |
| 15  | Calingulah No. 8                       | 15-43  |       |        |         |
| 16  | Muzammasid Bridge                      | 15-22  |       |        |         |
| 17  | Scouring Sluice & Calingulah No. 9     | 16-00  |       |        |         |
| 18  | Kurnool Lock, Dock Town Sluice (Bund)  | 16-72  |       |        |         |
| 19  | Swing Bridge                           | 17-36  |       |        |         |
| 20  | Handri Aqueduct                        | 18-34  |       |        |         |
| 21  | Curly Bridge                           | 18-3   |       |        |         |
| 21A | Calingulah No. 10                      | 19-19  |       |        |         |
| 22  | Joharapuram Bridge                     | 19-58  |       |        |         |
| 23  | Calingulah No. 11                      | 21-41  |       |        |         |
| 24  | Scouring Sluice                        | 22-22  |       |        |         |
| 25  | Kaderah Aqueduct                       | 23-13  |       |        |         |
| 26  | Calingulah No. 12                      | 24-16  |       |        |         |
| 26A | Bungalow                               | 24-16  |       |        |         |
| 27  | Do. No. 14 & Scouring Sluice           | 25-25  |       |        |         |
| 27A | Calingulah No. 15 Padur Point          | 30-3   |       |        |         |
| 28  | Padur Bridge                           | 30-29  |       |        |         |
| 29  | Calingulah No. 16                      | 30-48  |       |        |         |
| 30  | Submandr Bridge                        | 33-29  |       |        |         |
| 31  | Calingulah No. 17 & Scouring Sluice    | 35-31  |       |        |         |
| 32  | Calingulah No. 18                      | 34-37  |       |        |         |
| 33  | Aller Aqueduct                         | 36-24  |       |        |         |
| 34  | Aller Bridge Bungalow                  | 36-36  |       |        |         |
| 35  | Calingulah No. 19                      | 37-37  |       |        |         |
| 36  | Batharota Bridge                       | 38-38  |       |        |         |
| 37  | Calingulah No. 20                      | 40-48  |       |        |         |
| 38  | Calingulah & Scouring Sluice No. 21    | 41-31  |       |        |         |
| 39  | Mainala Bridge                         | 43-15  |       |        |         |
| 40  | Maddigala Bridge                       | 43-24  |       |        |         |
| 41  | Scouring Sluice                        | 44-17  |       |        |         |
| 42  | Calingulah No. 22                      | 44-31  |       |        |         |
| 43  | Nagathur Bridge                        | 46-35  |       |        |         |
| 43A | Nagathur Bungalow                      | 47-3   |       |        |         |
| 44  | Calingulah No. 23                      | 48-46  |       |        |         |
| 45  | Muzammasid Bridge                      | 49-48  |       |        |         |
| 46  | Muzammasid Bridge                      | 50-16  |       |        |         |
| 47  | Calingulah & Scouring Sluice No. 24    | 50-73  |       |        |         |
| 47A | Pagadur Bungalow                       | 54-55  |       |        |         |
| 48  | Sub Passage                            | 54-71  |       |        |         |
| 49  | Calingulah No. 25                      | 58-2   |       |        |         |
| 50  | Bollavaram Bridge                      | 59-38  |       |        |         |
| 51  | Calingulah No. 26                      | 61-3   |       |        |         |
| 52  | Jesid Bridge Bungalow                  | 61-67  |       |        |         |
| 53  | Tangur Bridge                          | 64-46  |       |        |         |
| 54  | Do. Aqueduct                           | 65-11  |       |        |         |
| 55  | Jotur Bridge                           | 66-49  |       |        |         |
| 56  | Pambalap Bridge                        | 71-82  |       |        |         |
| 56A | Kambalapalli Bungalow                  | 73-61  |       |        |         |
| 57  | Yerragur Bridge                        | 74-2   |       |        |         |
| 58  | Locomoti Tal & Head Sluice             | 74-58  |       |        |         |
| 59  | Lock No. 1 Regulating                  | 74-70  |       |        |         |
| 59A | Locking Bungalow                       | 74-74  |       |        |         |
| 60  | Mitsandala Bridge                      | 77-20  |       |        |         |
| 61  | Tudcheria Head Sluice                  | 80-40  |       |        |         |
| 62  | Lock No. 2 & Bridge 20 feet Drop       | 80-49  |       |        |         |
| 63  | Do. No. 3 10 feet                      | 80-67  |       |        |         |
| 64  | Do. No. 4 7 feet                       | 81-74  |       |        |         |
| 65  | Do. No. 5 21-68 feet                   | 82-48  |       |        |         |
| 66  | Do. No. 6 20-88 feet                   | 83-25  |       |        |         |
| 67  | Do. No. 7 13 feet                      | 84-38  |       |        |         |
| 68  | Do. No. 8 18 feet                      | 85-30  |       |        |         |
| 69  | Velupur Aqueduct                       | 86-66  |       |        |         |
| 69A | Do. Bungalow                           | 86-80  |       |        |         |
| 70  | Do. Bridge                             | 87-9   |       |        |         |
| 71  | Lock No. 9 & Bridge 15 feet Drop       | 88-33  |       |        |         |
| 72  | Do. No. 10 16 feet                     | 89-78  |       |        |         |
| 73  | Do. No. 11 8 feet                      | 90-43  |       |        |         |
| 74  | Do. No. 12 20 feet                     | 91-33  |       |        |         |
| 75  | Do. No. 13 & Bridge 10 feet            | 92-4   |       |        |         |
| 76  | Do. No. 14 10-20 feet                  | 92-79  |       |        |         |
| 77  | Do. No. 15 Regulating                  | 93-49  |       |        |         |
| 78  | Yerragur Aqueduct & No. Works Bungalow | 95-11  |       |        |         |
| 79  | Sandi Amakur Bridge                    | 97-13  |       |        |         |
| 80  | Calingulah                             | 97-49  |       |        |         |
| 81  | Singavaram Bridge                      | 99-3   |       |        |         |
| 82  | Calingulah                             | 100-23 |       |        |         |
| 83  | Empad Bridge                           | 100-34 |       |        |         |
| 84  | Aqueduct                               | 102-3  |       |        |         |
| 85  | Bayapakodur Bridge                     | 104-30 |       |        |         |
| 86  | Bollavaram Bridge                      |        |       |        |         |

The following statement shows the financial results :—

| Expenditure.                                     | During<br>1896-97. | To end<br>of<br>1896-97. | Receipts.                                                                                       | During<br>1896-97. | To end<br>of<br>1896-97. |
|--------------------------------------------------|--------------------|--------------------------|-------------------------------------------------------------------------------------------------|--------------------|--------------------------|
| Direct charges .. ..                             | Rs. 3,662          | Rs. 36,508               | Direct receipts in the Public Works Department ..                                               | Rs. 256            | Rs. 256                  |
| Indirect charges .. ..                           | 178                | 1,551                    | Irrigation revenue ..                                                                           | 11,533             | 79,820                   |
| Collection charges in the Civil Department .. .. | 477                | 2,956                    | Share of enhanced land revenue.                                                                 | 3                  | 56                       |
| Interest on capital outlay—                      |                    |                          | Total receipts ..                                                                               | 11,536             | 79,832                   |
| Direct charges .. ..                             | 16,056             | 1,75,416                 | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. | 1,850              | 18,780                   |
| Total expenditure and charges .. ..              | 20,368             | 2,16,431                 | Net Total ..                                                                                    | 9,686              | 63,852                   |
| Deficit .. ..                                    | — 10,682           | — 1,55,579               |                                                                                                 |                    |                          |
| Total .. ..                                      | 9,686              | 60,852                   |                                                                                                 |                    |                          |

Financial results.

The working expenses inclusive of interest charges for the year exceeded the revenue by Rs. 10,682.

#### No. 7.—CAUVERY DELTA SYSTEM.

##### CAPITAL ACCOUNT.

The following statement exhibits the grant of, and outlay during, the year :—

| Departmental heads.                         | Grant. | Outlay. |
|---------------------------------------------|--------|---------|
| <i>Direct Charges.</i>                      | Rs.    | Rs.     |
| Works .. ..                                 | 37,819 | 34,884  |
| Establishment .. ..                         | 5,629  | 7,741   |
| Tools and plant .. ..                       | ..     | ..      |
| Loss by exchange .. ..                      | ..     | ..      |
| Total .. ..                                 | 46,448 | 42,625  |
| <i>Indirect Charges.</i>                    |        |         |
| Capitalized abatement of land revenue .. .. | ..     | 1,094   |
| Leave and pension allowances .. ..          | ..     | ..      |
| Total .. ..                                 | ..     | 1,094   |
| Grand Total .. ..                           | ..     | 43,709  |

Grant and outlay.

The total capital outlay to the end of the year, including indirect charges, amounted to Rs. 43,709 against Rs. 20,27,863, the cost of construction as now estimated.

In the Tanjore division, the following works were in progress:—Providing screw-gearing shutters to the Kodamurti regulator, constructing superintendent and lascars' shed at Vettar head, restoring the old irrigation channel of Sithanvelur, improving Vadakarai Kuhur channel, constructing Neikunram drainage sluice, constructing foot-bridge at the infall of Vikramanar drainage sluice, fitting Mudikondanar bridge with shutters, improvements to Santhavari channel, constructing Gopalasamudram dam, constructing Alianar drainage sluice, constructing a syphon for Anjapadi drainage, improving Thevanur dam across Veerasholanar, constructing a new head-sluice to the Thirunagiri channel, altering Kiranur dam across Nandalar, and improving the Maraneri tank and Kali Voikal irrigation.

In the Negapatam division, the regulator of nine vents across the Vettar below the off-take of the Odambhogiar, and improvements to the Nariangudi dam were in progress.

ADMINISTRATION REPORT OF THE  
BARER TANK SYSTEM.  
REVENUE ACCOUNT.

The charges on Revenue Account were—

| Departmental heads.         | Grant.    | Outlay. |                                 |         |
|-----------------------------|-----------|---------|---------------------------------|---------|
|                             |           | Gross.  | Deduct old maintenance charges. | Net.    |
| Extensions and improvements | Rs. 1,004 | Rs. 904 | Rs. ..                          | Rs. 904 |
| Maintenance and repairs     | 1,500     | 1,613   | ..                              | 1,613   |
| Establishment               | 1,170     | 1,146   | 120                             | 1,026   |
| Tools and plant             | ..        | ..      | ..                              | ..      |
| Total                       | 3,680     | 3,662   | 120                             | 3,542   |
| Indirect charges            | ..        | 178     | 30                              | 148     |
| Grand Total                 | ..        | 3,840   | 150                             | 3,690   |

\* Exclusive of grant for old maintenance charges.

Extensions and improvements.  
Maintenance and repairs.  
Establishment.

Five minor works were completed and three were in progress.

Eight works were completed and one was in progress.

The charges for establishment amounted to Rs. 1,025 as shown below :—

|                                |       |
|--------------------------------|-------|
| 23 per cent. on Expenditure .. | 453   |
| 10 .. on Direct revenue ..     | 672   |
| 6 .. on Indirect revenue ..    | ..    |
| Total ..                       | 1,025 |

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

|                           | Area occupied. | Area charged as irrigated. | Irrigation revenue. |
|---------------------------|----------------|----------------------------|---------------------|
| First crop .. 1896-97 ..  | Ac. 2,609      | Ac. 2,609                  | Rs. 9,389           |
| .. 1895-96 ..             | 2,536          | 2,536                      | 9,170               |
| Second crop .. 1896-97 .. | 1,881          | 1,881                      | 2,144               |
| .. 1895-96 ..             | 1,693          | 1,693                      | 1,852               |

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

|                                                            |       |
|------------------------------------------------------------|-------|
| Land assessment on waste lands brought under irrigation .. | Rs. 2 |
| .. on miscellaneous items ..                               | 1     |
| Total ..                                                   | 3     |

The average rates of revenue and charges per acre irrigated for 1896-97 compare with those of the previous year as follow :—

|                                                                                   | 1896-97.   | 1895-96. |
|-----------------------------------------------------------------------------------|------------|----------|
| Total area irrigated, both first and second crops ..                              | Ac. 4,440  | 4,229    |
| Total gross revenue ..                                                            | Rs. 11,536 | 11,091   |
| Average revenue per acre ..                                                       | 2-60       | 2-62     |
| Total working expenses exclusive of collection charges in the Civil Department .. | 3,825      | 3,390    |
| Average working expenses per acre ..                                              | 0-86       | 0-80     |
| Total working expenses inclusive of collection charges in the Civil Department .. | 4,312      | 3,843    |
| Average working expenses per acre ..                                              | 0-97       | 1-09     |

SKETCH MAP  
OF THE  
CAUVERY DELTA

SHOWING POSITIONS OF  
THE PRINCIPAL IRRIGATION WORKS

SCALE OF MILES

0 5 10 20 30 MILES



LIST OF PRINCIPAL MASONRY WORKS

|                                     | Mileage from Head of Delta |
|-------------------------------------|----------------------------|
| 1 Upper Anicut                      | 0                          |
| 2 115 Yards Gungulish               | 3                          |
| 3 Grand Anicut                      | 17                         |
| 4 Cauvery & Vennar Regulators       | 17                         |
| 5 Do. Kottamurthi Dam               | 27                         |
| 6 Vaidisvarankoyil Dam              | 27                         |
| 7 Perambikudi Dam                   | 28                         |
| 8 Cauvery Arasalar Dam              | 42                         |
| 9 Do. Virasolan Dam                 | 22                         |
| 10 Kottamurthi Trimmurthi Regulator | 43                         |
| 11 Do. Nallur                       | 72                         |
| 12 Do. Nallur                       | 72                         |
| 13 Vennar Vettar                    | 72                         |
| 14 Do. Pannavay Regulator           | 72                         |
| 15 Do. Pannavay Regulator           | 72                         |
| 16 Do. Vellayar                     | 72                         |
| 17 Lower Anicut                     | 67                         |
| 18 Cravangam                        | 67                         |
| 19 Vellam                           | 67                         |
| 20 Idumbayam                        | 67                         |
| 21 Pithimul                         | 67                         |
| 22 Devanadi                         | 67                         |
| 23 Vaidisvarankoyil                 | 67                         |
| 24 Pannavay                         | 67                         |
| 25 Umbalacheri                      | 67                         |
| 26 Vennar Old Head                  | 67                         |
| 27 Kachamangalam Anicut             | 67                         |
| 28 Molattur                         | 67                         |
| 29 Vennar                           | 67                         |
| 30 Kodamuri Mudikondanar Head       | 67                         |
| 31 Doppes Dam                       | 67                         |
| 32 Seranadai Dam                    | 67                         |
| 33 Vaidisvarankoyil Anicut          | 67                         |
| 34 Peruvendur Anicut                | 67                         |
| 35 Taapadavay Anicut                | 67                         |
| 36 Kottamurthi Dam                  | 67                         |
| 37 Devanadi                         | 67                         |
| 38 Adichanallur Vennar Anicut       | 67                         |
| 39 Pithimul Anicut                  | 67                         |
| 40 Vervakudi Anicut                 | 67                         |
| 41 Kottamurthi Dam                  | 67                         |
| 42 Pannavay Anicut                  | 67                         |
| 43 Vennar                           | 67                         |
| 44 Pannavay Anicut                  | 67                         |
| 45 Kottamurthi Dam                  | 67                         |
| 46 Pannavay Anicut                  | 67                         |
| 47 Pannavay Anicut                  | 67                         |
| 48 Kottamurthi Dam                  | 67                         |
| 49 Pannavay Anicut                  | 67                         |
| 50 Pannavay Anicut                  | 67                         |
| 51 Pannavay Anicut                  | 67                         |
| 52 Pannavay Anicut                  | 67                         |
| 53 Pannavay Anicut                  | 67                         |

- (1) PANNAN VAIKAL
- (2) MANJALAR
- (3) SOUTH PUTHAR
- (4) NARASINGAM PETHAR
- (5) REGULATOR OF VENT'S ACROSS VETTAR (UNDER CONSTRUCTION)
- (6) ANBODIETHAN VAIKAL



## REVENUE ACCOUNT.

The charges on Revenue Account for the year were—

Grant and outlay.

| Departmental heads.                 | Grant.*    | Outlay.    |                                 |            |
|-------------------------------------|------------|------------|---------------------------------|------------|
|                                     |            | Gross.     | Deduct old maintenance charges. | Net.       |
| Extensions and improvements .. .. . | Rs. 17,831 | Rs. 18,576 | Rs. ..                          | Rs. 18,576 |
| Maintenance and repairs .. .. .     | 22,292     | 83,863     | 1,05,634                        | 21,771     |
| Establishment .. .. .               | 49,982     | 2,72,418   | 2,24,644                        | 47,774     |
| Tools and plant .. .. .             | 2,773      | 4,047      | 1,608                           | 2,444      |
| Total .. .. .                       | 48,294     | 3,79,904   | 3,31,881                        | 48,023     |
| Indirect charges .. .. .            | ..         | 38,230     | 31,450                          | 6,780      |
| Grand Total .. .. .                 | ..         | 4,18,134   | 3,63,331                        | 54,803     |

\* Exclusive of grant for old maintenance charges.

Extensions and improvements.

Maintenance and repairs.

Establishment.

In the Tanjore division 65 minor works were in progress, of which 38 were completed. In the Negapatam division 22 works were in progress, of which 5 were completed. In the Trichinopoly division one minor work was completed. In the Tanjore division about 250 petty works were in progress. In the Negapatam division one work—the maintenance of the Annamarasanar dam—was in progress. Two channel clearance works were also in progress. In the Trichinopoly division the Panguni, Peruvulai and Iyen channels, together with their branches, were maintained. Fifteen repair works were in progress, of which eight were completed. *Contribution Works.*—In the Tanjore division four works were in progress, of which one was completed. An expenditure of Rs. 322 was incurred on them. The charges for establishment amounted to Rs. 47,774 as shown below:—

|                                     |           |
|-------------------------------------|-----------|
| 23 per cent. on Expenditure .. .. . | Rs. 2,860 |
| 10 " on Direct revenue .. .. .      | 320       |
| 6 " on Indirect revenue .. .. .     | 50,314    |
| Total .. .. .                       | 47,774    |

Receipts in the Public Works Department.

The receipts collected in the Public Works Department amounted to Rs. 3,179, against a budget and revised estimate of Rs. 3,500 and Rs. 2,700, respectively. The collections consist of the sale-proceeds of plantations and other canal produce. The area and revenue compare as follows with those of the previous year:—

|                                  | Area occupied. | Area charged as irrigated. | Irrigation revenue. |
|----------------------------------|----------------|----------------------------|---------------------|
| First crop .. { 1896-97 .. .. .  | ACS. 883,159   | ACS. 882,636               | Rs. 38,49,998       |
| .. { 1895-96 .. .. .             | 886,664        | 888,320                    | 38,40,584           |
| Second crop .. { 1896-97 .. .. . | 96,102         | 94,687                     | 3,27,695            |
| .. { 1895-96 .. .. .             | 100,773        | 100,773                    | 3,48,945            |

The decrease of Rs. 11,837 in revenue during 1896-97 was chiefly due to the grant of remissions both in the Tanjore and Trichinopoly districts on account of floods in the Cauvery. The share of enhanced land revenue due to the works amounted to Rs. 1,11,531 as shown below:—

|                                                                 |              |
|-----------------------------------------------------------------|--------------|
| Land assessment on waste lands brought under irrigation .. .. . | Rs. 1,03,888 |
| " " on miscellaneous items .. .. .                              | 7,646        |
| Total .. .. .                                                   | 1,11,531     |

The gross revenue and working expenses per acre amounted to Rs. 4.89 and Re. 0.48, respectively, against Rs. 4.60 and Re. 0.46 in the previous year.

The following statement shows the financial results:—

Financial results.

| Expenditure.                                       | During 1896-97. | To end of 1896-97. | Receipts.                                                                                          | During 1896-97. | To end of 1896-97. |
|----------------------------------------------------|-----------------|--------------------|----------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Direct charges .. .. .                             | Rs. 3,79,904    | Rs. 1,06,66,315    | Direct receipts in the Public Works Department .. .. .                                             | Rs. 3,179       | Rs. 1,38,904       |
| Indirect charges .. .. .                           | 38,230          | 7,43,684           | Irrigation revenue .. .. .                                                                         | 41,77,693       | 17,08,32,674       |
| Collection charges in the Civil Department .. .. . | 47,495          | 16,18,897          | Share of enhanced land revenue .. .. .                                                             | 1,11,331        | 50,47,771          |
| Interest on capital outlay .. .. .                 | 65,344          | 16,70,543          |                                                                                                    |                 |                    |
| Direct charges .. .. .                             |                 |                    |                                                                                                    |                 |                    |
| Total expenditure and charges .. .. .              | 5,33,978        | 1,48,29,442        | Total receipts .. .. .                                                                             | 42,92,263       | 17,60,19,349       |
| Surplus revenue .. .. .                            | 7,82,433        | 2,19,14,485        | Deduct portion of revenue assumed to be due to old irrigation less old maintenance charges .. .. . | 29,75,797       | 18,92,05,421       |
| Total .. .. .                                      | 13,16,406       | 3,68,13,927        | Net Total .. .. .                                                                                  | 13,16,406       | 3,68,13,927        |

The net return, after paying interest charges, was 42.17 per cent. on the capital outlay against 47.49 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 .. .. .                                                                                                                                   | ACS. 882,636  |
|                                                                                                                                |                | New irrigation due to works .. .. .                                                                                                                                    | 743,033       |
|                                                                                                                                | Second crop .. | Total Assumed old irrigation .. .. .                                                                                                                                   | 139,503       |
|                                                                                                                                |                | New irrigation due to works .. .. .                                                                                                                                    | 94,687        |
|                                                                                                                                |                | ACS. 84,174                                                                                                                                                            |               |
| 2. Net revenue in 1896-97 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. 37,58,230 |
| 3. Accumulated net surplus revenue (exclusive of all that assumed to be due to old irrigation works) to end of 1896-97 .. .. . |                |                                                                                                                                                                        | 7,82,433      |
| 4. Total expenditure on Capital Account, both direct and indirect, which has secured the results shown above .. .. .           |                |                                                                                                                                                                        | 2,19,14,485   |
| 5. Year from which amounts against items 3 and 4 commenced to be calculated .. .. .                                            |                |                                                                                                                                                                        | 1836-37       |

## GENERAL REMARKS.

The highest flood of the year was on the 31st July 1896 when the water rose on the gauge of the dam at the head of the Cauvery to 13.7 feet, and at the Cauvery and Vennar regulators to 12.4 feet. 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.

Lieutenant-Colonel A. W. Smart, R.E., Superintending Engineer, who was appointed on special duty, in November 1895, for the preparation of the completion estimates of the Cauvery delta system, continued during the year the investigations necessary for the purpose. Estimates were prepared by him for a new open dam to be built in front of the existing Upper Coleroon anicut which will be eventually dismantled. These estimates, amounting to Rs. 6,57,000, for direct charges, were submitted for the sanction of the Government of India in March 1897 and sanctioned in May 1897. An estimate amounting to Rs. 1,39,200, for direct charges, was framed and submitted for the sanction of the Government of India for the provision of 5-foot lift shutters to the Cauvery grand anicut. The original proposal was to cut down the crest of the dam by 2 feet and to fit the shutters thereon. It was, however, found on further investigation that Colonel Montgomerie's figures with regard to flood levels at this point of the river were wrong, and that Colonel Oakes' computed flood mark for 1858 was in all probability right. Such being the case, and with the experience of the 1896 flood available, the cutting down of the dam is unnecessary. Plans and estimates were drawn up for building three new undersluices of 30 feet span in front of the existing ones. This work may be left in abeyance till the effect of the new upper anicut has been observed for some years. Plans and estimates were also

Preparation of completion estimates.

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

Area irrigated  
and revenue  
derived.

|             |               | Area<br>occupied. | Area<br>charged as<br>irrigated. | Irrigation<br>revenue. |
|-------------|---------------|-------------------|----------------------------------|------------------------|
|             |               | ACS.              | ACS.                             | RS.                    |
| First crop  | 1896-97 .. .. | 23,064            | 21,512                           | 1,23,653               |
|             | 1895-96 .. .. | 23,010            | 18,914                           | 1,08,151               |
| Second crop | 1896-97 .. .. | 19,694            | 18,635                           | 60,461                 |
|             | 1895-96 .. .. | 18,158            | 15,048                           | 48,587                 |

The share of enhanced land revenue due to the works amounted to Rs. 1,780 as shown below :—

Enhanced  
share  
of land  
revenue.

|                                                               |           |
|---------------------------------------------------------------|-----------|
| Land assessment on waste lands brought under irrigation .. .. | Rs. 1,734 |
| on miscellaneous items .. ..                                  | 46        |
| Total .. ..                                                   | 1,780     |

The gross revenue and working expenses amounted to Rs. 4.66 and Rs. 2.20 per acre, against Rs. 4.70 and Rs. 1.17, respectively, in the previous year.

The subjoined statement exhibits the financial results :—

Financial  
results.

| Expenditure.                    | During<br>1896-97. | To end of<br>1896-97. | Receipts.                       | During<br>1896-97. | To end of<br>1896-97. |
|---------------------------------|--------------------|-----------------------|---------------------------------|--------------------|-----------------------|
|                                 | RS.                | RS.                   |                                 | RS.                | RS.                   |
| Direct charges .. ..            | 79,845             | 8,09,348              | Direct receipts in the Public   |                    |                       |
| Indirect charges .. ..          | 3,364              | 49,268                | Works Department .. ..          | 1,431              | 29,670                |
| Collection charges in the Civil |                    |                       | Irrigation revenue .. ..        | 1,84,114           | 41,78,341             |
| Department .. ..                | 5,345              | 1,16,300              | Share of enhanced land revenue. | 1,780              | 43,133                |
| Interest on capital outlay—     |                    |                       | * Total receipts .. ..          | 1,87,315           | 42,52,243             |
| Direct charges .. ..            | 54,487             | 13,01,396             | Deduct portion of revenue as-   |                    |                       |
| Total expenditure and           |                    |                       | summed to be due to "old        |                    |                       |
| charges .. ..                   | 1,43,041           | 22,78,412             | irrigation" less old mainte-    |                    |                       |
| Surplus revenue .. ..           | 22,226             | 25,203                | nance charges .. ..             | 66,506             | 19,66,628             |
| Total .. ..                     | 1,20,815           | 22,01,615             | Net Total .. ..                 | 1,20,815           | 23,01,615             |

The working expenses, inclusive of interest charges, exceeded the revenue by Rs. 22,226.

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

Synopsis of  
results.

|                                                                              |                   |                                                |                                   |       |           |
|------------------------------------------------------------------------------|-------------------|------------------------------------------------|-----------------------------------|-------|-----------|
| 1. Areas charged as irri-<br>gated.                                          | First crop .. ..  | Total .. ..                                    | Assumed old irrigation .. ..      | Area. | 31,512    |
|                                                                              |                   |                                                | New irrigation due to works .. .. | "     | 14,138    |
|                                                                              | Second crop .. .. | Total .. ..                                    |                                   |       | 7,374     |
|                                                                              |                   |                                                | Assumed old irrigation .. ..      | "     | 18,635    |
|                                                                              |                   |                                                | New irrigation due to works .. .. | "     | 5,312     |
|                                                                              |                   |                                                |                                   |       | 12,093    |
|                                                                              |                   |                                                |                                   | Rs.   | 43,274    |
| 2. Net revenue in 1896-97                                                    | Total .. ..       | Portion taken as due to the works carried out  |                                   |       |           |
| after deducting in-                                                          |                   | since Capital and Revenue Accounts have been   |                                   |       |           |
| terest and all charges.                                                      |                   | kept exclusive of what is assumed to be due to |                                   |       |           |
|                                                                              |                   | old irrigation works .. ..                     |                                   |       | 22,226    |
| 3. Accumulated net surplus revenue                                           |                   | exclusive of all that assumed to be due        |                                   |       |           |
| to old irrigation works) to end of 1896-97 .. ..                             |                   |                                                |                                   |       | 25,203    |
| 4. Total expenditure on Capital Account, both direct and indirect, which has |                   |                                                |                                   |       |           |
| exceeded the results shown above .. ..                                       |                   |                                                |                                   |       | 14,68,483 |
| 5. Year from which amounts against Items 3 and 4 commenced to be calcu-      |                   |                                                |                                   |       |           |
| lated .. ..                                                                  |                   |                                                |                                   |       | 1870-71   |

#### GENERAL REMARKS.

During the year water passed over the Srivaikuntam anicut for 65 days against 37 days in the previous year. The highest level attained by the Tambraparni river was 6.10 feet over the crest on the 15th November 1895, the previous highest known flood being 12 feet above the crest of the anicut on the 30th December 1895, or 5.90 feet above the flood level of 1896.



prepared for a regulator for each of the rivers Keerthimannar, Puthar-Solasudamanian and Puthar-Velappaur. Four channels were cleared of silt at their heads, and continuous observations of velocity and discharge in these as well as in five others, which were not cleared, were registered and discharge diagrams have been prepared. The observations will be continued. Surveys and levels of the drainages of the northern half of the delta towards the coast were completed. The nature of the improvements required in these drainages has not as yet been determined. To facilitate the drainage of the southern tracts, it was considered advisable to provide means of turning off the flood waters of the Vennar at the Pandavayar head. The preparation of plans and estimates was in progress for a new cut into the Kattaur and the enlargement of the latter.

The work of preparing maps of irrigation and drainage of the rivers with the accompanying registers of the delta was in progress. These maps will be of very considerable value when completed and will enable the remodelling of the distributaries wherever found necessary to be taken up.

# No. 8.—SRIVAİKUNTAM ANICUT SYSTEM.

## CAPITAL ACCOUNT.

Total outlay. Rupees 543 were spent during the year on works on open Capital Account, against a grant of Rs. 1,080. The total capital outlay, including indirect charges, to the end of the year was Rs. 14,63,483.

Progress of works. The improvements to the Palayakayal tank were in progress.

## 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. 164 | Rs. 421 | Rs. 352                         | Rs. 69 |
| Maintenance and repairs .. .. .     | 50,189  | 50,189  | 5,208                           | 50,189 |
| Establishment .. .. .               | 18,055  | 24,027  | 6,019                           | 18,008 |
| Tools and plant .. .. .             | 78      | ..      | 76                              | 78     |
| Total .. .. .                       | 68,800  | 79,846  | 11,657                          | 68,188 |
| Indirect charges .. .. .            | ..      | 2,364   | 843                             | 2,521  |
| Grand Total .. .. .                 | ..      | 83,209  | 12,500                          | 70,709 |

\* Exclusive of grant for old maintenance charges.

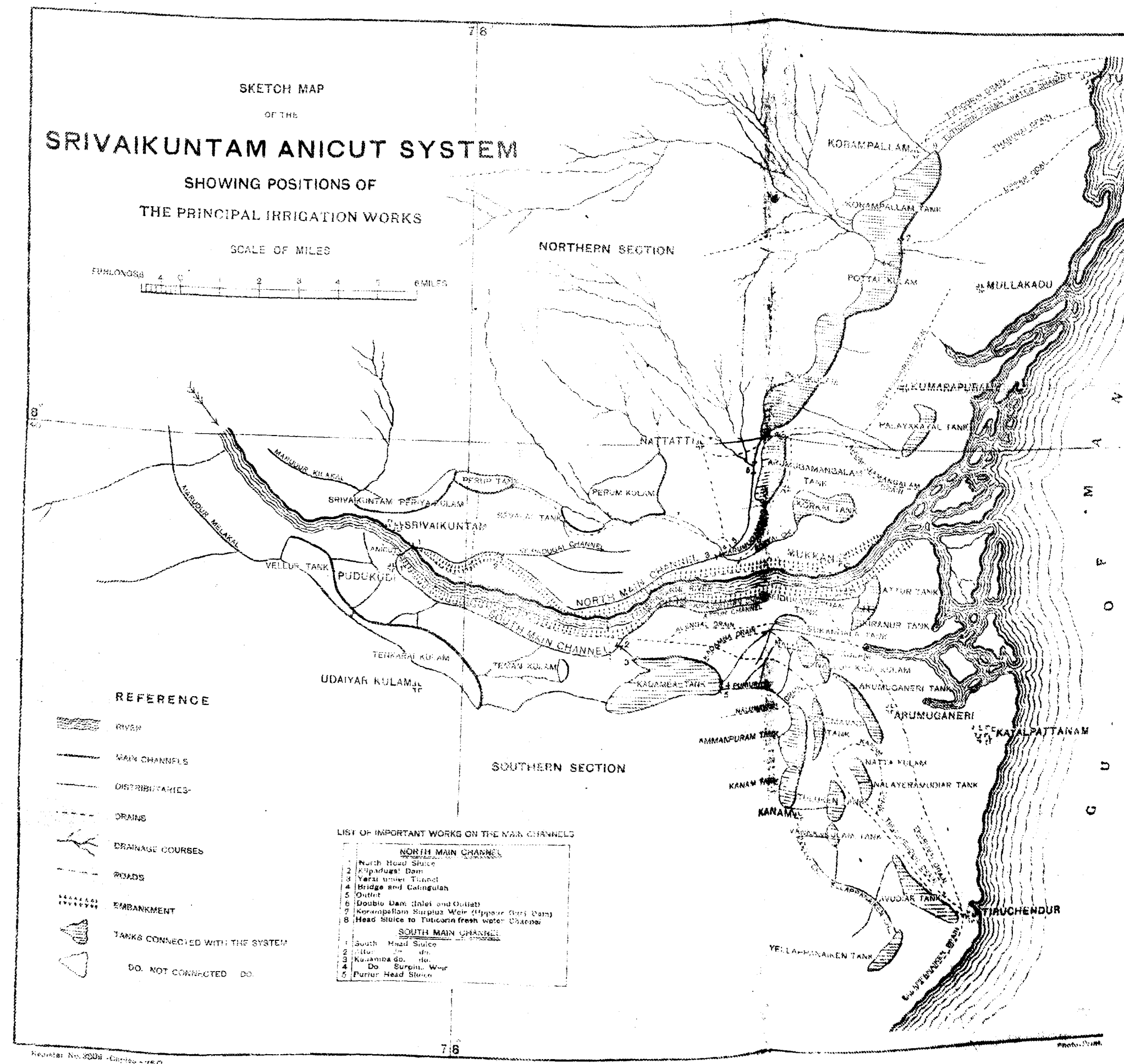
Of two works in progress, one was completed.

Fifty-nine works were in progress, of which 34 were completed. The most important work done during the year was the provision of a masonry apron to the anicut at a cost of Rs. 23,500.

The charges for establishment amounted to Rs. 18,008 as shown below :—

|                                     |            |
|-------------------------------------|------------|
| 23 per cent. on Expenditure .. .. . | Rs. 11,559 |
| 10 " " on Direct revenue .. .. .    | 112        |
| 6 " " on Indirect revenue .. .. .   | 6,807      |
| Total .. .. .                       | 18,008     |

The receipts collected in the Public Works Department from canal produce, rents of buildings, fresh-water supply to the town of Tuticorin, and from miscellaneous sources amounted to Rs. 1,421, against a budget and revised estimate of Rs. 1,000 and Rs. 1,200, respectively.



*Distributaries.*

No. 1 Branch Channel.—Aqueduct, super-passage and culvert were completed and field channels were in progress.

Nos. 2 and 3 Branch Channels were maintained properly during the year and field channels were in progress.

No. 4 Branch Channel.—Distributary and field channels were in progress.

Nos. 5, 6 and 8 Branch Channels.—Falls and weirs were completed. The excavation of distributary and field channels was in progress.

No. 9 Branch Channel.—Falls and weirs in the branch channel and offtakes were completed. Distributary and field channels were in progress.

No. 10 Branch Channel.—Four super-passages were completed. Falls in the channel and offtakes were in progress.

Nos. 11 and 12 Branch Channels with distributaries, commenced during the year, were in progress.

Fifty miles of branch channels were completed. 50 miles of distributaries and 75 miles of field channels were laid out during the year and 20½ miles of the former and 73 of the latter were in progress.

An expenditure of Rs. 2,292 was incurred under this head, mainly in conveying surplus stores from Thekkady to Madras, &c. The net credit to this head is due to the recovery of expenditure by the sale of machinery and tools and plant.

**REVENUE ACCOUNT.**

The project was brought into operation during the year and charges on Revenue Account as shown below were incurred for the first time:—

|                          | Grant. | Outlay. |                                 |        |
|--------------------------|--------|---------|---------------------------------|--------|
|                          |        | Gross.  | Deduct old maintenance charges. | Net.   |
|                          | RS.    | RS.     | RS.                             | RS.    |
| Compensation .. .. .     | 40,000 | 40,000  | ..                              | 40,000 |
| Establishment .. .. .    | ..     | 15,989  | 13,881                          | 2,108  |
| Tools and plant .. .. .  | ..     | ..      | ..                              | ..     |
| Total .. .. .            | 40,000 | 55,989  | 13,881                          | 42,108 |
| Indirect charges .. .. . | ..     | 2,238   | 1,943                           | 295    |
| Grand Total .. .. .      | 40,000 | 58,227  | 15,824                          | 42,403 |

The expenditure of Rs. 40,000 under "Compensation" represents the rent paid to the Travancore Government in accordance with the terms of the Periyar lease.

The charges for establishment amounted to Rs. 2,108 as shown below:—

|                                         |       |
|-----------------------------------------|-------|
|                                         | Rs.   |
| 6 per cent. on Indirect Revenue .. .. . | 2,108 |

Establishment.

The area irrigated and the revenue derived therefrom during the year are shown below:—

Area irrigated and revenue derived.

|                     | Area occupied. | Area charged as irrigated. |       |        | Irrigation revenue. |
|---------------------|----------------|----------------------------|-------|--------|---------------------|
|                     |                | Old.                       | New.  | Total. |                     |
|                     | ACS.           | ACS.                       | ACS.  | ACS.   | RS.                 |
| First crop .. .. .  | 52,444         | 50,108                     | 1,217 | 51,325 | 2,31,350            |
| Second crop .. .. . | 12,836         | 7,203                      | 5,225 | 12,428 | 32,530              |

No. 9.—PERIYAR PROJECT.

CAPITAL ACCOUNT.

tribution of the amount sanctioned by the Secretary of State for the direct charges was sanctioned by the Government of India in December expenditure on *Capital Account* of the Periyar project is shown in the sub-

| Departmental heads.              | Grant for 1896-97. | Expenditure during 1896-97. | Total expenditure to end of 1896-97. |
|----------------------------------|--------------------|-----------------------------|--------------------------------------|
| <i>Direct Charges.</i>           | RS.                | RS.                         | RS.                                  |
| 1,02,000                         | 1,03,313           | 60,69,752                   |                                      |
| 21,160                           | 22,434             | 13,46,177                   |                                      |
| 39,000                           | 88,446             | 7,28,291                    |                                      |
| Total                            | 33,160             | 45,301                      | 81,44,223                            |
| Less receipts on Capital Account |                    | 331                         | 14,263                               |
| Net Total                        | 33,160             | 41,970                      | 81,30,017                            |
| <i>Indirect Charges.</i>         |                    |                             |                                      |
| 4,891                            |                    | 84,661                      |                                      |
| 3,141                            |                    | 1,88,408                    |                                      |
| Total                            |                    | 7,532                       | 2,23,127                             |
| Grand Total                      |                    | 52,502                      | 83,53,144                            |

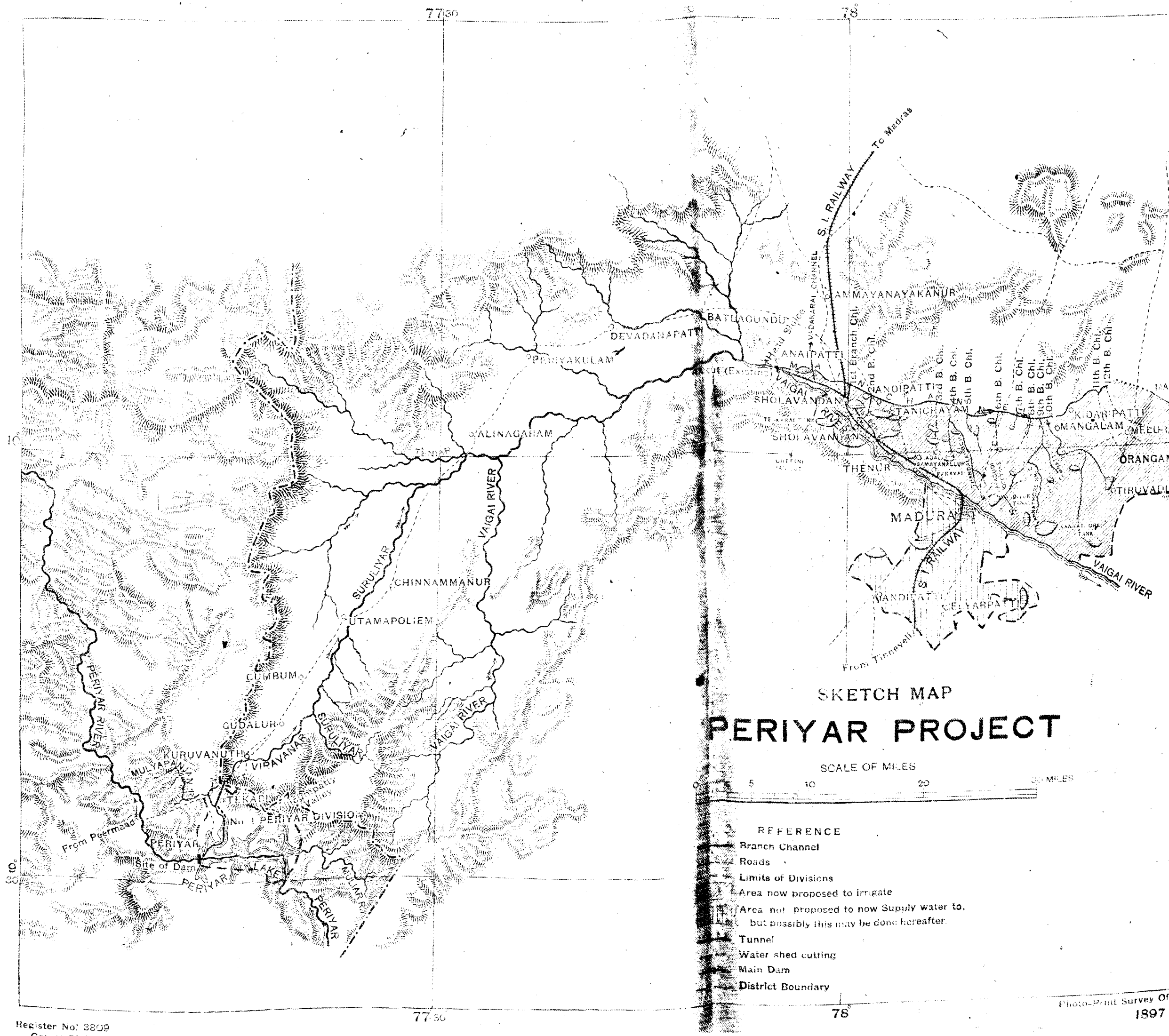
struction estimate for the project was closed on the 31st March 1897. expenditure including indirect charges incurred up to that date was Rupees against the sanctioned estimate of Rs. 87,50,000. owing is an epitomé of the work carried out during the year :—

Head Works.

Completed in all respects except the inspection tower which is in escape and water-shed tunnel were completed. Works at Thekkady.—A new store-room, improvements to rest-house, of four river gauge pillars and of godowns to rest-houses and conversion into lascars' quarters were completed.

Main Channel.

ach, 1 to 7 $\frac{3}{8}$  miles.—The excavation was finished. Inlet at 2 miles 5 feet and at 3 miles 2 furlongs 440 feet, run-off channel, inlet at 1 mile tary from Natchikulam weir were in progress. ach, 7 $\frac{3}{8}$  miles to 10 $\frac{1}{2}$  miles.—The bridge near Thathampetty and distributary n irrigation sluice were in progress. ach, 10 $\frac{1}{2}$  miles to 17 miles.—Distributaries from irrigation sluices and supply nam Sambaikulam tank were in progress. ach, 17 miles to 18 $\frac{1}{2}$  miles.—Irrigation channel was in progress. ach, 18 $\frac{1}{2}$  miles to 20 $\frac{1}{2}$  miles.—Raising wings of Marangaliar super-passage, queduct and irrigation sluice were completed. h, 8th, 9th and 10th Reaches, 20 $\frac{1}{2}$  miles to 30 $\frac{1}{2}$  miles.—The maintenance n channel was attended to. Irrigation sluices were completed and the es were in progress. each, 30 $\frac{1}{2}$  miles to 36 miles.—The excavation of the reach was finished. each was completed.



Enhanced  
share of land  
revenue.

The share of enhanced land revenue due to the works amounted to Rs. 419 as shown below :—

|                                                                 |        |
|-----------------------------------------------------------------|--------|
| Land assessment on waste lands brought under irrigation .. .. . | Rs. 93 |
| " " on miscellaneous items .. .. .                              | 326    |
| Total .. .. .                                                   | 419    |

The gross revenue and working expenses per acre amounted to Rs. 4.19 and Re. 0.94, respectively.

Financial  
results.

The following statement shows the financial results :—

| Expenditure.                    | During<br>1896-97. | To end of<br>1896-97. | Receipts.                       | During<br>1896-97. | To end of<br>1896-97. |
|---------------------------------|--------------------|-----------------------|---------------------------------|--------------------|-----------------------|
|                                 | Rs.                | Rs.                   |                                 | Rs.                | Rs.                   |
| Direct charges .. .. .          | 55,989             | 55,989                | Receipts in the Public Works    |                    |                       |
| Indirect charges .. .. .        | 2,238              | 2,238                 | Department .. .. .              | 2,66,480           | 2,66,480              |
| Collection charges in the Civil |                    |                       | Irrigation revenue .. .. .      | 419                | 419                   |
| department .. .. .              | 1,777              | 1,777                 | Share of enhanced land revenue. |                    |                       |
| Interest on capital outlay —    |                    |                       | Total receipts .. .. .          | 2,66,899           | 2,66,899              |
| Direct charges .. .. .          | 3,24,301           | 16,06,402             | Deduct portion of revenue as-   |                    |                       |
| Total expenditure and           |                    |                       | sumed to be due to "old         |                    |                       |
| charges .. .. .                 | 3,84,305           | 16,66,406             | irrigation" less old mainte-    |                    |                       |
| Deficit .. .. .                 | 3,32,930           | 16,15,031             | nance charges .. .. .           | 2,16,624           | 2,15,624              |
| Net Total .. .. .               | 51,375             | 51,875                | Net Total .. .. .               | 51,375             | 51,875                |

The working expenses, inclusive of interest charges for the year, exceeded the revenue by Rs. 3,32,930.

#### GENERAL REMARKS.

**Inspection of the Inspector-General of Irrigation.** The works were inspected by Mr. T. Higham, C.I.E., Inspector-General of Irrigation, in December 1896, and on his suggestion a design for fitting one of Stoney's gates to the head of the Periyar tunnel has since been prepared.

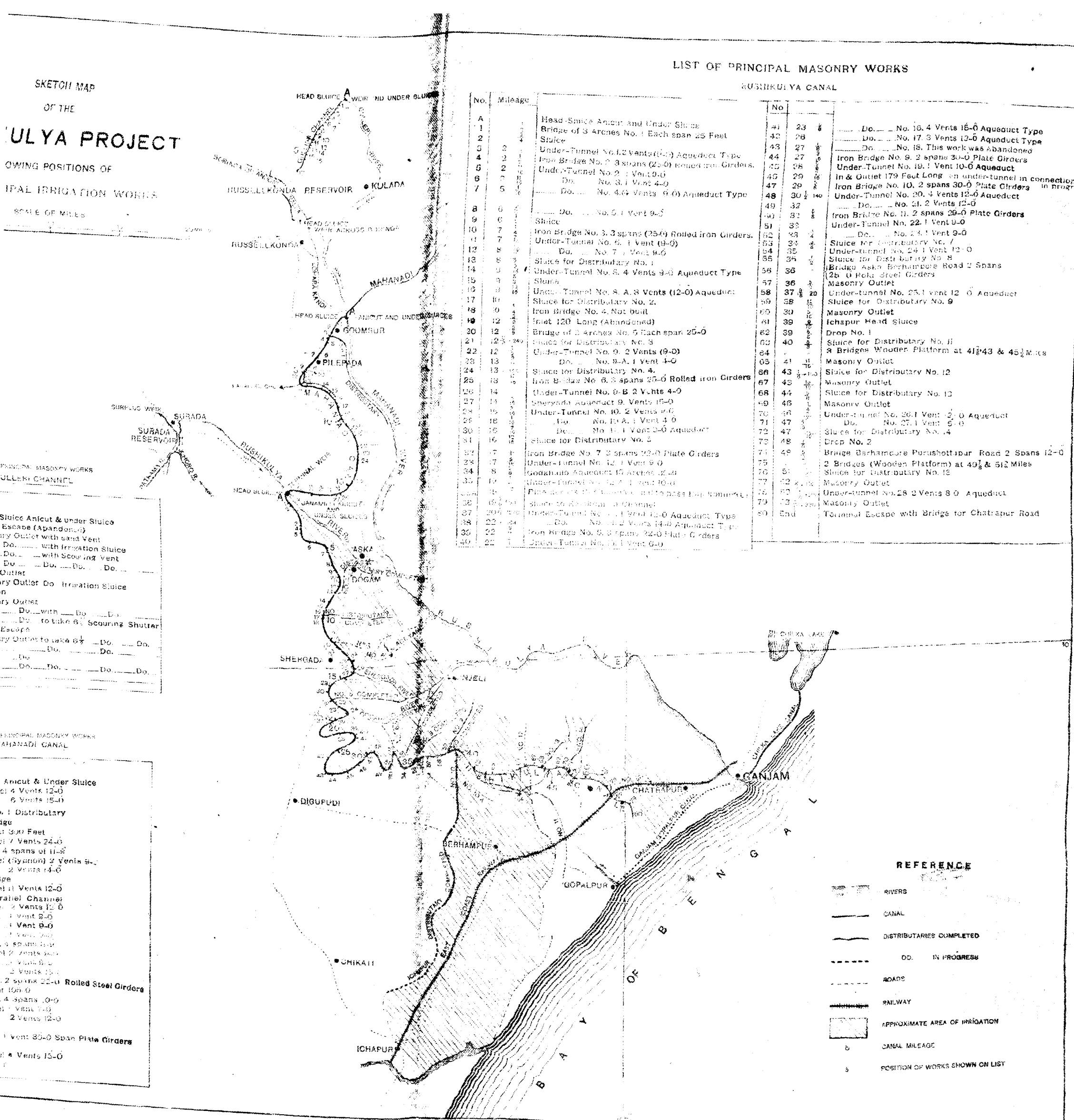
**Utilization of the water-power.** The question of utilizing the waterpower available from the fall of water from the tunnel to the plains, about 900 feet, was under the consideration of the Government during the year. Tenders have since been invited from the public.

**Engineering history of the Periyar project.** In October 1896, Mr. A. T. Mackenzie, Executive Engineer, Public Works Department, who was for a long time connected with the Periyar project works, was, with the sanction of the Government of India, entrusted with the preparation of an Engineering history of the project.

**Level of water in the Periyar lake.** From the diagram published at the end of this report, it will be seen that the level of water in the Periyar lake remained at a fairly constant level of about 2 feet above the level of the water-shed cutting from 1st April to the middle of June. The lake level then rose rapidly and began to surplus in the middle of July. It continued surplussing till about 20th August and having fallen during September and October to about 7½ feet below escape level, it rose in the middle of November and continued surplussing till the end of December. After this, the level of water in the lake gradually fell to the end of the year.

The offtake tunnel was opened on the 6th June and continued discharging full up to February. The quantity of water discharged through the tunnel during the year was 23,898,550 millions cubic feet, or sufficient to mature 110,642 acres of a five-month crop.





MAJOR (PROTECTIVE) WORK.  
No. 10.—RUSHIKULYA PROJECT.

CAPITAL ACCOUNT.  
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 1896-97. | Outlay during 1896-97. | Total outlay to end of 1896-97. |
|-----------------------------------------------|---------------------|--------------------------|------------------------|---------------------------------|
| <b>Direct Charges.</b>                        |                     |                          |                        |                                 |
| Works .. .. .                                 | Rs. 34,86,000       | Rs. 1,67,317             | Rs. 1,67,744           | Rs. 32,93,578                   |
| Establishment .. .. .                         | 7,29,223            | 36,183                   | 37,317                 | 6,89,651                        |
| Tools and plant .. .. .                       | 1,55,821            | ..                       | 90                     | 1,55,911                        |
| Loss by exchange .. .. .                      | ..                  | ..                       | ..                     | ..                              |
| Total .. .. .                                 | 43,71,044           | 2,03,500                 | 2,04,971               | 41,18,293                       |
| Less receipts on Capital Account .. .. .      | 3,044               | ..                       | 913                    | 7,081                           |
| Net Total .. .. .                             | 43,68,000           | 2,03,500                 | 2,04,058               | 41,11,212                       |
| <b>Indirect Charges.</b>                      |                     |                          |                        |                                 |
| Capitalized abatement of land revenue .. .. . | 2,85,900            | ..                       | 5,001                  | 2,71,608                        |
| Leave and pension allowances .. .. .          | 1,02,091            | ..                       | 5,224                  | 96,651                          |
| Total .. .. .                                 | 3,88,000            | ..                       | 10,225                 | 3,88,169                        |
| Grand Total .. .. .                           | 47,56,000           | ..                       | 2,14,283               | 44,79,371                       |

The following were the principal works in hand :—

**Mahanadi Section.**  
*The Russellkonda reservoir dam.*—The bund where the earthwork had settled has been brought to its full height + 322.  
*Surplus channel, drop and road dam and road diversion of Mojjagada road.*—Earthwork was fully completed.  
*The coping of the crest of the Goomsur anicut* was fully completed.  
*Mahanadi Canal.*—The diversion of Kaliamba Nalla into No. 3 aqueduct, and parallel channel from 5½ miles, Mahanadi canal, were fully completed.  
*The Boringa distributary.*—The earthwork and all masonry works, with the exception of 3, 4 and 5 drops, were fully completed.  
The excavation of No. 1 distributary, Mahanadi canal, was completed with the exception of piping arrangements across river channels.

**Rushikulya Section.**  
*Surada reservoir dam.*—The work was stopped for a great portion of the year pending final decision as to what course should be adopted in making up the slips. Work was resumed after the inspection of the Chief Engineer for Irrigation. The old revetment in the extension dam up to the head sluice was dismantled. The new toe wall was under construction over the whole length. Red earth was laid both in front and rear with slopes 1½ to 1 and 2 to 1, respectively, against the original slopes 1 to 1 and 1½ to 1. The whole revetment in the east dam above + 285 was dismantled and its reconstruction in a continuous slope of 1½ to 1 below + 285 instead of 1 to 1 was in progress.  
*The waste weir* was almost completed.  
*The diversion of the Pathama river into the Surada reservoir.*—Two-thirds of the work was finished.  
*The Surada reservoir head sluice and channel* therefrom to the Johoro river were fully completed.  
*Rushikulya canal.*—The works on the main canal were completed.



## 43. PROVINCIAL—MINOR WORKS AND NAVIGATION.

## MINOR WORKS FOR WHICH CAPITAL AND REVENUE ACCOUNTS ARE KEPT.

## CAPITAL ACCOUNT.

The capital expenditure was as follows :—

| Departmental heads.                           | Cost of construction as now estimated. | Final grant for 1896-97. | Outlay during 1896-97. | Total outlay to end of 1896-97. |
|-----------------------------------------------|----------------------------------------|--------------------------|------------------------|---------------------------------|
| <i>Direct Charges.</i>                        | RS.                                    | RS.                      | RS.                    | RS.                             |
| Works .. .. .                                 | 3,31,53,055                            | 5,40,490                 | 5,41,730               | 1,31,32,468                     |
| Establishment .. .. .                         | 31,17,515                              | 1,18,000                 | 1,15,921               | 30,43,336                       |
| Tools and plant .. .. .                       | 2,71,968                               | 52,531                   | 49,056                 | 2,70,088                        |
| <b>Total</b> .. .. .                          | 1,68,45,538                            | 7,11,041                 | 7,05,807               | 1,64,45,892                     |
| Less receipts on Capital Account .. .. .      | 6,500                                  | ..                       | 2,238                  | 7,046                           |
| <b>Net Total</b> .. .. .                      | 1,68,38,938                            | (a) 7,11,041             | 7,03,569               | 1,64,38,846                     |
| <i>Indirect Charges.</i>                      |                                        |                          |                        |                                 |
| Capitalized abatement of land revenue .. .. . | 6,67,040                               | ..                       | 11,807                 | 6,82,898                        |
| Leave and pension allowances .. .. .          | 4,68,391                               | ..                       | 16,102                 | 4,68,677                        |
| <b>Total</b> .. .. .                          | 11,35,431                              | ..                       | 27,909                 | 19,97,575                       |
| <b>Grand Total</b> .. .. .                    | 1,79,74,379                            | ..                       | * 7,31,478             | 1,76,36,421                     |

(a) Inclusive of Rs. 16,974 for the Kurnool-Cuddapah canal.

\* Exclusive of Rs. 12,911 expended on the Kurnool-Cuddapah Canal—*vide* footnote (a) to statements showing the outlay under "Major (Productive) Works" "Capital Account" as page 18.

The budget grant of Rs. 11,22,610 was reduced during the year to Rs. 7,11,041 by the surrender of the entire grant of Rs. 6,00,000 for the Coom Improvements scheme, pending sanction of an estimate for the work on modified lines, and by the appropriation of additional funds to the extent of Rs. 1,88,431, chiefly for the Munnyeru project, the Lower Coleroon and Pelanderai anicut systems.

## REVENUE ACCOUNT.

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

| Departmental heads.                 | Grant.   |          | Outlay.  |                                 |           |
|-------------------------------------|----------|----------|----------|---------------------------------|-----------|
|                                     | Budget.  | Final.   | Gross.   | Deduct old maintenance charges. | Net.      |
|                                     | RS.      | RS.      | RS.      | RS.                             | RS.       |
| Extensions and improvements .. .. . | 22,659   | 31,967   | 36,598   | 6,120                           | 30,468    |
| Maintenance and repairs .. .. .     | 1,72,209 | 2,29,391 | 2,34,454 | 6,264                           | 2,28,190  |
| Establishment .. .. .               | 57,819   | 72,904   | 75,799   | 2,845                           | 71,554    |
| Tools and plant .. .. .             | 3,875    | 6,275    | 6,819    | 123                             | 6,694     |
| <b>Total</b> .. .. .                | 2,56,562 | 3,38,637 | 3,52,658 | 15,354                          | 3,37,304  |
| Indirect charges .. .. .            | ..       | ..       | 11,494   | 396                             | 11,098    |
| <b>Grand Total</b> .. .. .          | ..       | ..       | 3,64,152 | 15,750                          | 3,48,402† |

† Exclusive of grant for old maintenance charges.

‡ Excludes Rs. 1,637 shown under Major Works debitable to the Kurnool-Cuddapah Canal—*vide* footnote (a), page 18.

Area irrigated and revenue derived and financial results.

The total area irrigated for first and second crops was 523,424 acres against 534,227 acres in the previous year. The total revenue derived was Rs. 19,80,476 and deducting the working expenses which amounted to Rs. 4,10,471, the net revenue amounted to Rs. 15,70,005. Deducting the sum of Rs. 8,96,146 due to old irrigation, there was an increase of Rs. 6,73,859.

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.

## CAPITAL ACCOUNT.

An expenditure of Rs. 4,011 was incurred during the year against a grant of Rs. 3,717.

The surplus weir in the right bank of Kallepalli branch of Waddada channel in Patha Chicacole limits was completed and the construction of sluice No. 1 to Tamara tank of Palatalagam and of surplus weir in the east bank of Singinadhambatti, the improvements to the private calingula of Mustaphakan tank of Tulugu, and the diversion of the Waddada channel near the Dusi channel aqueduct in the limits of Koilaka village were in progress.

## REVENUE ACCOUNT.

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

| Departmental heads.                 | Grant. | Outlay. |                                 |        |
|-------------------------------------|--------|---------|---------------------------------|--------|
|                                     |        | Gross.  | Deduct old maintenance charges. | Net.   |
|                                     | RS.    | RS.     |                                 | RS.    |
| Extensions and improvements .. .. . | 9,053  | 9,073   | ..                              | 9,073  |
| Maintenance and repairs .. .. .     | 2,082  | 2,121   | ..                              | 2,121  |
| Establishment .. .. .               | ..     | ..      | ..                              | ..     |
| Tools and plant .. .. .             | ..     | ..      | ..                              | ..     |
| <b>Total</b> .. .. .                | 11,135 | 11,194  | ..                              | 11,194 |
| Indirect charges .. .. .            | ..     | 297     | ..                              | 297    |
| <b>Grand Total</b> .. .. .          | ..     | 11,491  | ..                              | 11,491 |

The expenditure under this head was incurred in clearing silt from and in repairing and closing breaches in several channels and keeping them in working order.

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

|                                     |       |
|-------------------------------------|-------|
|                                     | RS.   |
| 28 per cent. on Expenditure .. .. . | 2,087 |
| 10 „ on Direct Revenue .. .. .      | 34    |
| <b>Total</b> .. .. .                | 2,121 |

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. |                     |
|                                |                | ACS.                       | ACS.            | ACS.   | RS.                 |
| First crop .. 1896-97 .. .. .  | 56,756         | 48,308                     | 6,926           | 53,234 | 97,820              |
| .. 1895-96 .. .. .             | 56,497         | 49,309                     | 7,170           | 56,488 | 1,11,744            |
| Second crop .. 1896-97 .. .. . | 10,770         | ..                         | 10,767          | 10,767 | 20,197              |
| .. 1895-96 .. .. .             | 5,608          | ..                         | 2,008           | 6,008  | 2,543               |

The share of enhanced land revenue due to the works amounted to Rs. 6,598 as shown below :—

|                                                                 |       |
|-----------------------------------------------------------------|-------|
|                                                                 | RS.   |
| Land assessment on waste lands brought under irrigation .. .. . | 6,004 |
| .. on miscellaneous items .. .. .                               | 594   |
| <b>Total</b> .. .. .                                            | 6,598 |

Enhanced share of land revenue.



## GENERAL REMARKS.

From October 1896, the progress of works was retarded to some extent owing to the major part of the labour having left for more remunerative works on the Madras-Benwada Railway in the Bellare district.

Steps were taken to complete the Pórumánilla tank supply channel in time for the coming monsoons, so that advantage might be taken of it to fill Pórumánilla tank. A revised estimate for this project, amounting to Rs. 4,50,000, including indirect charges, was sanctioned by Government in April 1897, and it is hoped that the financial results will justify this large expenditure; but the Sagileru river is dependent entirely on comparatively local rainfall for its supply and in years of drought must fail in common with other local streams. It cannot in any way be compared with the Tungabhadra as a trustworthy source of water-supply, and it is feared that the hopes of those who placed, and place, reliance on it may often be doomed to disappointment. The works have been exceedingly well carried out and reflect great credit on Mr. S. B. Murray, the Executive Engineer, and his Sub-Divisional officer Mr. R. Enright.

## No. 15.—CUMBUM TANK SYSTEM.

## CAPITAL ACCOUNT.

Total outlay. The construction of a combined scouring sluice and bridge at site of the Sekrail-kuthwa—an incomplete work of the previous year, for which a revised estimate amounting to Rs. 15,500 was sanctioned by Government in April 1895—was almost completed, the outlay incurred on the work during the year being Rs. 1,065, against a grant of Rs. 1,500. The total capital outlay, including indirect charges, to end of the year was Rs. 63,540.

## REVENUE ACCOUNT.

The charges on Revenue Account were—

| Departmental heads.                 | Grant. | Outlay. |                                 |        |
|-------------------------------------|--------|---------|---------------------------------|--------|
|                                     |        | Gross.  | Deduct old maintenance charges. | Net.   |
| Extensions and improvements .. .. . | Rs. 69 | Rs. 69  | ..                              | Rs. 69 |
| Maintenance and repairs .. .. .     | 759    | 715     | ..                              | 745    |
| Establishment .. .. .               | 184    | 185     | ..                              | 185    |
| Tools and plant .. .. .             | ..     | ..      | ..                              | ..     |
| Total .. .. .                       | 984    | 989     | ..                              | 989    |
| Indirect charges .. .. .            | ..     | 26      | ..                              | 26     |
| Grand Total .. .. .                 | ..     | 1,015   | ..                              | 1,015  |

The charges for establishment amounted to Rs. 185 as shown below :—

|                                     |         |
|-------------------------------------|---------|
| 23 per cent. on Expenditure .. .. . | Rs. 185 |
| 10 " " on Direct revenue .. .. .    | ..      |
| Total .. .. .                       | 185     |

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 .. { 1896-97 .. .. .  | Acres. 5,534   | Acres. 4,787               | Acres. 746      | Acres. 5,533 | Rs. 28,280          |
| .. { 1895-96 .. .. .             | 4,646          | 4,801                      | 746             | 5,546        | 28,342              |
| Second crop .. { 1896-97 .. .. . | 4,001          | 2,586                      | ..              | 2,586        | 4,912               |
| .. { 1895-96 .. .. .             | 4,152          | 2,658                      | 1,794           | 4,452        | 12,490              |

## CUMBUM TANK SYSTEM.

The share of enhanced land revenue due to the works amounted to Rs. 585 as shown below :—

|                                                                 |         |
|-----------------------------------------------------------------|---------|
| Land assessment on waste lands brought under irrigation .. .. . | Rs. 554 |
| " " on miscellaneous items .. .. .                              | 31      |
| Total .. .. .                                                   | 585     |

The following statement shows the financial results :—

| Expenditure.                                       | During 1896-97. | To end of 1896-97. | Receipts.                                                          | During 1896-97. | To end of 1896-97. | Financial results.              |
|----------------------------------------------------|-----------------|--------------------|--------------------------------------------------------------------|-----------------|--------------------|---------------------------------|
|                                                    |                 |                    |                                                                    |                 |                    |                                 |
| Direct charges .. .. .                             | Rs. 989         | Rs. 64,204         | Receipts in the Public Works Department .. .. .                    | Rs. 33,192      | Rs. 7,59,178       | Enhanced share of land revenue. |
| Indirect charges .. .. .                           | 26              | 4,385              | Irrigation revenue .. .. .                                         | 585             | 9,389              |                                 |
| Collection charges in the Civil Department .. .. . | 184             | 8,970              | Share of enhanced land revenue .. .. .                             | ..              | ..                 |                                 |
| Total expenditure and charges .. .. .              | 1,201           | 77,562             | Total receipts .. .. .                                             | 33,777          | 7,68,577           |                                 |
| Surplus revenue .. .. .                            | 2,528           | 1,01,844           | Deduct portion of revenue assigned to the "old irrigation" .. .. . | 30,048          | 6,89,171           |                                 |
| Total .. .. .                                      | 3,729           | 1,79,406           | Net Total .. .. .                                                  | 3,729           | 1,79,406           |                                 |

The actual return was 3.98 per cent. on the capital outlay.

## No. 16.—THADAPALLI CHANNEL SYSTEM.

## CAPITAL ACCOUNT.

Against a grant of Rs. 6,000 for works, an expenditure of Rs. 6,533 was incurred. The excavation of a side distributary along the left bank of the Thadapalli main channel was completed and the re-sluicing of the Thadapalli channel from 11½ to 18½ miles, sanctioned in February 1896, was in progress during the year. The total capital outlay, including indirect charges, to the end of the year, amounted to Rs. 1,22,919.

## REVENUE ACCOUNT.

The charges on Revenue Account were—

| Departmental heads.                 | Grant.    | Outlay.   |                                 |           |
|-------------------------------------|-----------|-----------|---------------------------------|-----------|
|                                     |           | Gross.    | Deduct old maintenance charges. | Net.      |
| Extensions and improvements .. .. . | Rs. 4,000 | Rs. 4,238 | ..                              | Rs. 4,238 |
| Maintenance and repairs .. .. .     | 3,300     | 3,324     | ..                              | 3,324     |
| Establishment .. .. .               | 1,688     | 1,923     | ..                              | 1,923     |
| Tools and plant .. .. .             | ..        | ..        | ..                              | ..        |
| Total .. .. .                       | 8,988     | 8,885     | ..                              | 8,885     |
| Indirect charges .. .. .            | ..        | 185       | ..                              | 185       |
| Grand Total .. .. .                 | ..        | 9,070     | ..                              | 9,070     |

The construction of the Pillayarkovilthorai bridge at 8½ miles, Thadapalli channel, of a store-shed at Kodiveri and of an inspection-shed at Gobichettipelliem and fixing jungle-wood box sluices in lieu of ruined ones in Thadapalli channel were in progress. Besides the usual maintenance of the works, repairing the inspection bungalow and out-houses at Kodiveri, and closing a breach in Thadapalli channel were in progress. The charges for establishment amounted to Rs. 1,323 as shown below :—

|                                     |           |
|-------------------------------------|-----------|
| 23 per cent. on Expenditure .. .. . | Rs. 1,316 |
| 10 " " on Direct revenue .. .. .    | 7         |
| Total .. .. .                       | 1,323     |

The receipts collected in the Public Works Department amounted to Rs. 75 against a budget and revised estimate of Rs. 80.

Receipts in the Public Works Department.

The following statement shows the financial results :—

| Expenditure.                                  | During 1896-97. | To end of 1896-97. | Receipts.                                                                                       | During 1896-97. | To end of 1896-97. |
|-----------------------------------------------|-----------------|--------------------|-------------------------------------------------------------------------------------------------|-----------------|--------------------|
|                                               | RS.             | RS.                |                                                                                                 | RS.             | RS.                |
| Direct charges ..                             | 11,194          | 12,469             | Direct receipts in the Public Works Department ..                                               | 340             | 340                |
| Indirect charges ..                           | 297             | 330                | Irrigation revenue ..                                                                           | 1,18,026        | 38,49,722          |
| Collection charges in the Civil Department .. | 2,040           | 24,363             | Share of enhanced land revenue ..                                                               | 6,698           | 2,16,213           |
| Total expenditure and charges ..              | 13,531          | 47,162             | Total receipts ..                                                                               | 1,24,964        | 40,65,275          |
| Surplus revenue ..                            | 27,611          | 6,40,146           | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. | 33,522          | 33,77,648          |
| Total ..                                      | 41,142          | 5,87,307           | Net Total ..                                                                                    | 41,142          | 6,87,607           |

## GENERAL REMARKS.

Good progress was made during the year, on the investigation necessary for the complete restoration of the river channels connected with this system.

## No. 12.—MUNNYERU PROJECT.

## CAPITAL ACCOUNT.

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

| Departmental heads.                      | Sanctioned estimate. | Grant for 1896-97. | Outlay during 1896-97. | Outlay to end of 1896-97. |
|------------------------------------------|----------------------|--------------------|------------------------|---------------------------|
| <i>Direct Charges.</i>                   | RS.                  | RS.                | RS.                    | RS.                       |
| Works ..                                 | 2,98,110             | 1,29,024           | 1,28,094               | 2,46,159                  |
| Establishment ..                         | 68,572               | 29,676             | 28,547                 | 56,573                    |
| Tools and plant ..                       | 2,693                | 1,500              | 1,286                  | 2,000                     |
| Total ..                                 | 3,69,410             | 1,59,900           | 1,58,027               | 3,02,741                  |
| Less receipts on Capital Account ..      | ..                   | ..                 | 291                    | 439                       |
| Net Total ..                             | 3,69,410             | 1,59,900           | 1,57,736               | 3,02,302                  |
| <i>Indirect Charges.</i>                 |                      |                    |                        |                           |
| Capitalized abatement of land revenue .. | 12,465               | ..                 | 4,011                  | 7,780                     |
| Leave and pension allowances ..          | 9,515                | ..                 | ..                     | 7,750                     |
| Total ..                                 | 22,000               | ..                 | 4,011                  | 7,750                     |
| Grand Total ..                           | 3,91,410             | ..                 | 1,61,747               | 3,10,052                  |

The ancient repairs and improvements were completed. Head sluices and under-sluzes were completed except the fitting of shutters. Excavation of main channel up to 22 miles 4 furlongs was completed, except the banks near some of the under-tunnels. One-third of the blasting work along the channel which is very heavy in tunnels. The first mile was completed. Six bridges and nine under-tunnels were completed and four bridges and eight under-tunnels, one regulator and one inlet were in progress. Vemavaram tank bund was raised and revetment in front completed. Of the branch channels, Penugavehiprole, Rebbavaram and Alurpad were aligned and the alignment of others was in progress. Owing chiefly to the very hard varieties of soil and rock met with, the original estimate for the whole project will be greatly exceeded. Revised estimates were under preparation.

## No. 13.—DONDAPAD TANK PROJECT.

## CAPITAL ACCOUNT.

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

| Departmental heads.                      | Sanctioned estimate. | Grant for 1896-97. | Outlay during 1896-97. | Outlay to end of 1896-97. |
|------------------------------------------|----------------------|--------------------|------------------------|---------------------------|
| <i>Direct Charges.</i>                   | RS.                  | RS.                | RS.                    | RS.                       |
| Works ..                                 | 1,05,095             | 25,698             | 26,889                 | 1,16,881                  |
| Establishment ..                         | 21,723               | 850                | 1,342                  | 22,040                    |
| Tools and plant ..                       | 1,498                | ..                 | ..                     | ..                        |
| Total ..                                 | 1,28,316             | 26,548             | 28,238                 | 1,38,927                  |
| Less receipts on capital account ..      | ..                   | ..                 | 7                      | 7                         |
| Net Total ..                             | 1,28,316             | ..                 | 28,231                 | 1,38,920                  |
| <i>Indirect Charges.</i>                 |                      |                    |                        |                           |
| Capitalized abatement of land revenue .. | 7,988                | ..                 | ..                     | 1,870                     |
| Leave and pension allowances ..          | 3,012                | ..                 | 189                    | 3,086                     |
| Total ..                                 | 11,000               | ..                 | 189                    | 4,956                     |
| Grand Total ..                           | 1,39,316             | ..                 | 28,420                 | 1,43,876                  |

All the works under this project were completed. The drainage sluice through the breach of Dondapad tank was closed by banking in front of it. Owing, however, to the very deficient rainfall, the tank never filled even to the present weir crest and the method adopted for closing the leaky sluice has not been subjected to any real trial. The supply channels to both Dondapad and Nadigadda tanks were completed. The people are very backward in availing themselves of the water from the Dondapad tank, but the past year having been exceptionally unfavourable, it is hoped that this reluctance to use the water will not continue to be manifested.

## No. 14.—SAGILERU "UPPER PROJECT."

## CAPITAL ACCOUNT.

The capital expenditure on the Sagileru "Upper project" was as follows :—

| Departmental heads.                      | Sanctioned estimate. | Grant for 1896-97. | Outlay during 1896-97. | Outlay to end of 1896-97. |
|------------------------------------------|----------------------|--------------------|------------------------|---------------------------|
| <i>Direct Charges.</i>                   | RS.                  | RS.                | RS.                    | RS.                       |
| Works ..                                 | 3,39,900             | 89,000             | 80,523                 | 2,89,050                  |
| Establishment ..                         | 76,692               | 18,170             | 18,386                 | 65,723                    |
| Tools and plant ..                       | 14,408               | 230                | ..                     | 12,307                    |
| Total ..                                 | 4,31,000             | 98,400             | 98,909                 | 3,67,080                  |
| <i>Indirect Charges.</i>                 |                      |                    |                        |                           |
| Capitalized abatement of land revenue .. | 10,700               | ..                 | 6,318                  | 6,356                     |
| Leave and pension allowances ..          | 8,800                | ..                 | 2,574                  | 9,201                     |
| Total ..                                 | 19,500               | ..                 | 8,892                  | 15,556                    |
| Grand Total ..                           | 4,50,500             | ..                 | 1,07,701               | 3,82,636                  |

The ancient, the scouring sluice, the head sluice, six inlets, two pipe aqueducts, sluices Nos. 1 and 2, weirs on right and left flanks, and the Pórunimilla disposition bungalow were completed. Five inlets, four outlets, one pipe aqueduct, three bridges, the Pulivagu escape, the sluice in  $\frac{1}{4}$  mile, two regulator bridges, the Kalsapad tank supply channel, the diversion of irrigation channel, the Pórunimilla tank supply channel, the Chintalapalli tank improvements and the Chubbam road diversion were the principal works in progress. Materials for two pipe aqueducts and the Kalsapad tank supply channel head-sluice were collected.

## 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. 180      | Rs. 180      | ..                              | Rs. 180      |
| Maintenance and repairs .. .. .     | 5,800        | 5,470        | ..                              | 5,470        |
| Establishment .. .. .               | 1,418        | 995          | ..                              | ..           |
| Tools and plant .. .. .             | ..           | ..           | ..                              | ..           |
| <b>Total</b> .. .. .                | <b>7,398</b> | <b>6,645</b> | <b>..</b>                       | <b>6,645</b> |
| Indirect charges .. .. .            | ..           | 139          | ..                              | 139          |
| <b>Grand Total</b> .. .. .          | <b>..</b>    | <b>6,784</b> | <b>..</b>                       | <b>6,784</b> |

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

A foot-bridge over the Kattupolliem outlet at 29th mile of Kalingaroyan channel was constructed.

The Kalingaroyan channel head works and the rest-house at Bhavani were under repair.

The charges for establishment amounted to Rs. 995 as shown below :—

|                                     |            |
|-------------------------------------|------------|
| 23 per cent. on Expenditure .. .. . | Rs. 995    |
| 10 " on Direct revenue .. .. .      | ..         |
| <b>Total</b> .. .. .                | <b>995</b> |

Area irrigated  
and revenue  
derived.

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. |                     |
|                                  | ACS.           | ACS.                       | ACS.            | ACS.   | Rs.                 |
| First crop .. { 1896-97 .. .. .  | 11,272         | 8,239                      | 3,033           | 11,272 | 68,815              |
| .. { 1895-96 .. .. .             | 11,208         | 8,219                      | 2,989           | 11,208 | 68,832              |
| Second crop .. { 1896-97 .. .. . | 10,244         | 8,202                      | 2,042           | 10,244 | 36,188              |
| .. { 1895-96 .. .. .             | 10,416         | 8,325                      | 2,091           | 10,416 | 36,272              |

Enhanced  
share of land  
revenue.

The share of enhanced land revenue due to the works amounted to Rs. 416 as shown below :—

|                                                                 |            |
|-----------------------------------------------------------------|------------|
| Land assessment on waste lands brought under irrigation .. .. . | Rs. 383    |
| " on miscellaneous items .. .. .                                | 33         |
| <b>Total</b> .. .. .                                            | <b>416</b> |

Financial  
results.

The following statement shows the financial results :—

| Expenditure.                                       | During 1896-97. | To end of 1896-97. | Receipts.                                                                                            | During 1896-97. | To end of 1896-97. |
|----------------------------------------------------|-----------------|--------------------|------------------------------------------------------------------------------------------------------|-----------------|--------------------|
|                                                    | Rs.             | Rs.                |                                                                                                      | Rs.             | Rs.                |
| Direct charges .. .. .                             | 6,645           | 4,87,718           | Direct receipts in the Public Works Department .. .. .                                               | ..              | 1,278              |
| Indirect charges .. .. .                           | 139             | 12,720             | Irrigation revenue .. .. .                                                                           | 1,05,003        | 37,52,624          |
| Collection charges in the Civil Department .. .. . | 1,024           | 22,118             | Share of enhanced land revenue .. .. .                                                               | 416             | 9,920              |
| <b>Total expenditure and charges</b> .. .. .       | <b>7,808</b>    | <b>5,22,556</b>    | <b>Total receipts</b> .. .. .                                                                        | <b>1,05,419</b> | <b>37,63,822</b>   |
| Surplus revenue .. .. .                            | 12,679          | 78,984             | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. .. . | 84,932          | 33,20,518          |
| <b>Total</b> .. .. .                               | <b>20,487</b>   | <b>4,43,574</b>    | <b>Net Total</b> .. .. .                                                                             | <b>20,487</b>   | <b>4,43,574</b>    |

The actual return was 21.03 per cent. on the capital outlay.

## GENERAL REMARKS.

The sanction accorded by the Secretary of State in January 1891 to the estimate of Rs. 8,71,000 for further improvements and extension of the Kalingaroyan channel having expired on the 30th January 1896, an application for an extension of that sanction for a further period of five years was submitted in December 1896, but in February 1897 the Government of India declined to extend the sanction pending revision of the estimate for the work.

## No. 19.—PALAR ANICUT SYSTEM.

## CAPITAL ACCOUNT.

The construction estimate of this system having been closed on the 31st March 1896, a schedule of works amounting to Rs. 22,300 remaining to be carried out to complete the system was submitted in February 1897 for the sanction of the Government of India together with the completion report.

The capital expenditure on the system during the year was as follows :—

Grant and  
outlay.

| Departmental heads.                           | Sanctioned estimate. | Grant for 1896-97. | Outlay during 1896-97. | Outlay to end of 1896-97. |
|-----------------------------------------------|----------------------|--------------------|------------------------|---------------------------|
| <b>Direct Charges.</b>                        | Rs.                  | Rs.                | Rs.                    | Rs.                       |
| Works .. .. .                                 | 19,066               | 7,000              | 6,678                  | 15,29,328                 |
| Establishment .. .. .                         | 3,163                | 1,610              | 1,359                  | 4,00,766                  |
| Tools and plant .. .. .                       | 81                   | ..                 | ..                     | 29,876                    |
| <b>Total</b> .. .. .                          | <b>22,300</b>        | <b>8,610</b>       | <b>8,037</b>           | <b>19,59,968</b>          |
| <b>Indirect Charges.</b>                      |                      |                    |                        |                           |
| Capitalised statement of land revenue .. .. . | ..                   | ..                 | 1,026                  | 28,054                    |
| Leave and pension allowances .. .. .          | ..                   | ..                 | 190                    | 82,214                    |
| <b>Total</b> .. .. .                          | <b>..</b>            | <b>..</b>          | <b>1,216</b>           | <b>1,05,268</b>           |
| <b>Grand Total</b> .. .. .                    | <b>..</b>            | <b>..</b>          | <b>9,248</b>           | <b>20,65,236</b>          |

The total capital outlay, including indirect charges, to the end of the year, was Rs. 20,65,236.

A weir to the Vepery big tank, a weir to the Kondangarai tank, a sluice to the Vepery small tank, a lascar's shed near the vented weir of Thakkolam channel, regulators to the Kondangarai tank and regulators in the Kolathur and Damal branch channels were constructed and a surplus channel in front of Easayanur large tank was excavated and embanked.

## 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. 9,867     | Rs. 9,534     | Rs. 178                         | Rs. 9,356     |
| Maintenance and repairs .. .. .     | 36,811        | 38,844        | 2,930                           | 35,914        |
| Establishment .. .. .               | 10,519        | 11,329        | 710                             | 10,619        |
| Tools and plant .. .. .             | ..            | ..            | 4                               | ..            |
| <b>Total</b> .. .. .                | <b>55,682</b> | <b>59,707</b> | <b>3,801</b>                    | <b>55,906</b> |
| Indirect charges .. .. .            | ..            | 1,586         | 99                              | 1,487         |
| <b>Grand Total</b> .. .. .          | <b>..</b>     | <b>61,293</b> | <b>3,900</b>                    | <b>57,393</b> |

\* Exclusive of grant for old maintenance charges.

Area irrigated and revenue derived.

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. |                     |
|             |         |    |    | ACS.           | ACS.                       | ACS.            | ACS.   | RS.                 |
| First crop  | 1896-97 | .. | .. | 14,686         | 10,044                     | 4,485           | 14,530 | 1,02,811            |
|             | 1896-96 | .. | .. | 14,214         | 9,954                      | 4,194           | 14,148 | 1,00,653            |
|             | 1896-97 | .. | .. | 401            | 178                        | 223             | 401    | 1,360               |
| Second crop | 1896-96 | .. | .. | 598            | 165                        | 433             | 598    | 2,205               |

Enhanced share of land revenue.

The share of enhanced land revenue due to the works amounted to Rs. 2,638 shown below :—

|                                                         |    |    |    |    |           |
|---------------------------------------------------------|----|----|----|----|-----------|
| Land assessment on waste lands brought under irrigation | .. | .. | .. | .. | Rs. 2,608 |
| on miscellaneous items                                  | .. | .. | .. | .. | 30        |
| Total                                                   | .. | .. | .. | .. | 2,638     |

Financial results.

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

| Expenditure.                                  | During 1896-97. | To end of 1896-97. | Receipts.                                                                                       | During 1896-97. | To end of 1896-97. |
|-----------------------------------------------|-----------------|--------------------|-------------------------------------------------------------------------------------------------|-----------------|--------------------|
|                                               | RS.             | RS.                |                                                                                                 | RS.             | RS.                |
| Direct charges ..                             | 8,835           | 3,01,935           | Direct receipts in the Public Works Department ..                                               | 75              | 671                |
| Indirect charges ..                           | 185             | 7,707              | Irrigation revenue ..                                                                           | 1,94,171        | 38,48,196          |
| Collection charges in the Civil Department .. | 1,625           | 41,468             | Share of enhanced land revenue ..                                                               | 2,638           | 85,341             |
| Total expenditure and charges ..              | 10,575          | 3,51,110           | Total receipts ..                                                                               | 1,96,884        | 39,34,208          |
| Surplus revenue ..                            | 19,599          | 4,78,005           | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. | 76,710          | 51,04,183          |
| Total ..                                      | 30,174          | 8,30,015           | Net Total ..                                                                                    | 30,174          | 5,30,015           |

The actual return was 15.94 per cent. on the capital outlay.

## No. 17.—ARKENKOTA 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 1,02,964.

### REVENUE ACCOUNT.

Grant and outlay.

The charges on Revenue Account were—

| Departmental heads.         | Grant.   | Outlay. |                                 |       |
|-----------------------------|----------|---------|---------------------------------|-------|
|                             |          | Gross.  | Deduct old maintenance charges. | Net.  |
|                             | RS.      | RS.     | RS.                             | RS.   |
| Extensions and improvements | 700      | 689     | ..                              | 689   |
| Maintenance and repairs     | 1,600    | 1,477   | ..                              | 1,477 |
| Establishment               | 620      | 369     | ..                              | 369   |
| Tools and plant             | ..       | ..      | ..                              | ..    |
| Indirect charges            | Total .. | 2,829   | 2,535                           | 2,535 |
|                             | ..       | ..      | 52                              | 52    |
| Grand Total                 | ..       | 2,587   | ..                              | 2,587 |

Fixing jungle-wood box-slucies in lieu of ruined ones and constructing two lascars' sheds were the works in progress.

Expenditure was incurred on the usual annual clearance of the channel and in closing breaches in the Mangamari scouring sluices.

The charges for establishment amounted to Rs. 369 as shown below :—

|                             |    |    |    |    |    |    |    |         |
|-----------------------------|----|----|----|----|----|----|----|---------|
| 23 per cent. on Expenditure | .. | .. | .. | .. | .. | .. | .. | Rs. 367 |
| 10 " on Direct revenue      | .. | .. | .. | .. | .. | .. | .. | 2       |
| Total                       | .. | .. | .. | .. | .. | .. | .. | 369     |

The receipts collected in the Public Works Department amounted to Rs. 23.

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. |                     |
|             |         |    |    |    | ACS.           | ACS.                       | ACS.            | ACS.   | RS.                 |
| First crop  | 1896-97 | .. | .. | .. | 4,118          | 2,631                      | 1,462           | 4,088  | 27,272              |
|             | 1895-96 | .. | .. | .. | 4,116          | 2,648                      | 1,442           | 4,099  | 27,259              |
|             | 1896-97 | .. | .. | .. | 43             | 7                          | 36              | 43     | 137                 |
| Second crop | 1895-96 | .. | .. | .. | 44             | 7                          | 37              | 44     | 130                 |

The share of enhanced land revenue due to the works amounted to Rs. 362 as shown below :—

|                                                         |    |    |    |    |         |
|---------------------------------------------------------|----|----|----|----|---------|
| Land assessment on waste lands brought under irrigation | .. | .. | .. | .. | Rs. 343 |
| on miscellaneous items                                  | .. | .. | .. | .. | 19      |
| Total                                                   | .. | .. | .. | .. | 362     |

The following statement shows the financial results :—

| Expenditure.                                  | During 1896-97. | To end of 1896-97. | Receipts.                                                                                       | During 1896-97. | To end of 1896-97. |
|-----------------------------------------------|-----------------|--------------------|-------------------------------------------------------------------------------------------------|-----------------|--------------------|
|                                               | RS.             | RS.                |                                                                                                 | RS.             | RS.                |
| Direct charges ..                             | 2,535           | 2,41,109           | Direct receipts in the Public Works Department ..                                               | 23              | 31                 |
| Indirect charges ..                           | 52              | 6,295              | Irrigation revenue ..                                                                           | 27,109          | 8,91,024           |
| Collection charges in the Civil Department .. | 437             | 12,756             | Share of enhanced land revenue ..                                                               | 362             | 9,805              |
| Total expenditure and charges ..              | 3,024           | 2,60,162           | Total receipts ..                                                                               | 27,794          | 9,00,860           |
| Surplus revenue ..                            | 5,719           | 4,972              | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. | 19,021          | 6,45,670           |
| Total ..                                      | 8,773           | 2,55,190           | Net Total ..                                                                                    | 8,773           | 2,55,190           |

The actual return was 5.58 per cent. on the capital outlay.

## No. 18.—KALINGAROYAN CHANNEL SYSTEM.

### CAPITAL ACCOUNT.

No outlay was incurred on Capital Account of this system during the year. The total expenditure, including indirect charges, to the end of the previous year, was Rs. 60,278.

### Financial results.

The following statement shows the financial results :—

| The following statement shows—                     |         |                    |                       |                                                                                                      |                       |
|----------------------------------------------------|---------|--------------------|-----------------------|------------------------------------------------------------------------------------------------------|-----------------------|
| Expenditure.                                       |         | During<br>1896-97. | To end of<br>1896-97. | Receipts.                                                                                            |                       |
|                                                    |         |                    |                       | During<br>1896-97.                                                                                   | To end of<br>1896-97. |
|                                                    |         | RS.                | RS.                   |                                                                                                      |                       |
| Direct charges .. .. .                             | .. .. . | 11,367             | 5,43,142              | Direct receipts in the Public Works Department .. .. .                                               | 281      3,188        |
| Indirect charges .. .. .                           | .. .. . | 312                | 14,407                | Irrigation revenue .. .. .                                                                           | 74,105      23,62,420 |
| Collection charges in the Civil Department .. .. . | .. .. . | 2,046              | 62,829                | Share of enhanced land revenue .. .. .                                                               | 4,978      1,47,508   |
| Total expenditure and charges.                     | .. .. . | 13,725             | 6,20,378              | Total receipts .. .. .                                                                               | 79,364      24,53,116 |
| Surplus revenue .. .. .                            | .. .. . | 27,479             | 6,39,401              | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. .. . | 38,160      11,93,387 |
| Total .. .. .                                      | .. .. . | 41,204             | 12,59,779             | Net Total .. .. .                                                                                    | 41,204      12,59,779 |

The actual return was 11.86 per cent. on the capital outlay.

GENERAL REMARKS.

No water passed over the crest of the Poiney anicut during the year.

No. 21.—CHEYÁRU ANICUT SYSTEM.

### CAPITAL ACCOUNT.

**Total outlay.**

**CAPITAL ACCOUNT.**

The works which were in progress on the closure of the construction estimate of the system on the 31st March 1896 were completed, the outlay incurred during the year being Rs. 4,525 against a grant of Rs. 3,992. The total capital outlay, including indirect charges, to the end of the year, was Rs. 4,05,415.

### Progress of work.

The bank of the Cheyáru channel from weir in Nallalam tank to regulator No. 3 was repaired and raised. Mile and furlong stones were fixed along the Cheyáru river. A weir to Kovilur tank, a regulator at the head of Tetrai channel, two lascars' huts and inspection bungalow at Kovilur regulator No. 3 and bridge No. 1 in Cheyáru main channel were constructed.

## REVENUE ACCOUNT.

**Grant and outlay.**

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

| The charges on Revenue Account for the year were— |                     |         |         |                                 |         |
|---------------------------------------------------|---------------------|---------|---------|---------------------------------|---------|
|                                                   |                     |         | Outlay. |                                 |         |
|                                                   | Departmental heads. | Grant.  | Gross.  | Deduct old maintenance charges. | Net.    |
|                                                   |                     | RS.     | RS.     | RS.                             | RS.     |
| Extensions and improvements .. .. .               | .. .. .             | 8,500   | 8,579   | .. .. .                         | 3,579   |
| Maintenance and repairs .. .. .                   | .. .. .             | 18,622  | 18,641  | .. .. .                         | 18,641  |
| Establishment .. .. .                             | .. .. .             | 5,129   | 5,129   | .. .. .                         | 5,129   |
| Tools and plant .. .. .                           | .. .. .             | .. .. . | .. .. . | .. .. .                         | .. .. . |
|                                                   | Total .. .. .       | 27,250  | 27,349  | .. .. .                         | 27,349  |
| Indirect charges .. .. .                          | .. .. .             | .. .. . | 718     | .. .. .                         | 718     |
|                                                   | Grand Total .. .. . | .. .. . | 28,067  | .. .. .                         | 28,067  |

**Extensions  
and improve-  
ments.**

\* Thirty-one works were in progress, of which sixteen were completed. Amongst the latter, the most important were—constructing an irrigation sluice to Thyram-pundi tank, constructing a sluice and improving the byewash in Erumuvetti Chitteri,

improving supply sluice of Tholoopedu large tank, constructing an escape to Sathur tank, constructing high level sluice to Kolamandai tank, constructing sluice in lieu of the one in ruins in Olandai tank and protecting rear-side of Olandai large tank with new stone revetment.

Thirty-five repair works were in progress, of which sixteen were completed.

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

|                                     | RS.       |
|-------------------------------------|-----------|
| 23 per cent. on Expenditure .. .. . | 6,090     |
| 10 „     on Direct revenue .. .. .  | <u>87</u> |
| Total .. .. .                       | 5,129     |

Maintenance  
and repairs.  
Establish-  
ment.

The receipts collected in the Public Works Department amounted to Rs. 394 against a budget and revised estimate of Rs. 200.

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.                 |
|             |         |    |    |    | 22,104         | 15,371                     | 6,233           | 22,104 | 68,810              |
| First crop  | 1896-97 | .. | .. | .. | 21,951         | 15,975                     | 5,975           | 21,950 | 68,377              |
|             | 1895-96 | .. | .. | .. | 14,898         | 1,709                      | 13,189          | 14,898 | 22,179              |
| Second crop | 1896-97 | .. | .. | .. | 15,126         | 1,771                      | 13,355          | 15,126 | 22,325              |
|             | 1895-96 | .. | .. | .. |                |                            |                 |        |                     |

The share of enhanced land revenue due to the works amounted to Rs. 3,469 as shown below :—

|                                                               |       |
|---------------------------------------------------------------|-------|
| below :—                                                      | Rs.   |
| Land assessment on waste lands brought under irrigation .. .. | 3,358 |
| „ „ on miscellaneous items .. ..                              | 96    |
| 1 per cent. on sale-proceeds of tank-bed lands .. ..          | 15    |
| Total .. ..                                                   | 3,469 |

Enhanced  
share of lan  
revenue.

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

| Expenditure.                    | During<br>1896-97. | To end of<br>1896-97. | Receipts.                                                                                    | During<br>1896-97. |           | To end of<br>1896-97. |    |
|---------------------------------|--------------------|-----------------------|----------------------------------------------------------------------------------------------|--------------------|-----------|-----------------------|----|
|                                 |                    |                       |                                                                                              | Rs.                | P.        | Rs.                   | P. |
| Direct charges                  | Rs.                | Rs.                   | Direct receipts in the Public Works                                                          |                    |           |                       |    |
| Indirect charges                | 27,349             | 5,92,138              | Department                                                                                   | 394                | 1,655     |                       |    |
| Collection charges in the Civil | 718                | 15,518                | Department                                                                                   | 90,859             | 21,08,096 |                       |    |
| Department                      |                    |                       | Irrigation revenue                                                                           | 3,469              | 1,16,079  |                       |    |
|                                 | 2,567              | 47,935                | Share of enhanced land revenue                                                               |                    |           |                       |    |
| Total expenditure and charges   | 30,574             | 6,55,691              | Total receipts                                                                               | 94,852             | 22,26,840 |                       |    |
| Surplus revenue                 | 19,900             | 3,04,764              | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges | 44,325             | 12,65,485 |                       |    |
| Total                           | 50,527             | 9,60,355              | Net Total                                                                                    | 50,527             | 9,60,355  |                       |    |

### Financial results.

The actual return was 4.92 per cent. on the capital outlay.

GENERAL REMARKS.

No water passed over the crest of the Cheyáru anicut during the year.



Extensions and improvements.

In the North Arcot division, constructing a surplus weir to Kuttanur tank, reconstructing low-level sluice to Kuttanur big tank, constructing a head-sluice on the right bank of Govindavadi channel and constructing a flush paved escape in the supply channel of Balakrishnapuram tank were completed and the land along the Kaveripauk main channel was demarcated.

Four works in the Chingleput division were in progress including two incomplete works of the previous year which were completed.

Maintenance and repairs.

In the North Arcot division, 45 works were in progress, of which 20 were completed.

In the Chingleput division, twelve works, of which five were incomplete works of the previous year, were in progress. Ten of these works were completed during the year.

Establishment.

The charges for establishment amounted to Rs. 10,619 as shown below :—

|                             |               |
|-----------------------------|---------------|
| 23 per cent. on Expenditure | Rs. 10,358    |
| 10 " on Direct revenue      | 261           |
| <b>Total</b>                | <b>10,619</b> |

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

The receipts collected in the Public Works Department amounted to Rs. 2,614 against a budget and revised estimate of Rs. 1,300 and Rs. 1,540, 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. |                     |
|             |                | ACS.                       | ACS.            | ACS.   | Rs.                 |
| First crop  | 1895-97        | 74,496                     | 21,970          | 70,336 | 1,90,556            |
|             | 1895-96        | 49,266                     | 23,191          | 75,726 | 2,08,797            |
|             | 1896-97        | 75,866                     | 8,042           | 23,397 | 47,348              |
| Second crop | 1896-97        | 25,072                     | 8,201           | 23,425 | 67,504              |
|             | 1895-96        | 23,589                     | 15,227          |        |                     |

Enhanced share of land revenue.

The share of enhanced land revenue due to the works amounted to Rs. 16,333 as shown below :—

|                                                         |               |
|---------------------------------------------------------|---------------|
| Land assessment on waste lands brought under irrigation | Rs. 16,043    |
| " on miscellaneous items                                | 289           |
| 4 per cent. on sale-proceeds of tank-bed lands          | 31            |
| <b>Total</b>                                            | <b>16,333</b> |

Financial results.

The following statement shows the financial results :—

| Expenditure.                               | During 1896-97. | To end of 1896-97. | Receipts.                                                                                     | During 1896-97. | To end of 1896-97. |
|--------------------------------------------|-----------------|--------------------|-----------------------------------------------------------------------------------------------|-----------------|--------------------|
|                                            |                 |                    |                                                                                               |                 |                    |
| Direct charges                             | Rs. 59,707      | Rs. 17,24,704      | Direct receipts in the Public Works Department                                                | Rs. 2,614       | Rs. 21,218         |
| Indirect charges                           | 1,588           | 67,462             | Irrigation revenue                                                                            | 2,37,904        | 66,78,865          |
| Collection charges in the Civil Department | 6,461           | 1,94,102           | Share of enhanced land revenue                                                                | 16,333          | 5,27,747           |
| <b>Total expenditure and charges.</b>      | <b>67,754</b>   | <b>19,86,268</b>   | <b>Total receipts</b>                                                                         | <b>2,56,551</b> | <b>74,27,830</b>   |
| Surplus revenue                            | 37,927          | 14,11,192          | Deduct portion of revenue assumed to be due to "old irrigation," less old maintenance charges | 1,21,100        | 40,30,370          |
| <b>Total</b>                               | <b>1,35,751</b> | <b>83,97,460</b>   | <b>Net Total</b>                                                                              | <b>1,35,751</b> | <b>33,97,460</b>   |

The actual return was 3.29 per cent. on the capital outlay.

#### GENERAL REMARKS.

No water passed over the crest of the Palar anicut during the year.

#### No. 20.—POINEY ANICUT SYSTEM.

##### CAPITAL ACCOUNT.

There was no outlay on Capital Account of this system during the year. The total outlay, including indirect charges, remained as at the end of the previous year at Rs. 2,31,779. The construction estimate was closed on the 31st March 1897.

##### REVENUE ACCOUNT.

The charges on Revenue Account for the year were—

| Departmental heads.         | Grant.        | Outlay.       |                                 |               |
|-----------------------------|---------------|---------------|---------------------------------|---------------|
|                             |               | Gross.        | Deduct old maintenance charges. | Net.          |
|                             |               | Rs.           | Rs.                             | Rs.           |
| Extensions and improvements | 2,000         | 1,997         | ..                              | 1,997         |
| Maintenance and repairs     | 7,000         | 7,222         | ..                              | 7,222         |
| Establishment               | 2,130         | 2,148         | ..                              | 2,148         |
| Tools and plant             | ..            | ..            | ..                              | ..            |
| <b>Total</b>                | <b>11,130</b> | <b>11,367</b> | <b>312</b>                      | <b>11,055</b> |
| Indirect charges            | ..            | ..            | ..                              | ..            |
| <b>Grand Total</b>          | <b>..</b>     | <b>11,679</b> | <b>..</b>                       | <b>11,679</b> |

Grant and outlay.

The low-level sluice to Minnel large tank was reconstructed and the Pallur small tank and supply channel and the weir in Rendadi tank were improved.

Fifteen works were in progress, of which eight were completed.

The charges for establishment amounted to Rs. 2,148 as shown below :—

|                             |              |
|-----------------------------|--------------|
| 23 per cent. on Expenditure | Rs. 2,120    |
| 10 " on Direct revenue      | 28           |
| <b>Total</b>                | <b>2,148</b> |

The receipts collected in the Public Works Department amounted to Rs. 281 against a budget and revised estimate of Rs. 600.

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. |                     |
|             |                | ACS.                       | ACS.            | ACS.   | Rs.                 |
| First crop  | 1896-97        | 21,695                     | 5,823           | 19,908 | 64,556              |
|             | 1895-96        | 15,169                     | 6,612           | 21,781 | 68,751              |
|             | 1896-97        | 22,455                     | 1,411           | 3,805  | 9,552               |
| Second crop | 1896-97        | 4,291                      | 2,558           | 4,969  | 12,701              |
|             | 1895-96        | 4,970                      |                 |        |                     |

The share of enhanced land revenue due to the works amounted to Rs. 4,978 as shown below :—

|                                                         |              |
|---------------------------------------------------------|--------------|
| Land assessment on waste lands brought under irrigation | Rs. 4,978    |
| " on miscellaneous items                                | 44           |
| 4 per cent. on sale-proceeds of tank-bed lands          | 51           |
| <b>Total</b>                                            | <b>4,978</b> |

Extensions and improvements.

Maintenance and repairs. Establishment.

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

Enhanced share of land revenue.



## MADRAS WATER-SUPPLY AND IRRIGATION EXTENSION

This sum, viz., Rs. 16,697, added to the balance that remained uncollected on 1st April 1896 amounted to Rs. 21,354, of which Rs. 19,825 were collected during the year, leaving Rs. 1,529 still to be collected. The receipts from other sources were Rs. 20 making a total of Rs. 19,845 against a budget and revised estimate of Rs. 13,380 and Rs. 13,500, respectively.

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

Area irrigated and revenue derived.

|             |         |    |    | Area charged as irrigated. |                 |                 |
|-------------|---------|----|----|----------------------------|-----------------|-----------------|
|             |         |    |    | Area occupied.             | Old irrigation. | New irrigation. |
|             |         |    |    | ACS.                       | ACS.            | ACS.            |
| First crop  | 1896-97 | .. | .. | 7,402                      | 5,524           | 1,868           |
|             | 1896-96 | .. | .. | 7,439                      | 5,571           | 1,863           |
| Second crop | 1896-97 | .. | .. | 2,341                      | 792             | 1,549           |
|             | 1896-96 | .. | .. | 2,260                      | 789             | 1,461           |

Enhanced share of land revenue.

The share of enhanced land revenue due to the works amounted shown below:—

|                                                         |    |    |    |    |    |     |
|---------------------------------------------------------|----|----|----|----|----|-----|
| Land assessment on waste lands brought under irrigation | .. | .. | .. | .. | .. | 7   |
| on miscellaneous items                                  | .. | .. | .. | .. | .. | 448 |
| Total                                                   | .. | .. | .. | .. | .. | 455 |

Financial results.

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

| Expenditure.                               | During 1896-97. | To end of 1896-97. | Receipts.                                                                                    | During 1896-97. | To end of 1896-97. |
|--------------------------------------------|-----------------|--------------------|----------------------------------------------------------------------------------------------|-----------------|--------------------|
| Direct charges                             | Rs. 8,569       | Rs. 5,96,375       | Direct receipts in the Public Works Department                                               | Rs. 19,845      | Rs. 2,12,643       |
| Indirect charges                           | 1,419           | 20,301             | Irrigation revenue                                                                           | 20,798          | 4,78,516           |
| Collection charges in the Civil Department | 512             | 13,425             | Share of enhanced land revenue                                                               | 445             | 10,397             |
| Total expenditure and charges              | 19,521          | 6,30,101           | Total Receipts                                                                               | 41,088          | 7,01,556           |
| Surplus revenue                            | 24,385          | 58,989             | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges | 6,200           | 1,30,424           |
| Total                                      | 34,886          | 5,71,132           | Net Total                                                                                    | 34,886          | 5,71,132           |

The actual return was 1.38 per cent. on the capital outlay.

## No. 24.—VALLURU ANICUT SYSTEM.

## CAPITAL ACCOUNT.

There was no outlay 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. 63,805.

In February 1897, estimates aggregating Rs. 6,400 for extending irrigation under the Meenjar branch channel of the system were sanctioned by Government.

## VALLURU ANICUT SYSTEM.

## REVENUE ACCOUNT.

The charges on Revenue Account for the year were:—

| Departmental heads.        | Grant.  | Outlay. |                                 | Grant and outlay. |
|----------------------------|---------|---------|---------------------------------|-------------------|
|                            |         | Gross.  | Deduct old maintenance charges. |                   |
| Extension and improvements | Rs. 119 | Rs. 119 | Rs. ..                          | Rs. 119           |
| Maintenance and repairs    | 113     | 465     | ..                              | 465               |
| Establishment              | 124     | 138     | ..                              | 138               |
| Tools and plant            | ..      | ..      | ..                              | ..                |
| Indirect charges           | Total   | 656     | 722                             | 722               |
|                            |         | 19      | ..                              | 19                |
| Grand Total                | ..      | 741     | ..                              | 741               |

Two incomplete works of the previous year were carried out.

The expenditure under this head was incurred on the usual maintenance of the system.

The charges for establishment amounted to Rs. 138 as shown below:—

|                             |    |    |    |    |    |         |
|-----------------------------|----|----|----|----|----|---------|
| 23 per cent. on Expenditure | .. | .. | .. | .. | .. | Rs. 134 |
| 10 " on Direct revenue      | .. | .. | .. | .. | .. | 4       |
| Total                       | .. | .. | .. | .. | .. | 138     |

The receipts collected in the Public Works Department amounted to Rs. 40 against a revised estimate of Rs. 20.

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. |                     |
|             |         |    |    | ACS.                       | ACS.            | ACS.            | Rs.                 |
| First crop  | 1896-97 | .. | .. | 5,149                      | 3,904           | 1,245           | 8,096               |
|             | 1895-96 | .. | .. | 5,167                      | 3,958           | 1,209           | 8,123               |
| Second crop | 1896-97 | .. | .. | 94                         | 10              | 84              | 187                 |
|             | 1895-96 | .. | .. | 181                        | ..              | 131             | 301                 |

The share of enhanced land revenue due to the works amounted to Rs. 1,065 as shown below:—

|                                                         |    |    |    |    |    |         |
|---------------------------------------------------------|----|----|----|----|----|---------|
| Land assessment on waste lands brought under irrigation | .. | .. | .. | .. | .. | Rs. 909 |
| on miscellaneous items                                  | .. | .. | .. | .. | .. | 156     |
| Total                                                   | .. | .. | .. | .. | .. | 1,065   |

The following statement shows the financial results:—

| Expenditure.                               | During 1896-97. | To end of 1896-97. | Receipts.                                                                                    | During 1896-97. | To end of 1896-97. |
|--------------------------------------------|-----------------|--------------------|----------------------------------------------------------------------------------------------|-----------------|--------------------|
| Direct charges                             | Rs. 722         | Rs. 33,760         | Direct receipts in the Public Works Department                                               | Rs. 40          | Rs. 69             |
| Indirect charges                           | 19              | 883                | Irrigation revenue                                                                           | 8,283           | 1,62,432           |
| Collection charges in the Civil Department | 213             | 3,517              | Share of enhanced land revenue                                                               | 1,065           | 19,602             |
| Total expenditure and charges              | 954             | 38,160             | Total Receipts                                                                               | 9,388           | 1,82,163           |
| Surplus revenue                            | 3,342           | 32,232             | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges | 5,092           | 1,11,771           |
| Total                                      | 4,296           | 70,392             | Net Total                                                                                    | 4,296           | 70,392             |

The actual return was 5.24 per cent. on the capital outlay.

## No. 22. —CHEMBRAMBAKAM TANK.

## 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. 7,44,038.

## 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. 934 | RS. 1,349 | RS. 2,283                       | RS. 934 |
| Maintenance and repairs .. .. .     | 706     | 2,403     | 997                             | 694     |
| Establishment .. .. .               | 360     | 874       | —                               | 864     |
| Tools and plant .. .. .             | 109     | —         | —                               | 109     |
| Total .. .. .                       | 2,109   | 4,626     | 6,727                           | 3,101   |
| Indirect charges .. .. .            | —       | 122       | 173                             | 51      |
| Grand Total .. .. .                 | —       | 4,748     | 6,900                           | 3,152   |

\* Exclusive of grant for old maintenance charges.

Extensions and improvements. Providing screw-gearing shutters to the Chembambakam tank sluices, an incomplete work of the previous year, was completed.

Maintenance and repairs. The works connected with this system were maintained in good order.

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

|                                     |         |
|-------------------------------------|---------|
| 23 per cent. on Expenditure .. .. . | RS. 378 |
| 10 " " on Direct revenue .. .. .    | 14      |
| Total .. .. .                       | 392     |

Receipts in the Public Works Department. The receipts collected in the Public Works Department amounted to Rs. 144 against a budget and revised estimate of Rs. 30 and Rs. 180, 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 .. .. .  | 1896-97 .. .. . | ACS. 13,042    | ACS. 11,568                | ACS. 1,470      | ACS. 13,037 | RS. 10,306          |
| Second crop .. .. . | 1895-96 .. .. . | 12,986         | 10,644                     | 1,380           | 11,424      | 31,012              |
| Second crop .. .. . | 1896-97 .. .. . | 2,220          | 1,016                      | 1,151           | 2,200       | 6,570               |
| Second crop .. .. . | 1895-96 .. .. . | 2,643          | 1,009                      | 868             | 1,967       | 4,956               |

Enhanced share of land revenue. The share of enhanced land revenue due to the works amounted to Rs. 872 as shown below :—

|                                                                 |         |
|-----------------------------------------------------------------|---------|
| Land assessment on waste lands brought under irrigation .. .. . | RS. 830 |
| " " on miscellaneous items .. .. .                              | 42      |
| Total .. .. .                                                   | 872     |

## CHEMBRAMBAKAM TANK.

The following statement shows the financial results :—

| Expenditure.  | During 1896-97. | To end of 1896-97. | Receipts.                                                                                            | During 1896-97. | To end of 1896-97. |
|---------------|-----------------|--------------------|------------------------------------------------------------------------------------------------------|-----------------|--------------------|
|               |                 |                    |                                                                                                      |                 |                    |
| .. .. .       | RS. 4,626       | RS. 2,56,609       | Direct receipts in the Public Works Department .. .. .                                               | RS. 144         | RS. 1,345          |
| .. .. .       | 122             | 11,412             | Irrigation revenue .. .. .                                                                           | 45,875          | 11,15,930          |
| .. .. .       | 1,537           | 44,105             | Share of enhanced land revenue .. .. .                                                               | 872             | 16,729             |
| .. .. .       | 6,285           | 3,12,128           | Total receipts .. .. .                                                                               | 46,891          | 11,33,004          |
| .. .. .       | 31,506          | 6,03,842           | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. .. . | 9,100           | 2,17,636           |
| Total .. .. . | 37,791          | 9,15,968           | Net total .. .. .                                                                                    | 37,791          | 9,15,968           |

return was 4.23 per cent. on the capital outlay.

## ADRAS 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 Rs. 17,54,045.

## REVENUE ACCOUNT.

The charges on Revenue Account were—

| Departmental heads.                 | Grant.*   | Outlay. |                                 |           |
|-------------------------------------|-----------|---------|---------------------------------|-----------|
|                                     |           | Gross.  | Deduct old maintenance charges. | Net.      |
| Extensions and improvements .. .. . | RS. 3,281 | RS. 319 | RS. 3,600                       | RS. 3,281 |
| Maintenance and repairs .. .. .     | 4,482     | 5,060   | 200                             | 4,860     |
| Establishment .. .. .               | 1,626     | 3,181   | 870                             | 2,311     |
| Tools and plant .. .. .             | 10        | —       | 10                              | —         |
| Total .. .. .                       | 2,817     | 8,560   | 4,680                           | 3,880     |
| Indirect charges .. .. .            | —         | 1,449   | 120                             | 1,329     |
| Grand Total .. .. .                 | —         | 10,009  | 4,800                           | 5,209     |

\* Exclusive of grant for old maintenance charges.

The Cholavaram tank distributary dams and rough-stone inlets in the right bank of the upper supply channel—incomplete works of the previous year—were completed and some compensation for zemindari lands paid.

Besides the usual maintenance of the works of this system, four works were in progress, of which two were completed.

The charges for establishment amounted to Rs. 2,311 as shown below :—

|                                     |         |
|-------------------------------------|---------|
| 23 per cent. on Expenditure .. .. . | RS. 326 |
| 10 " " on Direct revenue .. .. .    | 1,985   |
| Total .. .. .                       | 2,311   |

The quantity of water supplied to the Madras Municipality during the year was 16,697,122 cubic yards, the charge to the municipality being Rs. 16,697, at the rate of Rupee 1 per 1,000 cubic yards.

Receipts in the Public Works Department.

## No. 25.—TIRUKKOYILUR ANICUT SYSTEM.

## CAPITAL ACCOUNT.

There was no outlay on capital account of this system during the year. The total expenditure, including indirect charges, to the end of the previous year was Rs. 2,54,443.

## 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. 2,000 | Rs. 2,040 | ..                              | 2,040 |
| Maintenance and repairs .. .. .     | 5,094     | 5,123     | ..                              | 5,123 |
| Establishment .. .. .               | 1,690     | 1,690     | ..                              | 1,690 |
| Tools and plant .. .. .             | ..        | 3         | ..                              | 3     |
| Total .. .. .                       | 8,783     | 8,856     | ..                              | 8,856 |
| Indirect charges .. .. .            | ..        | 237       | ..                              | 237   |
| Grand Total .. .. .                 | ..        | 9,093     | ..                              | 9,093 |

Sluices in Pennavalam, Kuvagam and Yennapur tanks and pipe-sluice and inlet in Vailanur tank were constructed. Shutters to Marudur main channel were fitted.

The Pennavalam, Siruvathur, Athipat, Arkodu and Thoravi tanks and the inspection bungalow and Overseer's quarters were repaired, and the maintenance of the Pombay, Ragavian and Malattar channels and of the Tirukkoyilur anicut was attended to.

The charges for establishment amounted to Rs. 1,690 as shown below :—

|                                     |           |
|-------------------------------------|-----------|
| 23 per cent. on Expenditure .. .. . | Rs. 1,648 |
| 10 " " on Direct revenue .. .. .    | 42        |
| Total .. .. .                       | 1,690     |

The receipts in the Public Works Department amounted to Rs. 420 against a budget and revised estimate of Rs. 570.

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

|                                |        | Area charged as irrigated. |                 |                 | Irrigation revenue. |
|--------------------------------|--------|----------------------------|-----------------|-----------------|---------------------|
|                                |        | Area occupied.             | Old irrigation. | New irrigation. |                     |
| First crop .. 1896-97 .. .. .  | 23,003 | 16,053                     | 6,809           | 22,862          | 84,266              |
| .. 1896-98 .. .. .             | 23,110 | 16,184                     | 5,555           | 23,110          | 85,743              |
| Second crop .. 1896-97 .. .. . | 2,284  | 14                         | 2,214           | 2,358           | 7,251               |
| .. 1896-98 .. .. .             | 2,056  | 18                         | 2,038           | 2,056           | 6,100               |

The share of enhanced land revenue due to the works amounted to Rs. 3,202 as shown below :—

|                                                                                         |           |
|-----------------------------------------------------------------------------------------|-----------|
| Increments to the land assessment after the lands were brought under irrigation .. .. . | Rs. 3,199 |
| Land assessment on waste lands brought under irrigation .. .. .                         | 3         |
| Total .. .. .                                                                           | 3,202     |

## TIRUKKOYILUR ANICUT SYSTEM.

The following statement shows the financial results :—

| Expenditure.                                       | During 1896-97. | To end of 1896-97. | Receipts.                                                                                            | During 1896-97. | To end of 1896-97. |
|----------------------------------------------------|-----------------|--------------------|------------------------------------------------------------------------------------------------------|-----------------|--------------------|
|                                                    |                 |                    |                                                                                                      |                 |                    |
| Direct charges .. .. .                             | Rs. 8,856       | Rs. 3,38,551       | Direct receipts in the Public Works Department .. .. .                                               | Rs. 420         | Rs. 3,493          |
| Indirect charges .. .. .                           | 237             | 10,214             | Irrigation revenue .. .. .                                                                           | 91,517          | 22,54,364          |
| Collection charges in the Civil Department .. .. . | 1,751           | 38,897             | Share of enhanced land revenue .. .. .                                                               | 3,202           | 79,107             |
| Total expenditure and charges .. .. .              | 10,844          | 437,752            | Total Receipts .. .. .                                                                               | 95,139          | 23,36,664          |
| Surplus revenue .. .. .                            | 21,599          | 8,45,689           | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. .. . | 59,693          | 15,56,213          |
| Total .. .. .                                      | 35,443          | 7,81,451           | Net Total .. .. .                                                                                    | 35,443          | 7,81,451           |

The actual return was 9.67 per cent. on the capital outlay.

## No. 26.—MEHMATTUR ANICUT SYSTEM.

## CAPITAL ACCOUNT.

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

## REVENUE ACCOUNT.

The charges on Revenue Account were—

| Departmental heads.                 | Grant.  | Outlay. |                                 |       |
|-------------------------------------|---------|---------|---------------------------------|-------|
|                                     |         | Gross.  | Deduct old maintenance charges. | Net.  |
| Extensions and improvements .. .. . | Rs. 802 | Rs. 803 | ..                              | 803   |
| Maintenance and repairs .. .. .     | 1,950   | 1,950   | ..                              | 1,950 |
| Establishment .. .. .               | 637     | 637     | ..                              | 637   |
| Tools and plant .. .. .             | ..      | ..      | ..                              | ..    |
| Total .. .. .                       | 3,389   | 3,390   | ..                              | 3,390 |
| Indirect charges .. .. .            | ..      | 89      | ..                              | 89    |
| Grand Total .. .. .                 | ..      | 3,479   | ..                              | 3,479 |

The construction of a dam and sluice in the 7th mile of the main channel, and the provision of screw-gearing shutters to the head-sluice in the 4th mile were completed, and the re-construction of the Superintendent's and lascars' sheds was in progress.

The weirs of the Sathamedal and Vridachalam tanks were repaired and the maintenance of the anicut, head-sluice and main channels was attended to.

The charges for establishment amounted to Rs. 637 as shown below :—

|                                     |         |
|-------------------------------------|---------|
| 23 per cent. on Expenditure .. .. . | Rs. 637 |
| 10 " " on Direct revenue .. .. .    | ..      |
| Total .. .. .                       | 637     |

The receipts collected in the Public Works Department amounted to Rs. 48 against a budget and revised estimate of Rs. 30 and Rs. 50, respectively.

## MEENATTER ANICUT SYSTEM.

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  | 1896-97 | ACS. 3,430     | ACS. 459                   | ACS. 3,031      | ACS. 3,490 | RS. 14,931          |
|             | 1895-96 | 3,380          | 460                        | 2,920           | 3,380      | 14,527              |
| Second crop | 1896-97 | 59             | ..                         | 59              | 59         | 210                 |
|             | 1895-96 | 76             | ..                         | 76              | 76         | 281                 |

Enhanced share of land revenue.

The share of enhanced land revenue due to the works amounted to Rs. 29 as shown below :—

|                                                         |        |
|---------------------------------------------------------|--------|
| Land assessment on waste lands brought under irrigation | RS. 11 |
| on miscellaneous items                                  | 18     |
| Total                                                   | 29     |

Financial results.

The following statement shows the financial results :—

| Expenditure.                               | During 1896-97. | To end of 1896-97. | Receipts.                                                                                    | During 1896-97. | To end of 1896-97. |
|--------------------------------------------|-----------------|--------------------|----------------------------------------------------------------------------------------------|-----------------|--------------------|
| Direct charges                             | RS. 3,390       | RS. 1,29,790       | Receipts in the Public Works Department                                                      | RS. 48          | RS. 234            |
| Indirect charges                           | 89              | 2,412              | Irrigation revenue                                                                           | 13,141          | 2,41,293           |
| Collection charges in the Civil Department | 654             | 10,166             | Share of enhanced land revenue                                                               | 29              | 1,856              |
| Total expenditure and charges              | 4,133           | 1,43,284           | Total Receipts                                                                               | 15,218          | 2,43,382           |
| Surplus revenue                            | 8,989           | 58,256             | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges | 2,096           | 41,842             |
| Total                                      | 13,122          | 2,01,540           | Net Total                                                                                    | 13,122          | 2,01,540           |

The actual return was 12.65 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. 49,757.

## REVENUE ACCOUNT.

The charges on Revenue Account were—

| Department.                 | Grant.    | Gross.    | Outlay.                         |           |
|-----------------------------|-----------|-----------|---------------------------------|-----------|
|                             |           |           | Deduct old maintenance charges. | Net.      |
| Excavation and improvements | RS. 1,501 | RS. 1,504 | ..                              | RS. 1,504 |
| Maintenance and repairs     | 1,500     | 2,672     | ..                              | 2,672     |
| Establishment               | 926       | 946       | ..                              | 946       |
| Tools and plant             | ..        | 45        | ..                              | 45        |
| Total                       | 4,927     | 5,067     | ..                              | 5,066     |
|                             | ..        | 132       | ..                              | 132       |
| Grand Total                 | ..        | 5,199     | ..                              | 5,198     |

## VRIDDHACHALAM ANICUT SYSTEM.

The Superintendent's and lascars' sheds were reconstructed, and the division dams at the head of the Kavanur and Devangudi branch channels were completed. The bungalow at the anicut was repaired and the maintenance of the anicut, main channel, road to the anicut, and the tanks fed by the main channel was attended to. The amount of establishment charges is made up of the following items :—

|                             |         |
|-----------------------------|---------|
| 23 per cent. on Expenditure | RS. 937 |
| 10 " on Direct revenue      | 8       |
| Total                       | 945     |

Extension and improvements. Maintenance and repairs.

Establishment.

The receipts collected in the Public Works Department amounted to Rs. 78 against a revised estimate of Rs. 50.

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  | 1896-97 | ACS. 6,157     | ACS. 2,280                 | ACS. 3,877      | ACS. 6,157 | RS. 23,727          |
|             | 1895-96 | 5,910          | 2,281                      | 3,629           | 5,910      | 22,873              |
| Second crop | 1896-97 | 225            | ..                         | 225             | 225        | 682                 |
|             | 1895-96 | 204            | ..                         | 204             | 204        | 621                 |

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

The share of enhanced land revenue due to the works amounted to Rs. 173 as shown below :—

|                                                         |         |
|---------------------------------------------------------|---------|
| Land assessment on waste lands brought under irrigation | RS. 157 |
| on miscellaneous items                                  | 16      |
| Total                                                   | 173     |

The following statement shows the financial results :—

| Expenditure.                               | During 1896-97. | To end of 1896-97. | Receipts.                                                                                    | During 1896-97. | To end of 1896-97. |
|--------------------------------------------|-----------------|--------------------|----------------------------------------------------------------------------------------------|-----------------|--------------------|
| Direct charges                             | RS. 5,066       | RS. 1,27,771       | Direct receipts in the Public Works Department                                               | RS. 78          | RS. 379            |
| Indirect charges                           | 132             | 3,371              | Irrigation revenue                                                                           | 24,416          | 4,80,364           |
| Collection charges in the Civil Department | 809             | 16,548             | Share of enhanced land revenue                                                               | 173             | 12,369             |
| Total expenditure and charges              | 6,007           | 1,47,690           | Total Receipts                                                                               | 24,667          | 4,93,012           |
| Surplus revenue                            | 10,258          | 1,33,648           | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges | 8,402           | 1,61,674           |
| Total                                      | 16,265          | 3,31,338           | Net Total                                                                                    | 16,265          | 3,31,338           |

Financial results.

The actual return was 20.62 per cent. on the capital outlay.

## No. 28.—SHATIA TOPE ANICUT SYSTEM.

## CAPITAL ACCOUNT.

An expenditure of Rs. 943 on works on Capital Account was incurred during the year against a grant of Rs. 2,085. The total outlay including indirect charges, to the end of the year was Rs. 1,38,769. Foundations of the sluice vents in No. 1 weir of the Wallajah tank were laid and materials including shutters were ready at site.

Progress of works.

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SHATLATOPE ANICUT 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.   |
|                                   | RS.    | RS.     | RS.                             | RS.    |
| Extensions and improvements .. .. | 2,194  | 2,167   | ..                              | 2,167  |
| Maintenance and repairs .. ..     | 11,000 | 11,048  | ..                              | 11,048 |
| Establishment .. ..               | 3,065  | 3,037   | ..                              | 3,037  |
| Tools and plant .. ..             | ..     | 41      | ..                              | 41     |
| Total .. ..                       | 16,259 | 16,293  | ..                              | 16,293 |
| Indirect charges .. ..            | ..     | 425     | ..                              | 425    |
| Grand Total .. ..                 | ..     | 16,718  | ..                              | 16,718 |

The construction of an apron in rear of Perumal tank weir No. I, the cutting of a drainage channel from road dam near 133rd mile and the building of the cook-room and servants' quarters in the Inspection bungalow at Shatlatope were in progress and nearly completed.

Extensions and improvements.

Maintenance and repairs.

The Kothavancheri tank was repaired and sluice in it reconstructed. The anicut and bridge across the Vallaur, the weir of Sathapadi tank, and the banks of the Morattu channel were also repaired. Laterite blocks were collected at the anicut, and the Perumal and Wallajah tanks looked after.

Establishment.

The charges for establishment amounted to Rs. 3,037 as shown below :—

|                                   |       |
|-----------------------------------|-------|
| 23 per cent. on Expenditure .. .. | RS.   |
| 10 .. .. on Direct revenue .. ..  | 3,014 |
| Total .. ..                       | 3,037 |

The receipts collected in the Public Works Department amounted to Rs. 232 against a revised estimate of Rs. 300.

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

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. | Total. |                     |
|                                |    | ACS.                       | ACS.            | ACS.            | ACS.   | RS.                 |
| First crop .. { 1896-97 .. ..  | .. | 29,955                     | 7,316           | 22,500          | 29,846 | 1,01,748            |
| .. { 1895-96 .. ..             | .. | 29,281                     | 7,368           | 21,871          | 29,239 | 98,625              |
| Second crop .. { 1896-97 .. .. | .. | 3,891                      | 14              | 3,336           | 3,350  | 9,993               |
| .. { 1895-96 .. ..             | .. | 3,538                      | ..              | 3,518           | 3,518  | 10,323              |

The share of enhanced land revenue due to the works amounted to Rs. 15,596 as shown below :—

Enhanced share of land revenue.

|                                                               |        |
|---------------------------------------------------------------|--------|
| Land assessment on waste lands brought under irrigation .. .. | RS.    |
| .. .. on miscellaneous items .. ..                            | 15,961 |
| Total .. ..                                                   | 532    |
|                                                               | 15,596 |

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SHATLATOPE ANICUT SYSTEM.

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The following statement shows the financial results :—

Financial results.

| Expenditure.                                     | During 1896-97. | To end of 1896-97. | Receipts.                                                                                          | During 1896-97. | To end of 1896-97. |
|--------------------------------------------------|-----------------|--------------------|----------------------------------------------------------------------------------------------------|-----------------|--------------------|
|                                                  |                 |                    |                                                                                                    | RS.             | RS.                |
| Direct charges .. ..                             | RS.             | RS.                | Direct receipts in the Public Works Department .. ..                                               | 232             | 1,390              |
| Indirect charges .. ..                           | 16,293          | 4,97,359           | Irrigation revenue .. ..                                                                           | 1,11,741        | 23,74,444          |
| Collection charges in the Civil Department .. .. | 425             | 13,025             | Share of enhanced land revenue .. ..                                                               | 15,596          | 7,25,556           |
| Total expenditure and charges .. ..              | 5,311           | 1,29,130           | Total Receipts .. ..                                                                               | 1,27,569        | 31,05,790          |
| Surplus revenue .. ..                            | 22,029          | 6,39,514           | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. .. | 21,107          | 5,21,807           |
|                                                  | 84,433          | 19,44,189          | Net Total .. ..                                                                                    | 1,06,462        | 25,83,983          |
| Total .. ..                                      | 1,06,462        | 25,83,983          |                                                                                                    |                 |                    |

The actual return was 60.84 per cent. on the capital outlay.

No. 29.—PELANDORAI ANICUT SYSTEM.

CAPITAL ACCOUNT.

Against a grant of Rs. 26,238, an outlay of Rs. 36,861 was incurred during the year. The total capital outlay, including indirect charges, to the end of the year was Rs. 5,01,198.

Total outlay.

The work "lowering the crest of the anicut and fitting it with 6-foot shutters, &c.," was in progress and improvements to the Pelandorai main channel from the head sluice to 6th mile were carried out.

Progress of works.

REVENUE ACCOUNT.

The charges on *Revenue Account* were—

Grant and outlay.

| Departmental heads.               | Grant.* | Outlay. |                                 |        |
|-----------------------------------|---------|---------|---------------------------------|--------|
|                                   |         | Gross.  | Deduct old maintenance charges. | Net.   |
|                                   | RS.     | RS.     | RS.                             | RS.    |
| Extensions and improvements .. .. | 2,446   | 2,508   | 59                              | 2,449  |
| Maintenance and repairs .. ..     | 11,442  | 11,497  | 58                              | 11,439 |
| Establishment .. ..               | 3,219   | 3,243   | 27                              | 3,216  |
| Tools and plant .. ..             | ..      | ..      | 2                               | ..     |
| Total .. ..                       | 17,105  | 17,248  | 146                             | 17,102 |
| Indirect charges .. ..            | ..      | 454     | 4                               | 450    |
| Grand Total .. ..                 | ..      | 17,702  | 150                             | 17,552 |

\* Exclusive of grant for old maintenance charges.

An inspection bungalow at Srimushnam, lascars' sheds at the Pelandorai anicut, a pipe-sluice to Anandagudi tank and a sluice to B channel, Konamangalam tank, were constructed.

Extensions and improvements.

The anicut, head sluice, main channel, branch channels and tanks were repaired and kept in order. The extension of apron in rear of sand sluices, clearance of silt to 6th mile drop and reconstruction of a portion of the right revetment were completed.

Maintenance and repairs.

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

Establishment.

|                                   |       |
|-----------------------------------|-------|
| 23 per cent. on Expenditure .. .. | RS.   |
| 10 .. .. on Direct revenue .. ..  | 3,194 |
| Total .. ..                       | 22    |
|                                   | 3,216 |

The receipts collected in the Public Works Department amounted to Rs. 214 against a budget and revised estimate of Rs. 250.

Receipts in the Public Works Department.



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## PERANDORAI ANICUT SYSTEM.

Area irrigated and revenue derived.

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. |                     |
|             |         |    |    |    | ACS.                       | ACS.            | ACS.            | RS.                 |
| First crop  | 1896-97 | .. | .. | .. | 9,233                      | 2,975           | 7,148           | 33,893              |
|             | 1895-96 | .. | .. | .. | 8,751                      | 1,906           | 6,815           | 32,445              |
| Second crop | 1896-97 | .. | .. | .. | 168                        | 76              | 92              | 509                 |
|             | 1895-96 | .. | .. | .. | 113                        | 82              | 31              | 306                 |

Enhanced share of land revenue.

The share of enhanced land revenue due to the works amounted to Rs. 144 as shown below:—

|                                                            |     |
|------------------------------------------------------------|-----|
| Land assessment on waste lands brought under irrigation .. | Rs. |
| .. on miscellaneous items ..                               | 78  |
| Total ..                                                   | 66  |
| Total ..                                                   | 144 |

Financial results.

The subjoined statement exhibits the financial results:—

| Expenditure.                                  | During 1896-97. | To end of 1896-97. | Receipts.                                                                                       | During 1896-97. | To end of 1896-97. |
|-----------------------------------------------|-----------------|--------------------|-------------------------------------------------------------------------------------------------|-----------------|--------------------|
|                                               | RS.             | RS.                |                                                                                                 | RS.             | RS.                |
| Direct charges ..                             | 17,248          | 4,50,670           | Direct receipts in the Public Works Department ..                                               | 214             | 1,836              |
| Indirect charges ..                           | 454             | 16,687             | Irrigation revenue ..                                                                           | 34,292          | 3,30,328           |
| Collection charges in the Civil department .. | 1,537           | 11,928             | Share of enhanced land revenue ..                                                               | 144             | 2,683              |
| Total expenditure and charges ..              | 19,239          | 4,80,735           | Total Receipts ..                                                                               | 34,556          | 3,34,947           |
| Surplus revenue ..                            | 12,441          | 2,10,386           | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. | 2,850           | 64,993             |
| Total ..                                      | 31,719          | 2,69,819           | Net Total ..                                                                                    | 31,719          | 2,69,849           |

The actual return was 2.48 per cent. on the capital outlay.

## No. 30.—LOWER COLEROON ANICUT SYSTEM.

### CAPITAL ACCOUNT.

The capital expenditure on the system was as follows:—

| Departmental heads.                      | Sanctioned estimate. | Grant for 1896-97. | Outlay during 1896-97. | Total outlay to end of 1896-97. |
|------------------------------------------|----------------------|--------------------|------------------------|---------------------------------|
|                                          | RS.                  | RS.                | RS.                    | RS.                             |
| <i>Direct Charges.</i>                   |                      |                    |                        |                                 |
| Works Establishment ..                   | 7,37,266             | 61,449             | 79,335                 | 5,50,617                        |
| Tools and plant ..                       | 1,64,673             | 14,823             | 14,311                 | 1,22,398                        |
|                                          | 13,573               | 13,728             | 13,582                 | 13,982                          |
| Total ..                                 | 9,15,712             | 90,000             | 95,998                 | 6,95,997                        |
| <i>Indirect Charges.</i>                 |                      |                    |                        |                                 |
| Capitalized abatement of land revenue .. | 22,080               | ..                 | ..                     | ..                              |
| Leave and pension allowances ..          | 19,319               | ..                 | 2,063                  | 17,136                          |
| Total ..                                 | 41,399               | ..                 | 2,063                  | 17,136                          |
| Grand Total ..                           | 9,57,111             | ..                 | 1,00,601               | 7,13,132                        |

Grant and outlay.

## PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1896-97.

### LOWER COLEROON ANICUT SYSTEM.

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The following works were in progress:—

In the South Arcot division—

#### Chidambaram drainage scheme.

|                                            |                                       |
|--------------------------------------------|---------------------------------------|
| Regulator across Khan Saib's canal.        | Raising Lalpet road.                  |
| Improvements to weir No. 2 and to tunnels. | Aqueduct and bridge extension.        |
| Widening the Khan Saib's canal.            | Clearing, widening and forming banks. |

Progress of works.

#### Extension of Skattatope branch channel.

|                                      |                     |
|--------------------------------------|---------------------|
| Head sluice in Bajah voikal.         | Drainage culvert.   |
| Aqueduct across Kutlankoil drainage. | Excavating channel. |

Rupees 31,757 were paid on account of compensation for lands taken up for the above works.

In the Tanjore division, improvements to the Oosi voikal were carried out and those to the Lower Coleroon anicut and fitting iron shutters to that anicut were in progress. Expenditure was also incurred on special machinery required for works at the anicut.

The protective work of the north branch of the Lower Coleroon anicut forming part of the estimate of Rs. 1,25,000 for direct charges prepared by Lieutenant-Colonel A. W. Smart, R.E., Superintending Engineer on special duty, Cauvery completion estimates, and sanctioned by Government in March 1896, was completed during the year and that on the south branch commenced. In building, it was found that clay sub-soil was available the whole way across, so that the wells provided in the estimate were not required. The old plans showed that the old work was built on wells; this was evidently a mistake so far, at all events, as the north branch is concerned. An estimate amounting to Rs. 9,700 for direct charges, framed by Lieutenant-Colonel Smart, R.E., was sanctioned by Government in June 1896 for fitting the Lower Coleroon anicut with one lift and one push-down \* shutter. The former was made up, but not put up. Plans and estimates for the shutters and work still to be done were in progress. The taking of the necessary levels, &c., required for the preparation of estimates for raising the banks of the river below the anicut was in progress. The plotting, &c., for the north bank was completed and the estimate for earthwork prepared. The levels for the south bank were taken and will be shortly plotted.

\* NOTE.—The push-down shutter, it was subsequently found, would not be, as designed, stiff enough to stand the pressure, and for this and other reasons, the proposal of putting it up has been abandoned.

### REVENUE ACCOUNT.

The charges on Revenue Account were—

| Departmental heads.            | Grant. | Outlay. |                                 |        |
|--------------------------------|--------|---------|---------------------------------|--------|
|                                |        | Gross.  | Deduct old maintenance charges. | Net.   |
|                                | RS.    | RS.     | RS.                             | RS.    |
| Extensions and improvements .. | 3,400  | 2,421   | ..                              | 2,421  |
| Maintenance and repairs ..     | 22,220 | 22,226  | ..                              | 22,226 |
| Establishment ..               | 5,906  | 5,622   | ..                              | 5,622  |
| Tools and plant ..             | ..     | 60      | ..                              | 60     |
| Indirect charges ..            | ..     | ..      | ..                              | ..     |
| Total ..                       | 31,616 | 30,319  | ..                              | 30,319 |
|                                | ..     | 796     | ..                              | 796    |
| Grand Total ..                 | ..     | 31,115  | ..                              | 31,115 |

Grant and outlay.

In the South Arcot division four works were in progress. In the Tanjore division, five works were in progress, of which four were completed.

Extensions and improvements.



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## LOWER COLEROON ANICUT SYSTEM.

Maintenance and repairs.

In the South Arcot division, portions of the bank in rear of the north surplus weir of the Veeranam tank were revetted, silt in the Vadavar cleared, and breaches in it and in the left Rajah voikal and Khan Saib's canal closed. In addition to this, the maintenance of the Vadavar, Veeranam tank, left Rajah voikal, Govarapet channel, Ponnari and Pasimuthan odai and Khan Saib's canal was attended to.

In the Tanjore division nineteen works were in progress, of which thirteen were completed.

The charges for establishment amounted to Rs. 5,622 as shown below :—

|                                     |              |
|-------------------------------------|--------------|
| 23 per cent. on Expenditure .. .. . | Rs. 5,467    |
| 10 „ „ on Direct revenue .. .. .    | 155          |
| <b>Total .. .. .</b>                | <b>5,622</b> |

Establishment.

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

The receipts collected in the Public Works Department amounted to Rs. 1,655 against a budget and revised estimate of Rs. 1,000 and Rs. 1,030, 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 ..  | 1896-97 .. | 107,071        | 44,318                     | 62,676          | 106,994 | 3,77,486            |
|                | 1895-96 .. | 107,168        | 44,395                     | 62,651          | 107,046 | 3,75,914            |
| Second crop .. | 1896-97 .. | 1,800          | 114                        | 1,778           | 1,892   | 5,578               |
|                | 1895-96 .. | 4,211          | 134                        | 4,071           | 4,295   | 12,915              |

Enhanced share of land revenue.

The share of enhanced land revenue due to the works amounted to Rs. 53,703 as shown below :—

|                                                                 |               |
|-----------------------------------------------------------------|---------------|
| Land assessment of waste lands brought under irrigation .. .. . | Rs. 53,215    |
| on miscellaneous items .. .. .                                  | 488           |
| <b>Total .. .. .</b>                                            | <b>53,703</b> |

Financial results.

The following statement shows the financial results :—

| Expenditure.                                       | During 1896-97. | To end of 1896-97. | Receipts.                                                                                              | During 1896-97. | To end of 1896-97. |
|----------------------------------------------------|-----------------|--------------------|--------------------------------------------------------------------------------------------------------|-----------------|--------------------|
|                                                    | Rs.             | Rs.                |                                                                                                        | Rs.             | Rs.                |
| Direct charges .. .. .                             | 39,319          | 10,45,902          | Direct receipts in the Public Works Department .. .. .                                                 | 1,655           | 7,850              |
| Indirect charges .. .. .                           | 796             | 30,429             | Irrigation revenue .. .. .                                                                             | 3,83,064        | 1,39,10,558        |
| Collection charges in the Civil Department .. .. . | 11,234          | 5,21,481           | Share of enhanced land revenue .. .. .                                                                 | 53,703          | 22,58,128          |
| <b>Total expenditure and charges .. .. .</b>       | <b>45,219</b>   | <b>15,99,815</b>   | <b>Total Receipts .. .. .</b>                                                                          | <b>4,38,422</b> | <b>1,81,22,176</b> |
| Surplus revenue .. .. .                            | 2,10,930        | 84,99,711          | Deficit portion of revenue assigned to be due to "old irrigation" less old maintenance charges .. .. . | 1,52,095        | 70,51,117          |
| <b>Total .. .. .</b>                               | <b>2,56,149</b> | <b>1,01,97,526</b> | <b>Net Total .. .. .</b>                                                                               | <b>2,86,327</b> | <b>1,01,97,059</b> |

The actual return was 33.79 per cent. on the capital outlay.

## GENERAL REMARKS.

The greatest depth of water over the Lower Coleroon anicut during the year was 10.30 feet on the north branch and 10.43 feet on the south. The highest flood recorded is 11.5 feet on the north and 12.0 feet on the south branch, and this occurred in 1853.

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## No. 31.—NANDYAR CHANNEL.

### CAPITAL ACCOUNT.

The capital expenditure on the system was as follows :—

Grant and outlay.

| Departmental heads.                           | Sanctioned estimate. | Grant for 1896-97. | Outlay during 1896-97. | Outlay to end of 1896-97. |
|-----------------------------------------------|----------------------|--------------------|------------------------|---------------------------|
|                                               | Rs.                  | Rs.                | Rs.                    | Rs.                       |
| <b>Direct Charges.</b>                        |                      |                    |                        |                           |
| Works .. .. .                                 | 42,500               | 4,322              | 4,321                  | 43,488                    |
| Establishment .. .. .                         | 9,591                | 394                | 994                    | 10,002                    |
| Tools and plant .. .. .                       | 566                  | ..                 | ..                     | ..                        |
| <b>Total .. .. .</b>                          | <b>52,657</b>        | <b>5,116</b>       | <b>5,315</b>           | <b>53,490</b>             |
| <b>Indirect Charges.</b>                      |                      |                    |                        |                           |
| Capitalized abatement of land revenue .. .. . | 1,000                | ..                 | 139                    | 818                       |
| Leave and pension allowances .. .. .          | 1,343                | ..                 | ..                     | 1,406                     |
| <b>Total .. .. .</b>                          | <b>2,343</b>         | <b>..</b>          | <b>139</b>             | <b>2,218</b>              |
| <b>Grand Total .. .. .</b>                    | <b>55,000</b>        | <b>..</b>          | <b>5,454</b>           | <b>55,708</b>             |

The project was completed during the year, the total outlay incurred being Rs. 708 in excess of the sanctioned estimate owing to some additional works not originally contemplated having been executed.

### REVENUE ACCOUNT.

The charges on Revenue Account were—

Grant and outlay.

| Departmental heads.                 | Grant.       | Gross.       | Deduct old maintenance charges. | Net.         |
|-------------------------------------|--------------|--------------|---------------------------------|--------------|
|                                     | Rs.          | Rs.          | Rs.                             | Rs.          |
| Extensions and improvements .. .. . | 1,750        | 1,750        | ..                              | 1,750        |
| Maintenance and repairs .. .. .     | 402          | 364          | ..                              | 368          |
| Establishment .. .. .               | 100          | 100          | ..                              | 100          |
| Tools and plant .. .. .             | ..           | ..           | ..                              | ..           |
| <b>Total .. .. .</b>                | <b>2,252</b> | <b>2,158</b> | <b>..</b>                       | <b>2,158</b> |
| Indirect charges .. .. .            | ..           | 43           | ..                              | 43           |
| <b>Grand Total .. .. .</b>          | <b>..</b>    | <b>2,201</b> | <b>..</b>                       | <b>2,201</b> |

Six works were in progress and three of them were completed. The area irrigated and revenue derived therefrom during the year are shown below :—

Maintenance and repairs. Area irrigated and revenue derived.

|                | Area occupied. | Area charged as irrigated. |                 |        | Irrigation revenue. |
|----------------|----------------|----------------------------|-----------------|--------|---------------------|
|                |                | Old irrigation.            | New irrigation. | Total. |                     |
| First crop ..  | 1896-97 ..     | 4,254                      | 2,908           | 4,054  | 12,112              |
|                | 1895-96 ..     | 3,968                      | 2,908           | 3,968  | 12,075              |
| Second crop .. | 1896-97 ..     | 1,578                      | 1,058           | 1,454  | 3,119               |
|                | 1895-96 ..     | 1,528                      | 1,141           | 1,526  | 3,454               |

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## NANDYAR CHANNEL.

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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 brought under irrigation .. .. | Rs. 6 |
| " " on miscellaneous items .. ..                              | .. .. |
| Total .. ..                                                   | 6     |

Financial results.

The following statement shows the financial results :—

| Expenditure.                                     | During 1896-97. | To end of 1896-97. | Receipts.                                                                                          | During 1896-97. | To end of 1896-97. |
|--------------------------------------------------|-----------------|--------------------|----------------------------------------------------------------------------------------------------|-----------------|--------------------|
|                                                  | Rs.             | Rs.                |                                                                                                    | Rs.             | Rs.                |
| Direct charges .. ..                             | 2,158           | 2,820              | Direct receipts in the Public Works Department .. ..                                               | .. ..           | .. ..              |
| Indirect charges .. ..                           | 43              | 49                 | Irrigation revenue .. ..                                                                           | 15,561          | 31,090             |
| Collection charges in the Civil department .. .. | 47              | 87                 | Share of enhanced land revenue .. ..                                                               | 6               | 27                 |
| Total expenditure and charges .. ..              | 2,154           | 2,782              | Total Receipts .. ..                                                                               | 15,567          | 31,117             |
| Net deficit .. ..                                | 3,087           | 4,510              | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. .. | 16,500          | 32,845             |
| Total .. ..                                      | 933             | 1,723              | Net Total .. ..                                                                                    | 933             | 1,723              |

The working expenses exceeded the revenue by Rs. 3,087.

## No. 32.—MARADUR ANICUT SYSTEM.

### CAPITAL ACCOUNT.

Total outlay.

Against a grant of Rs. 1,000, an outlay of Rs. 982 was incurred in completing the improvements to Butterkulam tank, an incomplete work of the previous year. The total outlay, including indirect charges, to the end of the year was Rs. 44,789.

### REVENUE ACCOUNT.

Grant and outlay.

The charges on Revenue Account were—

| Departmental heads.               | Grant. | Gross. | Deduct old maintenance charges. | Net.   |
|-----------------------------------|--------|--------|---------------------------------|--------|
|                                   | Rs.    | Rs.    | Rs.                             | Rs.    |
| Extensions and improvements .. .. | 17,904 | 16,994 | .. ..                           | 16,994 |
| Maintenance and repairs .. ..     | 3,936  | 3,914  | .. ..                           | 3,914  |
| Establishment .. ..               | .. ..  | .. ..  | .. ..                           | .. ..  |
| Tools and plant .. ..             | .. ..  | .. ..  | .. ..                           | .. ..  |
| Total .. ..                       | 20,940 | 20,908 | .. ..                           | 20,908 |
| Indirect charges .. ..            | .. ..  | 548    | .. ..                           | 548    |
| Grand Total .. ..                 | .. ..  | 21,456 | .. ..                           | 21,456 |

Maintenance and repairs. Establishment.

Twenty-eight works were completed and thirteen were in progress.

The charges for establishment amounted to Rs. 3,914 as shown below :—

|                                   |           |
|-----------------------------------|-----------|
| 23 per cent. on Expenditure .. .. | Rs. 3,909 |
| 10 " " on Direct revenue .. ..    | 5         |
| Total .. ..                       | 3,914     |

Receipts in the Public Works Department.

The receipts collected in the Public Works Department amounted to Rs. 45 against a budget and revised estimate of Rs. 350 and Rs. 250, respectively.

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## MARADUR ANICUT SYSTEM.

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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. |                     |
|               | Acres.         | Acres.                     | Acres.          | Acres. | Rs.                 |
| 1896-97 .. .. | 17,345         | 16,880                     | 567             | 17,447 | 1,17,766            |
| 1895-96 .. .. | 17,652         | 16,828                     | 824             | 17,652 | 1,13,303            |
| 1896-97 .. .. | 16,471         | 466                        | 15,975          | 16,441 | 68,823              |
| 1895-96 .. .. | 17,289         | 465                        | 15,204          | 15,669 | 66,869              |

Share of enhanced land revenue due to the works amounted to Rs. 218 as shown below :—

|                                                               |         |
|---------------------------------------------------------------|---------|
| Land assessment on waste lands brought under irrigation .. .. | Rs. 191 |
| " " on miscellaneous items .. ..                              | 27      |
| Total .. ..                                                   | 218     |

Financial results.

The following statement shows the financial results :—

| Expenditure.                                     | During 1896-97. | To end of 1896-97. | Receipts.                                                                                          | During 1896-97. | To end of 1896-97. |
|--------------------------------------------------|-----------------|--------------------|----------------------------------------------------------------------------------------------------|-----------------|--------------------|
|                                                  | Rs.             | Rs.                |                                                                                                    | Rs.             | Rs.                |
| Direct charges .. ..                             | 90,908          | 8,71,618           | Direct receipts in the Public Works Department .. ..                                               | 45              | 2,491              |
| Indirect charges .. ..                           | 648             | 10,201             | Irrigation revenue .. ..                                                                           | 1,86,113        | 45,60,830          |
| Collection charges in the Civil department .. .. | 3,572           | 86,105             | Share of enhanced land revenue .. ..                                                               | 218             | 4,794              |
| Total expenditure and charges .. ..              | 25,028          | 4,67,924           | Total Receipts .. ..                                                                               | 1,86,375        | 45,67,915          |
| Net deficit .. ..                                | 46,466          | 12,66,667          | Deduct portion of revenue assumed to be due to "old irrigation" less old maintenance charges .. .. | 1,14,892        | 28,43,324          |
| Total .. ..                                      | 71,483          | 17,24,591          | Net Total .. ..                                                                                    | 71,483          | 17,24,591          |

return was 103.72 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, including indirect charges, remained as at the end of the previous year, at Rs. 31,027.

### REVENUE ACCOUNT.

Expenditure on Revenue Account compares as follows with the grant of the year :—

|                                   | Grant. | Expenditure. |
|-----------------------------------|--------|--------------|
|                                   | Rs.    | Rs.          |
| Extensions and improvements .. .. | 301    | 256          |
| Maintenance and repairs .. ..     | 69     | 59           |
| Establishment .. ..               | .. ..  | .. ..        |
| Tools and plant .. ..             | .. ..  | .. ..        |
| Total .. ..                       | 370    | 315          |
| Indirect charges .. ..            | .. ..  | 8            |
| Grand Total .. ..                 | .. ..  | 323          |

The canal establishment was maintained and a Public Works Department shed was repaired.

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## No. 34.—BUCKINGHAM CANAL (NAVIGATION).

## CAPITAL ACCOUNT.

The capital expenditure was as follows :—

| Departmental heads.                           | Grant for 1896-97. | Outlay during 1896-97. | Outlay to end of 1896-97. |
|-----------------------------------------------|--------------------|------------------------|---------------------------|
| <i>Direct Charges.</i>                        | RS.                | RS.                    | RS.                       |
| Works .. .. .                                 | 1,72,157           | 1,70,901               | 66,72,337                 |
| Establishment .. .. .                         | 39,596             | 37,615                 | 15,55,808                 |
| Tools and plant .. .. .                       | 37,373             | 35,788                 | 1,89,722                  |
| <b>Total ..</b>                               | <b>2,49,126</b>    | <b>2,44,305</b>        | <b>84,47,867</b>          |
| <i>Less receipts on Capital Account ..</i>    | <i>..</i>          | <i>2,000</i>           | <i>4,414</i>              |
| <b>Net Total ..</b>                           | <b>2,49,126</b>    | <b>2,40,305</b>        | <b>84,43,453</b>          |
| <i>Indirect Charges.</i>                      |                    |                        |                           |
| Capitalized abatement of land revenue .. .. . | ..                 | 75                     | 2,62,183                  |
| Leave and pension allowances .. .. .          | ..                 | 5,266                  | 2,23,608                  |
| <b>Total ..</b>                               | <b>..</b>          | <b>5,341</b>           | <b>4,85,794</b>           |
| <b>Grand Total ..</b>                         | <b>..</b>          | <b>2,45,646</b>        | <b>89,29,247</b>          |

The construction estimate for the canal was closed on the 31st March 1897.

The total expenditure, including indirect charges, incurred up to that date, was Rs. 89,29,247 against the sanctioned estimate of Rs. 92,91,954.

The locks at Pumbli, Swarnamukhi north, Palar south, Ennur north, Mannaru north, Palaru south and Chippaleru south were completed during the year and have added considerably to the improvement of the canal reaches by locking in the high tide water from the sea. The flood gate across the Vayalar salt channel at junction with the canal for keeping out floods from canal was completed and was effective during the heavy rains of November 1896.

Silt traps at the Triplicane and Kistnampet syphons and siding basins at  $\frac{1}{4}$  mile, North canal, were constructed during the year. The ten-vent sluice at Ennur for supplying the Cooum with sea-water was almost completed. It was in use before it was completed and has proved of use, as a considerable amount of clear sea-water has been let down through it from the Ennur back-water into the Cooum. The locks at Mannaru south, Pyderu north and Chippaleru south flood gates were also nearly completed.

The improvements to canal from 65/3 to 75/2 were finished and satisfactory progress made in the improvements from Adyar to Palar and Palar to Merkanun. Compensation amounting to Rs. 7,203 for land was also paid during the year.

Work was started on the estimate of Rs. 9,340 sanctioned in May 1896 for making the Otary Nullah navigable and providing a boat-basin thereon, but had to be stopped, after Rs. 834 had been spent, owing to objections raised by the Military Department.

## REVENUE ACCOUNT.

The charges on *Revenue Account* were—

|                                     | Grand. RS.    | Outlay. RS.     |
|-------------------------------------|---------------|-----------------|
| Extensions and improvements .. .. . | 3,050         | 3,050           |
| Maintenance and repairs .. .. .     | 61,280        | 64,143          |
| Establishment .. .. .               | 26,504        | 26,501          |
| Tools and plant .. .. .             | 4,800         | 5,286           |
| <b>Total ..</b>                     | <b>95,634</b> | <b>99,310</b>   |
| Indirect charges .. .. .            | ..            | 3,710           |
| <b>Grand Total ..</b>               | <b>..</b>     | <b>1,03,020</b> |

## BUCKINGHAM CANAL (NAVIGATION).

The expenditure under this head was incurred on the construction of additional quarters for lock establishment at Adyar, Sadras and Covelong, of drop inlets at 79, 79/IV, inlets at miles 9, 17/III and 192 and outlet at 63/V, on improvements to outlets at miles 11/I, 17/IV and 33/VII and re-demarcation of canal lands to be sold after canal is completed.

The expenditure under this head includes Rs. 9,715 spent on repairing flood damages caused by the heavy rains of the north-east monsoon. The canal was maintained in good order throughout the year.

In the neighbourhood of Pulicat some difficulty was experienced in keeping the canal easily navigable from April to November owing to the Pulicat bar having remained closed till the 29th November 1896. An unsuccessful attempt was made to open the bar in May 1896. In June at Coromandel the level of water fell 2.66 below M.S.L. or 1.4 feet below L.R.T. The water in the lake became so low and shallow that fish in it began to die off and were taken up in boat loads. To maintain sufficient water in the back-water and canal outside the main portion of the Pulicat lake, a sand bag lock was constructed at the south entrance to the lake, and by this means navigation was rendered possible.

The charges for establishment amounted to Rs. 26,501 as shown below :—

|                                     | RS.           |
|-------------------------------------|---------------|
| 23 per cent. on Expenditure .. .. . | 15,022        |
| 10 " on Direct revenue .. .. .      | 11,479        |
| <b>Total ..</b>                     | <b>26,501</b> |

A Cockburn's dredger was received from England in January 1897 and got ready for work by the end of the year.

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

|                       | Number.   | Original value. | Actual cost of upkeep. |
|-----------------------|-----------|-----------------|------------------------|
|                       |           | RS.             | RS.                    |
| Staff boats .. .. .   | 3         | 2,892           | 1,522                  |
| Special boats .. .. . | 2         | 1,400           | 1,748                  |
| Punts .. .. .         | 4         | 7,762           | ..                     |
| Ferry boats .. .. .   | 25        | ..              | ..                     |
| <b>Total ..</b>       | <b>34</b> | <b>13,054</b>   | <b>3,270</b>           |

The total receipts were Rs. 1,14,772 against Rs. 1,08,374 in the preceding year as shown below :—

|                                   | 1896-97.        | 1895-96.        |
|-----------------------------------|-----------------|-----------------|
|                                   | RS.             | RS.             |
| License fees .. .. .              | 62,483          | 63,030          |
| Toll fees .. .. .                 | 14,352          | 9,283           |
| Wharfage fees .. .. .             | 31,109          | 31,845          |
| Sundries .. .. .                  | 6,894           | 4,225           |
| <b>Total ..</b>                   | <b>1,14,788</b> | <b>1,08,383</b> |
| Deduct refunds of revenue .. .. . | 16              | 9               |
| <b>Net Total ..</b>               | <b>1,14,772</b> | <b>1,08,374</b> |

The increase of Rs. 6,398 in the receipts is due partly to a larger collection under toll-fees and partly to the recovery of Rs. 2,745 from Messrs. Waljee Laljee & Co. for rent of canal land occupied by them from 1st November 1895 to 31st August 1896 for stacking coal.

Financial  
results.

The following statement shows the financial results :—

| Expenditure.           | During<br>1896-97. | To end of<br>1896-97. | Receipts.                     | During<br>1896-97. | To end of<br>1896-97. |
|------------------------|--------------------|-----------------------|-------------------------------|--------------------|-----------------------|
|                        | Rs.                | Rs.                   |                               | Rs.                | Rs.                   |
| Direct charges .. ..   | 26,19              | 26,83,986             | Direct receipts—              | 1,13,716           | 15,50,600             |
| Indirect charges .. .. | 8,710              | 91,521                | Navigation receipts ..        | 1,070              | 14,53,000             |
|                        |                    |                       | Miscellaneous receipts ..     |                    |                       |
| Total Expenditure ..   | 1,00,070           | 30,75,506             | Total ..                      | 1,14,786           | 30,03,600             |
| Surplus revenue .. ..  | 11,752             | 80,551                | Product refunds of revenue .. | 15                 | 17,748                |
| Net Total ..           | 1,11,772           | 29,94,952             | Net Total ..                  | 1,14,772           | 29,87,852             |

The financial result of the year was a surplus revenue of Rs. 11,752 against Rs. 12,351 in the previous year.

The net result does not include the sum of Rs. 5,025 due by the Salt department on account of wharfage fees on boats employed in the transport of salt during the year, owing to the amount having been intimated to the Examiner, Public Works Accounts, too late for inclusion in the Administrative Accounts of the year.

## GENERAL REMARKS.

Cooum Im-  
provements  
Scheme.

In November 1896 Government having directed the preparation of an estimate for the Cooum Improvements scheme, the following outlay was incurred against an estimate of Rs. 1,000 for preliminary survey operations, &c. :—

|                     |         |
|---------------------|---------|
| Works .. ..         | Rs. 111 |
| Establishment .. .. | 25      |
| Total .. ..         | 136     |

The scheme includes the provision of a canal from the Cooum to the Madras Harbour in connection with a boat basin to be constructed by the Harbour Trust Board. Apart from its use for navigation, the canal will be the means of introducing supplies of sea water into the river and canals, and when the Municipality have completed their scheme for the exclusion of sewage from the river a very important improvement in the state of this long-standing source of complaint will have been effected.

There was a recovery of expenditure of Rs. 4,986 under tools and plant obtained for the abandoned scheme.

## No. 35.—VEDARANNIYAM CANAL (TIDAL).

## REVENUE ACCOUNT.

Maintenance  
and repairs.

In November 1896 an estimate, amounting to Rs. 27,183, was sanctioned by Government for deepening and improving the canal. An expenditure of Rs. 9,960 was incurred during the year on the work. The net charge to the Public Works Department after debiting "Incorporated Local Funds" with the moiety of the difference between the traffic receipts and cost of maintenance of the canal was Rs. 4,171 against a grant of Rs. 4,225.

Tools and  
plant.  
Traffic.  
Receipts.

A boat for inspection purposes was under construction.

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

The amount of license fees collected during the year was Rs. 917 against Rupees 1,136 in the previous year.

## No. 36.—GANJAM-GOPALPUR CANAL.

## CAPITAL ACCOUNT.

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 canal is nearly filled up again with blown sands and earth washed down from the spoil banks.

The total expenditure, including indirect charges, remained as at the end of the previous year at Rs. 1,55,493.

## PROVINCIAL—MINOR WORKS AND NAVIGATION.

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

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

Grant and  
outlay.

|                                              | Grant for 1896-97. |           | Outlay during<br>1896-97. |
|----------------------------------------------|--------------------|-----------|---------------------------|
|                                              | Budget.            | Final.    |                           |
|                                              | Rs.                | Rs.       | Rs.                       |
| <i>Ordinary Works.</i>                       |                    |           |                           |
| <i>Minor Works, Public Works Department—</i> |                    |           |                           |
| Original Works—                              |                    |           |                           |
| Major .. ..                                  | 1,09,000           | 1,71,283  | 1,67,270                  |
| Minor .. ..                                  | 1,70,380           | 1,05,236  | 1,06,319                  |
| Repairs .. ..                                | 8,47,030           | 4,07,525  | 4,09,816                  |
| Establishment .. ..                          | 1,46,103           | 1,54,565  | 1,67,720                  |
| Tools and plant .. ..                        | 9,463              | 10,179    | 10,391                    |
| Total .. ..                                  | 7,90,946           | 8,51,599  | 8,51,436                  |
| <i>Minor Works, Revenue Department—</i>      |                    |           |                           |
| Original works .. ..                         | 24,096             | 14,342    | 12,925                    |
| Repairs .. ..                                | 5,512              | 5,073     | 4,906                     |
| Establishment .. ..                          | 302                | 397       | 324                       |
| Tools and plant .. ..                        |                    |           |                           |
| Total .. ..                                  | 29,910             | 20,812    | 18,155                    |
| <i>Old Maintenance Charges.</i>              |                    |           |                           |
| Original works .. ..                         | 10,381             | 10,381    | 10,381                    |
| Repairs .. ..                                | 1,42,550           | 1,42,550  | 1,42,550                  |
| Establishment .. ..                          | 2,66,183           | 2,66,523  | 2,61,592                  |
| Tools and plant .. ..                        | 1,563              | 1,868     | 1,868                     |
| Total .. ..                                  | 4,21,282           | 4,23,622  | 4,36,491                  |
| <i>Tank Restoration Works.</i>               |                    |           |                           |
| Repairs .. ..                                | 5,14,201           | 4,45,009  | 4,42,072                  |
| Establishment .. ..                          | 1,25,166           | 1,02,352  | 1,01,112                  |
| Tools and plant .. ..                        | 8,163              | 6,676     | 6,593                     |
| Total .. ..                                  | 6,47,530           | 5,54,037  | 5,49,777                  |
| Grand Total .. ..                            | 19,19,758          | 18,69,138 | 18,64,961                 |

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

Major  
original  
works.

*Vizagapatam division.*—Emergent repairs to the Latchirazu dam were completed.

*Goddavari Western division.*—The land for the diversion of Yerracalva having been handed over by the Revenue Department, the earthwork was commenced in March 1897. The improvements to Medavarapa tank of Settivarigudem were completed.

*Kistna Eastern division.*—Excavating a navigable canal to the Salt factory at Panāraka was nearly completed.

*Bellary division.*—The remaining improvements to the Kampli and Bellagodal channels, which were left incomplete in the previous year, were in good progress. Nine irrigation sluices and three aqueducts were built. Half a mile of the channel extension to Arlaballi was completed. The improvements to the Dasanoor channel were also under progress. The head sluice, the excavation of a new diversion channel, the construction of a bridge, the closing of surplus sluices, the construction of eleven earthenware pipe sluices, of masonry sluices and of a stone slab bridge—works connected with this channel—were completed. The construction of seven sluices in the lower reach and the improvement of surplus sluices in the upper reach in connection with the Kampli channel improvements were completed. There still remains one-fourth of the work to complete the whole channel including a head sluice. When this and the Sirugappa channel are completed, the whole of the Tungabhadra channels, eight in number, will be in first-class order, and a very valuable property. The improvements to Maravapalli Agraharam tank, an incomplete work of the previous year, were completed. The improvements to the Rayalcheruvu tank were commenced. Expenditure was incurred on building stone revetment and on collecting broken stone for concrete. The excavation of a channel and construction of five syphon sluices for the Gandiganur tank were commenced during the year. The first of the five sluices was completed and materials for the other sluices were under collection. Work in connection with the excavation of a channel for supplying the Yapanur large and Kolacul tanks was first commenced during the year on piece-work system to give relief to the distressed people in the adjacent villages, but as the distress was not serious the work was closed.

*Chingleput division.*—Improvements to the Vylakavur tank and channel, Tirumashi tank supply channel, and to the Kunnavadi, Kunnavakam and Kuam tanks, and repairs to Pandeswaram and Taiyur tanks were in progress. The Kattur Madugu weir, an incomplete work of the previous year, was still under construction.

*South Arcot division.*—The work of cutting a channel from the Penniar to irrigate lands in Tirukondavaram and other villages and the improvements and additions to Vikrayandi ancient channel, which were commenced in the previous year, were still in progress, and the reconstruction of a weir in Orattur tank was completed.

*Coimbatore division.*—The work of registering rainfall and velocity of the Muthikolam river in connection with the proposed Muthikolam project was continued during the year. The construction of the Muthikolam rest house was in progress. The examination of a trial trench at the proposed site of the Bhavani reservoir dam was also in progress, but was afterwards stopped in favour of two other lines which require

*Madura division.*—The extension of the Vyavanar anicut and providing scouring sluices, &c., were completed, and the construction of an under-tunnel at 3,200 feet from the head of Seeliampatty channel was in progress.

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:—

[illegible]



# ADMINISTRATION REPORT OF THE

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

Repairs.

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.  |
| <i>Minor Works for which neither Capital nor Revenue Accounts are kept, Public Works Department.</i> | Rs.             | Rs.             | Rs.             |                        |            |                           |            |
| Ganjam .. .. .                                                                                       | 17,000          | 8,230           | 8,781           | 115                    | 67         | 16                        | 18         |
| Vizagapatam .. .. .                                                                                  | 17,000          | 13,523          | 16,775          | 63                     | 113        | 1*                        | 31         |
| Goddavari Eastern .. .. .                                                                            | 15,000          | 21,000          | 20,416          | 102                    | 6          | 17                        | 3          |
| Do. Western .. .. .                                                                                  | 4,000           | 8,500           | 8,129           | ..                     | ..         | ..                        | ..         |
| Kistna Eastern .. .. .                                                                               | 5,000           | 21,000          | 21,000          | 41                     | ..         | 34                        | ..         |
| Do. Northern .. .. .                                                                                 | 8,500           | 11,000          | 11,287          | 15                     | 2          | 12                        | 2          |
| Nellore .. .. .                                                                                      | 25,000          | 28,473          | 27,681          | 231                    | 14         | 63                        | 5          |
| Cuddapah .. .. .                                                                                     | 55,000          | 2,3879          | 23,217          | 27                     | 33         | 41                        | 12         |
| Kurnool .. .. .                                                                                      | 10,000          | 0,027           | 2,152           | 73                     | 1          | 45                        | 1          |
| Bellary .. .. .                                                                                      | 30,000          | 44,456          | 44,429          | 175                    | 11         | 17                        | 11         |
| Anantapur .. .. .                                                                                    | 55,000          | 41,000          | 41,250          | 204                    | 61         | 61                        | 3          |
| Chingleput .. .. .                                                                                   | 25,000          | 27,225          | 27,109          | 151                    | 14         | 6                         | 4          |
| North Arcot .. .. .                                                                                  | 55,000          | 0,027           | 31,550          | 349                    | 26         | 60                        | 17         |
| South Arcot .. .. .                                                                                  | 12,000          | 12,000          | 12,179          | 93                     | 12         | 14                        | 9          |
| Salem .. .. .                                                                                        | 12,000          | 11,500          | 11,550          | 12                     | 52         | 7                         | 14         |
| West Coast .. .. .                                                                                   | 2,000           | 2,000           | 2,181           | ..                     | ..         | ..                        | ..         |
| Bijapur .. .. .                                                                                      | 5,000           | 2,000           | 5,001           | 15                     | ..         | 2                         | ..         |
| Nagpet .. .. .                                                                                       | ..              | 2,500           | 3,311           | 38                     | ..         | 10                        | ..         |
| Trichinopoly .. .. .                                                                                 | 20,000          | 20,500          | 22,727          | 79                     | 72         | 6                         | 16         |
| Madura .. .. .                                                                                       | 12,000          | 12,210          | 19,115          | 172                    | 47         | 55                        | 27         |
| Tinnevely .. .. .                                                                                    | 20,000          | 31,000          | 50,535          | 282                    | 33         | 50                        | 25         |
| <b>Total .. .. .</b>                                                                                 | <b>3,17,000</b> | <b>4,07,325</b> | <b>4,09,816</b> | <b>2,680</b>           | <b>605</b> | <b>520</b>                | <b>196</b> |
| <i>Minor Works, Revenue Department, executed by Public Works Department.</i>                         |                 |                 |                 |                        |            |                           |            |
| Vizagapatam .. .. .                                                                                  | ..              | 791             | 622             | ..                     | ..         | ..                        | ..         |
| Kistna Northern .. .. .                                                                              | ..              | 210             | 171             | ..                     | ..         | ..                        | ..         |
| Nellore .. .. .                                                                                      | ..              | 804             | 804             | ..                     | ..         | ..                        | ..         |
| Cuddapah .. .. .                                                                                     | ..              | ..              | 246             | ..                     | ..         | ..                        | ..         |
| Kurnool .. .. .                                                                                      | ..              | 202             | 610             | ..                     | ..         | ..                        | ..         |
| Bellary .. .. .                                                                                      | ..              | 750             | 748             | ..                     | ..         | ..                        | ..         |
| Chingleput .. .. .                                                                                   | ..              | 292             | 292             | ..                     | ..         | ..                        | ..         |
| North Arcot .. .. .                                                                                  | ..              | 2,285           | 1,778           | ..                     | ..         | ..                        | ..         |
| South Arcot .. .. .                                                                                  | ..              | 515             | 563             | ..                     | ..         | ..                        | ..         |
| Coimbatore .. .. .                                                                                   | ..              | 1,970           | 1,636           | ..                     | ..         | ..                        | ..         |
| Salem .. .. .                                                                                        | ..              | 2,825           | 967             | ..                     | ..         | ..                        | ..         |
| Tanjore .. .. .                                                                                      | ..              | 200             | 201             | ..                     | ..         | ..                        | ..         |
| Trichinopoly .. .. .                                                                                 | ..              | ..              | 180             | ..                     | ..         | ..                        | ..         |
| Madura .. .. .                                                                                       | ..              | 1,200           | 290             | ..                     | ..         | ..                        | ..         |
| <b>Total .. .. .</b>                                                                                 | <b>..</b>       | <b>12,971</b>   | <b>9,572</b>    | <b>..</b>              | <b>..</b>  | <b>..</b>                 | <b>..</b>  |

# PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1896-97.

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

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The expenditure under Minor works, Public Works Department, in the Godavari Eastern division, includes also the cost of maintenance of the Dumagudem anicut and channel which latter was closed for repairs from 15th March 1896 to 15th June 1896. Five hundred and twelve boats passed through the canal during the year against 391 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:—

Repairs to Minor Works, Revenue Department, executed by Civil officers.

| Districts.                                                                     | Grant.          |                 | Outlay.         | Total number of works. |              | Number of works repaired. |
|--------------------------------------------------------------------------------|-----------------|-----------------|-----------------|------------------------|--------------|---------------------------|
|                                                                                | Budget.         | Final.          |                 | Tanks.                 | Channels.    |                           |
| <i>Repairs to Minor Works, Revenue Department, executed by Civil officers.</i> | Rs.             | Rs.             | Rs.             |                        |              |                           |
| Ganjam .. .. .                                                                 | 15,000          | 18,617          | 18,617          | 2,482                  | 48           | 207                       |
| Vizagapatam .. .. .                                                            | 15,000          | 16,000          | 16,138          | 1,270                  | 42           | 110                       |
| Goddavari .. .. .                                                              | 14,000          | 32,469          | 27,694          | 1,213                  | 21           | 86                        |
| Kistna .. .. .                                                                 | 5,400           | 14,100          | 14,000          | 284                    | 6            | 43                        |
| Nellore .. .. .                                                                | 18,000          | 18,000          | 18,939          | 394                    | 6            | 39                        |
| Cuddapah .. .. .                                                               | 30,000          | 30,180          | 29,617          | 1,842                  | 801          | 62                        |
| Kurnool .. .. .                                                                | 10,000          | 11,800          | 10,219          | 312                    | 232          | 32                        |
| Bellary .. .. .                                                                | 6,100           | 13,300          | 5,297           | 191                    | 28           | 24                        |
| Anantapur .. .. .                                                              | 23,000          | 33,000          | 27,826          | 638                    | 1,279        | 55                        |
| Presidency .. .. .                                                             | 470             | 720             | 660             | 8                      | ..           | 6                         |
| Chingleput .. .. .                                                             | 35,000          | 26,255          | 25,864          | 1,656                  | 148          | 81                        |
| North Arcot .. .. .                                                            | 60,000          | 55,000          | 54,700          | 2,412                  | 1,109        | 135                       |
| South Arcot .. .. .                                                            | 65,000          | 64,312          | 64,230          | 2,648                  | 208          | 180                       |
| Salem .. .. .                                                                  | 20,000          | 18,250          | 17,849          | 1,832                  | 321          | 58                        |
| Coimbatore .. .. .                                                             | 2,500           | 1,939           | 1,645           | 69                     | 22           | 9                         |
| Malabar .. .. .                                                                | 30              | 210             | 180             | ..                     | ..           | 1                         |
| Tanjore .. .. .                                                                | 5,500           | 5,500           | 5,382           | 444                    | ..           | 32                        |
| Trichinopoly .. .. .                                                           | 20,000          | 18,647          | 18,097          | 972                    | 27           | 53                        |
| Madura .. .. .                                                                 | 20,000          | 14,335          | 15,445          | 4,965                  | 500          | 63                        |
| Tinnevely .. .. .                                                              | 48,000          | 38,700          | 37,830          | 1,751                  | 110          | 185                       |
| Reserve .. .. .                                                                | 5,000           | 7,075           | ..              | ..                     | ..           | ..                        |
| <b>Total .. .. .</b>                                                           | <b>4,20,000</b> | <b>4,35,809</b> | <b>4,08,029</b> | <b>25,184</b>          | <b>5,408</b> | <b>1,400</b>              |

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

Repairs to 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 .. .. .             | 7                                         | 6                              | ..                        | ..                                                      | 1                                          |
| Vizagapatam .. .. .        | 1                                         | ..                             | 1                         | ..                                                      | ..                                         |
| Goddavari, Eastern .. .. . | 11                                        | 7                              | 3                         | ..                                                      | 1                                          |
| Do. Western .. .. .        | 6                                         | 4                              | ..                        | ..                                                      | ..                                         |
| Kistna, Northern .. .. .   | 2                                         | 1                              | ..                        | ..                                                      | 1                                          |
| Nellore .. .. .            | 103                                       | 13                             | ..                        | 61                                                      | 39                                         |
| Cuddapah .. .. .           | 25                                        | 21                             | ..                        | ..                                                      | 4                                          |
| Kurnool .. .. .            | 17                                        | 15                             | ..                        | 2                                                       | ..                                         |
| Bellary .. .. .            | 23                                        | 17                             | 1                         | 3                                                       | 7                                          |
| Chingleput .. .. .         | 241                                       | 131                            | 9                         | 79                                                      | 31                                         |
| North Arcot .. .. .        | 91                                        | 2                              | 2                         | 9                                                       | 2                                          |
| South Arcot .. .. .        | 36                                        | 29                             | 1                         | 5                                                       | 1                                          |
| Salem .. .. .              | 18                                        | 6                              | 8                         | 1                                                       | 3                                          |
| Coimbatore .. .. .         | 22                                        | 21                             | ..                        | 1                                                       | ..                                         |
| Tanjore .. .. .            | 7                                         | 3                              | 3                         | ..                                                      | 1                                          |
| Trichinopoly .. .. .       | 16                                        | 4                              | 2                         | 4                                                       | 1                                          |
| Madura .. .. .             | 56                                        | 44                             | 4                         | 3                                                       | 4                                          |
| Tinnevely .. .. .          | 6                                         | 3                              | ..                        | 3                                                       | ..                                         |
| <b>Total .. .. .</b>       | <b>703</b>                                | <b>420</b>                     | <b>35</b>                 | <b>162</b>                                              | <b>96</b>                                  |

\* Four of these require proper escapes.



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

\* In charge of the Military Works Department. + The list of tanks in the Nellore district is under revision.

|    |                          |          |
|----|--------------------------|----------|
| 23 | per cent. on Expenditure | 1,56,826 |
| 10 | on Direct revenue        | 904      |
|    | Total                    | 1,57,730 |

The charge for tools and plant amounted to Rs. 10,304 calculated at 1½ per cent. on the expenditure on works and repairs.

The Tank Restoration Scheme parties Nos. 1, 2 and 5 continued to work in the districts in which they had been engaged at the close of the previous year. The No. 3 party was transferred in November 1896 from Chingleput to Kurnool to work under orders of the Executive Engineer, Kurnool division, on estimates for famine-relief works, and No. 4 party was transferred from Salem to Anantapur district at the beginning of March 1897. It having been decided to investigate the large number of irrigation sources in Rāyachōti taluk, Cuddapah district, with a view to reducing the number and increasing the size of tanks, a temporary Tank Restoration Scheme party was started for the purpose from 1st April 1896. The party continued to be employed on this work till the end of November 1896, when its services were placed at the disposal of the Superintending Engineer, III Circle, for employment on famine relief works.

Investigation  
Establish-  
ment.

Extent of  
Investigation  
operations.

Grant and  
outlay.

|                              | *<br>Grant for 1896-97. |                          |                        |                 | Expenditure during 1896-97. |                          |                        |                 | Outlay<br>to end of<br>1896-97. |
|------------------------------|-------------------------|--------------------------|------------------------|-----------------|-----------------------------|--------------------------|------------------------|-----------------|---------------------------------|
|                              | Repairs.                | Estab-<br>lish-<br>ment. | Tools<br>and<br>plant. | Total.          | Repairs.                    | Estab-<br>lish-<br>ment. | Tools<br>and<br>plant. | Total.          |                                 |
|                              | RS.                     | RS.                      | RS.                    | RS.             | RS.                         | RS.                      | RS.                    | RS.             | RS.                             |
| Vizagapatam division .. ..   | 30,000                  | 6,900                    | 450                    | 37,350          | 29,549                      | 6,755                    | 440                    | 36,741          | ..                              |
| Gōdāvari Eastern division .. | 6,900                   | 1,380                    | 90                     | 7,370           | 6,289                       | 1,419                    | 93                     | 7,751           | ..                              |
| Do. Western do. .. ..        | 1,000                   | 230                      | 15                     | 1,245           | 1,147                       | 264                      | 17                     | 1,428           | ..                              |
| Kistna Northern do. .. ..    | 28,000                  | 6,440                    | 420                    | 34,860          | 29,087                      | 6,890                    | 436                    | 36,213          | ..                              |
| Salem division .. ..         | 37,475                  | 8,619                    | 562                    | 46,656          | 37,638                      | 8,667                    | 566                    | 46,860          | ..                              |
| Chingleput division .. ..    | 70,000                  | 16,100                   | 1,050                  | 87,150          | 70,107                      | 16,123                   | 1,051                  | 87,281          | ..                              |
| North Arcot division .. ..   | 27,000                  | 6,210                    | 416                    | 33,615          | 28,119                      | 6,469                    | 421                    | 34,999          | ..                              |
| South Arcot do. .. ..        | 37,500                  | 8,626                    | 553                    | 46,688          | 37,613                      | 8,661                    | 564                    | 46,828          | ..                              |
| Nagapatam do. .. ..          | 55,655                  | 12,801                   | 835                    | 69,291          | 58,120                      | 13,377                   | 872                    | 72,409          | ..                              |
| Madura do. .. ..             | 75,379                  | 17,337                   | 1,131                  | 93,847          | 87,481                      | 15,105                   | 985                    | 93,561          | ..                              |
| Tinnevely do. .. ..          | 77,000                  | 17,710                   | 1,155                  | 95,865          | 76,932                      | 17,616                   | 1,149                  | 95,716          | ..                              |
| <b>Total ..</b>              | <b>4,45,009</b>         | <b>1,02,362</b>          | <b>6,676</b>           | <b>5,54,037</b> | <b>4,42,072</b>             | <b>1,01,112</b>          | <b>6,593</b>           | <b>5,49,777</b> | <b>52,07,586</b>                |

Progress of investigation-

*No. 2 Party.*—The area investigated in Tinnevely was 146 square miles. 29 estimates aggregating Rs. 38,152 were sanctioned and 84 estimates for Rs. 73,439 were under disposal at the end of the year.

**No. 3 Party.**—The area investigated by the party in the Chingleput district was 180 square miles. Estimates for 45 works amounting to Rs. 33,609 were sanctioned, and 57 estimates aggregating Rs. 39,825 were under disposal at the close of the year. The party was in November 1896 transferred to Kurnool for employment on famine relief work.

**No. 4 Party.**—This party investigated an area of 76 square miles in the Salem district. Estimates for 34 works amounting to Rs. 31,515 were sanctioned and 35 estimates aggregating Rs. 25,145 were under disposal at the end of the year. The party was, in March 1897, transferred to the Anantapur district, where it commenced investigation of the Hindupur Minor Basin of the Upper Pennér river basin.

**No. 5 Party.**—The area investigated by the party in the North Arcot district was 390 square miles. Estimates for 67 works amounting to Rs. 31,562 were sanctioned and 65 estimates aggregating Rs. 38,919 were under disposal at the close of the year.

**Special investigation.** *Special party for investigation of irrigation works in Rayachoti taluk, Cuddapah district.*—This party was engaged in mapping, and collecting financial and hydraulic particulars of irrigation works up to end of November 1896, when its services were placed at the disposal of the Superintending Engineer, III Circle, for employment on famine relief works.

**Statement of work done by districts.** The following statement shows the work done by the Tank Restoration Scheme during and up to end of 1896-97, by districts:—

| Parties.                  | Districts.     | Approximate area investigated in square miles. |                         | Number of estimates sanctioned. |                         | Amount of estimates sanctioned. |                         |
|---------------------------|----------------|------------------------------------------------|-------------------------|---------------------------------|-------------------------|---------------------------------|-------------------------|
|                           |                | During the year 1896-97.                       | To the end of the year. | During the year.                | To the end of the year. | During the year.                | To the end of the year. |
| No. I Party ..            | Madura ..      | ..                                             | 3,852                   | 19                              | 1,131                   | Rs. 28,457                      | Rs. 11,57,151           |
| No. II Party ..           | Nellore ..     | ..                                             | 225                     | 3                               | 272                     | 4,095                           | 3,82,205                |
| No. II and III Parties .. | Tinnevely ..   | ..                                             | 146                     | 29                              | 960                     | 39,152                          | 11,43,255               |
| No. III and VI Parties .. | Chingleput ..  | ..                                             | 190                     | 45                              | 216                     | 53,609                          | 2,18,195                |
| ..                        | Kurnool ..     | ..                                             | ..                      | 2                               | 28                      | 660                             | 19,769                  |
| ..                        | Cuddapah ..    | ..                                             | 6,695                   | ..                              | 20                      | ..                              | 5,264                   |
| ..                        | Bellary ..     | ..                                             | 100                     | ..                              | 4                       | ..                              | 76,241                  |
| ..                        | Anantapur ..   | ..                                             | 8,664                   | ..                              | 147                     | ..                              | 3,09,318                |
| No. IV Party ..           | Chimbalore ..  | ..                                             | 2,899                   | 34                              | 680                     | 31,515                          | 3,04,514                |
| No. V Party ..            | Salem ..       | ..                                             | 70                      | 67                              | 562                     | 31,562                          | 5,39,075                |
| No. IV and V Parties ..   | North Arcot .. | ..                                             | 890                     | ..                              | 102                     | 1,408                           | 2,62,551                |
| ..                        | South Arcot .. | ..                                             | 256                     | 1                               | 235                     | 6,851                           | 2,70,081                |
| No. VI Party ..           | Tanjore ..     | ..                                             | 503                     | 1                               | 175                     | 6,835                           | 1,02,106                |
| No. VII Party ..          | Gódvári ..     | ..                                             | 718                     | ..                              | 192                     | ..                              | 1,48,572                |
| No. VII Party ..          | Kistna ..      | ..                                             | 3,036                   | ..                              | 136                     | 493                             | 1,44,099                |
| No. VIII Party ..         | Visagapatam .. | ..                                             | 583                     | ..                              | ..                      | ..                              | ..                      |
| Total ..                  | ..             | 1,011                                          | 34,187                  | 201                             | 4,863                   | 1,82,437                        | 50,26,491               |

\* Of these one estimate amounting to Rs. 140 is for a dasabandam work. The estimate was sanctioned and sent to the Collector for execution by the inamdar.  
† Of these, 18 estimates for Rs. 3,513 (excluding those works whose inam lands have since been resumed) refer to repairs to dasabandam works and they were sent to the Collector of the district for execution by the inamdars.  
‡ Of these, 45 estimates for Rs. 9,715 do. do. do.

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

| Memoirs for Minor Basins printed. |          | Plates for Minor Basins printed. |          | Memoirs and plates in press on 31st March 1897. |         |
|-----------------------------------|----------|----------------------------------|----------|-------------------------------------------------|---------|
| To end of                         |          | To end of                        |          | Memoirs.                                        | Plates. |
| 1895-96.                          | 1896-97. | 1895-96.                         | 1896-97. |                                                 |         |
| 26                                | 28       | 25                               | 29       | 1                                               | ..      |

**Visagapatam division.**—Thirty-four tank restoration works were in progress during the year, all of which were completed. Progress of execution.

**Gódvári Eastern division.**—All works in the Biccavole minor basin were completed and the works in the Terrigedda minor basin were in progress. Eleven works were completed and twenty-three minor works were in progress.

**Gódvári Western division.**—Sixty-five works were completed.

**Kistna Northern division.**—Of the ninety-three works the restoration of which was in progress during the year, forty-six were completed.

**Chingleput division.**—One hundred and seventy-nine works including incomplete works of the previous year were in progress, of which ninety-one were completed.

**North Arcot division.**—One hundred and five works were in progress, of which thirty-nine were completed.

**South Arcot division.**—The improvements to the Tiruvamuthur tank and channel were completed, and those to the Alangal channel and the tanks depending on it, to the Pallibellianur tank channel, Kongayanur tank and channel and Kolanur channel were in progress. Besides the above, a number of small tanks were under repair.

**Salem division.**—Two hundred and thirty-nine works were in progress, of which one hundred and forty-six were completed.

**Negapatam division.**—A large number of works were in hand during the year, of which ninety-six were completed.

**Madura division.**—One hundred and fifty-seven works were in progress, of which fifty-seven were completed.

**Tinnevely division.**—One hundred and sixty-five works were in progress, of which one hundred and one were completed.

### INVESTIGATION OF PROJECTS.

In the Kistna Northern division, the survey of the Jangamaheswerapuram tank project was completed and the estimates were far advanced, but the submission of the report was delayed pending receipt of information regarding land-cess and compensation from the Collector of Kistna.

The preliminary survey operations of the Chilakalurpad tank project in the same division were carried out, as well as some further investigations in connection with the Atmakur tank project.

The investigation of the Madavaram tank project in the Bellary division was commenced in August 1896 and was almost completed. The project is for forming a tank near the village of Madavaram, Adóni taluk, by throwing up a bund  $\frac{3}{4}$  mile below the confluence of the two large streams (the smaller of the two being the surplus channel of Chinnathumbalam tank) draining about 178 square miles with the double object of affording work to famine labour and converting 800 acres of dry land into wet.

In connection with the investigation of the Pattukkóttai project in the Tanjore division, the best line for the channel from the head to the outfall in the Maharaja-samudram was fixed and the examination of the nature of the soil by borings was in progress. Good sites for tanks were found and more detailed investigation of these was in progress.

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:—

|                    | Rs.    |
|--------------------|--------|
| Budget estimate .. | 10,000 |
| Revised ..         | 15,000 |
| Actuals ..         | 9,016  |

The total area charged as irrigated for first and second crops under all works \* for which neither Capital nor Revenue Accounts are kept was 2,849,185 acres against 3,392,165 acres in the previous year. The revenue derived from these works \* was Rs. 74,04,194 exclusive of deductions and remissions of Rs. 11,70,342.

\* Exclusive of those in the Anantapur district.

MINOR WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS  
ARE KEPT, P.W.D.

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

36 MINOR WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS  
ARE KEPT, P.W.D.

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. |           |
|--------------------------------------------------------------------------------|-----------------|-----------|---------------------|-----------|
|                                                                                | 1896-97.        | 1895-96.  | 1896-97.            | 1895-96.  |
|                                                                                | ACS.            | ACS.      | RS.                 | RS.       |
| Minor Works for which a continuous record of expenditure is kept individually. | 184,917         | 173,065   | 6,52,068            | 7,59,028  |
| (2) Other Minor Works, Public Works Department.                                | 1,119,652       | 1,000,232 | 23,11,979           | 23,81,261 |
| Minor Works, Revenue Department.                                               | 1,508,614       | 1,579,120 | 24,57,537           | 23,83,416 |
| Total.                                                                         | 4,413,183       | 3,352,417 | 34,21,584           | 35,23,705 |

Under works for which a continuous record of expenditure is kept, there was a decrease during the year of Rs. 17,880 in the net revenue due to irrigation. This occurred chiefly in the Vizagapatam District where remissions amounting to Rs. 45,687 were granted during the year against Rs. 392 in the previous year, on account of the unfavourable character of the season. Under the Minor Works, there was a decrease in all the districts except Nellore, Tanjore and Tinnevely districts. Explanation of the cause of the decrease has not yet been received from the Board of Revenue.

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. 74,13,209 and the total charges incurred on these works amounted to Rs. 22,43,632, viz., Rs. 18,35,603 in the Public Works Department, and Rs. 4,08,029 in the Revenue Department, leaving Rs. 51,69,577 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 Department, and Minor Works, Revenue Department, during the last year 1896, and the expenditure incurred on them during the official year 1896-97.

|                                                                             | Area charged as irrigated and revenue derived during the last year 1896 (1895-97). |              | Outlay during the official year 1896-97. |        |          |                |                  |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------|------------------------------------------|--------|----------|----------------|------------------|
|                                                                             | Area.                                                                              |              | Total irrigation revenue.                | Works. | Repairs. | Establishment. | Tools and plant. |
|                                                                             | First crop.                                                                        | Second crop. |                                          |        |          |                |                  |
|                                                                             | ACS.                                                                               | ACS.         | RS.                                      | RS.    | RS.      | RS.            | RS.              |
| MINOR WORKS FOR WHICH NEITHER CAPITAL NOR REVENUE ACCOUNTS ARE KEPT, P.W.D. |                                                                                    |              |                                          |        |          |                |                  |
| Works for which a continuous record of expenditure is kept individually.    |                                                                                    |              |                                          |        |          |                |                  |
| Vizagapatam.                                                                |                                                                                    |              |                                          |        |          |                | 871              |
| Godavari, for a tank.                                                       | 7,074                                                                              | 6,047        | 2,297                                    | 145    | 150      | 7              |                  |
| Godavari, for a tank.                                                       | 4,794                                                                              | 3,149        | 5,000                                    |        |          |                |                  |
| Godavari.                                                                   |                                                                                    |              |                                          |        |          |                | 3,906            |
| Andhra Pradesh, for a tank.                                                 | 30,379                                                                             | 29,871       | 1,10,000                                 | 308    | 2,014    | 708            | 47               |
| Andhra Pradesh.                                                             |                                                                                    |              |                                          |        |          |                | 1,564            |
| Madras, for a tank.                                                         | 504                                                                                | 127          | 300                                      | 100    | 100      | 100            | 15               |
| Madras, for a tank.                                                         |                                                                                    |              |                                          |        |          |                |                  |

|                                                                               | Area charged as irrigated and revenue derived during the last year 1896 (1895-97). |              | Outlay during the official year 1896-97. |          |           |                |                  |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------|------------------------------------------|----------|-----------|----------------|------------------|
|                                                                               | Area.                                                                              |              | Total irrigation revenue.                | Works.   | Repairs.  | Establishment. | Tools and plant. |
|                                                                               | First crop.                                                                        | Second crop. |                                          |          |           |                |                  |
|                                                                               | ACS.                                                                               | ACS.         | RS.                                      | RS.      | RS.       | RS.            | RS.              |
| Works for which a continuous record of expenditure is kept individually—cont. |                                                                                    |              |                                          |          |           |                |                  |
| Chingleput.                                                                   |                                                                                    |              |                                          |          |           |                |                  |
| Madurantakam tank ..                                                          | 5,932                                                                              | 799          | 14,306                                   | 927      | 3,430     | 1,002          | 65               |
| South Arcot.                                                                  |                                                                                    |              |                                          |          |           |                |                  |
| Myranady, Kattumailur anicut.                                                 | 467                                                                                | 67           | 2,239                                    | 250      | 613       |                |                  |
| Godavari river, Tiruvadi anicut.                                              | 7,020                                                                              | 1,359        | 36,630                                   |          | 1,452     | 1,613          | 105              |
| Vanamadevi anicut ..                                                          | 303                                                                                | 313          | 4,827                                    |          | 517       |                |                  |
| Tiruvendipuram anicut ..                                                      | 2,020                                                                              | 713          | 9,810                                    | 2,603    | 1,046     |                |                  |
| Kallar river, Vikravandi anicut.                                              | 2,275                                                                              | 137          | 8,144                                    |          |           |                |                  |
| Tinnevely.                                                                    |                                                                                    |              |                                          |          |           |                |                  |
| Tambraparni river, six anicuts ..                                             | 30,943                                                                             | 34,178       | 4,21,511                                 | 1,018    | 25,473    | 6,220          | 413              |
| Total ..                                                                      | 94,561                                                                             | 69,451       | 6,62,058                                 | 5,941    | 37,721    | 10,042         | 554              |
| "Other Minor Works," P.W.D.                                                   |                                                                                    |              |                                          |          |           |                |                  |
| Ganjam ..                                                                     | 35,991                                                                             | 604          | 1,229                                    | 2,837    | 8,781     | 2,667          | 173              |
| Vizagapatam ..                                                                | 23,911                                                                             | 23,911       | 60,803                                   | 10,848   | 40,170    | 11,212         | 730              |
| Godavari ..                                                                   | 31,694                                                                             | 1,316        | 39,773                                   | 9,269    | 36,301    | 9,623          | 671              |
| Kistna ..                                                                     | 8,262                                                                              | 7,280        | 11,839                                   | 88,099   | 61,574    | 22,947         | 1,496            |
| Nellore ..                                                                    | 91,517                                                                             | 22,587       | 3,89,709                                 | 69,365   | 27,681    | 20,681         | 1,306            |
| Cuddapah ..                                                                   | 47,768                                                                             | 3,130        | 1,96,618                                 | 4,830    | 23,217    | 6,662          | 427              |
| Kurnool ..                                                                    | 14,580                                                                             |              | 35,393                                   | 6,143    | 7,153     | 3,637          | 237              |
| Anantapur ..                                                                  | 25,356                                                                             | 6,308        | 1,55,383                                 | 30,625   | 48,429    | 20,393         | 1,343            |
| Bellary ..                                                                    | 23,343                                                                             | 38,720       | 5,88,698                                 | 29,432   | 1,10,957  | 32,292         | 2,093            |
| Chingleput ..                                                                 | 56,964                                                                             | 24,328       | 2,17,698                                 | 12,684   | 61,281    | 14,665         | 964              |
| North Arcot ..                                                                | 78,919                                                                             | 18,139       | 3,06,951                                 | 11,366   | 66,515    | 17,713         | 1,153            |
| South Arcot ..                                                                | 29,357                                                                             | 28,561       | 1,36,200                                 | 7,121    | 48,241    | 13,055         | 843              |
| Salem ..                                                                      | 34,705                                                                             | 13,501       | 1,74,479                                 | 23,952   | 8,677     | 7,009          | 470              |
| Coimbatore ..                                                                 |                                                                                    |              |                                          | 173      | 2,184     | 286            | 10               |
| West Coast ..                                                                 |                                                                                    |              |                                          | 975      | 31,126    | 1,11,368       | 637              |
| Tanjore ..                                                                    | 18,007                                                                             | 1,618        | 46,362                                   | 8,496    | 1,17,676  | 1,33,346       | 2,056            |
| Trichinopoly ..                                                               | 80,088                                                                             | 4,29,785     | 4,29,785                                 | 8,496    | 1,17,676  | 1,33,346       | 2,056            |
| Madura ..                                                                     | 49,374                                                                             | 19,123       | 2,16,649                                 | 2,028    | 83,606    | 19,280         | 1,256            |
| Tinnevely ..                                                                  | 55,186                                                                             | 33,050       | 3,57,820                                 | 8,611    | 1,01,014  | 25,190         | 1,638            |
| Total ..                                                                      | 914,595                                                                            | 261,064      | 38,14,179                                | 2,67,648 | 8,14,167  | 2,48,800       | 16,240           |
| Minor Works, Revenue Department.                                              |                                                                                    |              |                                          |          |           |                |                  |
| Ganjam ..                                                                     | 40,187                                                                             | 645          | 9,732                                    |          | 18,617    |                | 18,517           |
| Vizagapatam ..                                                                | 29,058                                                                             | 31,965       | 54,356                                   |          | 16,760    |                | 16,760           |
| Godavari ..                                                                   | 30,619                                                                             | 238          | 8,632                                    |          | 27,694    |                | 27,694           |
| Kistna ..                                                                     | 21,596                                                                             | 218          | 64,848                                   | 1,670    | 14,171    | 423            | 28               |
| Nellore ..                                                                    | 34,523                                                                             | 5,457        | 1,11,393                                 | 1,930    | 17,743    | 629            | 41               |
| Cuddapah ..                                                                   | 117,146                                                                            | 37,829       | 3,22,496                                 | 2,239    | 29,863    | 672            | 37               |
| Kurnool ..                                                                    | 21,904                                                                             | 2,554        | 46,751                                   | 182      | 10,829    | 182            | 12               |
| Anantapur ..                                                                  | 17,941                                                                             | 6,049        | 48,275                                   | 479      | 27,826    |                | 27,826           |
| Bellary ..                                                                    |                                                                                    |              |                                          |          | 6,346     | 282            | 19               |
| Chingleput ..                                                                 | 118,100                                                                            | 15,060       | 2,50,690                                 | 24       | 600       |                | 600              |
| North Arcot ..                                                                | 152,181                                                                            | 70,451       | 5,50,137                                 | 737      | 26,156    | 73             | 5                |
| South Arcot ..                                                                | 204,731                                                                            | 70,451       | 7,28,242                                 | 245      | 56,473    | 560            | 37               |
| Salem ..                                                                      | 76,386                                                                             | 70,451       | 2,58,677                                 | 458      | 64,793    | 186            | 12               |
| Coimbatore ..                                                                 | 13,667                                                                             | 4,390        | 46,877                                   |          | 18,816    | 328            | 21               |
| West Coast ..                                                                 |                                                                                    |              |                                          |          | 3,189     | 376            | 25               |
| Tanjore ..                                                                    | 30,635                                                                             | 2,673        | 80,634                                   | 344      | 180       |                | 180              |
| Nagapattinam ..                                                               |                                                                                    |              |                                          |          | 5,285     | 220            | 15               |
| Trichinopoly ..                                                               | 41,384                                                                             | 15,710       | 1,15,921                                 | 114      | 18,277    | 539            | 40               |
| Madura ..                                                                     | 90,212                                                                             | 17,217       | 2,73,444                                 | 1,822    | 15,735    | 436            | 32               |
| Tinnevely ..                                                                  | 91,348                                                                             | 50,936       | 4,71,362                                 |          | 37,830    |                | 37,830           |
| Total ..                                                                      | 1,441,148                                                                          | 265,364      | 34,37,657                                | 12,925   | 1,47,131  | 4,905          | 334              |
| Grand Total ..                                                                | 2,156,304                                                                          | 698,815      | 74,04,194                                | 2,86,514 | 12,69,919 | 2,63,748       | 17,218           |

\* Particulars not yet furnished by the Board of Revenue.

† This amount includes the expenditure on Tank Restoration works.

‡ Inclusive of Rs. 4,08,029, the outlay incurred by Civil officers—see statement in page 81.

## 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 1896-97. |          | Outlay during 1896-97. |
|-----------------|---------|---------------------|----------|------------------------|
|                 |         | Budget.             | Final.   |                        |
| Original Works. |         | RS.                 | RS.      | RS.                    |
| Major           | .. .. . | 92,500              | 1,18,346 | 1,21,855               |
| Minor           | .. .. . | 13,900              | 22,243   | 72,357                 |
| Total           |         | 1,06,400            | 1,40,589 | 1,87,212               |
| Repairs         | .. .. . | 3,74,389            | 5,96,940 | 5,99,692               |
| Establishment   | .. .. . | 1,63,303            | 1,63,303 | 1,63,303               |
| Tools and plant | .. .. . | 6,574               | 10,727   | 11,018                 |
| Grand Total     |         | 5,36,070            | 9,16,384 | 9,11,225               |

Major original works.

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

In the Ganjam division, the diversion of the flood bank of the Mahanadi river was in progress.

In the Vizagapatam division, the left flood bank of the Nagavalli river between Annavaram and Ampilli villages was completed except turfing.

In the Godavari Eastern division, Rs. 380 were paid for land taken up for raising the left flood embankment of the Gowtami-Godavari from Rajahmundry to Yanam.

In the Godavari Western division, raising the Vasista Godavari right bank from the anicut to Chinchinada ferry was in progress in 14th and 38th miles. Raising the Vasista right bank from Chinchinada ferry to Narsapur was completed except for about half a mile.

In the Godavari Central division, raising the Vasista left bank from head to junction of Gannavaram canal was completed, as was also the diversion of the Vainateyam right bank along Paserlapudi channel left bank.

In the Kistna Eastern division, the raising of the Kistna river left bank was completed from 12/7½ down to 22/6 and from 27/6 to 29/0 miles. Demarcation stones were also fixed for about 10 miles. The rest-houses at Vallur and Sreekakulam were completed.

In the Kistna Western division, raising the flood embankment of the Kistna river in right side from 44 miles to 55½ miles was completed except sectioning.

The systematic operations under the river conservancy sub-division are beginning to make a marked improvement in the margin of the river and were assisted by the nature of the floods of August which scoured away a good many obstructions and quickened the silting up of the planted portions.

In the Tanjore division, improvements to both banks of the Mudikondanar were completed. Raising Cauvery both banks from Road No. 4 to Kumbakonam bridge and raising Mudikondanar banks from Road No. 15 to end of Kumbakonam taluk were in progress. In the Trichinopoly division, the work of raising and strengthening the Aganda Cauvery right bank was completed and that of raising the revetment of the Kodamurti right flood bank was in progress.

In the Tinnevely division, the diversion of the Tambrapanni river right flood bank below Srivaikuntam anicut 10th mile in Sedukuvoithan village was in progress.

## AGRICULTURAL WORKS.

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.   |
| Ganjam .. .. .           | RS. 3,226             | RS. 3,955 | RS. 4,000 | RS. 3,854 |
| Vizagapatam .. .. .      | 250                   | 268       | 4,330     | 4,116     |
| Godavari Eastern .. .. . | .. .. .               | .. .. .   | 30,000    | 29,925    |
| Do. Central .. .. .      | 1,010                 | 605       | 53,350    | 53,000    |
| Do. Western .. .. .      | 3,000                 | 3,054     | 35,428    | 34,468    |
| Kistna Eastern .. .. .   | 10,000                | .. .. .   | 42,400    | 41,906    |
| Do. Northern .. .. .     | .. .. .               | .. .. .   | 40,435    | 50,228    |
| Do. Western .. .. .      | .. .. .               | .. .. .   | 1,62,653  | 1,70,099  |
| Nellore .. .. .          | .. .. .               | .. .. .   | 6,295     | 6,269     |
| Buckingham canal .. .. . | .. .. .               | .. .. .   | 6,595     | 6,506     |
| Chingalapah .. .. .      | .. .. .               | .. .. .   | 2,600     | 2,402     |
| Chingleput .. .. .       | 500                   | 522       | 5,600     | 5,435     |
| South Arcot .. .. .      | .. .. .               | .. .. .   | 10,960    | 11,865    |
| Salem .. .. .            | .. .. .               | .. .. .   | 589       | 610       |
| Coimbatore .. .. .       | 210                   | 210       | 9,139     | 9,128     |
| Tanjore .. .. .          | 2,000                 | 1,716     | 79,482    | 78,314    |
| Nagapattam .. .. .       | 500                   | 501       | 12,000    | 12,129    |
| Trichinopoly .. .. .     | 1,100                 | 973       | 45,057    | 49,944    |
| Tinnevely .. .. .        | 553                   | 553       | 35,666    | 29,293    |
| Total .. .. .            | 22,343                | 12,357    | 5,96,940  | 5,99,692  |

The charge for establishment amounted to Rs. 1,63,303 as shown below:—

Establishment.

|                                     |              |
|-------------------------------------|--------------|
| 23 per cent. on Expenditure .. .. . | RS. 1,60,917 |
| 10. " " on Direct revenue .. .. .   | 2,386        |
| Total .. .. .                       | 1,63,303     |

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.

Tools and plant.

The receipts realized by the sale of plantations and produce of trees along the river embankments amounted to Rs. 23,223 against a budget and revised estimate of Rs. 30,000 and Rs. 25,000, respectively.

Receipts collected in the Public Works Department.

## LOCAL MINOR WORKS AND NAVIGATION.

In Chingleput, Coimbatore, 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.



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LOCAL--MINOR WORKS AND NAVIGATION.

Grant and outlay.

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

| Divisions.           | Original grant for 1896-97. | Total grant for 1896-97. | Outlay, 1896-97. |
|----------------------|-----------------------------|--------------------------|------------------|
| Colembatam .. .. .   | Rs. 1,115                   | Rs. 1,115                | Rs. 6,494        |
| Salem .. .. .        | 6,000                       | 6,000                    | 8,487            |
| Trichinopoly .. .. . | 5,400                       | 5,441                    | 10,361           |
| Total .. .. .        | Rs. 12,515                  | Rs. 12,556               | Rs. 25,342       |

Progress of works.

In the Salem division, Rs. 1,815 were spent on the construction of an inspection shed with out-houses at Jadupaliem. Nine minor works and repairs were in progress, of which four were completed.

In the Trichinopoly division, three minor works were completed and of the five repair works which were in progress, two were completed.

ESTATE WORKS EXECUTED BY THE PUBLIC WORKS DEPARTMENT.

Grant and outlay.

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:—

| Estate.                        | Original works. |         | Repairs.       |         |
|--------------------------------|-----------------|---------|----------------|---------|
|                                | Revised grant.  | Outlay. | Revised grant. | Outlay. |
| <b>Ganjām Division.</b>        |                 |         |                |         |
| Suranji .. .. .                | Rs. 398         | Rs. 547 | Rs. 175        | Rs. 175 |
| Bodagada .. .. .               | 576             | 554     | 1,248          | 1,920   |
| Dhārākōta .. .. .              | 3,518           | 2,641   | 1,509          | 1,510   |
| Total, Ganjām Division .. .. . | 4,492           | 3,742   | 2,912          | 2,905   |
| <b>Salem Division.</b>         |                 |         |                |         |
| Shulagiri .. .. .              | ..              | ..      | 125            | 106     |
| Total, Salem Division .. .. .  | ..              | ..      | 125            | 106     |

Progress of works.

In the Suranji estate, one original and one repair work--incomplete works of the previous year--were completed during the year.

In the Bodagada estate, of five original works in progress, four were completed. The remaining work was also completed except turfing. Of five repair works in progress, three were completed.

In the Dhārākōta estate, one major original work, "improvements to the Rayajol Bondho of Koetra" was completed and handed over to the Zemindar. Six minor original and seven repair works were also completed during the year.

In the Shulagiri estate, repairs to the Corraladoddy dasabandam tank were carried out.



## APPENDIX A.

### DESCRIPTIVE NOTE OF THE PHOTOGRAPHIC VIEWS OF THE PERIYÁR PROJECT.

*Plate I.*—"Right bank escape of the Periyár Lake."—This view is taken looking towards the right bank escape of the Periyár Lake over which 1 foot of water was passing, the discharge being 1,020 c.f.s. In July 1896 water rose to 6.5 feet above the crest of escape and scoured out a channel which is now permanent.

*Plate II.*—"Pillayar Suthu bridge across Periyár Channel."—This view of the Periyár water is taken at Pillayar Suthu bridge which crosses the stream at a little more than half a mile from its exit from the tunnel. The stream winds between hills densely covered with jungle, and descends in a series of cascades over sheets of rocks, and large boulders with which its course is strewn.

The fall in the stream at the bridge from the tunnel exit is 365 feet. When the view was taken the Periyár Lake was 1 foot above full lake level, and the tunnel was discharging full, the flow in the stream being calculated at 1,040 c.f.s.

Below the bridge the course of the stream is similar to that above until it approaches the plains when it flows through a deep valley, the action of the water cutting away the soft soil and widening its course, until a permanent channel has been obtained. The fall of the stream from the tunnel exit to the foot of the hills is about 1,030 feet.



## APPENDIX B.

STATEMENT showing the outlay during 1896-97 on Irrigation and Navigation—Minor Works for which neither Capital nor Revenue Accounts are kept, estimated to cost Rs. 2,500 each or more.

| District.   | Executive division. | Description of work.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Amount of Estimate.                                                                                                                                                                          | Outlay during 1896-97.                                                                                                                                                   | Outlay to end of 1896-97.                                                                                                                                                   |
|-------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |                     | <i>Minor Works for which neither Capital nor Revenue Accounts are kept.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RS.                                                                                                                                                                                          | RS.                                                                                                                                                                      | RS.                                                                                                                                                                         |
| Vizagapatam | Vizagapatam         | Noolongeram channel: Improvements to the —<br>Vendurra Hattal channel: Do.<br>Latchanna dam: Emergency repairs to —<br>Bida Kuarapa tank: Compensation for land to the bed of —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3,330<br>3,040<br>2,730<br>3,985                                                                                                                                                             | 179<br>118<br>2,514<br>2,939                                                                                                                                             | 8,416<br>2,755<br>2,514<br>2,939                                                                                                                                            |
|             |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                              | 5,750                                                                                                                                                                    |                                                                                                                                                                             |
| Godavari    | Godavari Eastern.   | Dunugudon: Narrowing the tail lock at —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 3,740                                                                                                                                                                                        | 93                                                                                                                                                                       | 139                                                                                                                                                                         |
|             |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                              | 93                                                                                                                                                                       |                                                                                                                                                                             |
|             | Godavari Western.   | Yerra: Salva: Diversion of, and construction of, dam across — and Godavari channel<br>Parumapudi Bhimadu tank<br>Madavarapu tank of Sattavarigudem No. 87: Improving the —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9,460<br>4,720<br>2,350                                                                                                                                                                      | 4,776<br>19<br>426                                                                                                                                                       | 6,069<br>4,733<br>2,943                                                                                                                                                     |
|             |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                              | 5,220                                                                                                                                                                    |                                                                                                                                                                             |
| Kistna      | Kistna East-ern.    | Pandura: Excavating navigable canal to Salt factory at —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 5,980                                                                                                                                                                                        | 5,648                                                                                                                                                                    | 5,648                                                                                                                                                                       |
|             |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                              | 5,648                                                                                                                                                                    |                                                                                                                                                                             |
|             | Kistna Northern.    | Macherla: Restoring the old ruined tank near —<br>Ipur tank: Raising and strengthening the bund of —<br>Jannapudi tank scheme<br>Ipur tank: Excavating distributary for —<br>Ipur tank: Constructing a bridge on a Local Fund road to —<br>Jannapudi tank: Constructing a weir to —<br>Ipur tank: Constructing a wall at left flank of bund                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 26,900<br>8,200<br>18,160<br>7,440<br>5,680<br>2,950<br>5,860                                                                                                                                | 10,852<br>4,163<br>7,482<br>19<br>2,747<br>4,016<br>501                                                                                                                  | 21,193<br>4,163<br>7,482<br>19<br>2,747<br>1,016<br>501                                                                                                                     |
|             |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                              | 29,776                                                                                                                                                                   |                                                                                                                                                                             |
|             |                     | Kota Panduravara: Constructing a head sluice to —<br>Marrigaud tank: Improvements to the —<br>Kulivaya tank: Do.<br>Dunnapudi tank: Do.<br>Kandamur tank: Do.<br>South Mopur tank: Do.<br>Kamasagarani tank: Naidu tank: Improvements to the —<br>Chadambeti tank: Improvements to the —<br>Kuredu tank: Improvements to the —<br>Maimani gudam tank: Improvements to the —<br>Mopud tank: Improvements to the —<br>Kalavakur tank: Improvements to the —<br>Molakalapandla tank: Improvements to the —<br>Kota Pavaka: Salva: Constructing a head sluice to —<br>Totahcheruvupalli tank: Constructing a head sluice to —<br>Rapur Dabala tank: Constructing a head sluice to —<br>Sudavala tank: Constructing a head sluice to —<br>Marrigaud tank: Improvements to —<br>Kalavakur tank: Compensation to —<br>Budamagunta tank: Improvements to —<br>Molakur Panduravara tank: Improvements to —<br>Nandavaram tank: Restoring the — | 3,530<br>3,530<br>12,650<br>15,300<br>3,560<br>5,405<br>2,860<br>2,665<br>2,230<br>4,740<br>23,200<br>3,550<br>2,810<br>5,700<br>2,680<br>3,580<br>5,480<br>1,590<br>3,073<br>2,780<br>2,810 | 2,718<br>1,102<br>2,532<br>3,000<br>4,598<br>1,944<br>1,990<br>214<br>283<br>11,506<br>1,919<br>1,294<br>1,987<br>2,064<br>2,181<br>3,839<br>613<br>89<br>1,011<br>2,725 | 5,850<br>12,456<br>12,534<br>3,116<br>5,206<br>2,867<br>2,170<br>2,413<br>4,535<br>17,331<br>2,829<br>1,987<br>2,064<br>3,096<br>3,966<br>15,254<br>2,847<br>1,011<br>2,725 |
|             |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                              | 44,926                                                                                                                                                                   |                                                                                                                                                                             |
| Kurnool     | Kurnool             | Rampuram pedda and chinna tank: Raising and strengthening the bund of —<br>Rampuram: Mshavappa tank: Restoring the —<br>Tukapalli project: Preliminary expenses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4,000<br>4,368<br>4,140                                                                                                                                                                      | 1,746<br>1,937<br>250                                                                                                                                                    | 3,798<br>4,785<br>3,258                                                                                                                                                     |
|             |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                              | 2,942                                                                                                                                                                    |                                                                                                                                                                             |

## APPENDIX B.

Statement showing the outlay during 1896-97 on Irrigation and Navigation, &c.—cont.

| District.    | Executive division. | Description of work.                                                                                                                                                                                                                                                                                                                                                                             | Amount of estimate.                                                    | Outlay during 1896-97.                                 | Outlay to end of 1896-97.                                     |
|--------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------|
|              |                     | <i>Minor Works for which neither Capital nor Revenue Accounts are kept—cont.</i>                                                                                                                                                                                                                                                                                                                 | RS.                                                                    | RS.                                                    | RS. A. P.                                                     |
| Cuddapah     | Cuddapah            | Vankatarayalu cheruvu of Teddamallala: Restoring the —<br>Nagaripudi ancient: Extending the —                                                                                                                                                                                                                                                                                                    | 2,650<br>4,836                                                         | 1,225<br>1,714                                         | 2,763<br>4,866                                                |
|              |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                         |                                                                        | 2,939                                                  |                                                               |
| Bellary      | Bellary             | Kampli and Bellagodal channel: Improvements to —<br>Dasanoor channel: Improvements to —<br>Rampoor channel: Improvements to —<br>Maravapalli Agnibaram tank: Improvements to —<br>Gandiganur tank: Excavating channel and constructing five syphon sluices for the —<br>Rayachervu tank: Improvements to —                                                                                       | 31,700<br>18,770<br>21,485<br>5,900<br>3,010<br>10,800                 | 1,352<br>7,027<br>10,081<br>4,171<br>1,020<br>1,520    | 31,930<br>15,893<br>21,361<br>4,789<br>1,020<br>1,520         |
|              |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                         |                                                                        | 25,071                                                 |                                                               |
| Coimbatore   | Coimbatore          | Bhavani reservoir dam: Excavating a trench for the proposed —<br>Northborel channel: Constructing surplus weir to —<br>Nerur channel: —Constructing a head sluice —<br>Vengul channel: —Do.                                                                                                                                                                                                      | 16,000<br>2,500<br>3,430<br>2,850                                      | 14,408<br>2,524<br>72<br>38                            | 21,361<br>2,524<br>5,249<br>6,113                             |
|              |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                         |                                                                        | 17,042                                                 |                                                               |
| Salem        | Salem               | Belur Chintu ancient: Constructing head sluice to —<br>Chinna Krishnapuram tank: Constructing an ancient for supply of —                                                                                                                                                                                                                                                                         | 3,550<br>2,500                                                         | 213<br>712                                             | 4,080<br>2,551                                                |
|              |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                         |                                                                        | 925                                                    |                                                               |
| Malabar      | West Coast          | Enamakal dam: Restoring the —                                                                                                                                                                                                                                                                                                                                                                    | 9,800                                                                  | 180                                                    | 8,015                                                         |
|              |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                         |                                                                        | 180                                                    |                                                               |
| North Arcot  | North Arcot         | Gunda Eri tank: Excavating supply channel from Kathan river to —<br>Kadaladi tank: Restoring the —                                                                                                                                                                                                                                                                                               | 6,820<br>4,350                                                         | 29<br>721                                              | 55<br>4,384                                                   |
|              |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                         |                                                                        | 750                                                    |                                                               |
| South Arcot  | South Arcot         | Poonjar: Cutting a channel from — to irrigate lands in Tirukondawaram<br>Vikravadi ancient channel: Improvements and additions to the —<br>Orathur tank: —Reconstructing weir No. 2                                                                                                                                                                                                              | 14,730<br>8,670<br>2,800                                               | 3,063<br>2,602<br>560                                  | 4,999<br>3,604<br>2,936                                       |
|              |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                         |                                                                        | 6,185                                                  |                                                               |
| Chingleput   | Chingleput          | Kattar madaga: Constructing a surplus weir across —<br>Pandeswaram tank: —Revetting the bund —<br>Kumaravadi tank: Improving the —<br>Kum tangal: Improving the —<br>Tirumusti tank: Constructing head sluice and cutting channel —<br>Vylakavur tank and supply channel: Improving the —<br>Pandeswaram tank: —Revetting the bund of —<br>Kumaravadi tank: Constructing irrigation sluices to — | 13,980<br>3,010<br>4,740<br>29,400<br>3,520<br>7,260<br>3,910<br>2,780 | 3,909<br>2,000<br>2,659<br>1,445<br>3,660<br>118<br>67 | 13,985<br>3,203<br>5,022<br>29,528<br>4,153<br>6,844<br>3,083 |
|              |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                         |                                                                        | 13,858                                                 |                                                               |
| Trichinopoly | Trichinopoly        | Vahavani tank: Improving the —<br>Alannur large and small tank: Improving the —<br>Kotagallam tank: Improving the —<br>Tirugudi tank: Improving the —                                                                                                                                                                                                                                            | 2,670<br>3,500<br>3,500<br>3,500                                       | 866<br>1,102<br>374<br>10                              | 866<br>3,737<br>2,518<br>10                                   |
|              |                     | Total ..                                                                                                                                                                                                                                                                                                                                                                                         |                                                                        | 2,362                                                  |                                                               |

## APPENDIX TO THE ADMINISTRATION REPORT OF THE

## APPENDIX B.

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Statement showing the outlay during 1896-97 on Irrigation and Navigation, &amp;c.—cont.

| District.   | Executive division. | Description of work.                                                                               | Amount of estimate. | Outlay during 1896-97. | Outlay to end of 1896-97. |
|-------------|---------------------|----------------------------------------------------------------------------------------------------|---------------------|------------------------|---------------------------|
|             |                     | <i>Minor works for which neither Capital nor Revenue Accounts are kept—cont.</i>                   | RS.                 | RS.                    | RS.                       |
| Madura      | Madura              | Iyer Satharur Tamangalam tank: Improving the —                                                     | 2,950               | 505                    | 505                       |
|             |                     | Vydevanur anicut: Extending the —                                                                  | 6,020               | 113                    | 6,098                     |
|             |                     | Vydevanur river—Diversion of sluice No. 51                                                         | 2,680               | 83                     | 863                       |
|             |                     | Seelampatty channel—Constructing an under tunnel                                                   | 2,710               | 19                     | 19                        |
|             |                     | Total ..                                                                                           | ..                  | 720                    | ..                        |
| Tinnevely   | Tinnevely           | Puliyur Periyakulam tank: Improving the —                                                          | 3,065               | 3,000                  | 3,000                     |
|             |                     | Sivaperi channel: Improving the —                                                                  | 6,700               | 1,833                  | 5,333                     |
|             |                     | Thiruvengadamathan Periyakulam: Improving the —                                                    | 2,980               | 200                    | 2,708                     |
|             |                     | Vadukachinathil tank: Improving the —                                                              | 3,820               | 426                    | 426                       |
|             |                     | Total ..                                                                                           | ..                  | 5,459                  | ..                        |
|             |                     | Grand Total, 43. Minor Works and Navigation for which Capital and Revenue Accounts are not kept .. | ..                  | 1,67,270               | ..                        |
|             |                     | <i>Agricultural Works.</i>                                                                         |                     |                        |                           |
| Ganjam      | Ganjam              | Mahanadi river: Diversions of flood banks above and below ..                                       | 2,780               | 1,768                  | 1,768                     |
|             |                     | Total ..                                                                                           | ..                  | 1,768                  | ..                        |
| Vizagapatam | Vizagapatam         | Nagavalli river—Constructing left flood bank ..                                                    | 6,620               | 1,875                  | 4,091                     |
|             |                     | Nagavalli river—Constructing flood bank above Nandivarada Agraharam ..                             | 3,430               | 78                     | 2,846                     |
|             |                     | Total ..                                                                                           | ..                  | 1,953                  | ..                        |
| Godavari    | Godavari Western.   | Vasista Godavari—Raising right bank from Chinchinada ferry to Narasapur ..                         | 10,750              | 3,687                  | 9,118                     |
|             |                     | Vasista right bank: Raising the — from anicut to Chinchinada ferry ..                              | 72,800              | 34,157                 | 50,012                    |
|             |                     | Vizawaram: Raising river embankment from — to Polavaram ..                                         | 25,000              | 120                    | 24,302                    |
|             |                     | Total ..                                                                                           | ..                  | 37,964                 | ..                        |
|             | Godavari Central.   | Vasista left bank: Raising the — from head to junction of Gunnavaram canal ..                      | 33,500              | 9,122                  | 34,517                    |
|             |                     | Paserlapudi channel left bank: Diverting Vainateyam right bank above ..                            | 16,000              | 5,993                  | 11,308                    |
|             |                     | Budameru lanka: Raising right bank of — from Indupari river ..                                     | 6,270               | 708                    | 6,257                     |
|             |                     | Gowtami river: Raising embankment of — from head junction of canal bank with river bank ..         | 29,600              | 195                    | 30,274                    |
|             |                     | Vasista left bank: Diversion of — at Ramachendrapuram ..                                           | 23,700              | 5,328                  | 20,293                    |
|             |                     | Vainateyam left bank: Raising the — from Gunnavaram aqueduct to Budameru lanka ..                  | 26,400              | 179                    | 25,961                    |
|             |                     | Vasista left bank: Protecting the — at Nagulanka set ..                                            | 3,870               | 189                    | 2,143                     |
|             |                     | Total ..                                                                                           | ..                  | 21,714                 | ..                        |
| Godavari    | Godavari Eastern.   | Godavari left embankment: Raising the — from Rajakmundry to Yanam ..                               | 45,000              | 413                    | 56,102                    |
|             |                     | Pillanka: Diversion of river bank at — from 33/7 miles French channel sluice ..                    | 9,850               | ..                     | ..                        |
|             |                     | Total ..                                                                                           | ..                  | 413                    | ..                        |
| Kistna      | Kistna Eastern.     | Kistna river left flood bank: Raising the — ..                                                     | 78,300              | 19,388                 | 42,883                    |
|             |                     | Budameru aqueduct: Cut from — to Kesarapalli ..                                                    | 10,900              | 327                    | 9,873                     |
|             |                     | Srikakulam: Rest-houses and out-houses at ..                                                       | 3,668               | 40                     | 3,668                     |
|             |                     | Vallur: Do. at ..                                                                                  | 3,100               | 141                    | 3,841                     |
|             |                     | Avanigadda: Do. at ..                                                                              | 3,120               | 890                    | 5,051                     |
|             |                     | Total ..                                                                                           | ..                  | 20,606                 | ..                        |
|             | Kistna Western.     | Kistna right side: Raising the flood bank of — from 44 miles to 52½ miles ..                       | 39,000              | 15,070                 | 26,044                    |
|             |                     | Total ..                                                                                           | ..                  | 15,070                 | ..                        |

Statement showing the outlay during 1896-97 on Irrigation and Navigation, &amp;c.—cont.

| District.     | Executive division. | Description of work.                                                                            | Amount of estimate. | Outlay during 1896-97. | Outlay to end of 1896-97. |
|---------------|---------------------|-------------------------------------------------------------------------------------------------|---------------------|------------------------|---------------------------|
|               |                     | <i>Agricultural Works—cont.</i>                                                                 | RS.                 | RS.                    | RS.                       |
| Nellore       | Nellore             | Mulasari drain: Improving first four miles of —                                                 | 24,560              | 83                     | 22,190                    |
|               |                     | Total ..                                                                                        | ..                  | 33                     | ..                        |
| Tanjore       | Tanjore             | Madikondanur: Estimate for raising — from road No. 15 to the eastern limit, Kumbakonam taluk .. | 5,150               | 3,901                  | 3,901                     |
|               |                     | Canvey—Raising both banks from road No. 4 to Kumbakonam bridge ..                               | 25,900              | 5,015                  | 23,579                    |
|               |                     | Madikondanur: Improving both banks of —                                                         | 11,800              | 536                    | 9,380                     |
|               |                     | Total ..                                                                                        | ..                  | 8,551                  | ..                        |
| Trichinopoly. | Trichinopoly.       | Agunda Canvey right bank: Raising and strengthening the —                                       | 5,130               | 1,876                  | 4,370                     |
|               |                     | Kodamurti right flood bank: Raising the re-tvetment of the —                                    | 3,370               | 267                    | 267                       |
|               |                     | Total ..                                                                                        | ..                  | 2,143                  | ..                        |
| Tinnevely     | Tinnevely           | Tambraparni right flood bank: Diversion of the — in the 10th mile below Srivaikuntam anicut ..  | 18,250              | 14,510                 | 14,510                    |
|               |                     | Total ..                                                                                        | ..                  | 14,510                 | ..                        |
|               |                     | Grand Total, Agricultural Works ..                                                              | ..                  | 1,24,856               | ..                        |

(Signed) E. A. DENNY, Examiner of P. W. Accounts.



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PILLAYAR SUTHU BRIDGE ACROSS PERIYAR CHANNEL. Photo. Print, Survey Office, Madras 1897.

## APPENDIX C.

Note.—This and the following statements relate only to works for which Capital and Revenue Accounts are kept.

## APPENDIX C.

## STATISTICAL STATEMENTS.

## I. A.—STATEMENT of Canals in the Madras Presidency.

| Source of supply of water                                             | Giddalur system No. 1. | Kistna system No. 2. | Pennar system No. 3. | Sangam system No. 4. | Kurnool system No. 5. | Canary system No. 7. | Sitaram system No. 8. | Munieru system No. 12. | Sagilam system No. 14. | Tadapatri system No. 15. | Arkon system No. 16. | Kudim system No. 17. | Palar system No. 18. | Periyar system No. 19. |
|-----------------------------------------------------------------------|------------------------|----------------------|----------------------|----------------------|-----------------------|----------------------|-----------------------|------------------------|------------------------|--------------------------|----------------------|----------------------|----------------------|------------------------|
| Minimum discharge of river, cubic feet per second.                    | 8,516                  | 1,193,871            | 2,306                | 4,800                | 1,467                 | 1,381                | 1,880                 | 227                    | 450                    | 735                      | 552                  | 893                  | 5,512                | 1,251                  |
| Maximum discharge of main canals, as designed, cubic feet per second. | 11,697                 | 1,811,000            | 3,778                | 3,804                | 1,381                 | 38,715               | 1,884                 | 273                    | 273                    | 562                      | 519                  | 844                  | 7,919                | 1,776                  |
| Do. during the year.                                                  | 11,697                 | 1,811,000            | 3,778                | 3,804                | 1,381                 | 38,715               | 1,884                 | 273                    | 273                    | 562                      | 519                  | 844                  | 7,919                | 1,776                  |
| Average annual rainfall.                                              | 56.71                  | 56.71                | 56.71                | 56.71                | 56.71                 | 56.71                | 56.71                 | 56.71                  | 56.71                  | 56.71                    | 56.71                | 56.71                | 56.71                | 56.71                  |
| Gross area commanded.                                                 | 1,237,200              | 1,237,200            | 135,000              | 123,600              | 84,450                | 1,756,100            | 84,450                | 10,000                 | 80,478                 | 13,788                   | 4,118                | 9,025                | 20,000               | 10,000                 |
| Culturable do.                                                        | 771,624                | 771,624              | 80,000               | 110,000              | 321,515               | 919,500              | 80,383                | 10,000                 | 26,376                 | 13,788                   | 4,118                | 9,025                | 20,000               | 10,000                 |
| Area irrigable by complete project.                                   | 872,900                | 872,900              | 69,385               | 90,000               | 160,000               | 919,500              | 80,383                | 10,000                 | 26,376                 | 13,788                   | 4,118                | 9,025                | 20,000               | 10,000                 |
| Do. at present.                                                       | 615,000                | 615,000              | 69,385               | 90,000               | 160,000               | 919,500              | 80,383                | 10,000                 | 26,376                 | 13,788                   | 4,118                | 9,025                | 20,000               | 10,000                 |
| Cost of construction as now estimated—                                |                        |                      |                      |                      |                       |                      |                       |                        |                        |                          |                      |                      |                      |                        |
| Direct charges                                                        | 1,113,871              | 1,113,871            | 16,48,416            | 83,48,694            | 217,14,100            | 15,08,503            | 15,08,503             | 8,69,410               | 4,41,560               | 1,22,308                 | 1,00,315             | 58,740               | 19,71,008            | 2,24,755               |
| Indirect charges                                                      | 19,11,629              | 19,11,629            | 2,49,104             | 6,96,024             | 1,91,912              | 1,13,960             | 1,90,551              | 22,000                 | 10,000                 | 2,189                    | 2,626                | 1,705                | 1,01,153             | 1,071                  |
| Total, Estimate                                                       | 1,33,04,900            | 1,33,04,900          | 18,97,520            | 40,44,718            | 2,17,16,012           | 20,22,463            | 14,99,054             | 8,91,410               | 4,51,560               | 1,24,497                 | 1,02,941             | 60,445               | 20,72,161            | 2,35,726               |
| Expenditure to (Direct charges and of 1896-97.)                       | 1,00,96,077            | 1,00,96,077          | 15,47,474            | 31,32,550            | 2,17,11,139           | 17,29,508            | 13,72,316             | 3,92,302               | 3,67,080               | 1,13,471                 | 99,278               | 58,740               | 19,36,008            | 2,24,755               |
| Indirect do.                                                          | 19,00,368              | 19,00,368            | 2,49,193             | 6,95,671             | 2,35,773              | 1,29,955             | 1,90,868              | 7,780                  | 15,556                 | 9,928                    | 2,626                | 1,705                | 1,01,153             | 1,071                  |
| Total, Expenditure                                                    | 1,28,97,446            | 1,28,97,446          | 18,96,667            | 38,28,221            | 2,17,13,494           | 18,59,463            | 15,63,184             | 3,10,082               | 3,82,636               | 1,23,400                 | 1,01,904             | 60,445               | 20,37,161            | 2,35,726               |
| Works as now sanctioned—                                              |                        |                      |                      |                      |                       |                      |                       |                        |                        |                          |                      |                      |                      |                        |
| Main canals, irrigation                                               | 500                    | 572                  | 22                   | 9                    | 190                   | 844                  | 58                    | 27                     | 10                     | 49                       | 20                   | 57                   | 25                   | 55                     |
| Branch canals, do.                                                    | 1,911                  | 1,025                | 120                  | 284                  | 313                   | 1,250                | 62                    | ..                     | ..                     | ..                       | ..                   | ..                   | 163                  | 45                     |
| Distributaries                                                        | ..                     | ..                   | ..                   | ..                   | ..                    | ..                   | ..                    | ..                     | ..                     | ..                       | ..                   | ..                   | 133                  | 75                     |
| Of above—                                                             |                        |                      |                      |                      |                       |                      |                       |                        |                        |                          |                      |                      |                      |                        |
| Navigable canals                                                      | 403                    | 382                  | ..                   | ..                   | 190                   | ..                   | ..                    | ..                     | ..                     | ..                       | ..                   | ..                   | ..                   | ..                     |
| Works completed at end of 1896-97—                                    |                        |                      |                      |                      |                       |                      |                       |                        |                        |                          |                      |                      |                      |                        |
| Main canals, irrigation                                               | 503                    | 329                  | 22                   | 9                    | 190                   | 844                  | 58                    | ..                     | ..                     | ..                       | ..                   | ..                   | ..                   | ..                     |
| Branch canals, do.                                                    | 1,903                  | 1,014                | 120                  | 284                  | 313                   | 1,250                | 62                    | ..                     | ..                     | ..                       | ..                   | ..                   | 163                  | 45                     |
| Distributaries                                                        | ..                     | ..                   | ..                   | ..                   | ..                    | ..                   | ..                    | ..                     | ..                     | ..                       | ..                   | ..                   | 133                  | 75                     |
| Of above—                                                             |                        |                      |                      |                      |                       |                      |                       |                        |                        |                          |                      |                      |                      |                        |
| Navigable                                                             | 493                    | 397                  | ..                   | ..                   | 190                   | ..                   | ..                    | ..                     | ..                     | ..                       | ..                   | ..                   | ..                   | ..                     |

\* The extra discharge was, on account of two extra vents, built in 1897-98 to Dowlahwaram head.

## APPENDIX C.

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

| Source of supply of water                                             | Chayyar system No. 21. | Vallam system No. 24. | Tirukkoyilur system No. 25. | Tirukkoyilur system No. 26. | Vidhar system No. 27. | Shattappa system No. 28. | Palandam system No. 29. | Lower Coleroon system No. 30. | Nandiyar system No. 31. | Mandur system No. 32. | Chilka system No. 33. | Duckington system No. 34. | Vedarsani system No. 35. | Ganjam system No. 36 (a). |
|-----------------------------------------------------------------------|------------------------|-----------------------|-----------------------------|-----------------------------|-----------------------|--------------------------|-------------------------|-------------------------------|-------------------------|-----------------------|-----------------------|---------------------------|--------------------------|---------------------------|
| Minimum discharge of river, cubic feet per second.                    | 1,463                  | 113                   | 1,271                       | 1,271                       | 1,271                 | 1,271                    | 1,271                   | 1,271                         | 1,271                   | 1,271                 | 1,271                 | 1,271                     | 1,271                    | 1,271                     |
| Maximum discharge of main canals, as designed, cubic feet per second. | 704                    | 113                   | 1,388                       | 1,388                       | 1,388                 | 1,388                    | 1,388                   | 1,388                         | 1,388                   | 1,388                 | 1,388                 | 1,388                     | 1,388                    | 1,388                     |
| Do. during the year.                                                  | 704                    | 113                   | 1,388                       | 1,388                       | 1,388                 | 1,388                    | 1,388                   | 1,388                         | 1,388                   | 1,388                 | 1,388                 | 1,388                     | 1,388                    | 1,388                     |
| Average annual rainfall.                                              | 40.29                  | 40.29                 | 40.29                       | 40.29                       | 40.29                 | 40.29                    | 40.29                   | 40.29                         | 40.29                   | 40.29                 | 40.29                 | 40.29                     | 40.29                    | 40.29                     |
| Gross area commanded.                                                 | 70,400                 | 8,691                 | 21,274                      | 21,274                      | 21,274                | 21,274                   | 21,274                  | 21,274                        | 21,274                  | 21,274                | 21,274                | 21,274                    | 21,274                   | 21,274                    |
| Culturable do.                                                        | 18,451                 | 4,654                 | 20,531                      | 20,531                      | 20,531                | 20,531                   | 20,531                  | 20,531                        | 20,531                  | 20,531                | 20,531                | 20,531                    | 20,531                   | 20,531                    |
| Area irrigable by complete project.                                   | 18,200                 | 3,803                 | 20,531                      | 20,531                      | 20,531                | 20,531                   | 20,531                  | 20,531                        | 20,531                  | 20,531                | 20,531                | 20,531                    | 20,531                   | 20,531                    |
| Do. at present.                                                       | 16,558                 | 3,803                 | 19,771                      | 19,771                      | 19,771                | 19,771                   | 19,771                  | 19,771                        | 19,771                  | 19,771                | 19,771                | 19,771                    | 19,771                   | 19,771                    |
| Cost of construction as now estimated—                                |                        |                       |                             |                             |                       |                          |                         |                               |                         |                       |                       |                           |                          |                           |
| Direct charges                                                        | 3,94,376               | 62,177                | 2,47,952                    | 2,47,952                    | 2,47,952              | 2,47,952                 | 2,47,952                | 2,47,952                      | 2,47,952                | 2,47,952              | 2,47,952              | 2,47,952                  | 2,47,952                 | 2,47,952                  |
| Indirect do.                                                          | 11,039                 | 1,625                 | 6,518                       | 6,518                       | 6,518                 | 6,518                    | 6,518                   | 6,518                         | 6,518                   | 6,518                 | 6,518                 | 6,518                     | 6,518                    | 6,518                     |
| Total, Estimate                                                       | 4,05,415               | 63,803                | 2,54,470                    | 2,54,470                    | 2,54,470              | 2,54,470                 | 2,54,470                | 2,54,470                      | 2,54,470                | 2,54,470              | 2,54,470              | 2,54,470                  | 2,54,470                 | 2,54,470                  |
| Expenditure to (Direct charges and of 1896-97.)                       | 3,94,376               | 62,177                | 2,47,952                    | 2,47,952                    | 2,47,952              | 2,47,952                 | 2,47,952                | 2,47,952                      | 2,47,952                | 2,47,952              | 2,47,952              | 2,47,952                  | 2,47,952                 | 2,47,952                  |
| Indirect do.                                                          | 11,039                 | 1,625                 | 6,518                       | 6,518                       | 6,518                 | 6,518                    | 6,518                   | 6,518                         | 6,518                   | 6,518                 | 6,518                 | 6,518                     | 6,518                    | 6,518                     |
| Total, Expenditure                                                    | 4,05,415               | 63,803                | 2,54,470                    | 2,54,470                    | 2,54,470              | 2,54,470                 | 2,54,470                | 2,54,470                      | 2,54,470                | 2,54,470              | 2,54,470              | 2,54,470                  | 2,54,470                 | 2,54,470                  |
| Works as now sanctioned—                                              |                        |                       |                             |                             |                       |                          |                         |                               |                         |                       |                       |                           |                          |                           |
| Main canals, irrigation                                               | 21                     | 3                     | 57                          | 57                          | 57                    | 57                       | 57                      | 57                            | 57                      | 57                    | 57                    | 57                        | 57                       | 57                        |
| Branch do.                                                            | 40                     | ..                    | 80                          | 80                          | 80                    | 80                       | 80                      | 80                            | 80                      | 80                    | 80                    | 80                        | 80                       | 80                        |
| Distributaries                                                        | 120                    | ..                    | 26                          | 26                          | 26                    | 26                       | 26                      | 26                            | 26                      | 26                    | 26                    | 26                        | 26                       | 26                        |
| Of above—                                                             |                        |                       |                             |                             |                       |                          |                         |                               |                         |                       |                       |                           |                          |                           |
| Navigable canals                                                      | ..                     | ..                    | ..                          | ..                          | ..                    | ..                       | ..                      | ..                            | ..                      | ..                    | ..                    | ..                        | ..                       | ..                        |
| Works completed at end of 1896-97—                                    |                        |                       |                             |                             |                       |                          |                         |                               |                         |                       |                       |                           |                          |                           |
| Main canals, irrigation                                               | 21                     | 3                     | 57                          | 57                          | 57                    | 57                       | 57                      | 57                            | 57                      | 57                    | 57                    | 57                        | 57                       | 57                        |
| Branch do.                                                            | 40                     | ..                    | 80                          | 80                          | 80                    | 80                       | 80                      | 80                            | 80                      | 80                    | 80                    | 80                        | 80                       | 80                        |
| Distributaries                                                        | 120                    | ..                    | 26                          | 26                          | 26                    | 26                       | 26                      | 26                            | 26                      | 26                    | 26                    | 26                        | 26                       | 26                        |
| Of above—                                                             |                        |                       |                             |                             |                       |                          |                         |                               |                         |                       |                       |                           |                          |                           |
| Navigable                                                             | ..                     | ..                    | ..                          | ..                          | ..                    | ..                       | ..                      | ..                            | ..                      | ..                    | ..                    | ..                        | ..                       | ..                        |

(a) Work carried on only for famine purposes and abandoned—see page 77 of Report.  
(b) Information is not available at present.

(Signed) W. HUGHES,  
Chief Engineer for Irrigation.

(Signed) W. HUGHES,  
Chief Engineer for Irrigation.

a) The supply from the river is obtained by means of an afloat.  
b) The supply is to be obtained from two reservoirs - "Russellkonda" and "Surda" as well as from the rivers which will have afloats across them.  
c) The Cambum tank receives its supply from drainage basin, none is diverted into the tank by means of afloats on the two rivers.  
d) This is the drainage area of the river at the Nainital afloat. The drainage area of the Barir tank itself is 7 square miles.  
e) Russellkonda reservoir is in progress and is expected to be completed in 1898.

**A.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 Presidency for and to end of 1896-97.**

| Works or systems.                               |                            | Direct charges (net expenditure). |                |                  |                   |             |           | Indirect charges excluding interest. |             | Total       |     | Sample interest. |  |
|-------------------------------------------------|----------------------------|-----------------------------------|----------------|------------------|-------------------|-------------|-----------|--------------------------------------|-------------|-------------|-----|------------------|--|
|                                                 |                            | Works.                            | Establishment. | Tools and plant. | Suspense account. | Total.      |           |                                      |             |             |     |                  |  |
|                                                 |                            | RS.                               | RS.            | RS.              | RS.               | RS.         | RS.       | RS.                                  | RS.         | RS.         | RS. | RS.              |  |
| PRODUCTIVE PUBLIC WORKS.                        |                            |                                   |                |                  |                   |             |           |                                      |             |             |     |                  |  |
| No. 1.                                          | Goddavari delta system     | 80,73,558                         | 19,73,498      | 8,85,000         | ..                | 1,00,22,065 | 18,98,566 | ..                                   | 1,25,97,519 | 1,25,97,519 | ..  | ..               |  |
|                                                 | { To end of previous year  | 64,078                            | 10,834         | 5,52,745         | ..                | 67,812      | 2,102     | ..                                   | 4,38,581    | 4,38,581    | ..  | ..               |  |
| "                                               | { During 1896-97           | 87,64,756                         | 20,69,319      | 5,52,745         | ..                | 1,13,76,820 | 8,04,563  | ..                                   | 1,21,81,403 | 1,21,81,403 | ..  | ..               |  |
| "                                               | { To end of previous year  | 4,31,411                          | 91,821         | 41,660           | ..                | 5,84,882    | 17,962    | ..                                   | 6,02,844    | 6,02,844    | ..  | ..               |  |
| "                                               | { During 1896-97           | 12,93,711                         | 3,19,991       | 27,851           | ..                | 16,40,633   | 2,49,080  | ..                                   | 18,89,713   | 18,89,713   | ..  | ..               |  |
| "                                               | { To end of previous year  | 6,017                             | 804            | ..               | ..                | 6,821       | 113       | ..                                   | 6,934       | 6,934       | ..  | ..               |  |
| "                                               | { During 1896-97           | 25,03,302                         | 4,95,472       | 1,45,413         | ..                | 31,44,187   | 6,35,198  | ..                                   | 38,10,415   | 38,10,415   | ..  | ..               |  |
| "                                               | { To end of previous year  | 18,045                            | 2,866          | ..               | ..                | 17,333      | 373       | ..                                   | 17,706      | 17,706      | ..  | ..               |  |
| "                                               | { During 1896-97           | 2,16,87,793                       | 10,872         | 1,378            | ..                | 2,16,89,635 | 1,885     | ..                                   | 2,17,00,550 | 2,17,00,550 | ..  | ..               |  |
| "                                               | { To end of previous year  | 10,176                            | 2,298          | ..               | ..                | 12,474      | 476       | ..                                   | 12,944      | 12,944      | ..  | ..               |  |
| "                                               | { During 1896-97           | 2,40,177                          | 73,504         | 6,801            | ..                | 4,00,682    | 22,829    | ..                                   | 4,23,481    | 4,23,481    | ..  | ..               |  |
| "                                               | { To end of previous year  | 1,465                             | 289            | ..               | ..                | 1,754       | 40        | ..                                   | 1,803       | 1,803       | ..  | ..               |  |
| "                                               | { During 1896-97           | 13,34,961                         | 3,13,648       | 38,674           | ..                | 16,87,283   | 1,24,906  | ..                                   | 18,11,169   | 18,11,169   | ..  | ..               |  |
| "                                               | { To end of previous year  | 8,184                             | 7,741          | ..               | ..                | 42,655      | 1,984     | ..                                   | 44,639      | 44,639      | ..  | ..               |  |
| "                                               | { During 1896-97           | 10,36,477                         | 2,92,216       | 10,155           | ..                | 13,61,847   | 1,09,951  | ..                                   | 14,82,798   | 14,82,798   | ..  | ..               |  |
| "                                               | { To end of previous year  | 543                               | 126            | ..               | ..                | 668         | 17        | ..                                   | 685         | 685         | ..  | ..               |  |
| "                                               | { During 1896-97           | 59,60,439                         | 13,23,743      | 8,00,865         | ..                | 80,85,047   | 2,13,565  | ..                                   | 83,00,642   | 83,00,642   | ..  | ..               |  |
| "                                               | { To end of previous year  | 1,09,813                          | 22,434         | 88,777           | ..                | 44,970      | 7,332     | ..                                   | 52,302      | 52,302      | ..  | ..               |  |
| "                                               | { During 1896-97           | 509,88,174                        | 68,71,462      | 24,38,603        | ..                | 6,02,58,239 | 41,12,593 | ..                                   | 6,44,10,822 | 6,44,10,822 | ..  | ..               |  |
| "                                               | { To end of previous year  | 6,83,722                          | 1,39,012       | 46,505           | ..                | 7,76,239    | 29,693    | ..                                   | 8,05,922    | 8,05,922    | ..  | ..               |  |
| PROTECTIVE IRRIGATION WORKS.                    |                            |                                   |                |                  |                   |             |           |                                      |             |             |     |                  |  |
| No. 10.                                         | Rashikranya project        | 31,25,829                         | 8,52,234       | 1,25,991         | ..                | 39,07,151   | 3,57,934  | ..                                   | 42,65,088   | 42,65,088   | ..  | ..               |  |
|                                                 | { To end of previous year  | 1,57,744                          | 37,317         | 1,003            | ..                | 2,04,068    | 10,225    | ..                                   | 2,14,283    | 2,14,283    | ..  | ..               |  |
| "                                               | { During 1896-97           | ..                                | ..             | ..               | ..                | ..          | ..        | ..                                   | ..          | ..          | ..  | ..               |  |
| ORDINARY IRRIGATION—MINOR WORKS AND NAVIGATION. |                            |                                   |                |                  |                   |             |           |                                      |             |             |     |                  |  |
| No. 11.                                         | Ganjām minor rivers system | 4,011                             | 833            | ..               | ..                | 4,894       | 124       | ..                                   | 5,018       | 5,018       | ..  | ..               |  |
|                                                 | { To end of previous year  | 1,17,065                          | 26,026         | ..               | ..                | 1,43,565    | 3,769     | ..                                   | 1,47,334    | 1,47,334    | ..  | ..               |  |
| "                                               | { During 1896-97           | 1,28,094                          | 28,647         | 676              | ..                | 1,57,736    | 4,011     | ..                                   | 1,61,747    | 1,61,747    | ..  | ..               |  |
| "                                               | { To end of previous year  | 89,902                            | 20,697         | 905              | ..                | 1,10,689    | 4,767     | ..                                   | 1,15,456    | 1,15,456    | ..  | ..               |  |
| "                                               | { During 1896-97           | 26,889                            | 1,349          | ..               | ..                | 28,231      | 189       | ..                                   | 28,420      | 28,420      | ..  | ..               |  |
| "                                               | { To end of previous year  | 2,08,527                          | 47,337         | 12,807           | ..                | 2,68,171    | 6,764     | ..                                   | 2,74,935    | 2,74,935    | ..  | ..               |  |
| "                                               | { During 1896-97           | 80,623                            | 18,866         | ..               | ..                | 98,909      | 8,792     | ..                                   | 1,07,701    | 1,07,701    | ..  | ..               |  |
| "                                               | { To end of previous year  | 49,427                            | 11,267         | ..               | ..                | 60,694      | 1,577     | ..                                   | 62,271      | 62,271      | ..  | ..               |  |
| "                                               | { During 1896-97           | 1,005                             | 332            | ..               | ..                | 1,337       | 32        | ..                                   | 1,369       | 1,369       | ..  | ..               |  |
| "                                               | { To end of previous year  | 86,658                            | 18,947         | ..               | ..                | 1,05,605    | 5,965     | ..                                   | 1,11,570    | 1,11,570    | ..  | ..               |  |
| "                                               | { During 1896-97           | 6,583                             | 1,903          | ..               | ..                | 8,086       | 3,313     | ..                                   | 11,319      | 11,319      | ..  | ..               |  |
| "                                               | { To end of previous year  | 81,378                            | 18,760         | ..               | ..                | 1,09,338    | 2,626     | ..                                   | 1,02,964    | 1,02,964    | ..  | ..               |  |
| "                                               | { During 1896-97           | ..                                | ..             | ..               | ..                | ..          | ..        | ..                                   | ..          | ..          | ..  | ..               |  |



## APPENDIX C.

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

| Works or systems.                                           | Direct charges (net expenditure). |            |                |            |                  |            |                   |            |            |            |
|-------------------------------------------------------------|-----------------------------------|------------|----------------|------------|------------------|------------|-------------------|------------|------------|------------|
|                                                             | Works.                            |            | Establishment. |            | Tools and plant. |            | Suspense account. |            | Total.     |            |
|                                                             | 1                                 | 2          | 3              | 4          | 5                | 6          | 7                 | 8          | 9          | 10         |
| <b>ORDINARY IRRIGATION—MAJOR WORKS AND NAVIGATION—cont.</b> |                                   |            |                |            |                  |            |                   |            |            |            |
| No. 18. Kallangirayan channel system ..                     | Rs. 47,556                        | Rs. 20,784 | Rs. 1,058      | Rs. 20,784 | Rs. 20,784       | Rs. 20,784 | Rs. 1,058         | Rs. 20,784 | Rs. 20,784 | Rs. 20,784 |
| To end of previous year ..                                  | 17,22,555                         | 3,29,500   | 1,058          | 3,29,500   | 3,29,500         | 3,29,500   | 1,058             | 3,29,500   | 3,29,500   | 3,29,500   |
| During 1896-97 ..                                           | 3,29,500                          | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 19. Palar salted system ..                              | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 20. Palar do. ..                                        | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 21. Choyra do. ..                                       | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 22. Chemburam tank ..                                   | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 23. Madhav water supply and irrigation extension ..     | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 24. Vallar salted system ..                             | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 25. Tirukkolai do. ..                                   | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 26. Mahanadi do. ..                                     | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 27. Vellachandam salted system ..                       | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 28. Shallop salted system ..                            | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 29. Talam do. ..                                        | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 30. Lower Coleroon do. ..                               | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 31. Nallur channel extension ..                         | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 32. Masur salted system ..                              | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 33. Chikka lake canal ..                                | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 34. Buckingham canal ..                                 | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 35. Vellam salted system ..                             | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| No. 36. Gajam Gopipar canal ..                              | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |
| Total, Minor Works and Navigation ..                        | Rs. 1,88,501                      | Rs. 42,524 | Rs. 1,058      | Rs. 42,524 | Rs. 42,524       | Rs. 42,524 | Rs. 1,058         | Rs. 42,524 | Rs. 42,524 | Rs. 42,524 |
| To end of previous year ..                                  | 1,88,501                          | 42,524     | 1,058          | 42,524     | 42,524           | 42,524     | 1,058             | 42,524     | 42,524     | 42,524     |
| During 1896-97 ..                                           | 42,524                            | 1,058      | 1,058          | 1,058      | 1,058            | 1,058      | 1,058             | 1,058      | 1,058      | 1,058      |

1st October 1897.

(Signed) E. A. DENNIS,  
Examiner, Public Works Accounts, Madras.

## 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 in the Madras Presidency for the year ending 31st March 1897.

| Works or systems.                      | Revenue (actual receipts). |              |               |            |               |                |               |                          |                              |                                     | Working expenses.                  |                     |                 |                           |
|----------------------------------------|----------------------------|--------------|---------------|------------|---------------|----------------|---------------|--------------------------|------------------------------|-------------------------------------|------------------------------------|---------------------|-----------------|---------------------------|
|                                        | Irrigation.                |              |               |            | Navigation.   | Miscellaneous. | Total.        | Less refunds of revenue. | Gross revenue, less refunds. | Defect share of irrigation revenue. | Total revenue due to improvements. | Revenue management. |                 |                           |
|                                        | Share of land revenue.     |              | Total.        | Direction. |               |                |               |                          |                              |                                     |                                    | Execution.          | Civil officers. | Total Revenue management. |
|                                        | Rs.                        | P.           |               |            |               |                |               |                          |                              |                                     |                                    |                     |                 |                           |
| I                                      |                            |              |               |            |               |                |               |                          |                              |                                     |                                    |                     |                 |                           |
| Productive Public Works.               |                            |              |               |            |               |                |               |                          |                              |                                     |                                    |                     |                 |                           |
| No. 1. Gajavari delta system ..        | Rs. 26,79,408              | Rs. 1,47,443 | Rs. 28,96,851 | Rs. 90,227 | Rs. 29,28,449 | Rs. 5,740      | Rs. 29,28,449 | Rs. 5,740                | Rs. 29,28,449                | Rs. 5,740                           | Rs. 29,28,449                      | Rs. 5,740           | Rs. 29,28,449   | Rs. 5,740                 |
| do. ..                                 | 20,29,276                  | 1,47,106     | 22,06,481     | 81,679     | 22,56,068     | 15,923         | 22,56,068     | 15,923                   | 22,56,068                    | 15,923                              | 22,56,068                          | 15,923              | 22,56,068       | 15,923                    |
| No. 2. Kallangirayan channel system .. | Rs. 2,56,480               | Rs. 419      | Rs. 2,56,899  | Rs. 1,002  | Rs. 2,57,901  | Rs. 30,958     | Rs. 2,57,901  | Rs. 30,958               | Rs. 2,57,901                 | Rs. 30,958                          | Rs. 2,57,901                       | Rs. 30,958          | Rs. 2,57,901    | Rs. 30,958                |
| do. ..                                 | 2,56,480                   | 419          | 2,56,899      | 1,002      | 2,57,901      | 30,958         | 2,57,901      | 30,958                   | 2,57,901                     | 30,958                              | 2,57,901                           | 30,958              | 2,57,901        | 30,958                    |
| No. 3. Kallangirayan channel system .. | Rs. 41,77,693              | Rs. 1,11,331 | Rs. 42,89,024 | Rs. 1,002  | Rs. 43,90,326 | Rs. 2,202      | Rs. 43,90,326 | Rs. 2,202                | Rs. 43,90,326                | Rs. 2,202                           | Rs. 43,90,326                      | Rs. 2,202           | Rs. 43,90,326   | Rs. 2,202                 |
| do. ..                                 | 41,77,693                  | 1,11,331     | 42,89,024     | 1,002      | 43,90,326     | 2,202          | 43,90,326     | 2,202                    | 43,90,326                    | 2,202                               | 43,90,326                          | 2,202               | 43,90,326       | 2,202                     |
| No. 4. Shallop salted system ..        | Rs. 1,84,114               | Rs. 1,780    | Rs. 1,85,894  | Rs. 1,002  | Rs. 1,86,896  | Rs. 1,421      | Rs. 1,86,896  | Rs. 1,421                | Rs. 1,86,896                 | Rs. 1,421                           | Rs. 1,86,896                       | Rs. 1,421           | Rs. 1,86,896    | Rs. 1,421                 |
| do. ..                                 | 1,84,114                   | 1,780        | 1,85,894      | 1,002      | 1,86,896      | 1,421          | 1,86,896      | 1,421                    | 1,86,896                     | 1,421                               | 1,86,896                           | 1,421               | 1,86,896        | 1,421                     |
| No. 5. Palar project ..                | Rs. 2,56,480               | Rs. 419      | Rs. 2,56,899  | Rs. 1,002  | Rs. 2,57,901  | Rs. 30,958     | Rs. 2,57,901  | Rs. 30,958               | Rs. 2,57,901                 | Rs. 30,958                          | Rs. 2,57,901                       | Rs. 30,958          | Rs. 2,57,901    | Rs. 30,958                |
| do. ..                                 | 2,56,480                   | 419          | 2,56,899      | 1,002      | 2,57,901      | 30,958         | 2,57,901      | 30,958                   | 2,57,901                     | 30,958                              | 2,57,901                           | 30,958              | 2,57,901        | 30,958                    |
| Total ..                               | Rs. 1,06,106               | Rs. 143      | Rs. 1,06,249  | Rs. 2      | Rs. 1,06,251  | Rs. 751        | Rs. 1,06,251  | Rs. 751                  | Rs. 1,06,251                 | Rs. 751                             | Rs. 1,06,251                       | Rs. 751             | Rs. 1,06,251    | Rs. 751                   |
| Productive Irrigation Works.           |                            |              |               |            |               |                |               |                          |                              |                                     |                                    |                     |                 |                           |
| No. 10. Rashtakula project ..          | Rs. 1,06,106               | Rs. 143      | Rs. 1,06,249  | Rs. 2      | Rs. 1,06,251  | Rs. 751        | Rs. 1,06,251  | Rs. 751                  | Rs. 1,06,251                 | Rs. 751                             | Rs. 1,06,251                       | Rs. 751             | Rs. 1,06,251    | Rs. 751                   |
| Minor Works and Navigation.            |                            |              |               |            |               |                |               |                          |                              |                                     |                                    |                     |                 |                           |
| No. 11. Gajam Minor rivers system ..   | Rs. 1,13,026               | Rs. 6,593    | Rs. 1,24,624  | Rs. 97     | Rs. 1,24,624  | Rs. 243        | Rs. 1,24,624  | Rs. 243                  | Rs. 1,24,624                 | Rs. 243                             | Rs. 1,24,624                       | Rs. 243             | Rs. 1,24,624    | Rs. 243                   |
| do. ..                                 | 1,13,026                   | 6,593        | 1,24,624      | 97         | 1,24,624      | 243            | 1,24,624      | 243                      | 1,24,624                     | 243                                 | 1,24,624                           | 243                 | 1,24,624        | 243                       |
| No. 12. Gajam Minor rivers system ..   | Rs. 33,192                 | Rs. 2,538    | Rs. 35,730    | Rs. 362    | Rs. 36,092    | Rs. 75         | Rs. 36,092    | Rs. 75                   | Rs. 36,092                   | Rs. 75                              | Rs. 36,092                         | Rs. 75              | Rs. 36,092      | Rs. 75                    |
| do. ..                                 | 33,192                     | 2,538        | 35,730        | 362        | 36,092        | 75             | 36,092        | 75                       | 36,092                       | 75                                  | 36,092                             | 75                  | 36,092          | 75                        |
| No. 13. Rashtakula channel system ..   | Rs. 27,403                 | Rs. 416      | Rs. 27,819    | Rs. 33     | Rs. 27,852    | Rs. 23         | Rs. 27,852    | Rs. 23                   | Rs. 27,852                   | Rs. 23                              | Rs. 27,852                         | Rs. 23              | Rs. 27,852      | Rs. 23                    |
| do. ..                                 | 27,403                     | 416          | 27,819        | 33         | 27,852        | 23             | 27,852        | 23                       | 27,852                       | 23                                  | 27,852                             | 23                  | 27,852          | 23                        |
| No. 14. Rashtakula channel system ..   | Rs. 27,403                 | Rs. 416      | Rs. 27,819    | Rs. 33     | Rs. 27,852    | Rs. 23         | Rs. 27,852    | Rs. 23                   | Rs. 27,852                   | Rs. 23                              | Rs. 27,852                         | Rs. 23              | Rs. 27,852      | Rs. 23                    |
| do. ..                                 | 27,403                     | 416          | 27,819        | 33         | 27,852        | 23             | 27,852        | 23                       | 27,852                       | 23                                  | 27,852                             | 23                  | 27,852          | 23                        |
| No. 15. Rashtakula channel system ..   | Rs. 27,403                 | Rs. 416      | Rs. 27,819    | Rs. 33     | Rs. 27,852    | Rs. 23         | Rs. 27,852    | Rs. 23                   | Rs. 27,852                   | Rs. 23                              | Rs. 27,852                         | Rs. 23              | Rs. 27,852      | Rs. 23                    |
| do. ..                                 | 27,403                     | 416          | 27,819        | 33         | 27,852        | 23             | 27,852        | 23                       | 27,852                       | 23                                  | 27,852                             | 23                  | 27,852          | 23                        |
| No. 16. Rashtakula channel system ..   | Rs. 27,403                 | Rs. 416      | Rs. 27,819    | Rs. 33     | Rs. 27,852    | Rs. 23         | Rs. 27,852    | Rs. 23                   | Rs. 27,852                   | Rs. 23                              | Rs. 27,852                         | Rs. 23              | Rs. 27,852      | Rs. 23                    |
| do. ..                                 | 27,403                     | 416          | 27,819        | 33         | 27,852        | 23             | 27,852        | 23                       | 27,852                       | 23                                  | 27,852                             | 23                  | 27,852          | 23                        |
| No. 17. Rashtakula channel system ..   | Rs. 27,403                 | Rs. 416      | Rs. 27,819    | Rs. 33     | Rs. 27,852    | Rs. 23         | Rs. 27,852    | Rs. 23                   | Rs. 27,852                   | Rs. 23                              | Rs. 27,852                         | Rs. 23              | Rs. 27,852      | Rs. 23                    |
| do. ..                                 | 27,403                     | 416          | 27,819        | 33         | 27,852        | 23             | 27,852        | 23                       | 27,852                       | 23                                  | 27,852                             | 23                  | 27,852          | 23                        |
| No. 18. Rashtakula channel system ..   | Rs. 27,403                 | Rs. 416      | Rs. 27,819    | Rs. 33     | Rs. 27,852    | Rs. 23         | Rs. 27,852    | Rs. 23                   | Rs. 27,852                   | Rs. 23                              | Rs. 27,852                         | Rs. 23              | Rs. 27,852      | Rs. 23                    |
| do. ..                                 | 27,403                     | 416          | 27,819        | 33         | 27,852        | 23             | 27,852        | 23                       | 27,852                       | 23                                  | 27,852                             | 23                  | 27,852          | 23                        |
| No. 19. Rashtakula channel system ..   | Rs. 27,403                 | Rs. 416      | Rs. 27,819    | Rs. 33     | Rs. 27,852    | Rs. 23         | Rs. 27,852    | Rs. 23                   | Rs. 27,852                   | Rs. 23                              | Rs. 27,852                         | Rs. 23              | Rs. 27,852      | Rs. 23                    |
| do. ..                                 | 27,403                     | 416          | 27,819        | 33         | 27,852        | 23             | 27,852        | 23                       | 27,852                       | 23                                  | 27,852                             | 23                  | 27,852          | 23                        |
| No. 20. Rashtakula channel system ..   | Rs. 27,403                 | Rs. 416      | Rs. 27,819    | Rs. 33     | Rs. 27,852    | Rs. 23         | Rs. 27,852    | Rs. 23                   | Rs. 27,852                   | Rs. 23                              | Rs. 27,852                         | Rs. 23              | Rs. 27,852      | Rs. 23                    |
| do. ..                                 | 27,403                     | 416          | 27,819        | 33         | 27,852        | 23             | 27,852        | 23                       | 27,852                       | 23                                  | 27,852                             | 23                  | 27,852          | 23                        |
| No. 21. Rashtakula channel system ..   | Rs. 27,403                 | Rs. 416      | Rs. 27,819    | Rs. 33     | Rs. 27,852    | Rs. 23         | Rs. 27,852    | Rs. 23                   | Rs. 27,852                   | Rs. 23                              | Rs. 27,852                         | Rs. 23              | Rs. 27,852      | Rs. 23                    |
| do. ..                                 | 27,403                     | 416          | 27,819        | 33         | 27,852        | 23             | 27,852        | 23                       | 27,852                       | 23                                  | 27,852                             | 23                  | 27,852          | 23                        |
| No. 22. Rashtakula channel system ..   | Rs. 27,403                 | Rs. 416      | Rs. 27,819    | Rs. 33     | Rs. 27,852    | Rs. 23         | Rs. 27,852    | Rs. 23                   | Rs. 27,852                   | Rs. 23                              | Rs. 27,852                         | Rs. 23              | Rs. 27,852      | Rs. 23                    |
| do. ..                                 | 27,403                     | 416          | 27,819        | 33         | 27,852        | 23             | 27,852        | 23                       | 27,852                       | 23                                  | 27,852                             | 23                  | 27,852          | 23                        |
| No. 23. Rashtakula channel system ..   | Rs. 27,403                 | Rs. 416      | Rs. 27,819    | Rs. 33     | Rs. 27,852    | Rs. 23         | Rs. 27,852    | Rs. 23                   | Rs. 27,852                   | Rs. 23                              | Rs. 27,852                         | Rs. 23              | Rs. 27,852      | Rs. 23                    |
| do. ..                                 | 27,403                     | 416          | 27,819        | 33         | 27,852        | 23             | 27,852        | 23                       | 27,852                       | 23                                  | 27,852                             | 23                  | 27,852          | 23                        |



## 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.

| Works or systems.                      | Working expenses—cont. |          |          |             |           |           |                              |        |           |                      |           |        |
|----------------------------------------|------------------------|----------|----------|-------------|-----------|-----------|------------------------------|--------|-----------|----------------------|-----------|--------|
|                                        | Maintenance of works.  |          |          |             |           |           | Net revenue.                 |        |           |                      |           |        |
|                                        | Establishment.         |          |          | Plantation. |           |           | Total working expenses—cont. |        |           | Due to improvements. |           |        |
|                                        | Rs.                    | Rs.      | Rs.      | Rs.         | Rs.       | Rs.       | Rs.                          | Rs.    | Rs.       | Rs.                  | Rs.       | Rs.    |
| <b>Productive Public Works.</b>        |                        |          |          |             |           |           |                              |        |           |                      |           |        |
| No. 1. Ghorahi delta system ..         | 11,457                 | 45,000   | 57,456   | 10,708      | 2,402,913 | 2,413,621 | 1,050                        | 8,500  | 687,563   | 22,82,513            | 31,15,813 |        |
| " 2. Kirta do. ..                      | 19,515                 | 73,067   | 92,582   | 14,428      | 1,14,259  | 1,28,687  | 8,17,561                     | 4,800  | 8,12,921  | 14,08,257            | 19,12,167 |        |
| " 3. Pansar ancient system ..          | 1,074                  | 4,297    | 5,371    | 2,712       | 21,193    | 23,905    | 3,410                        | 3,000  | 2,15,600  | 2,17,222             | 1,80,722  |        |
| " 4. Sangre do. ..                     | 1,616                  | 5,065    | 6,681    | 5,536       | 31,411    | 37,097    | 3,410                        | 2,800  | 2,15,600  | 2,17,222             | 1,80,722  |        |
| " 5. Kurnool-Chidambaram canal ..      | 2,859                  | 14,455   | 17,314   | 9,184       | 22,228    | 31,412    | 1,311                        | 1,200  | 92,386    | 2,68,985             | 1,44,006  |        |
| " 6. Rann tank system ..               | 84                     | 363      | 447      | 301         | 1,613     | 2,060     | 1,311                        | 1,200  | 92,386    | 2,68,985             | 1,44,006  |        |
| " 7. Quarny delta system ..            | 4,287                  | 12,149   | 16,436   | 19,466      | 86,863    | 1,06,329  | 4,500                        | 3,000  | 1,62,298  | 38,96,374            | 8,50,777  |        |
| " 8. Srivakuntam ancient sys-tem ..    | 2,508                  | 10,779   | 13,287   | 421         | 57,877    | 58,904    | 843                          | 19,500 | 75,054    | 98,781               | 32,261    |        |
| " 9. Periyar project ..                | ..                     | ..       | ..       | ..          | 40,000    | 40,000    | 1,913                        | 15,824 | 44,180    | 2,90,865             | 8,859     |        |
| <b>Total ..</b>                        | 49,497                 | 1,73,298 | 2,22,796 | 72,108      | 9,41,362  | 10,13,570 | 28,000                       | 19,500 | 19,30,792 | 8,92,184             | 16,30,513 |        |
| <b>Protective Irrigation Works.</b>    |                        |          |          |             |           |           |                              |        |           |                      |           |        |
| No. 10. Bakhikya project ..            | 1,442                  | 5,766    | 7,208    | ..          | 3,561     | 812       | ..                           | ..     | 43,919    | 65,161               | 19,863    |        |
| <b>Minor Works and Navigation.</b>     |                        |          |          |             |           |           |                              |        |           |                      |           |        |
| No. 11. Ganjam Minor rivers sys-tem .. | 417                    | 1,870    | 2,287    | ..          | 9,073     | ..        | 11,160                       | 257    | ..        | 13,521               | 1,11,433  | 27,511 |
| " 12. Munyara project ..               | ..                     | ..       | ..       | ..          | ..        | ..        | ..                           | ..     | ..        | ..                   | ..        | ..     |
| " 13. Dandak tank ..                   | ..                     | ..       | ..       | ..          | ..        | ..        | ..                           | ..     | ..        | ..                   | ..        | ..     |
| " 14. Suffera project ..               | ..                     | ..       | ..       | ..          | ..        | ..        | ..                           | ..     | ..        | ..                   | ..        | ..     |
| " 15. Gunjam tank system ..            | 37                     | 148      | 185      | ..          | 745       | ..        | ..                           | ..     | ..        | ..                   | ..        | ..     |
| " 16. Thadiparth channel system ..     | 263                    | 1,633    | 1,896    | 4,328       | 8,378     | 185       | 1,231                        | ..     | 1,591     | 32,576               | 7,528     |        |
| " 17. Arunkota do. ..                  | 73                     | 294      | 367      | 689         | 1,477     | ..        | 3,024                        | ..     | 10,575    | 36,839               | 15,299    |        |
| " 18. Kalliguvoru do. ..               | 199                    | 786      | 985      | 180         | 3,470     | ..        | 7,508                        | ..     | 3,024     | 24,170               | 5,745     |        |
| " 19. Polar ancient system ..          | 2,214                  | 8,354    | 11,568   | 9,534       | 38,511    | ..        | 67,734                       | 3,500  | 63,834    | 1,89,197             | 12,579    |        |
| " 20. Pomey do. ..                     | 424                    | 1,623    | 2,129    | 1,997       | 7,222     | ..        | 15,729                       | ..     | 18,725    | 65,039               | 27,479    |        |
| " 21. Chayra do. ..                    | 1,018                  | 4,072    | 5,090    | 3,579       | 18,651    | ..        | 30,574                       | ..     | 30,574    | 64,278               | 19,651    |        |
| " 22. Chabrambaku tank sys-tem ..      | 215                    | 645      | 860      | 1,349       | 2,403     | ..        | 6,385                        | 132    | ..        | 6,900                | 40,806    | 31,406 |
| <b>Total ..</b>                        | ..                     | ..       | ..       | ..          | ..        | ..        | ..                           | ..     | ..        | ..                   | ..        | ..     |

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 of systems.                                       | Revenue (actual receipts). |          |           |          |       |        |                            |     |           |                                  |           |        |
|---------------------------------------------------------|----------------------------|----------|-----------|----------|-------|--------|----------------------------|-----|-----------|----------------------------------|-----------|--------|
|                                                         | Irrigation.                |          |           |          |       |        | Revenue (actual receipts). |     |           |                                  |           |        |
|                                                         | Share of land revenue.     |          |           | Total.   |       |        | Less refunds of revenue.   |     |           | Total revenue due to Government. |           |        |
|                                                         | Rs.                        | Rs.      | Rs.       | Rs.      | Rs.   | Rs.    | Rs.                        | Rs. | Rs.       | Rs.                              | Rs.       | Rs.    |
| <b>Minor Works and Navigation—cont.</b>                 |                            |          |           |          |       |        |                            |     |           |                                  |           |        |
| No. 23. Madras water-supply and irrigation extension .. | 20,793                     | 413      | 21,206    | ..       | ..    | ..     | ..                         | ..  | ..        | ..                               | ..        | ..     |
| " 24. Vaidya ancient system ..                          | 8,283                      | 1,065    | 9,348     | ..       | ..    | ..     | ..                         | ..  | ..        | ..                               | ..        | ..     |
| " 25. Tirukkalur do. ..                                 | 21,517                     | 3,203    | 24,720    | ..       | ..    | ..     | ..                         | ..  | ..        | ..                               | ..        | ..     |
| " 26. Madhavur do. ..                                   | 15,111                     | 129      | 15,240    | ..       | ..    | ..     | ..                         | ..  | ..        | ..                               | ..        | ..     |
| " 27. Vaidikulam do. ..                                 | 34,416                     | 113      | 34,529    | ..       | ..    | ..     | ..                         | ..  | ..        | ..                               | ..        | ..     |
| " 28. Shadavur do. ..                                   | 11,111                     | 15,796   | 26,907    | ..       | ..    | ..     | ..                         | ..  | ..        | ..                               | ..        | ..     |
| " 29. Palahur do. ..                                    | 31,202                     | 144      | 31,346    | ..       | ..    | ..     | ..                         | ..  | ..        | ..                               | ..        | ..     |
| " 30. Loken Chattram do. ..                             | 3,850,004                  | 59,703   | 3,909,707 | ..       | ..    | ..     | ..                         | ..  | ..        | ..                               | ..        | ..     |
| " 31. Nandiyar channel exten-sion ..                    | 15,531                     | 6        | 15,537    | ..       | ..    | ..     | ..                         | ..  | ..        | ..                               | ..        | ..     |
| " 32. Madhavur ancient system ..                        | 1,66,112                   | 315      | 1,66,427  | ..       | ..    | ..     | ..                         | ..  | ..        | ..                               | ..        | ..     |
| " 33. Chitra Lake canal ..                              | ..                         | ..       | ..        | ..       | ..    | ..     | ..                         | ..  | ..        | ..                               | ..        | ..     |
| " 34. Buckingham canal ..                               | ..                         | ..       | ..        | ..       | ..    | ..     | ..                         | ..  | ..        | ..                               | ..        | ..     |
| " 35. Vedaranyam canal ..                               | ..                         | ..       | ..        | ..       | ..    | ..     | ..                         | ..  | ..        | ..                               | ..        | ..     |
| " 36. Ganjam-Gopalpur canal ..                          | ..                         | ..       | ..        | ..       | ..    | ..     | ..                         | ..  | ..        | ..                               | ..        | ..     |
| <b>Total ..</b>                                         | 17,27,509                  | 1,19,330 | 18,46,839 | 1,14,635 | 1,773 | 26,760 | 19,80,492                  | 16  | 10,80,478 | 9,41,826                         | 10,78,480 | 60,534 |

## 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. | Plantation. | Total cost of maintenance. | Indirect charges. | Grand total, Working expenses. | Direct charges.                 | Total. |        |                                         |              |          |
|                                                         | Director.             | Executive. | Total. |        |          |                  |             |                            |                   |                                |                                 |        |        |                                         |              |          |
|                                                         | 17                    | 18         | 19     | 20     | 21       | 22               | 23          | 24                         | 25                | 26                             | 27                              | 28     | 29     | 30                                      | 31           | 32       |
| Minor Works and Navigation—cont.                        |                       |            |        |        |          |                  |             |                            |                   |                                |                                 |        |        |                                         |              |          |
| No. 20. Madras water-supply and irrigation extension .. | 135                   | 967        | 1,106  | 319    | 5,860    | ..               | ..          | 6,575                      | 1,449             | 10,521                         | 4,080                           | ..     | 4,860  | 5,721                                   | 39,565       | 24,365   |
| " 21. Valparaíso ..                                     | 27                    | 137        | 164    | ..     | 453      | ..               | ..          | 718                        | 19                | 954                            | ..                              | ..     | ..     | 964                                     | 8,434        | 3,212    |
| " 22. Valparaíso ..                                     | 223                   | 1,179      | 1,602  | 2,610  | 3,123    | 8                | ..          | 8,814                      | 237               | 10,544                         | ..                              | ..     | ..     | 10,814                                  | 34,589       | 34,589   |
| " 23. Valparaíso ..                                     | 106                   | 709        | 815    | 900    | 1,356    | ..               | ..          | 3,065                      | 89                | 4,153                          | ..                              | ..     | ..     | 4,153                                   | 11,785       | 3,589    |
| " 24. Valparaíso ..                                     | 187                   | 755        | 942    | 1,133  | 2,672    | 45               | ..          | 5,088                      | 182               | 6,087                          | ..                              | ..     | ..     | 6,087                                   | 18,278       | 18,278   |
| " 25. Valparaíso ..                                     | 624                   | 2,173      | 3,007  | 2,100  | 11,008   | 41               | ..          | 16,270                     | 428               | 22,029                         | ..                              | ..     | ..     | 22,029                                  | 1,02,449     | 84,433   |
| " 26. Valparaíso ..                                     | 844                   | 3,077      | 3,921  | 2,100  | 11,008   | 41               | ..          | 16,270                     | 428               | 22,029                         | ..                              | ..     | ..     | 22,029                                  | 1,13,391     | 12,441   |
| " 27. Valparaíso ..                                     | 1,001                 | 4,000      | 5,001  | 2,100  | 11,008   | 41               | ..          | 16,270                     | 428               | 22,029                         | ..                              | ..     | ..     | 22,029                                  | 1,13,391     | 12,441   |
| " 28. Lower Colorado ..                                 | ..                    | ..         | ..     | ..     | ..       | ..               | ..          | ..                         | ..                | ..                             | ..                              | ..     | ..     | ..                                      | ..           | ..       |
| " 29. Nandiyar Canal extension ..                       | ..                    | ..         | ..     | ..     | ..       | ..               | ..          | ..                         | ..                | ..                             | ..                              | ..     | ..     | ..                                      | ..           | ..       |
| " 30. Nandiyar ..                                       | ..                    | ..         | ..     | ..     | ..       | ..               | ..          | ..                         | ..                | ..                             | ..                              | ..     | ..     | ..                                      | ..           | ..       |
| " 31. Nandiyar ..                                       | ..                    | ..         | ..     | ..     | ..       | ..               | ..          | ..                         | ..                | ..                             | ..                              | ..     | ..     | ..                                      | ..           | ..       |
| " 32. Nandiyar ..                                       | ..                    | ..         | ..     | ..     | ..       | ..               | ..          | ..                         | ..                | ..                             | ..                              | ..     | ..     | ..                                      | ..           | ..       |
| " 33. Nandiyar ..                                       | ..                    | ..         | ..     | ..     | ..       | ..               | ..          | ..                         | ..                | ..                             | ..                              | ..     | ..     | ..                                      | ..           | ..       |
| " 34. Nandiyar ..                                       | ..                    | ..         | ..     | ..     | ..       | ..               | ..          | ..                         | ..                | ..                             | ..                              | ..     | ..     | ..                                      | ..           | ..       |
| " 35. Nandiyar ..                                       | ..                    | ..         | ..     | ..     | ..       | ..               | ..          | ..                         | ..                | ..                             | ..                              | ..     | ..     | ..                                      | ..           | ..       |
| " 36. Nandiyar ..                                       | ..                    | ..         | ..     | ..     | ..       | ..               | ..          | ..                         | ..                | ..                             | ..                              | ..     | ..     | ..                                      | ..           | ..       |
| Total ..                                                | 2,485                 | 15,131     | 17,616 | 5,107  | 51,113   | 7,564            | 40          | 3,38,443                   | 11,494            | 4,10,471                       | 15,351                          | 896    | 15,722 | 3,91,721                                | 16,76,046    | 6,78,539 |

MADRAS.

1st October 1897.

(Signed) E. A. DENNY,  
Examiner, Public Works Accounts.

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 1896-97, based on actual receipts.

| Irrigation works.                     | Revenue receipts.                                      |             |           |           |           |          |           |           |           |           | Working expenses.                  |           |           |           | Net revenue due to improvements. | Percentage of net revenue on capital outlay. |           | Surplus revenue after paying interest. |                                    | Excess charges including interest. |                                    |         |                                    |
|---------------------------------------|--------------------------------------------------------|-------------|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|------------------------------------|-----------|-----------|-----------|----------------------------------|----------------------------------------------|-----------|----------------------------------------|------------------------------------|------------------------------------|------------------------------------|---------|------------------------------------|
|                                       | Direct and indirect capital outlay to end of 1896-97.  |             |           |           |           |          |           |           |           |           | Total revenue due to improvements. |           |           |           |                                  | Total working expenses on improvements.      |           | Simple interest on capital outlay.     | Percentage on total sum at charge. | Amount.                            | Percentage on total sum at charge. | Amount. | Percentage on total sum at charge. |
|                                       | Gross receipts, direct and indirect, from all sources. |             |           |           |           |          |           |           |           |           | Total revenue due to improvements. |           |           |           |                                  | Total working expenses on improvements.      |           |                                        |                                    |                                    |                                    |         |                                    |
|                                       | 1                                                      | 2           | 3         | 4         | 5         | 6        | 7         | 8         | 9         | 10        | 11                                 | 12        | 13        | 14        | 15                               | 16                                           | 17        | 18                                     | 19                                 | 20                                 | 21                                 |         |                                    |
| PRODUCTIVE PUBLIC WORKS.              |                                                        |             |           |           |           |          |           |           |           |           |                                    |           |           |           |                                  |                                              |           |                                        |                                    |                                    |                                    |         |                                    |
| In operation.                         |                                                        |             |           |           |           |          |           |           |           |           |                                    |           |           |           |                                  |                                              |           |                                        |                                    |                                    |                                    |         |                                    |
| No. 1. Gôlvarî delta system ..        | 1,28,97,345                                            | 1,24,000    | 28,04,396 | 6,96,053  | 8,150     | 8,150    | 8,150     | 8,150     | 8,150     | 8,150     | 8,150                              | 8,150     | 8,150     | 8,150     | 8,150                            | 8,150                                        | 8,150     | 8,150                                  | 8,150                              | 8,150                              |                                    |         |                                    |
| " 2. Kistna ..                        | 1,27,84,247                                            | 71,000      | 21,85,038 | 8,47,801  | 4,900     | 4,900    | 4,900     | 4,900     | 4,900     | 4,900     | 4,900                              | 4,900     | 4,900     | 4,900     | 4,900                            | 4,900                                        | 4,900     | 4,900                                  | 4,900                              | 4,900                              |                                    |         |                                    |
| " 3. Chaverry ..                      | 18,65,194                                              | 33,39,128   | 9,53,076  | 4,65,628  | 3,63,331  | 1,02,358 | 1,02,358  | 1,02,358  | 1,02,358  | 1,02,358  | 1,02,358                           | 1,02,358  | 1,02,358  | 1,02,358  | 1,02,358                         | 1,02,358                                     | 1,02,358  | 1,02,358                               | 1,02,358                           | 1,02,358                           |                                    |         |                                    |
| " 4. Pennar ancient system ..         | 18,95,667                                              | 1,17,000    | 1,53,176  | 84,953    | 30,000    | 24,953   | 24,953    | 24,953    | 24,953    | 24,953    | 24,953                             | 24,953    | 24,953    | 24,953    | 24,953                           | 24,953                                       | 24,953    | 24,953                                 | 24,953                             | 24,953                             |                                    |         |                                    |
| " 5. Sivakantam ancient system ..     | 14,63,483                                              | 1,79,000    | 1,53,176  | 86,354    | 12,520    | 76,034   | 76,034    | 76,034    | 76,034    | 76,034    | 76,034                             | 76,034    | 76,034    | 76,034    | 76,034                           | 76,034                                       | 76,034    | 76,034                                 | 76,034                             | 76,034                             |                                    |         |                                    |
| " 6. Sangam ..                        | 38,28,121                                              | 5,35,421    | 1,96,421  | 77,338    | 25,000    | 52,338   | 52,338    | 52,338    | 52,338    | 52,338    | 52,338                             | 52,338    | 52,338    | 52,338    | 52,338                           | 52,338                                       | 52,338    | 52,338                                 | 52,338                             | 52,338                             |                                    |         |                                    |
| " 7. Kurnool-Cuddapah canal ..        | 2,17,14,493                                            | 1,43,098    | 1,43,098  | 36,355    | 150       | 4,162    | 4,162     | 4,162     | 4,162     | 4,162     | 4,162                              | 4,162     | 4,162     | 4,162     | 4,162                            | 4,162                                        | 4,162     | 4,162                                  | 4,162                              | 4,162                              |                                    |         |                                    |
| " 8. Parur tank system ..             | 4,28,045                                               | 11,536      | 9,358     | 4,312     | 150       | 4,162    | 4,162     | 4,162     | 4,162     | 4,162     | 4,162                              | 4,162     | 4,162     | 4,162     | 4,162                            | 4,162                                        | 4,162     | 4,162                                  | 4,162                              | 4,162                              |                                    |         |                                    |
| " 9. Pottiyâr project ..              | 83,23,144                                              | 2,68,899    | 2,31,343  | 39,551    | 60,004    | 15,824   | 44,180    | 44,180    | 44,180    | 44,180    | 44,180                             | 44,180    | 44,180    | 44,180    | 44,180                           | 44,180                                       | 44,180    | 44,180                                 | 44,180                             | 44,180                             |                                    |         |                                    |
| Total ..                              | 6,52,15,714                                            | 1,06,93,051 | 41,02,476 | 65,90,505 | 23,90,997 | 4,60,205 | 19,30,792 | 19,30,792 | 19,30,792 | 19,30,792 | 19,30,792                          | 19,30,792 | 19,30,792 | 19,30,792 | 19,30,792                        | 19,30,792                                    | 19,30,792 | 19,30,792                              | 19,30,792                          | 19,30,792                          |                                    |         |                                    |
| PROTECTIVE IRRIGATION WORKS.          |                                                        |             |           |           |           |          |           |           |           |           |                                    |           |           |           |                                  |                                              |           |                                        |                                    |                                    |                                    |         |                                    |
| In operation.                         |                                                        |             |           |           |           |          |           |           |           |           |                                    |           |           |           |                                  |                                              |           |                                        |                                    |                                    |                                    |         |                                    |
| No. 10. Rushikulya project ..         | 44,79,271                                              | 1,09,080    | 45,366    | 63,772    | 43,919    | ..       | 43,919    | 43,919    | 43,919    | 43,919    | 43,919                             | 43,919    | 43,919    | 43,919    | 43,919                           | 43,919                                       | 43,919    | 43,919                                 | 43,919                             | 43,919                             |                                    |         |                                    |
| MINOR WORKS AND NAVIGATION.           |                                                        |             |           |           |           |          |           |           |           |           |                                    |           |           |           |                                  |                                              |           |                                        |                                    |                                    |                                    |         |                                    |
| Under construction.                   |                                                        |             |           |           |           |          |           |           |           |           |                                    |           |           |           |                                  |                                              |           |                                        |                                    |                                    |                                    |         |                                    |
| No. 11. Ganjam minor rivers system .. | 3,018                                                  | 1,24,864    | 83,822    | 41,142    | 13,581    | ..       | 13,581    | 13,581    | 13,581    | 13,581    | 13,581                             | 13,581    | 13,581    | 13,581    | 13,581                           | 13,581                                       | 13,581    | 13,581                                 | 13,581                             | 13,581                             |                                    |         |                                    |
| " 12. Manjeru project ..              | 3,10,089                                               | ..          | ..        | ..        | ..        | ..       | ..        | ..        | ..        | ..        | ..                                 | ..        | ..        | ..        | ..                               | ..                                           | ..        | ..                                     | ..                                 | ..                                 |                                    |         |                                    |
| " 13. Deakapad tank system ..         | 1,13,878                                               | ..          | ..        | ..        | ..        | ..       | ..        | ..        | ..        | ..        | ..                                 | ..        | ..        | ..        | ..                               | ..                                           | ..        | ..                                     | ..                                 | ..                                 |                                    |         |                                    |
| " 14. Saglora project ..              | 3,82,536                                               | ..          | ..        | ..        | ..        | ..       | ..        | ..        | ..        | ..        | ..                                 | ..        | ..        | ..        | ..                               | ..                                           | ..        | ..                                     | ..                                 | ..                                 |                                    |         |                                    |
| " 15. Chikara tank ..                 | 68,640                                                 | 33,777      | 20,348    | 3,729     | 1,201     | ..       | 1,201     | 1,201     | 1,201     | 1,201     | 1,201                              | 1,201     | 1,201     | 1,201     | 1,201                            | 1,201                                        | 1,201     | 1,201                                  | 1,201                              | 1,201                              |                                    |         |                                    |
| " 16. Thudayelli channel ..           | 1,22,919                                               | 1,05,884    | 76,710    | 30,174    | 10,575    | ..       | 10,575    | 10,575    | 10,575    | 10,575    | 10,575                             | 10,575    | 10,575    | 10,575    | 10,575                           | 10,575                                       | 10,575    | 10,575                                 | 10,575                             | 10,575                             |                                    |         |                                    |
| " 17. Arkakota do. ..                 | 1,02,904                                               | 27,794      | 19,021    | 8,773     | 3,024     | ..       | 3,024     | 3,024     | 3,024     | 3,024     | 3,024                              | 3,024     | 3,024     | 3,024     | 3,024                            | 3,024                                        | 3,024     | 3,024                                  | 3,024                              | 3,024                              |                                    |         |                                    |
| " 18. Kalingarayan channel ..         | 30,278                                                 | 1,62,419    | 84,832    | 20,181    | 7,868     | ..       | 7,868     | 7,868     | 7,868     | 7,868     | 7,868                              | 7,868     | 7,868     | 7,868     | 7,868                            | 7,868                                        | 7,868     | 7,868                                  | 7,868                              | 7,868                              |                                    |         |                                    |
| " 19. Palar ancient system ..         | 20,55,235                                              | 2,55,551    | 1,25,000  | 1,30,551  | 67,554    | 3,900    | 63,654    | 63,654    | 63,654    | 63,654    | 63,654                             | 63,654    | 63,654    | 63,654    | 63,654                           | 63,654                                       | 63,654    | 63,654                                 | 63,654                             | 63,654                             |                                    |         |                                    |
| " 20. Poincy do. ..                   | 2,33,779                                               | 79,851      | 38,169    | 41,204    | 13,725    | ..       | 13,725    | 13,725    | 13,725    | 13,725    | 13,725                             | 13,725    | 13,725    | 13,725    | 13,725                           | 13,725                                       | 13,725    | 13,725                                 | 13,725                             | 13,725                             |                                    |         |                                    |
| " 21. Chayara do. ..                  | 4,05,415                                               | 94,559      | 44,527    | 60,327    | 30,574    | ..       | 30,574    | 30,574    | 30,574    | 30,574    | 30,574                             | 30,574    | 30,574    | 30,574    | 30,574                           | 30,574                                       | 30,574    | 30,574                                 | 30,574                             | 30,574                             |                                    |         |                                    |

III-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 1896-97, based on actual receipts and expenditure.

| Irrigation works                                            | Revenue receipts. |           | Working expenses. |          |          |        | Percentage of net revenue due to working expenses. |          | Percentage of net revenue due to capital charges. |     | Percentage of net revenue due to depreciation. |     | Percentage of net revenue due to other charges. |     |
|-------------------------------------------------------------|-------------------|-----------|-------------------|----------|----------|--------|----------------------------------------------------|----------|---------------------------------------------------|-----|------------------------------------------------|-----|-------------------------------------------------|-----|
|                                                             | 2                 | 3         | 4                 | 5        | 6        | 7      | 8                                                  | 9        | 10                                                | 11  | 12                                             | 13  | 14                                              | 15  |
| Direct and indirect capital outlay to end of 1896-97.       | Rs.               | Rs.       | Rs.               | Rs.      | Rs.      | Rs.    | Rs.                                                | Rs.      | Rs.                                               | Rs. | Rs.                                            | Rs. | Rs.                                             | Rs. |
| Minor Works and Navigation—contd.                           |                   |           |                   |          |          |        |                                                    |          |                                                   |     |                                                |     |                                                 |     |
| No. 22. Chemburam tank system.                              | 7,14,088          | 46,831    | 80,881            | 9,252    | 816      | 4,300  | 5,731                                              | 41,000   | 4.25                                              |     |                                                |     |                                                 |     |
| " 23. Madras water supply and irrigation extension project. | 17,34,045         | 41,059    | 50,085            | 10,001   | 1,001    | 4,800  | 5,731                                              | 54,905   | 1.29                                              |     |                                                |     |                                                 |     |
| " 24. Vellur tank system.                                   | 68,815            | 9,853     | 1,000             | 100      | 100      | 1,000  | 1,000                                              | 1,000    | 1.44                                              |     |                                                |     |                                                 |     |
| " 25. Tiruchirappalli tank system.                          | 2,31,470          | 5,000     | 5,000             | 100      | 100      | 1,000  | 1,000                                              | 1,000    | 1.44                                              |     |                                                |     |                                                 |     |
| " 26. Madurai tank system.                                  | 1,00,000          | 10,000    | 10,000            | 100      | 100      | 1,000  | 1,000                                              | 1,000    | 1.44                                              |     |                                                |     |                                                 |     |
| " 27. Vellore tank system.                                  | 49,731            | 24,867    | 24,867            | 100      | 100      | 1,000  | 1,000                                              | 1,000    | 1.44                                              |     |                                                |     |                                                 |     |
| " 28. Lower Coleroon tank system.                           | 1,00,000          | 10,000    | 10,000            | 100      | 100      | 1,000  | 1,000                                              | 1,000    | 1.44                                              |     |                                                |     |                                                 |     |
| " 29. Lower Coleroon tank system.                           | 5,01,108          | 39,800    | 39,800            | 100      | 100      | 1,000  | 1,000                                              | 1,000    | 1.44                                              |     |                                                |     |                                                 |     |
| " 30. Lower Coleroon tank system.                           | 7,13,172          | 43,842    | 43,842            | 100      | 100      | 1,000  | 1,000                                              | 1,000    | 1.44                                              |     |                                                |     |                                                 |     |
| " 31. Nandiyar tank system.                                 | 55,708            | 10,000    | 10,000            | 100      | 100      | 1,000  | 1,000                                              | 1,000    | 1.44                                              |     |                                                |     |                                                 |     |
| " 32. Marudair tank system.                                 | 44,783            | 1,000     | 1,000             | 100      | 100      | 1,000  | 1,000                                              | 1,000    | 1.44                                              |     |                                                |     |                                                 |     |
| " 33. Chikla lake canal.                                    | 31,000            | 1,000     | 1,000             | 100      | 100      | 1,000  | 1,000                                              | 1,000    | 1.44                                              |     |                                                |     |                                                 |     |
| " 34. Buckingham canal.                                     | 89,29,347         | 1,14,772  | 1,14,772          | 100      | 100      | 1,000  | 1,000                                              | 1,000    | 1.44                                              |     |                                                |     |                                                 |     |
| " 35. Vellore tank system.                                  | 1,25,413          | 117       | 117               | 100      | 100      | 1,000  | 1,000                                              | 1,000    | 1.44                                              |     |                                                |     |                                                 |     |
| " 36. Ganjam-Gopalpur canal.                                | 1,53,463          | 117       | 117               | 100      | 100      | 1,000  | 1,000                                              | 1,000    | 1.44                                              |     |                                                |     |                                                 |     |
| Total                                                       | 1,75,36,421       | 12,89,476 | 12,89,476         | 4,16,477 | 3,84,711 | 25,170 | 3,84,711                                           | 6,13,529 | 3.81                                              |     |                                                |     |                                                 |     |

(a) Percentages on minor works have been omitted.

MADRAS,  
1st October 1897.

(Signed) E. A. DENNY,  
Examiner, Public Works Accounts.

APPENDIX C.

APPENDIX C.

III-C.—DEMANDS and Realizations during the year 1896-97 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 carried over from previous year. |    | Demands of year. |             | Total.   |          | Paid in full. |          | Deduct amount uncollected at close of year. |    | Actual total receipts of year. |          | Product share due to old irrigation. |    | Total revenue due to improvements. |          |
|-------------------------------------------------------------|-----------------------------------------------------|----|------------------|-------------|----------|----------|---------------|----------|---------------------------------------------|----|--------------------------------|----------|--------------------------------------|----|------------------------------------|----------|
|                                                             | 1                                                   | 2  | 3                | 4           | 5        | 6        | 7             | 8        | 9                                           | 10 | 11                             | 12       | 13                                   | 14 | 15                                 | 16       |
| <b>Productive Public Works.</b>                             |                                                     |    |                  |             |          |          |               |          |                                             |    |                                |          |                                      |    |                                    |          |
| No. 1. Chelvan delta system.                                | ..                                                  | .. | 81,08,569        | 31,23,359   | 2,65,178 | 2,65,178 | 2,65,178      | 2,65,178 | ..                                          | .. | 2,65,178                       | 2,65,178 | ..                                   | .. | 2,65,178                           | 2,65,178 |
| " 2. Kishan do.                                             | ..                                                  | .. | 2,00,000         | 2,00,000    | 1,42,713 | 1,42,713 | 1,42,713      | 1,42,713 | ..                                          | .. | 1,42,713                       | 1,42,713 | ..                                   | .. | 1,42,713                           | 1,42,713 |
| " 3. Periyar tank system.                                   | ..                                                  | .. | 2,00,000         | 2,00,000    | 1,42,713 | 1,42,713 | 1,42,713      | 1,42,713 | ..                                          | .. | 1,42,713                       | 1,42,713 | ..                                   | .. | 1,42,713                           | 1,42,713 |
| " 4. Sankar do.                                             | ..                                                  | .. | 2,00,000         | 2,00,000    | 1,42,713 | 1,42,713 | 1,42,713      | 1,42,713 | ..                                          | .. | 1,42,713                       | 1,42,713 | ..                                   | .. | 1,42,713                           | 1,42,713 |
| " 5. Kurumbi-Cuddalore canal.                               | ..                                                  | .. | 2,00,000         | 2,00,000    | 1,42,713 | 1,42,713 | 1,42,713      | 1,42,713 | ..                                          | .. | 1,42,713                       | 1,42,713 | ..                                   | .. | 1,42,713                           | 1,42,713 |
| " 6. Barar tank system.                                     | ..                                                  | .. | 2,00,000         | 2,00,000    | 1,42,713 | 1,42,713 | 1,42,713      | 1,42,713 | ..                                          | .. | 1,42,713                       | 1,42,713 | ..                                   | .. | 1,42,713                           | 1,42,713 |
| " 7. Ganvay delta system.                                   | ..                                                  | .. | 2,00,000         | 2,00,000    | 1,42,713 | 1,42,713 | 1,42,713      | 1,42,713 | ..                                          | .. | 1,42,713                       | 1,42,713 | ..                                   | .. | 1,42,713                           | 1,42,713 |
| " 8. Sivakantam tank system.                                | ..                                                  | .. | 2,00,000         | 2,00,000    | 1,42,713 | 1,42,713 | 1,42,713      | 1,42,713 | ..                                          | .. | 1,42,713                       | 1,42,713 | ..                                   | .. | 1,42,713                           | 1,42,713 |
| " 9. Periyar project.                                       | ..                                                  | .. | 2,00,000         | 2,00,000    | 1,42,713 | 1,42,713 | 1,42,713      | 1,42,713 | ..                                          | .. | 1,42,713                       | 1,42,713 | ..                                   | .. | 1,42,713                           | 1,42,713 |
| Total                                                       | ..                                                  | .. | 1,12,10,000      | 1,12,10,000 | 4,07,123 | 4,07,123 | 4,07,123      | 4,07,123 | ..                                          | .. | 4,07,123                       | 4,07,123 | ..                                   | .. | 4,07,123                           | 4,07,123 |
| <b>Protective Irrigation Works.</b>                         |                                                     |    |                  |             |          |          |               |          |                                             |    |                                |          |                                      |    |                                    |          |
| No. 10. Raskhanya project.                                  | ..                                                  | .. | 1,12,10,000      | 1,12,10,000 | 4,07,123 | 4,07,123 | 4,07,123      | 4,07,123 | ..                                          | .. | 4,07,123                       | 4,07,123 | ..                                   | .. | 4,07,123                           | 4,07,123 |
| <b>Minor Works and Navigation.</b>                          |                                                     |    |                  |             |          |          |               |          |                                             |    |                                |          |                                      |    |                                    |          |
| No. 11. Ganjam Minor rivers system.                         | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 12. Ganjam tank system.                                   | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 13. Tiruchirappalli channel system.                       | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 14. Arakkonam do.                                         | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 15. Kallikrovan do.                                       | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 16. Palar tank system.                                    | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 17. Poovay do.                                            | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 18. Choyay do.                                            | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 19. Chemburam tank system.                                | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 20. Madras water supply and irrigation extension project. | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 21. Vellur tank system.                                   | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 22. Tiruchirappalli tank system.                          | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 23. Madurai tank system.                                  | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 24. Vellore tank system.                                  | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 25. Vellore tank system.                                  | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 26. Peardorai do.                                         | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 27. Lower Coleroon do.                                    | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 28. Nandiyar tank system.                                 | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 29. Marudair tank system.                                 | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 30. Chikla lake canal.                                    | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 31. Buckingham canal.                                     | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| " 32. Vadamanyam canal.                                     | ..                                                  | .. | 1,41,167         | 1,41,167    | 10,000   | 10,000   | 10,000        | 10,000   | ..                                          | .. | 10,000                         | 10,000   | ..                                   | .. | 10,000                             | 10,000   |
| Total                                                       | ..                                                  | .. | 20,11,270        | 20,11,270   | 60,841   | 60,841   | 60,841        | 60,841   | ..                                          | .. | 60,841                         | 60,841   | ..                                   | .. | 60,841                             | 60,841   |

MADRAS,  
1st October 1897.

(Signed) E. A. DENNY,  
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 1896-97 based on assessments for the year.

Principal results of operations for the year ended 31st March 1897.

| Works of systems.                   | Revenue assessed during the year. |             |               |                |        |                                            |                          |              |                             |                                    | Net revenue of the year.           |                         | Percentage on capital outlay to end of year. |                                            |                                      |                                         |        |
|-------------------------------------|-----------------------------------|-------------|---------------|----------------|--------|--------------------------------------------|--------------------------|--------------|-----------------------------|------------------------------------|------------------------------------|-------------------------|----------------------------------------------|--------------------------------------------|--------------------------------------|-----------------------------------------|--------|
|                                     | Direct revenue.                   |             |               |                |        | Indirect revenue, less refunds of revenue. |                          |              |                             |                                    | Total revenue due to improvements. | Total working expenses. |                                              |                                            |                                      |                                         |        |
|                                     | Occupier's rate.                  | Plantation. | Navigational. | Miscellaneous. | Total. | Land revenue due to operation of canal.    | Less refunds of revenue. | G and Total. | Deduct share of irrigation. | Total revenue due to improvements. |                                    |                         |                                              | Total direct charges and indirect charges. | Deduct old main-tenance and charges. | 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.            |                                   |             |               |                |        |                                            |                          |              |                             |                                    |                                    |                         |                                              |                                            |                                      |                                         |        |
| 1. Chidambaram delta system ..      | 1,28,07,845                       | ..          | ..            | ..             | 5,749  | 1,07,598                                   | 95,26,851                | 53           | 29,28,506                   | 1,24,000                           | 28,04,390                          | 6,02,032                | 8,400                                        | 68,753                                     | 22,29,243                            | 21,12,843                               | 16,41  |
| 2. Kistna do. ..                    | 1,27,54,417                       | ..          | ..            | ..             | 15,623 | 49,587                                     | 22,09,481                | 30           | 23,56,068                   | 71,000                             | 21,55,068                          | 847,801                 | 4,000                                        | 843,900                                    | 14,08,237                            | 13,42,137                               | 10,50  |
| 3. Coovim do. ..                    | 18,36,198                         | ..          | ..            | ..             | 2,203  | 3,304                                      | 4,20,034                 | 25           | 23,09,247                   | 32,300                             | 23,05,947                          | 1,65,692                | 3,63,831                                     | 1,22,298                                   | 88,26,571                            | 8,60,777                                | 43,88  |
| 4. Pennar ancient system ..         | 18,06,857                         | ..          | ..            | ..             | 438    | ..                                         | 2,11,737                 | ..           | 2,72,774                    | 1,77,000                           | 1,53,116                           | 94,393                  | 80,000                                       | 24,968                                     | 2,17,222                             | 1,60,222                                | 6,87   |
| 5. Srirangapatnam ancient system .. | 14,65,189                         | ..          | ..            | ..             | 1,421  | 1,421                                      | 1,35,894                 | ..           | 1,87,339                    | 73,000                             | 1,08,316                           | 88,554                  | 12,500                                       | 76,016                                     | 98,761                               | 32,261                                  | 2,20   |
| 6. Suez do. ..                      | 2,17,12,121                       | ..          | ..            | ..             | 588    | 588                                        | 3,31,959                 | 27           | 3,35,121                    | 1,59,000                           | 1,08,420                           | 77,836                  | 25,000                                       | 62,336                                     | 2,58,036                             | 1,44,036                                | 5,76   |
| 7. Kurnool-Godavari canal ..        | 2,17,12,121                       | ..          | ..            | ..             | 1,593  | 4,916                                      | 1,34,354                 | 221          | 1,43,098                    | ..                                 | 1,43,098                           | 9,335                   | ..                                           | 9,335                                      | 46,743                               | 46,743                                  | 2,22   |
| 8. River tank system ..             | 4,15,015                          | ..          | ..            | ..             | ..     | ..                                         | 1,15,368                 | ..           | 11,536                      | 2,000                              | 9,536                              | 4,812                   | 150                                          | 4,162                                      | 7,221                                | 6,871                                   | 1,26   |
| 9. Periyar project ..               | 8,13,114                          | ..          | ..            | ..             | ..     | ..                                         | 2,66,893                 | ..           | 2,50,893                    | 2,31,318                           | 25,551                             | 60,004                  | 15,824                                       | 44,180                                     | 2,06,865                             | ..                                      | 6,629  |
| Total ..                            | 6,59,16,744                       | ..          | ..            | ..             | 11,342 | 1,23,394                                   | 1,55,804                 | 359          | 1,06,93,081                 | 11,02,476                          | 55,90,605                          | 23,90,997               | 4,80,205                                     | 19,30,792                                  | 83,02,084                            | 46,59,818                               | 7,15   |
| PROTECTIVE IRRIGATION WORKS.        |                                   |             |               |                |        |                                            |                          |              |                             |                                    |                                    |                         |                                              |                                            |                                      |                                         |        |
| 10. Rakkittur project ..            | 44,10,271                         | ..          | ..            | ..             | 78     | 2                                          | 1,09,240                 | ..           | 1,09,080                    | 45,308                             | 63,772                             | 43,913                  | ..                                           | 43,913                                     | 65,161                               | 19,853                                  | 44     |
| MINOR WORKS AND NAVIGATION.         |                                   |             |               |                |        |                                            |                          |              |                             |                                    |                                    |                         |                                              |                                            |                                      |                                         |        |
| 11. Ganjam minor rivers ..          | 61,5,013                          | ..          | ..            | ..             | ..     | ..                                         | 1,24,624                 | ..           | 1,24,624                    | 83,822                             | 41,142                             | 13,531                  | ..                                           | ..                                         | 1,11,433                             | 27,611                                  | 550,24 |
| 12. Munyera project ..              | 3,13,693                          | ..          | ..            | ..             | ..     | ..                                         | ..                       | ..           | ..                          | ..                                 | ..                                 | ..                      | ..                                           | ..                                         | ..                                   | ..                                      | ..     |
| 13. Dandagad tank ..                | 3,83,536                          | ..          | ..            | ..             | ..     | ..                                         | ..                       | ..           | ..                          | ..                                 | ..                                 | ..                      | ..                                           | ..                                         | ..                                   | ..                                      | ..     |
| 14. Sagaram project ..              | 63,540                            | ..          | ..            | ..             | ..     | ..                                         | ..                       | ..           | ..                          | ..                                 | ..                                 | ..                      | ..                                           | ..                                         | ..                                   | ..                                      | ..     |
| 15. Chintamani tank system ..       | 1,22,619                          | ..          | ..            | ..             | ..     | ..                                         | ..                       | ..           | ..                          | ..                                 | ..                                 | ..                      | ..                                           | ..                                         | ..                                   | ..                                      | ..     |
| 16. Thadapalli channel system ..    | 1,02,661                          | ..          | ..            | ..             | ..     | ..                                         | ..                       | ..           | ..                          | ..                                 | ..                                 | ..                      | ..                                           | ..                                         | ..                                   | ..                                      | ..     |
| 17. Arakota do. ..                  | 60,278                            | ..          | ..            | ..             | ..     | ..                                         | ..                       | ..           | ..                          | ..                                 | ..                                 | ..                      | ..                                           | ..                                         | ..                                   | ..                                      | ..     |
| 18. Kalingarayan do. ..             | 30,66,236                         | ..          | ..            | ..             | ..     | ..                                         | ..                       | ..           | ..                          | ..                                 | ..                                 | ..                      | ..                                           | ..                                         | ..                                   | ..                                      | ..     |
| 19. Palar ancient system ..         | 2,21,779                          | ..          | ..            | ..             | ..     | ..                                         | ..                       | ..           | ..                          | ..                                 | ..                                 | ..                      | ..                                           | ..                                         | ..                                   | ..                                      | ..     |
| 20. Ponnay 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 1897.

| Works or systems.                                             | Revenue assessed during the year. |               |               |                  |        |                                                                       |              |                                     |                                    |                                     | Net revenue of the year.                       |                         |                             | Percentage on capital outlay to end of year (improvements only). |           |          |        |
|---------------------------------------------------------------|-----------------------------------|---------------|---------------|------------------|--------|-----------------------------------------------------------------------|--------------|-------------------------------------|------------------------------------|-------------------------------------|------------------------------------------------|-------------------------|-----------------------------|------------------------------------------------------------------|-----------|----------|--------|
|                                                               | Direct revenue.                   |               |               |                  |        | Indirect revenue, less refunds of revenue due to operations of canal. | Grand Total. | Deduct share due to old irrigation. | Total revenue due to improvements. | Working expenses.                   |                                                |                         | Total. Due to improvements. |                                                                  |           |          |        |
|                                                               | Occupier's rate.                  | Plan- tation. | Navi- gation. | Miscel- laneous. | Total. |                                                                       |              |                                     |                                    | Total charges, direct and indirect. | Deduct old machine- charges on improve- ments. | Total working expenses. |                             |                                                                  |           |          |        |
|                                                               |                                   |               |               |                  |        |                                                                       |              |                                     |                                    |                                     |                                                |                         |                             |                                                                  | RS.       | RS.      | RS.    |
| 1                                                             | 2                                 | 3             | 4             | 5                | 6      | 7                                                                     | 8            | 9                                   | 10                                 | 11                                  | 12                                             | 13                      | 14                          | 15                                                               | 16        | 17       | 18     |
| MINOR WORKS AND NAVIGATION<br>—cont.                          |                                   |               |               |                  |        |                                                                       |              |                                     |                                    |                                     |                                                |                         |                             |                                                                  |           |          |        |
| No. 21. Cheyara ancient system ..                             | 4,05,415                          | ..            | ..            | ..               | 324    | 394                                                                   | 94,456       | ..                                  | 24,852                             | 41,325                              | 50,527                                         | 30,574                  | 6,285                       | 30,574                                                           | 64,278    | 19,953   | 4.92   |
| " 22. Chentrambakkam tank system ..                           | 7,41,038                          | ..            | ..            | ..               | 144    | 144                                                                   | 46,747       | ..                                  | 43,891                             | 18,000                              | 30,501                                         | 6,285                   | 3,900                       | 615                                                              | 40,606    | 31,506   | 4.23   |
| " 23. Madras water-supply and irrigation extension project .. | 17,54,045                         | ..            | 29            | ..               | 19,825 | 19,845                                                                | 21,241       | ..                                  | 41,085                             | 11,000                              | 30,085                                         | 10,521                  | 4,800                       | 5,721                                                            | 35,505    | 24,355   | 1.38   |
| " 24. Valluvar anicut system ..                               | 63,805                            | ..            | 370           | ..               | 40     | 40                                                                    | 9,348        | ..                                  | 9,988                              | 5,092                               | 4,296                                          | 854                     | ..                          | 954                                                              | 6,434     | 5,342    | 6.24   |
| " 25. Tirukkoiyil do. ..                                      | 2,51,479                          | ..            | ..            | ..               | 41     | 420                                                                   | 94,719       | ..                                  | 96,139                             | 59,656                              | 35,443                                         | 10,844                  | ..                          | 10,844                                                           | 24,589    | 9.67     |        |
| " 26. Mohanur do. ..                                          | 71,047                            | ..            | ..            | ..               | 47     | 48                                                                    | 15,170       | ..                                  | 15,218                             | 2,036                               | 13,122                                         | 4,133                   | ..                          | 4,133                                                            | 8,989     | 12.65    |        |
| " 27. Vaidhachalam do. ..                                     | 49,737                            | ..            | ..            | ..               | 78     | 78                                                                    | 24,588       | ..                                  | 24,667                             | 8,402                               | 16,255                                         | 6,007                   | ..                          | 6,007                                                            | 10,258    | 20.62    |        |
| " 28. Shanmugai do. ..                                        | 1,38,769                          | ..            | 211           | ..               | 232    | 214                                                                   | 1,27,589     | ..                                  | 1,27,589                           | 21,107                              | 1,06,462                                       | 23,026                  | ..                          | 22,929                                                           | 1,05,540  | 84,433   | 60.81  |
| " 29. Pelandurai do. ..                                       | 6,91,198                          | ..            | ..            | ..               | 165    | 214                                                                   | 84,846       | ..                                  | 31,560                             | 3,000                               | 31,560                                         | 19,236                  | ..                          | 19,118                                                           | 15,291    | 12,441   | 2.18   |
| " 30. Lower Coleroon anicut system ..                         | 7,13,132                          | ..            | 956           | ..               | 690    | 1,655                                                                 | 4,36,767     | ..                                  | 4,38,422                           | 1,52,024                            | 2,86,398                                       | 45,640                  | ..                          | 45,340                                                           | 8,93,073  | 2,40,880 | 33.79  |
| " 31. Nandiyar channel system ..                              | 55,708                            | ..            | ..            | ..               | ..     | ..                                                                    | 18,867       | ..                                  | 15,567                             | 16,500                              | 933                                            | 2,134                   | ..                          | 2,134                                                            | 13,413    | 8,087    | 103.72 |
| " 32. Marudhar anicut system ..                               | 44,789                            | ..            | ..            | ..               | 45     | 45                                                                    | 1,86,320     | ..                                  | 1,86,375                           | 1,14,592                            | 71,456                                         | 92,028                  | ..                          | 92,028                                                           | 1,57,847  | 46,155   | ..     |
| " 33. Chikla lake canal ..                                    | 31,627                            | ..            | ..            | ..               | ..     | ..                                                                    | ..           | ..                                  | ..                                 | ..                                  | ..                                             | 323                     | ..                          | 323                                                              | 353       | 823      | ..     |
| " 34. Eucherian canal ..                                      | 89,29,247                         | ..            | ..            | ..               | 1,070  | 1,14,788                                                              | ..           | ..                                  | 1,14,772                           | ..                                  | 1,14,772                                       | 1,03,020                | ..                          | 1,03,020                                                         | 11,752    | 11,752   | ..     |
| " 35. Vellam ancient canal ..                                 | 1,36,173                          | ..            | ..            | ..               | 917    | 917                                                                   | ..           | ..                                  | 917                                | ..                                  | 917                                            | 6,365                   | ..                          | 6,365                                                            | 6,263     | 6,448    | ..     |
| " 36. Gopuram-Gopalpur canal ..                               | 1,56,193                          | ..            | ..            | ..               | ..     | ..                                                                    | ..           | ..                                  | ..                                 | ..                                  | ..                                             | ..                      | ..                          | ..                                                               | ..        | ..       | ..     |
| Total ..                                                      | 1,75,56,421                       | ..            | 1,768         | 1,14,635         | 25,750 | 1,42,163                                                              | 15,38,339    | 16                                  | 19,80,476                          | 9,11,806                            | 10,68,589                                      | 4,10,471                | 15,750                      | 3,94,724                                                         | 15,70,005 | 6,73,859 | 3.84   |

Note.—For the Kurnool case, information as regards assessment not being forthcoming, the actuals have been entered.

(a) The Capital and Revenue Accounts for these projects have been finally framed during 1896-97.

(b) Represents outlay during 1896-97, the previous outlay has been entered, and is under scrutiny.

(c) Percentages on minor figures have been omitted.

1st October 1897.

(Signed) E. A. DENNY,  
Examiner, Public Works Accounts.





## APPENDIX C.

**I.D.—STATEMENT of Traffic on the principal Navigable Canals in the Madras Presidency during the year 1896-97.**

[illegible]

Note.—The figures as regards tonnage, ton-millage and estimated value of cargoes are merely approximations.  
(a) The primary object of the Godavari and Krishna canals is *irrigation*, from which there is large revenue.  
(b) The primary object of the Godavari and Krishna canals is *navigation*, from which there is large revenue.

(Signed) W. HUGHES,  
Chief Engineer for Irrigation.

## APPENDIX C.

II.D.—Description and quantities of goods, &c., carried on the principal Canals in the Madras Presidency during the year 1896-97.

| Description.                        | No. 1, Godavari canal.         |         |         |             |         |             |           |          |         |             | No. 2, Krishna canal.          |             |           |       |    |          |    |        |    |  |
|-------------------------------------|--------------------------------|---------|---------|-------------|---------|-------------|-----------|----------|---------|-------------|--------------------------------|-------------|-----------|-------|----|----------|----|--------|----|--|
|                                     | Total, Government and Private. |         |         |             |         | Private.    |           |          |         |             | Total, Government and Private. |             |           |       |    | Private. |    |        |    |  |
|                                     | Quantity, tons.                |         |         |             |         | Value.      | Quantity. |          |         |             |                                | Value.      | Quantity. |       |    |          |    | Value. |    |  |
|                                     | Up.                            | Down.   | Total.  | Tons.       | Up.     |             | Down.     | Total.   | Tons.   | Up.         | Down.                          |             | Total.    | Tons. |    |          |    |        |    |  |
| 1                                   | 2                              | 3       | 4       | 5           | 6       | 7           | 8         | 9        | 10      | 11          | 12                             | 13          | 14        | 15    | 16 | 17       | 18 | 19     | 20 |  |
| Boat Traffic.                       |                                |         |         |             |         |             |           |          |         |             |                                |             |           |       |    |          |    |        |    |  |
| Woolen, raw, and manufactured goods | 503                            | 494     | 1,087   | 12,50,185   | 1,087   | 12,50,185   | 848       | 546      | 1,394   | 10,07,153   | 1,894                          | 10,07,153   | ms.       |       |    |          |    |        |    |  |
| Woolen goods                        | 76                             | 76      | 152     | 1,16,300    | 152     | 1,16,300    | 3         | 23       | 26      | 89,250      | 26                             | 89,250      | ms.       |       |    |          |    |        |    |  |
| Woolen and manufactured goods       | 56                             | 447     | 503     | 1,30,000    | 503     | 1,30,000    | 381       | 503      | 889     | 2,66,700    | 889                            | 2,66,700    | ms.       |       |    |          |    |        |    |  |
| Rice                                | 49,298                         | 37,447  | 86,745  | 28,60,814   | 86,745  | 28,60,814   | 12,821    | 14,442   | 32,267  | 11,30,280   | 32,267                         | 11,30,280   | ms.       |       |    |          |    |        |    |  |
| Other food grains                   | 2,448                          | 8,922   | 11,370  | 5,67,412    | 11,370  | 5,67,412    | 4,744     | 7,230    | 11,974  | 5,98,500    | 11,974                         | 5,98,500    | ms.       |       |    |          |    |        |    |  |
| Hides and skins                     | 169                            | 287     | 456     | 3,32,700    | 456     | 3,32,700    | 69        | 29       | 98      | 68,000      | 98                             | 68,000      | ms.       |       |    |          |    |        |    |  |
| Almonds                             | 284                            | 663     | 947     | 8,48,120    | 947     | 8,48,120    | 2,067     | 1,332    | 3,399   | 6,79,877    | 3,399                          | 6,79,877    | ms.       |       |    |          |    |        |    |  |
| Waxes                               | 863                            | 1,511   | 2,374   | 1,95,442    | 2,374   | 1,95,442    | 1,166     | 1,060    | 2,226   | 2,57,070    | 2,226                          | 2,57,070    | ms.       |       |    |          |    |        |    |  |
| Gins                                | 910                            | 1,303   | 2,213   | 1,91,235    | 2,213   | 1,91,235    | 697       | 8,427    | 9,124   | 4,61,200    | 9,124                          | 4,61,200    | ms.       |       |    |          |    |        |    |  |
| Oil-seeds                           | 19,242                         | 23,509  | 42,751  | 16,55,806   | 42,751  | 16,55,806   | 6,273     | 14,143   | 20,416  | 9,58,210    | 20,416                         | 9,58,210    | ms.       |       |    |          |    |        |    |  |
| Provisions                          | 4,111                          | 6,656   | 10,767  | 15,17,246   | 10,767  | 15,17,246   | 1,066     | 494      | 1,560   | 11,56,200   | 1,560                          | 11,56,200   | ms.       |       |    |          |    |        |    |  |
| Salt                                | 9,433                          | 2,217   | 11,650  | 8,63,359    | 11,650  | 8,63,359    | 1,066     | 494      | 1,560   | 11,56,200   | 1,560                          | 11,56,200   | ms.       |       |    |          |    |        |    |  |
| Sugar                               | 123                            | 159     | 282     | 2,82,000    | 282     | 2,82,000    | 1,066     | 494      | 1,560   | 11,56,200   | 1,560                          | 11,56,200   | ms.       |       |    |          |    |        |    |  |
| Tobacco                             | 2,020                          | 6,223   | 8,243   | 6,83,130    | 8,243   | 6,83,130    | 1,066     | 494      | 1,560   | 11,56,200   | 1,560                          | 11,56,200   | ms.       |       |    |          |    |        |    |  |
| Building materials                  | 2,020                          | 6,223   | 8,243   | 6,83,130    | 8,243   | 6,83,130    | 1,066     | 494      | 1,560   | 11,56,200   | 1,560                          | 11,56,200   | ms.       |       |    |          |    |        |    |  |
| Macellaneous goods                  | 12,913                         | 60,611  | 73,524  | 29,19,000   | 73,524  | 29,19,000   | 1,066     | 494      | 1,560   | 11,56,200   | 1,560                          | 11,56,200   | ms.       |       |    |          |    |        |    |  |
| Timber                              | 12,913                         | 60,611  | 73,524  | 29,19,000   | 73,524  | 29,19,000   | 1,066     | 494      | 1,560   | 11,56,200   | 1,560                          | 11,56,200   | ms.       |       |    |          |    |        |    |  |
| Rubber                              | 686                            | 3,283   | 3,969   | 9,76,632    | 3,969   | 9,76,632    | 1,066     | 494      | 1,560   | 11,56,200   | 1,560                          | 11,56,200   | ms.       |       |    |          |    |        |    |  |
| Raw wool                            | 3,393                          | 1,592   | 4,985   | 3,15,920    | 4,985   | 3,15,920    | 1,066     | 494      | 1,560   | 11,56,200   | 1,560                          | 11,56,200   | ms.       |       |    |          |    |        |    |  |
| Refrigerators                       | 168                            | 9,443   | 9,611   | 1,92,220    | 9,611   | 1,92,220    | 1,066     | 494      | 1,560   | 11,56,200   | 1,560                          | 11,56,200   | ms.       |       |    |          |    |        |    |  |
| Coal and coke                       | 7                              | 93      | 100     | 1,200       | 100     | 1,200       | 1,066     | 494      | 1,560   | 11,56,200   | 1,560                          | 11,56,200   | ms.       |       |    |          |    |        |    |  |
| Iron and steel                      | 3                              | 40      | 43      | 5,160       | 43      | 5,160       | 1,066     | 494      | 1,560   | 11,56,200   | 1,560                          | 11,56,200   | ms.       |       |    |          |    |        |    |  |
| Trains                              | 15                             | 20      | 35      | 30,19,352   | 35      | 30,19,352   | 1,066     | 494      | 1,560   | 11,56,200   | 1,560                          | 11,56,200   | ms.       |       |    |          |    |        |    |  |
| Total, Boat Traffic                 | 119,745                        | 179,352 | 299,097 | 1,83,75,687 | 299,097 | 1,83,75,687 | 69,628    | 124,375  | 194,003 | 1,21,67,870 | 194,003                        | 1,21,67,870 | ms.       |       |    |          |    |        |    |  |
| Boat Traffic.                       |                                |         |         |             |         |             |           |          |         |             |                                |             |           |       |    |          |    |        |    |  |
| Timber in bags                      | 500                            | 16,089  | 16,589  | 12,44,957   | 16,589  | 12,44,957   | 889       | 1,633    | 2,493   | 1,86,955    | 2,493                          | 1,86,955    | ms.       |       |    |          |    |        |    |  |
| Squared timber                      | 487                            | 6,056   | 6,573   | 4,46,887    | 6,573   | 4,46,887    | 535       | 206      | 740     | 30,720      | 740                            | 30,720      | ms.       |       |    |          |    |        |    |  |
| Sisal, broad gauge                  | 2                              | 2       | 4       | 640         | 4       | 640         | 535       | 206      | 740     | 30,720      | 740                            | 30,720      | ms.       |       |    |          |    |        |    |  |
| Do, narrow gauge                    | ..                             | ..      | ..      | ..          | ..      | ..          | ..        | ..       | ..      | ..          | ..                             | ..          | ms.       |       |    |          |    |        |    |  |
| Quarries                            | 20                             | 2,411   | 2,431   | 1,45,860    | 2,431   | 1,45,860    | ..        | ..       | ..      | ..          | ..                             | ..          | ms.       |       |    |          |    |        |    |  |
| Fish                                | 445                            | 6,707   | 7,153   | 2,86,120    | 7,153   | 2,86,120    | ..        | ..       | ..      | ..          | ..                             | ..          | ms.       |       |    |          |    |        |    |  |
| Firewood                            | ..                             | ..      | ..      | ..          | ..      | ..          | ..        | ..       | ..      | ..          | ..                             | ..          | ms.       |       |    |          |    |        |    |  |
| Barrel                              | 869                            | 38,869  | 39,738  | 7,94,560    | 39,738  | 7,94,560    | ..        | ..       | ..      | ..          | ..                             | ..          | ms.       |       |    |          |    |        |    |  |
| Total, Boat Traffic                 | 2,314                          | 69,174  | 71,488  | 29,18,021   | 71,488  | 29,18,021   | 2,161     | 3,899    | 6,350   | 2,84,755    | 6,350                          | 2,84,755    | ms.       |       |    |          |    |        |    |  |
| Grand Total                         | 122,069                        | 249,125 | 371,196 | 2,12,93,691 | 371,196 | 2,12,93,691 | 72,679    | 1,28,274 | 200,953 | 1,27,62,825 | 200,953                        | 1,27,62,825 | ms.       |       |    |          |    |        |    |  |



The information under these systems being supplied monthly from sludge works, the resulting error of the discharge per cubic foot per second cannot be compared with that of the other systems. The average in column 10 of the statement is 1.5 cubic feet per second. I would suggest that it is not included in column 6 of statement I-E, the figures in which represent the times actually irrigated. The reason for this is that there is a statement received from the Board of Revenue.

(Signed) W. HUGHES,  
Chief Engineer for Irrigation.

III-E.—Statement of quantity and value of crops irrigated in the Madras Presidency during the fasli year 1896-97 under Major (Productive) Works and Minor Works for which Capital and Revenue Accounts are kept (*vide* Proceedings, Board of Revenue, Revenue Settlement, Land Records and Agriculture, Mss. Nos. 9519 and 9708, dated 25th November 1897 and 3rd December 1897, respectively).

(Signed) R. V. SRINIVASLAR,  
Secretary, Board of Revenue.  
Revenue Settlement, Land Records and Agriculture.

IV-E.—Comparative statement of Irrigation and Rainfall for the year 1896-97 in the Madras Presidency (see Proceedings, Board of Revenue, Revenue Settlement, Land, Records and Agriculture, M.S. Nos. 9419, 9408 and 19763 dated 25th November 1897, 3rd and 6th December 1897, respectively)

| IV.E.—Comparative socio-Settlement, Land, Records and Agriculture, M/s. N.S. 9119, 1905 and 1906 |                       |                         |                                |                |                |          |                 |     |                   |
|--------------------------------------------------------------------------------------------------|-----------------------|-------------------------|--------------------------------|----------------|----------------|----------|-----------------|-----|-------------------|
| Civil district.                                                                                  | Of the Civil district |                         | Works supplying Irrigation.    |                | Area in        |          | Area irrigated. |     | Rainfall, inches. |
|                                                                                                  | Total area, acres.    | Culturable area, acres. | Name.                          | Area in acres. | Area in acres. | 1895-96. | 1896-97.        |     |                   |
| Ganjam.                                                                                          | 4,556,199             | 3,753,106               | 479,581                        | 400            | 300            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 1. Rasthikya project.          | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 2. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 3. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 4. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |
| Vizagapatnam.                                                                                    | 4,556,199             | 3,753,106               | 479,581                        | 400            | 300            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 1. Panchajanya project.        | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 2. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 3. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 4. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |
| Guntur.                                                                                          | 4,556,199             | 3,753,106               | 479,581                        | 400            | 300            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 1. Rasthikya project.          | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 2. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 3. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 4. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |
| Kistna.                                                                                          | 4,556,199             | 3,753,106               | 479,581                        | 400            | 300            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 1. Rasthikya project.          | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 2. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 3. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 4. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |
| Nellore.                                                                                         | 4,556,199             | 3,753,106               | 479,581                        | 400            | 300            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 1. Rasthikya project.          | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 2. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 3. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |
|                                                                                                  |                       |                         | 4. Ganjam water supply system. | 400            | 400            | 400      | 400             | 400 | 16                |

## APPENDIX C.

## APPENDIX TO THE ADMINISTRATION REPORT OF THE

## PUBLIC WORKS DEPARTMENT, IRRIGATION BRANCH, 1896-97.

## APPENDIX C.

|            |   |           |           |           |         |         |         |         |         |         |         |             |
|------------|---|-----------|-----------|-----------|---------|---------|---------|---------|---------|---------|---------|-------------|
| Chingleput | 1 | 1,554,636 | 1,152,300 | 100,810   | 88,634  | 74,008  | 6,291   | 84,299  | 87,405  | 9,068   | 96,473  | 37-72       |
|            | 2 | ..        | ..        | 37,309    | 19,505  | 18,102  | 4,240   | 17,342  | 17,348  | 4,040   | 21,388  | ..          |
|            | 3 | ..        | ..        | 172,093   | 148,581 | 144,835 | 57,713  | 202,548 | 130,693 | 47,818  | 178,411 | ..          |
|            | 4 | ..        | ..        | 202,405   | 108,086 | 157,937 | 61,953  | 219,890 | 147,941 | 51,863  | 199,799 | 31-48 18-16 |
| Anantapur  | 1 | ..        | ..        | ..        | ..      | ..      | ..      | ..      | ..      | ..      | ..      | ..          |
|            | 2 | ..        | ..        | ..        | ..      | ..      | ..      | ..      | ..      | ..      | ..      | ..          |
|            | 3 | ..        | ..        | ..        | ..      | ..      | ..      | ..      | ..      | ..      | ..      | ..          |
|            | 4 | ..        | ..        | ..        | ..      | ..      | ..      | ..      | ..      | ..      | ..      | ..          |
| Peddary    | 1 | ..        | ..        | ..        | ..      | ..      | ..      | ..      | ..      | ..      | ..      | ..          |
|            | 2 | ..        | ..        | ..        | ..      | ..      | ..      | ..      | ..      | ..      | ..      | ..          |
|            | 3 | ..        | ..        | ..        | ..      | ..      | ..      | ..      | ..      | ..      | ..      | ..          |
|            | 4 | ..        | ..        | ..        | ..      | ..      | ..      | ..      | ..      | ..      | ..      | ..          |
| Kurnool    | 1 | 3,762,095 | 2,921,551 | 1,820,652 | 30,674  | 31,222  | 24,956  | 2,542   | 27,498  | 22,069  | 3,055   | 25,064      |
|            | 2 | ..        | ..        | ..        | 28,504  | 26,582  | 28,449  | 5,058   | 30,502  | 26,619  | 6,415   | 33,034      |
|            | 3 | ..        | ..        | ..        | 59,178  | 58,174  | 59,405  | 7,566   | 58,000  | 48,628  | 9,470   | 58,098      |
|            | 4 | ..        | ..        | ..        | 50,000  | 30,000  | 12,828  | 2,082   | 14,910  | 60,651  | 4,124   | 64,775      |
| Chingleput | 1 | 4,372,109 | 2,510,746 | 1,796,602 | 6,111   | 6,111   | 6,536   | 4,471   | 10,107  | 5,482   | 2,587   | 8,069       |
|            | 2 | ..        | ..        | ..        | 20,572  | 20,572  | 23,784  | 4,899   | 24,183  | 17,392  | 8,534   | 20,916      |
|            | 3 | ..        | ..        | ..        | 28,866  | 27,920  | 26,408  | 11,905  | 38,813  | 18,601  | 8,410   | 20,017      |
|            | 4 | ..        | ..        | ..        | 105,019 | 82,303  | 88,656  | 22,867  | 91,613  | 100,116 | 13,661  | 113,777     |
| Chingleput | 1 | ..        | ..        | ..        | 23,243  | 24,129  | 18,587  | 4,161   | 22,748  | 19,117  | 3,309   | 21,426      |
|            | 2 | ..        | ..        | ..        | 14,127  | 13,127  | 11,688  | 2,996   | 14,579  | 12,002  | 4,466   | 16,488      |
|            | 3 | ..        | ..        | ..        | 7,367   | 7,069   | 7,120   | 2,087   | 9,297   | 8,463   | 2,612   | 11,076      |
|            | 4 | ..        | ..        | ..        | 6,495   | 6,109   | 4,953   | 563     | 4,606   | 4,230   | 469     | 4,699       |
| Chingleput | 1 | ..        | ..        | ..        | 252,412 | 246,362 | 226,771 | 50,287  | 277,058 | 226,742 | 40,177  | 286,919     |
|            | 2 | ..        | ..        | ..        | 133,942 | 126,941 | 123,713 | 24,060  | 149,573 | 119,841 | 21,850  | 141,691     |
|            | 3 | ..        | ..        | ..        | 435,586 | 411,813 | 391,827 | 85,044  | 476,871 | 388,395 | 72,884  | 459,279     |
|            | 4 | ..        | ..        | ..        | ..      | ..      | ..      | ..      | ..      | ..      | ..      | ..          |

\* Details for (a) and (b) not available. The Collector states that they will be reported on receipt of information called for from Tahsildars.  
† Particulars have not yet been furnished for the Anantapur district by the Board of Revenue.

## IV.E.—Comparative statement of Irrigation and Rainfall for the year 1936-37 in the Madras Presidency—cont.

| Of the Civil district |             |    |                              |    |      |                             |      |         |      |                 |      |      |      |          | Rainfall, inches. |  |
|-----------------------|-------------|----|------------------------------|----|------|-----------------------------|------|---------|------|-----------------|------|------|------|----------|-------------------|--|
| Civil district        | Total area. |    | Culturable (estimated area). |    | No.  | Works supplying irrigation. |      | Area of |      | Area irrigated. |      |      |      | 1895-97. |                   |  |
|                       | ACS.        | .. | ACS.                         | .. |      | 7                           | 8    | 9       | 10   | 11              | 12   | 13   | 14   | 15       | 16                |  |
| North Arcot           | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
|                       | ACS.        | .. | ACS.                         | .. | ACS. | ACS.                        | ACS. | ACS.    | ACS. | ACS.            | ACS. | ACS. | ACS. | ACS.     | ACS.              |  |
|                       | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
|                       | ACS.        | .. | ACS.                         | .. | ACS. | ACS.                        | ACS. | ACS.    | ACS. | ACS.            | ACS. | ACS. | ACS. | ACS.     | ACS.              |  |
|                       | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
|                       | ACS.        | .. | ACS.                         | .. | ACS. | ACS.                        | ACS. | ACS.    | ACS. | ACS.            | ACS. | ACS. | ACS. | ACS.     | ACS.              |  |
|                       | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
| South Arcot           | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
|                       | ACS.        | .. | ACS.                         | .. | ACS. | ACS.                        | ACS. | ACS.    | ACS. | ACS.            | ACS. | ACS. | ACS. | ACS.     | ACS.              |  |
|                       | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
|                       | ACS.        | .. | ACS.                         | .. | ACS. | ACS.                        | ACS. | ACS.    | ACS. | ACS.            | ACS. | ACS. | ACS. | ACS.     | ACS.              |  |
|                       | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
|                       | ACS.        | .. | ACS.                         | .. | ACS. | ACS.                        | ACS. | ACS.    | ACS. | ACS.            | ACS. | ACS. | ACS. | ACS.     | ACS.              |  |
|                       | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
| Tanjore               | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
|                       | ACS.        | .. | ACS.                         | .. | ACS. | ACS.                        | ACS. | ACS.    | ACS. | ACS.            | ACS. | ACS. | ACS. | ACS.     | ACS.              |  |
|                       | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
|                       | ACS.        | .. | ACS.                         | .. | ACS. | ACS.                        | ACS. | ACS.    | ACS. | ACS.            | ACS. | ACS. | ACS. | ACS.     | ACS.              |  |
|                       | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
|                       | ACS.        | .. | ACS.                         | .. | ACS. | ACS.                        | ACS. | ACS.    | ACS. | ACS.            | ACS. | ACS. | ACS. | ACS.     | ACS.              |  |
|                       | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
| Trichinopoly          | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
|                       | ACS.        | .. | ACS.                         | .. | ACS. | ACS.                        | ACS. | ACS.    | ACS. | ACS.            | ACS. | ACS. | ACS. | ACS.     | ACS.              |  |
|                       | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
|                       | ACS.        | .. | ACS.                         | .. | ACS. | ACS.                        | ACS. | ACS.    | ACS. | ACS.            | ACS. | ACS. | ACS. | ACS.     | ACS.              |  |
|                       | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |
|                       | ACS.        | .. | ACS.                         | .. | ACS. | ACS.                        | ACS. | ACS.    | ACS. | ACS.            | ACS. | ACS. | ACS. | ACS.     | ACS.              |  |
|                       | 1           | 2  | 3                            | 4  | 5    | 6                           | 7    | 8       | 9    | 10              | 11   | 12   | 13   | 14       | 15                |  |

|            |     |                                                      |            |            |            |           |           |           |           |           |        |
|------------|-----|------------------------------------------------------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|--------|
| Madura     | 1   | Pettiar project                                      | 90,257     | 61,499     | 93,649     | 10,716    | 50,356    | 62,837    | 13,447    | 66,734    |        |
|            | 2   | (a) Petty works in charge of Public Works Department | 47,075     | 40,477     | 44,020     | 14,122    | 58,142    | 43,668    | 12,210    | 66,865    |        |
|            | (b) | Petty works in charge of Revenue Department          | 90,817     | 50,125     | 103,762    | 27,090    | 130,658   | 85,026    | 19,248    | 134,574   |        |
|            |     | Total                                                | 234,149    | 137,494    | 134,431    | 60,534    | 245,865   | 132,021   | 54,905    | 245,426   | 36,068 |
| Tinnevely  | 1   | Sivulurtham anicut                                   | 20,362     | 20,362     | 19,469     | 7,447     | 26,906    | 18,822    | 15,123    | 28,145    |        |
|            | 2   | Marudur anicut                                       | 17,715     | 17,715     | 17,784     | 12,010    | 23,224    | 10,975    | 16,626    | 31,966    |        |
|            | (a) | Petty works in charge of Public Works Department     | 102,265    | 102,087    | 95,171     | 65,104    | 153,379   | 96,010    | 62,792    | 166,892   |        |
|            | (b) | Petty works in charge of Revenue Department          | 80,292     | 89,282     | 82,551     | 60,408    | 118,939   | 33,667    | 41,509    | 126,179   |        |
|            |     | Total                                                | 239,624    | 259,436    | 213,365    | 145,990   | 338,364   | 214,464   | 135,754   | 353,219   | 31,998 |
| Coimbatore | 1   | Thadapalli channel                                   | 13,735     | 13,735     | 12,005     | 1,192     | 14,041    | 13,821    | 167       | 14,388    |        |
|            | 2   | Arerucka channel                                     | 4,118      | 4,118      | 3,626      | 398       | 4,023     | 4,060     | 19        | 4,089     |        |
|            | 3   | Kalingaroyan channel                                 | 9,026      | 12,185     | 11,812     | 9,772     | 21,134    | 11,185    | 9,459     | 20,114    |        |
|            | (a) | Petty works in charge of Public Works Department     | 59,035     | 53,295     | 57,368     | 19,618    | 76,981    | 67,464    | 18,312    | 75,775    |        |
|            | (b) | Petty works in charge of Revenue Department          | 12,411     | 11,430     | 10,209     | 3,842     | 13,851    | 10,821    | 3,191     | 14,012    |        |
|            |     | Total                                                | 98,328     | 98,781     | 94,830     | 34,560    | 130,980   | 97,341    | 30,948    | 128,249   | 23,911 |
| Salem      | 1   | Barur tank project                                   | 8,897      | 7,628      | 2,425      | 560       | 3,385     | 2,453     | 1,059     | 3,518     |        |
|            | 2   | (a) Petty works in charge of Public Works Department | 29,575     | 28,572     | 24,324     | 9,955     | 34,273    | 23,782    | 8,492     | 36,974    |        |
|            | (b) | Petty works in charge of Revenue Department          | 96,970     | 87,268     | 85,801     | 23,609    | 109,470   | 77,193    | 23,134    | 100,327   |        |
|            |     | Total                                                | 134,942    | 123,428    | 112,550    | 34,584    | 147,134   | 103,324   | 32,685    | 135,119   | 38,526 |
|            |     | First and Second class works                         | 2,352,786  | 3,179,136  | 2,568,567  | 413,156   | 2,917,163 | 2,590,462 | 442,522   | 3,062,964 |        |
|            |     | Third and Fourth class works                         | 2,365,614  | 2,934,676  | 2,268,119  | 639,822   | 2,947,441 | 2,407,672 | 562,113   | 2,639,186 |        |
|            |     | Total                                                | 4,718,399  | 5,463,231  | 4,762,106  | 1,102,438 | 5,864,604 | 4,967,534 | 1,004,635 | 5,672,169 | 33,99  |
|            |     |                                                      | 81,148,786 | 30,722,286 | 21,607,504 |           |           |           |           |           | 46,70  |

\* Details not reported by the Collectors.

† This includes the area relating to the Trichinopoly district.

(Signed) R. V. SRINIVASIAH,  
Secretary, Board of Revenue,  
Revenue Settlement, Land Records and Agriculture.

(Signed) W. HUGHES,  
Chief Engineer for Irrigation.

Note.—The figures in columns 7 and 8 do not agree with the corresponding figures entered in statistical statements I-A and II-A (pages 96-97) which have been prepared from information furnished by Superintending Engineers. Steps will be taken to reconcile them in the next report.

APPENDIX C.

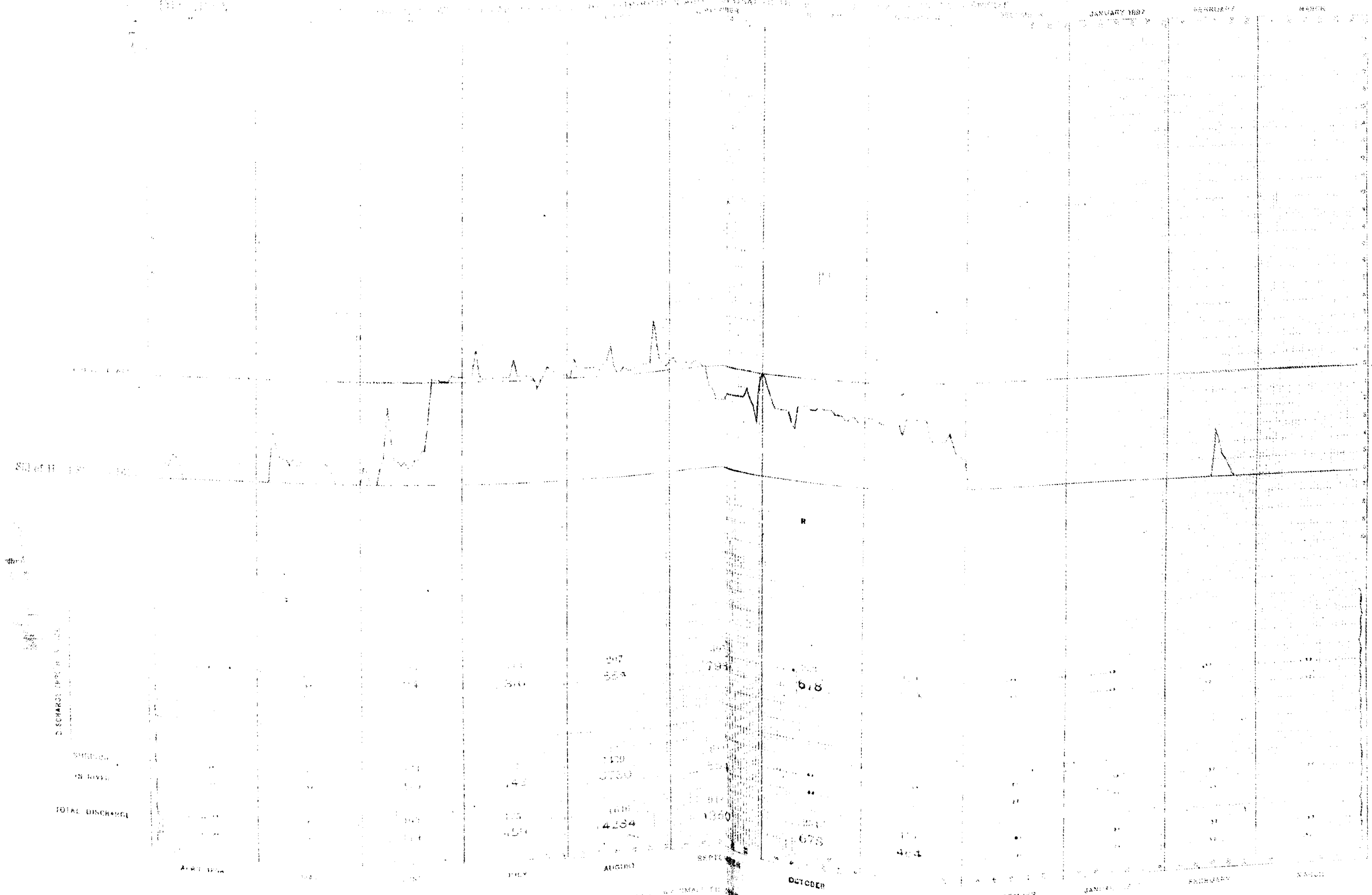
I.F.—STATEMENT showing the water-rates per acre which were in force under class I and II works in the Madras Presidency during the year ending 30th June 1897 (vide Proceedings of the Board of Revenue, Land Records and Agriculture, M.S. No. 7882, dated 24th September 1897).

| Description of crop.                                                                                                                                                                                                                                                                                        | Goddavari and Krishna canals. |        |    | Kurnool-Cuddapah canal. |        |    | Srisaikuntam and Maragur canals. |       |    | Roshikanya project. |       |    | Other systems. |       |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------|----|-------------------------|--------|----|----------------------------------|-------|----|---------------------|-------|----|----------------|-------|----|
|                                                                                                                                                                                                                                                                                                             | Irrigation by                 |        |    | Irrigation by           |        |    | Irrigation by                    |       |    | Irrigation by       |       |    | Irrigation by  |       |    |
|                                                                                                                                                                                                                                                                                                             | Flow.                         | Lift.  |    | Flow.                   | Lift.  |    | Flow.                            | Lift. |    | Flow.               | Lift. |    | Flow.          | Lift. |    |
| 1. Single wet crop irrigated                                                                                                                                                                                                                                                                                | 5 0 0                         | 3 12 0 | .. | 4 0 0                   | 3 0 0  | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 2. Second wet crop on irrigated lands                                                                                                                                                                                                                                                                       | 5 0 0                         | 3 12 0 | .. | 3 0 0                   | 2 4 0  | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 3. If compounded for two crops for a term of not less than five years                                                                                                                                                                                                                                       | 8 2 0                         | 6 1 6  | .. | 6 0 0                   | 4 8 0  | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 4. Sugarcane, betel, plantains and other garden produce remaining on the ground for the time of two crops                                                                                                                                                                                                   | 10 0 0                        | 7 8 0  | .. | 6 0 0                   | 4 8 0  | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 5. Sugarcane, betel, plantains, and other garden produce, if compounded for a term of not less than five years                                                                                                                                                                                              | 8 2 0                         | ..     | .. | 6 0 0                   | 4 8 0  | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 6. Single dry crop on irrigated land                                                                                                                                                                                                                                                                        | 2 8 0                         | 1 14 0 | .. | 1 0 0                   | 0 12 0 | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 7. Second dry crop on irrigated land                                                                                                                                                                                                                                                                        | 2 8 0                         | 1 14 0 | .. | 1 0 0                   | 0 12 0 | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 8. Dry crop, whether first or second crop sown on land for which irrigation has never been supplied, or if once supplied discontinued                                                                                                                                                                       | 2 8 0                         | 1 14 0 | .. | 1 0 0                   | 0 12 0 | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 9. Garden crops (class II of Madras Irrigation Canal Company's rules)                                                                                                                                                                                                                                       | ..                            | ..     | .. | 3 0 0                   | 2 4 0  | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 10. Mundia (tall or coarse) paddy                                                                                                                                                                                                                                                                           | ..                            | ..     | .. | 2 0 0                   | 1 8 0  | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 11. Single wet crop on—(a) wet or marginal irrigated lands in season and whole town villages, the old sources of supply to which have not been interfered with, but for which canal water is taken; (b) all rainfed paddy (Madhavari lands)                                                                 | ..                            | ..     | .. | ..                      | ..     | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 12. Second wet crop on the above                                                                                                                                                                                                                                                                            | ..                            | ..     | .. | ..                      | ..     | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 13. Sugarcane, betel, &c., requiring water longer than ordinary wet crop on lands falling under II                                                                                                                                                                                                          | ..                            | ..     | .. | ..                      | ..     | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 14. Dry crop watered, whether first or second crop, on lands falling under II                                                                                                                                                                                                                               | ..                            | ..     | .. | ..                      | ..     | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 15. Second wet crop or sugarcane, betel, plantains, &c., requiring water longer than ordinary wet crop raised on wet lands in season and whole town villages, the old sources of supply to which have not been interfered with, but for which canal water is taken; (b) all rainfed paddy (Madhavari lands) | ..                            | ..     | .. | ..                      | ..     | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 16. Dry crop raised as second crop on—do.                                                                                                                                                                                                                                                                   | ..                            | ..     | .. | ..                      | ..     | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 17. Dry crop raised as second crop on single crop wet in Government villages                                                                                                                                                                                                                                | ..                            | ..     | .. | ..                      | ..     | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 18. Single wet crop raised on dry land                                                                                                                                                                                                                                                                      | ..                            | ..     | .. | ..                      | ..     | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 19. Second crop on the same land                                                                                                                                                                                                                                                                            | ..                            | ..     | .. | ..                      | ..     | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 20. Sugarcane, betel, coconuts, plantains, &c., on dry land requiring water longer than an ordinary wet crop                                                                                                                                                                                                | ..                            | ..     | .. | ..                      | ..     | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |
| 21. Dry crop watered, whether first or second                                                                                                                                                                                                                                                               | ..                            | ..     | .. | ..                      | ..     | .. | ..                               | ..    | .. | ..                  | ..    | .. | ..             | ..    | .. |

(Signed) R. V. SRINIVASIAH,  
Secretary, Board of Revenue,  
Revenue Settlement, Land Records and Agriculture.

1896-97  
WYOMING RIVER

100000



Length of Anicut 700 ft  
11 5 10 10750

DISCHARGE (CFS) IN  
WYOMING RIVER  
TOTAL DISCHARGE

APRIL 1897

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

JANUARY

FEBRUARY

MARCH

THE DATA FOR THIS YEAR, INCLUDING THE TOTAL DISCHARGE IN THE WYOMING RIVER, IS AS FOLLOWS:

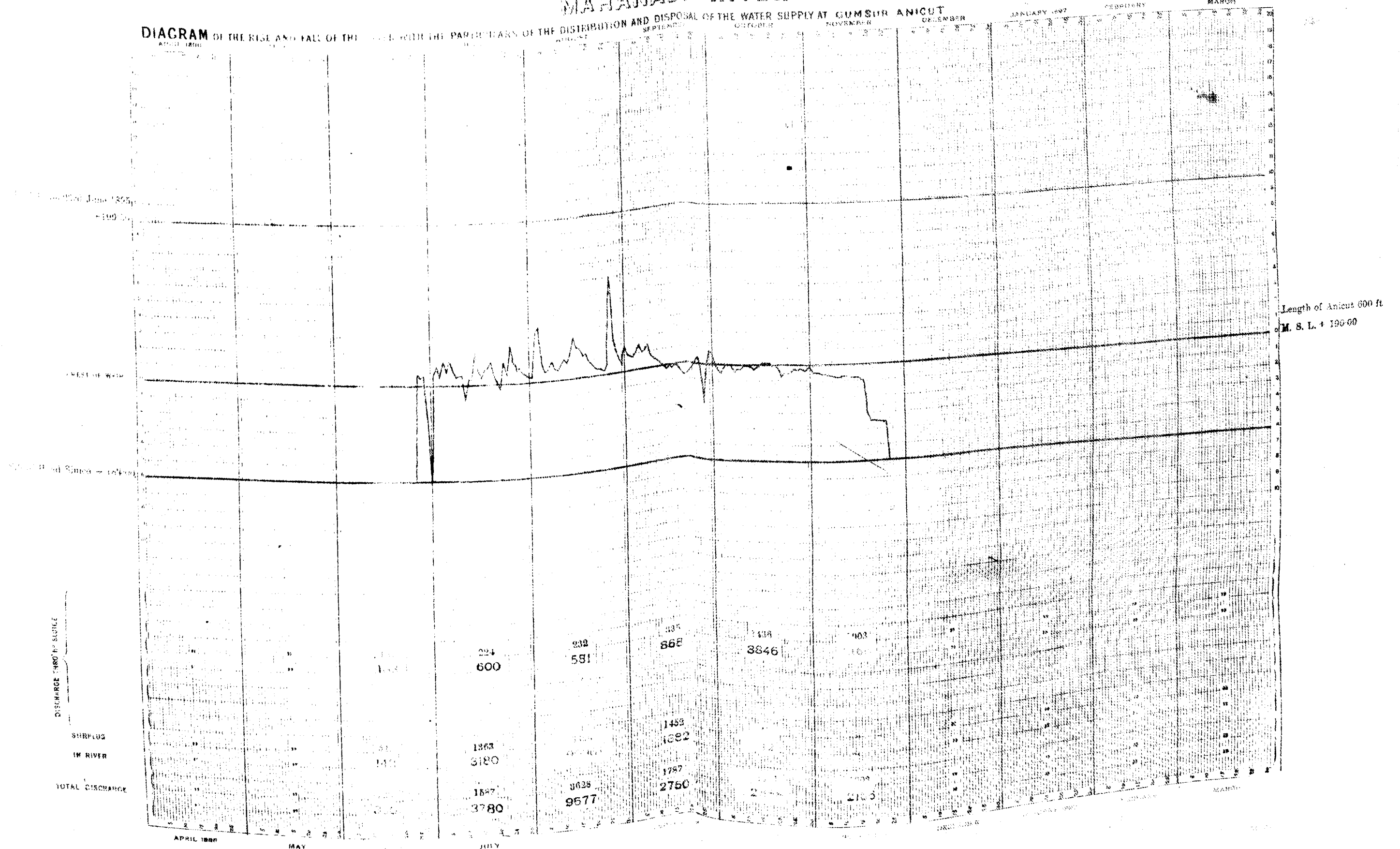
Page 1000



GANJAM DIVISION

# 1896-97 MAHANADI RIVER

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



Length of Anicut 600 ft  
M. S. L. + 190.60



GANJAM DIVISION

# 1896-97 GULLERY RIVER

83

1ST CIRCLE

DIACRAM OF THE RISE AND FALL OF THE RIVER WITH THE PARTICULARS OF THE DISTRIBUTION AND DISPOSAL OF THE WATER SUPPLY AT GULLERY ANICUT

M. F. L. 23rd June 1895  
+ 340.50

Length of Anicut 200  
M. S. L. + 328.50

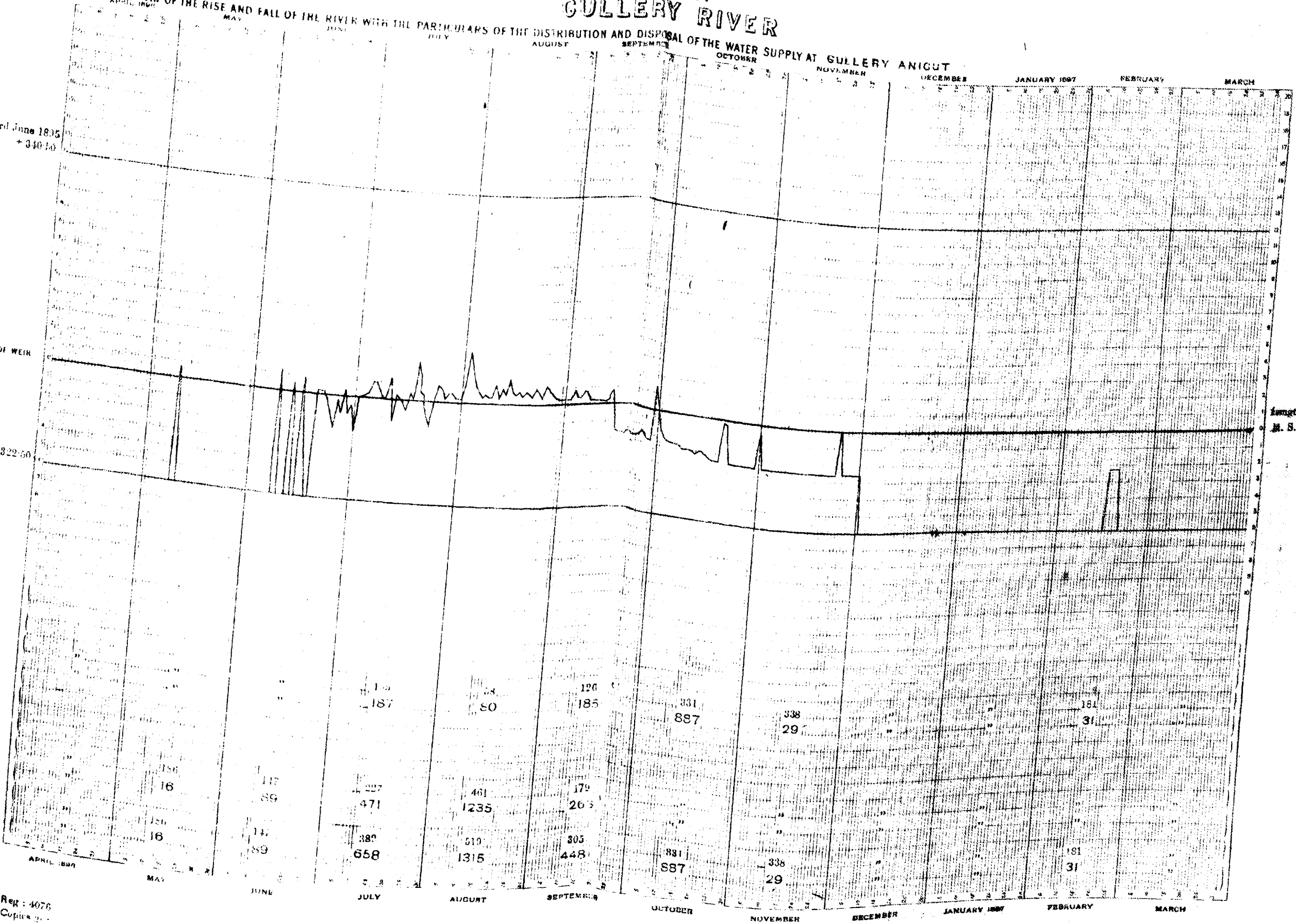
Crest of Weir

Sill of Head Sluice + 322.50

DISCHARGE THRO' SLUICES &c.

SURPLUS  
IN RIVER

TOTAL DISCHARGE



Rep: 4076  
Copies 2.

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

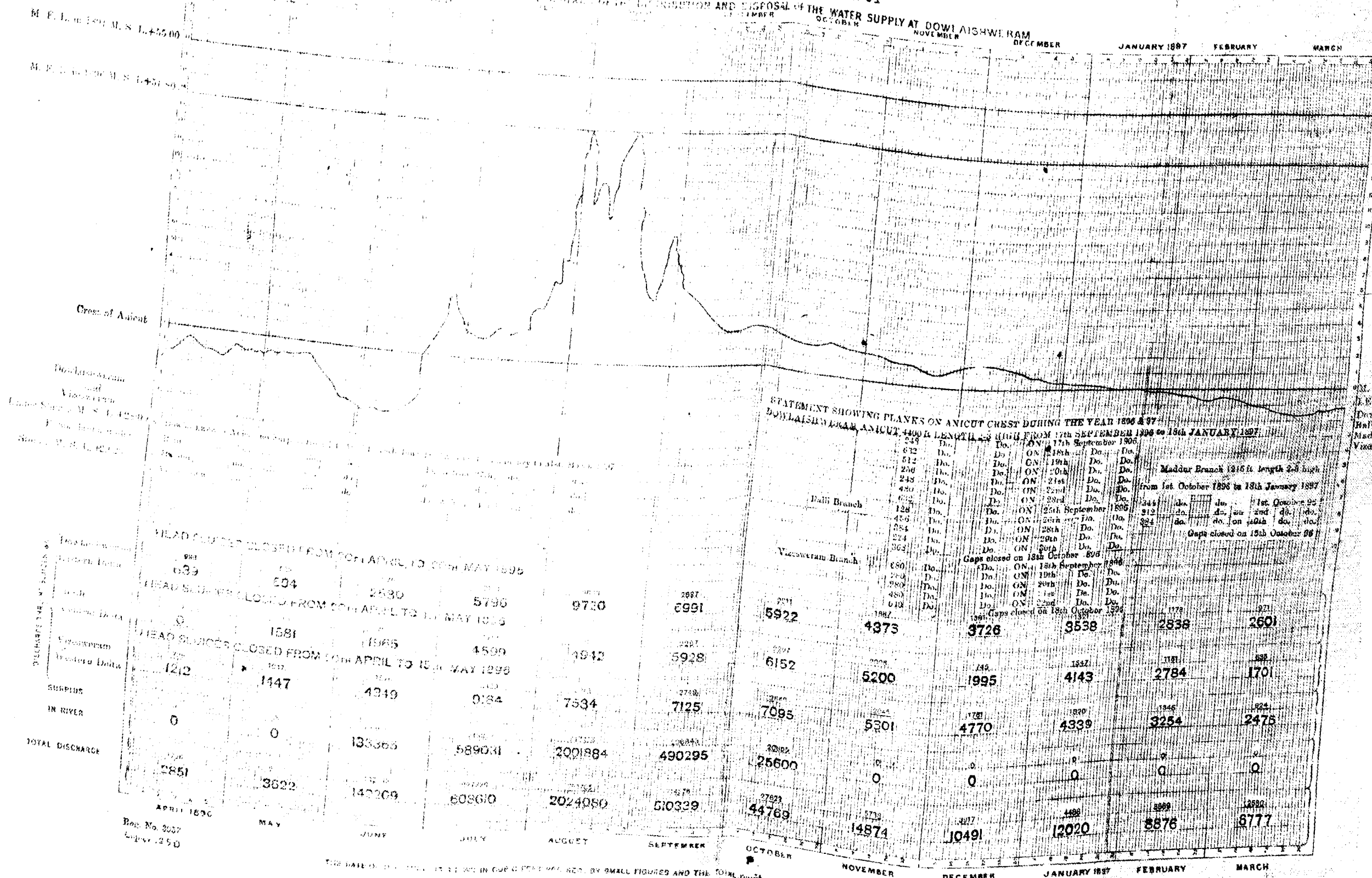
Photo-Print Survey Office, Madras.  
1897

EASTERN DIVISION

1896 - 97  
GODAVARI RIVER

1ST CIRCLE

DIAGRAM OF THE GULF AND FATH OF THE RIVER WITH THE PARTICULARS OF THE INFILTRATION AND DISPOSAL OF THE WATER SUPPLY AT DOWRI AISHWARI RAM



STATEMENT SHOWING PLANKS ON ANICUT CREST DURING THE YEAR 1906 & 97 -  
 DOWNLAISHAN ANICUT 4400 ft LENGTH 48 ft FROM 17th SEPTEMBER 1906 to 18th JANUARY 1907

| M. S. L-35 00              |               |
|----------------------------|---------------|
| LENGTH OF CHESTS OF ANICUP |               |
| Dorabhywarra               | ancient 4.919 |
| Ralli                      | do. 2.859     |
| Maddur                     | do. 1.548     |
| Vikaswarra.                | do. 2.698     |
| Total 11.924               |               |

Photo-Print Survey Office, Madras.  
1897.

KISTNA NORTHERN DIVISION

# 1896-97 KISTNA RIVER

RED CIRCLE

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

1. L. on 6th August  
1916 M. S. L. + 87.55  
Present M. S. L. in July  
1902 M. S. L. + 66.53

Note:—The crest of Anicut is at level + 46.33 up to 1891  
from 1891 to 1894 + 47.25  
from 1894 to date + 49.25

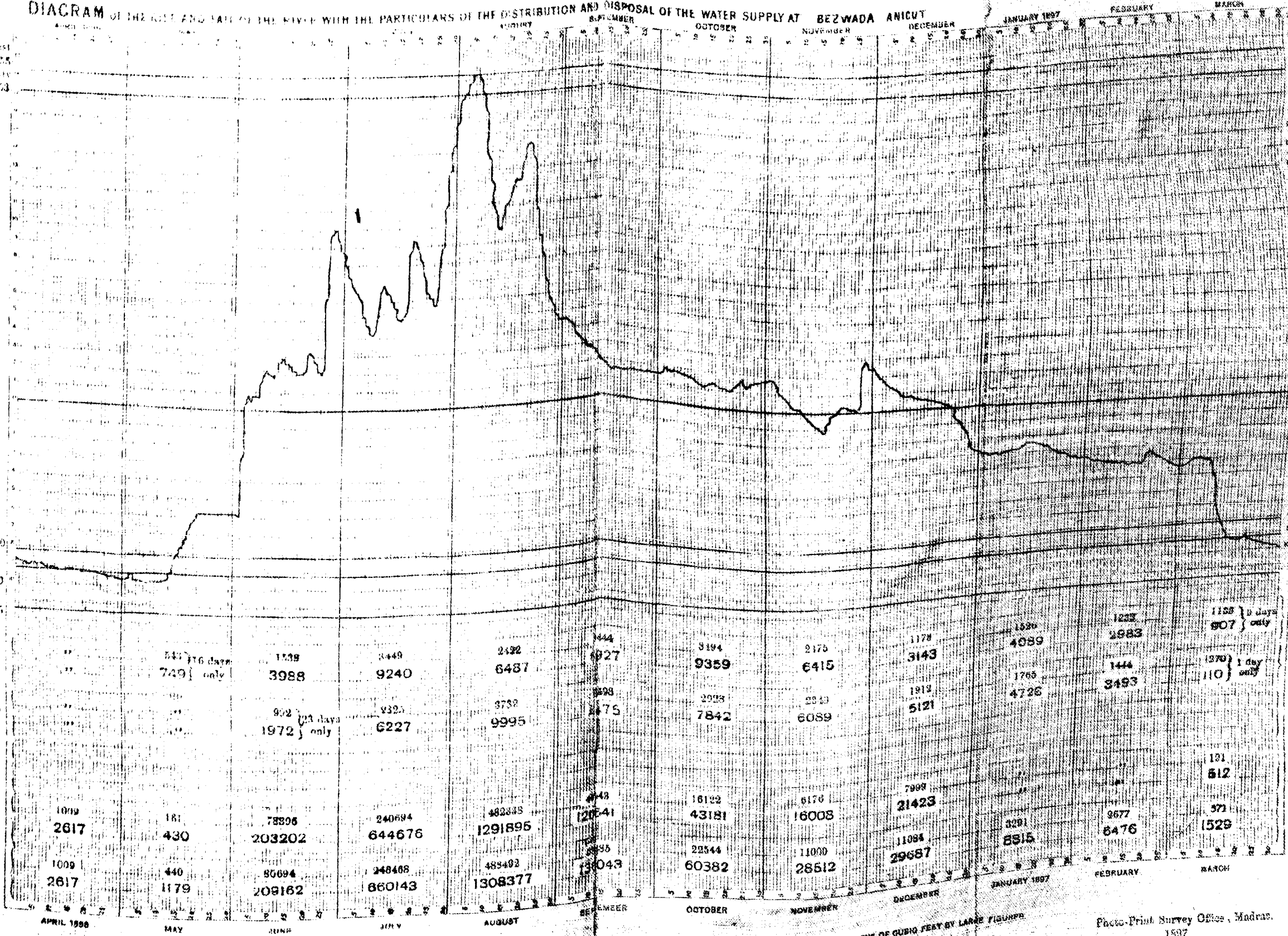
CREST OF WEIR

Dead water (M. S. L. + 41.00)  
Eastern Divn.  
Head of river (M. S. L. + 40.00)  
Western Divn.  
Under sluices M. S. L. + 37.75

Length of Cross bridge - 5712 ft.  
M. S. L. + 40.25

DISCHARGE THRO' SLUICES &

Eastern Delta  
Western Delta  
SURPLUS  
IN RIVER  
TOTAL DISCHARGE



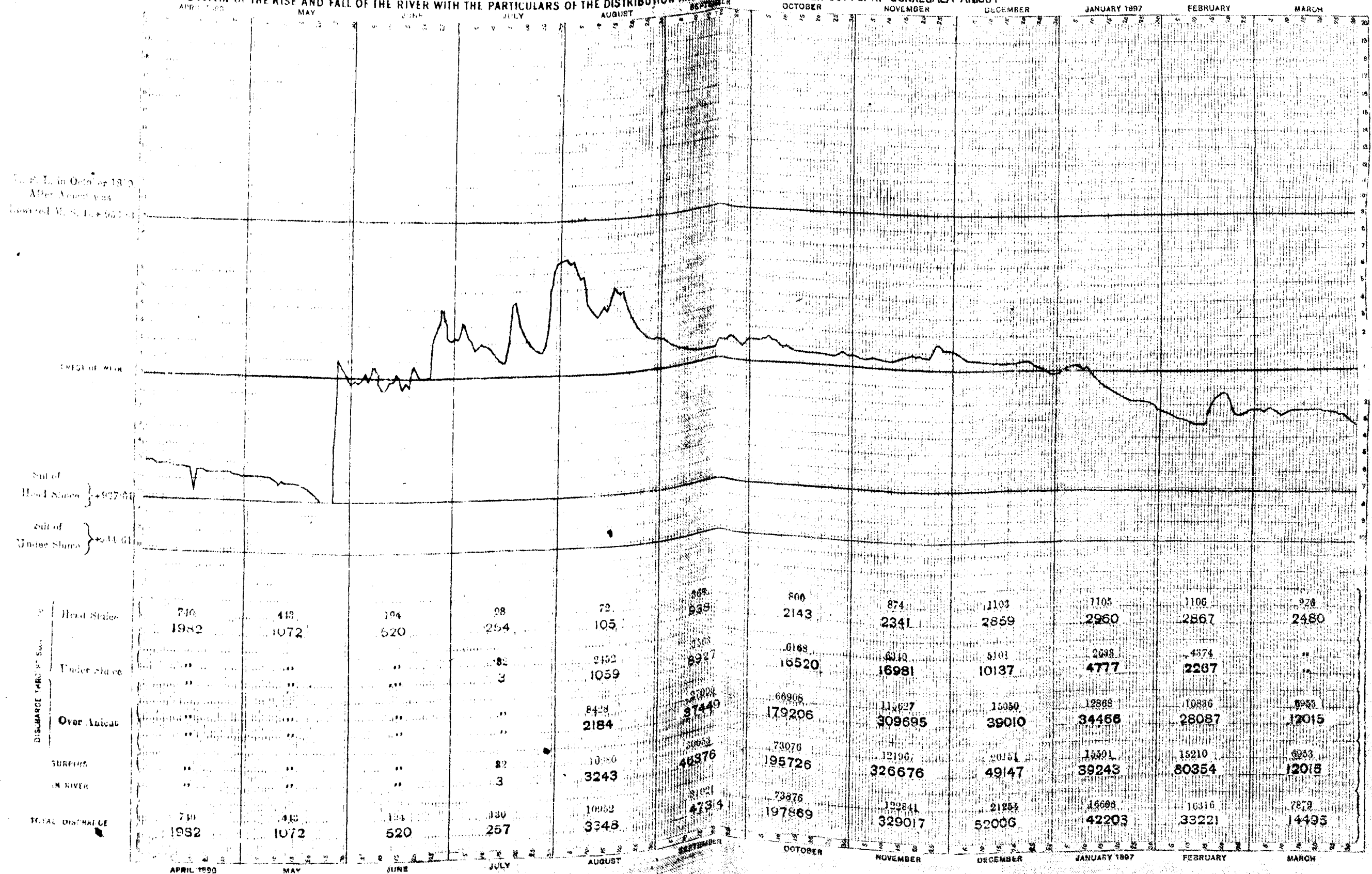
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1897

# 1896-97 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 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.



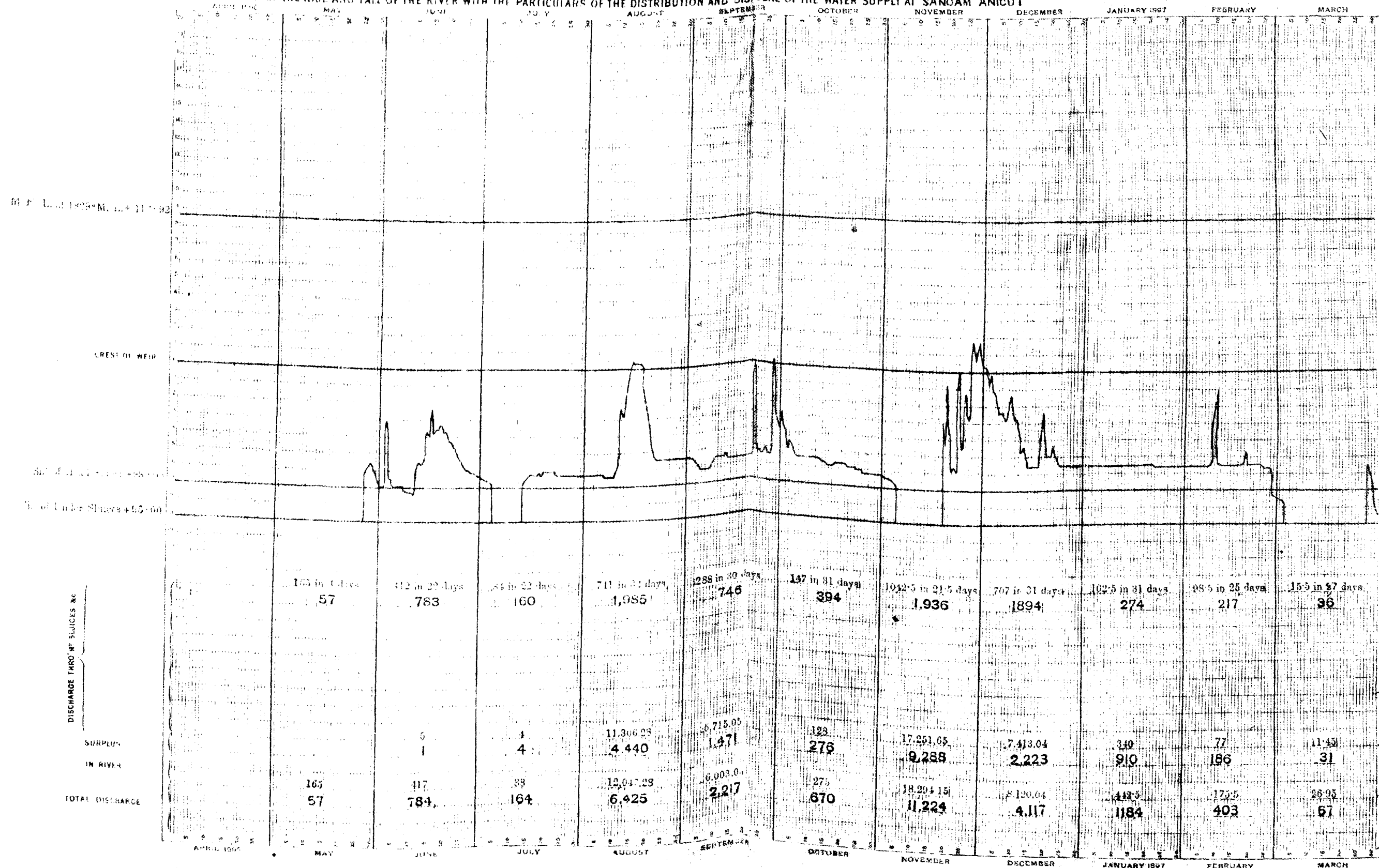
NELLORE DIVISION

1896-97

2<sup>ND</sup> CIRCLE

# PENNER RIVER

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



Length of Anicut 4072 ft.  
M. S. L. +199.22

Reg: 4066  
Copies 250

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

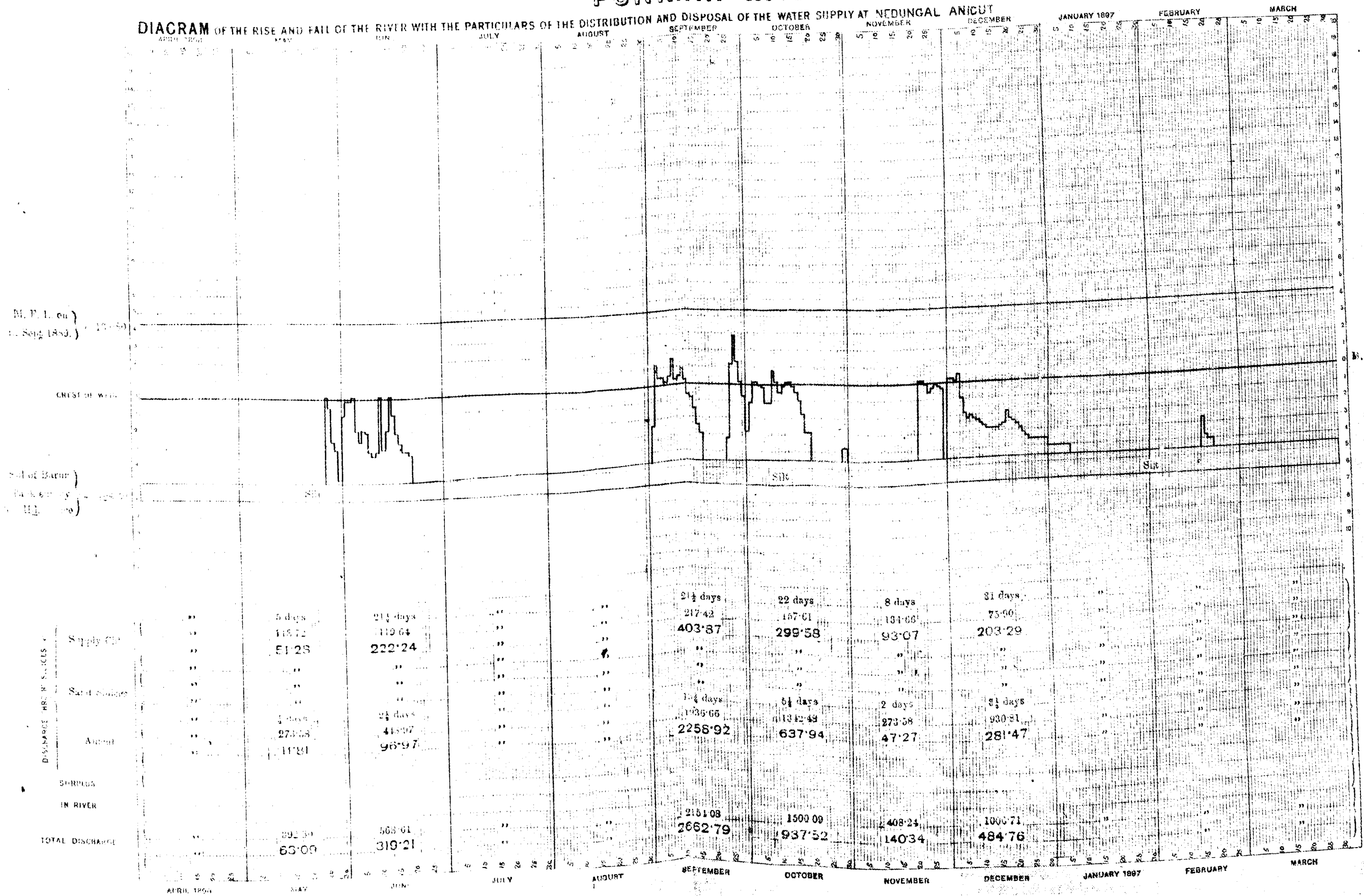
Photo-Print Survey Office., Madras.  
1897

89

SALEM DIVISION

# 1896-97 PONNIAR RIVER

DIACRAM OF THE RISE AND FALL OF THE RIVER WITH THE PARTICULARS OF THE DISTRIBUTION AND DISPOSAL OF THE WATER SUPPLY AT NEDUNGAL 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

Photo-Print Survey Office, Madras.  
1897



91

5th CIRCLE

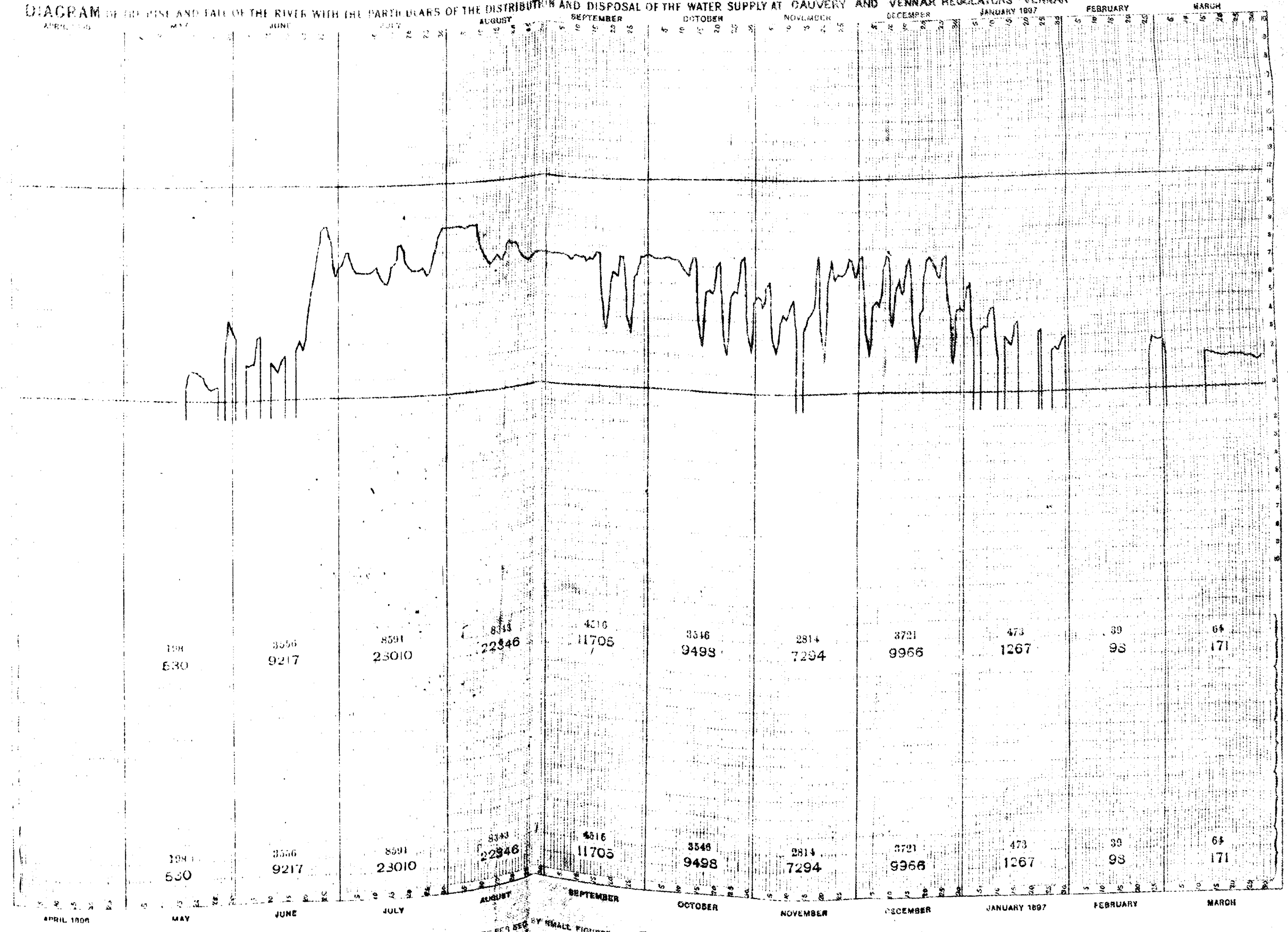
# 1896-97 VENNAR RIVER

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

M. P. L. D.  
OF THE RIVER

DISCHARGE THROUGH CAUVERY

TOTAL DISCHARGE



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

Fig. No. 4110  
C.S. 217

Photo. Print Survey Office, Madras.  
1897.

TANJORE DIVISION

1896-97  
CAUVERY RIVER

5TH CIRCLE

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

M. F. L. of 1853 } M. S. L. + 136.10

Upper City } M. S. L. + 18.12  
Lower do. } + 15.00

|                          | APRIL 1896 | MAY | JUNE  | JULY  | AUGUST | SEPTEMBER | OCTOBER | NOVEMBER | DECEMBER | JANUARY 1897 | FEBRUARY | MARCH |
|--------------------------|------------|-----|-------|-------|--------|-----------|---------|----------|----------|--------------|----------|-------|
| Cauvery                  |            |     | 6209  | 13945 | 20073  | 19566     | 18754   | 17011    | 16091    | 1797         | 253      | 1     |
|                          |            |     | 16405 | 50716 | 56179  | 28165     | 23238   | 15581    | 16267    | 2135         | 1714     | 3     |
| Vennar                   |            |     | 340   | 942   | 1193   | 877       | 1007    | 1109     | 202      | "            | "        | "     |
| Surplus                  |            |     | 653   | 2526  | 3037   | 718       | 958     | 316      | 541      | "            | "        | "     |
| Remaining for Irrigation |            |     | 6077  | 13992 | 19441  | 18689     | 9419    | 15055    | 15746    | 1797         | 253      | 1     |
|                          |            |     | 15752 | 49190 | 53142  | 27447     | 22382   | 15055    | 15746    | 2135         | 1714     | 3     |
| TOTAL DISCHARGE          |            |     | 6077  | 13992 | 19441  | 18689     | 9419    | 15055    | 15746    | 1797         | 253      | 1     |
|                          |            |     | 15752 | 49190 | 53142  | 27447     | 22382   | 15055    | 15746    | 2135         | 1714     | 3     |

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

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Chennai 250

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1897.

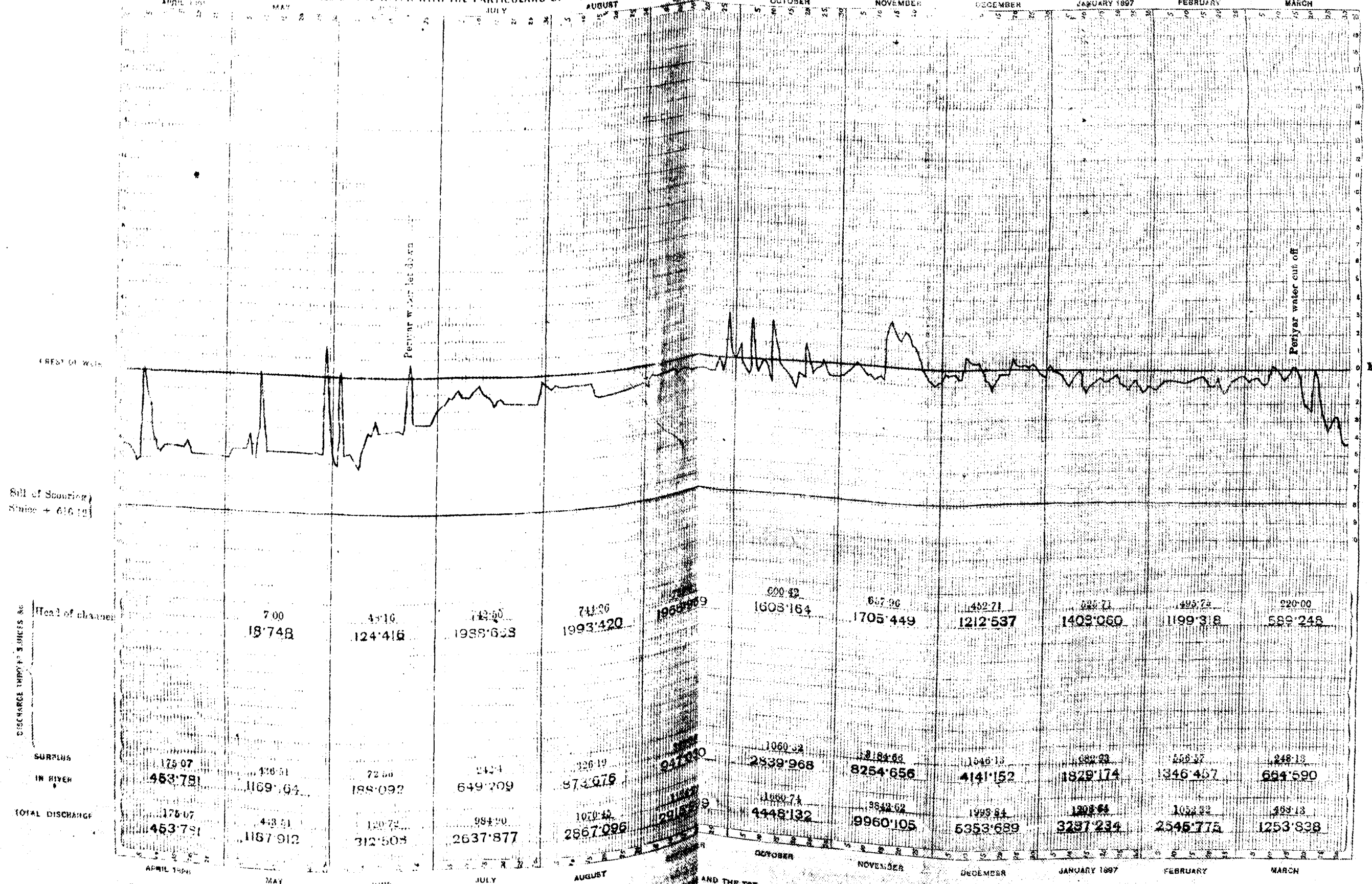
92

MADURA DIVISION

1896-97  
VAIGAI RIVER

5th CIRCLE

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



Bed of Scouring  
Stage + 616.10

DISCHARGE INTO THE RIVER &  
Head of channel

SURPLUS  
IN RIVER

TOTAL DISCHARGE

Reg. No. 4123  
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

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1897



93

8th CIRCLE

TINNFVELLY DIVISION

# TAMBRAPARNI RIVER

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

M. S. L. of December 1895  
+61.40

CREST OF WEIR

Bed of Head Sluices

Length of Anicut 1330  
M. S. L. + 59.40

M. S. L. + 51.40

DISCHARGE THROUGH SLUICES &c

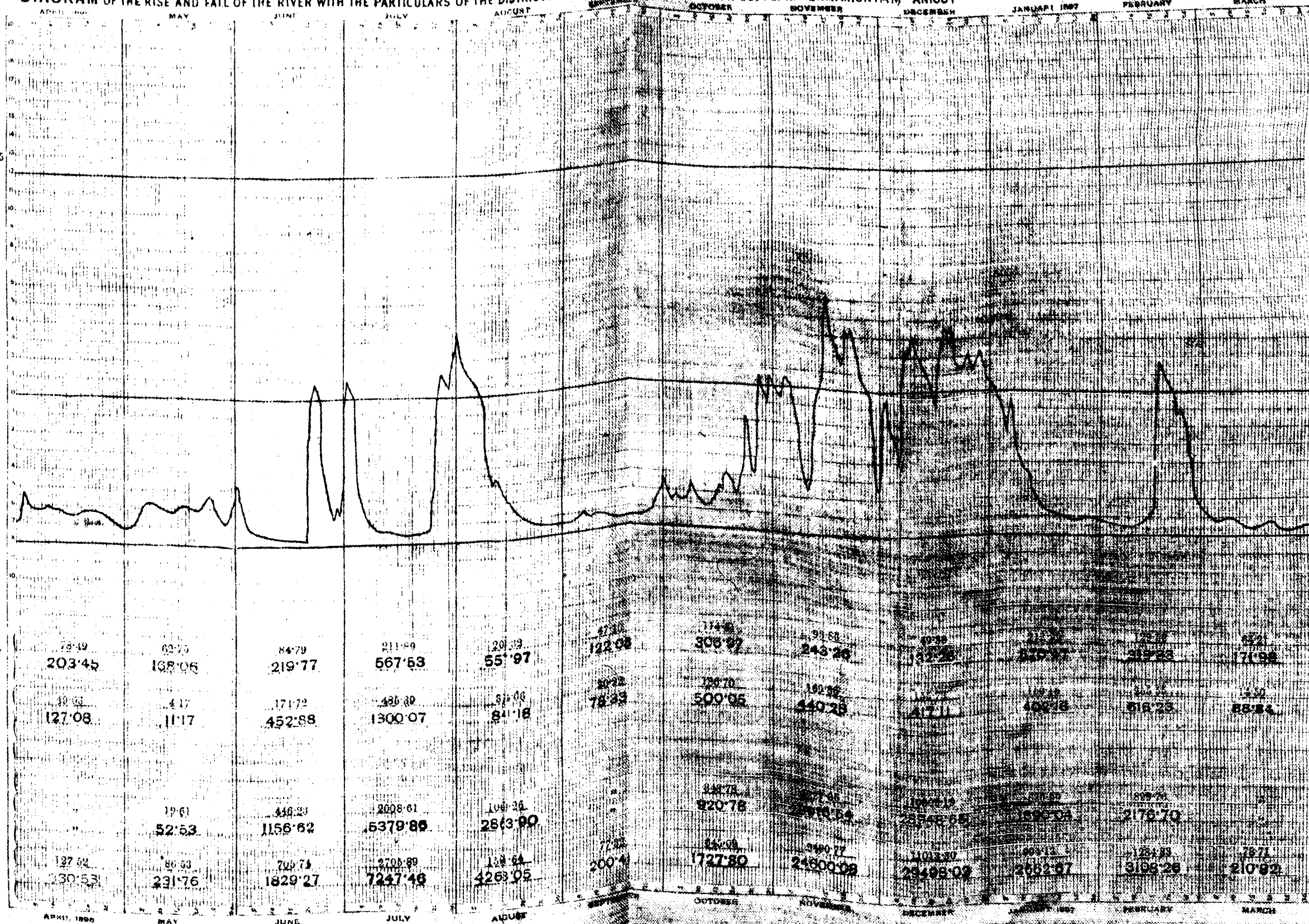
N. H. Sluices

S. H. Sluices

SLUICES

IN RIVER

TOTAL DISCHARGE



Box 14074  
Copies 550

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

Hydrographic Survey Office, Madras

1297



R  
DI 2117 M96  
M98

94

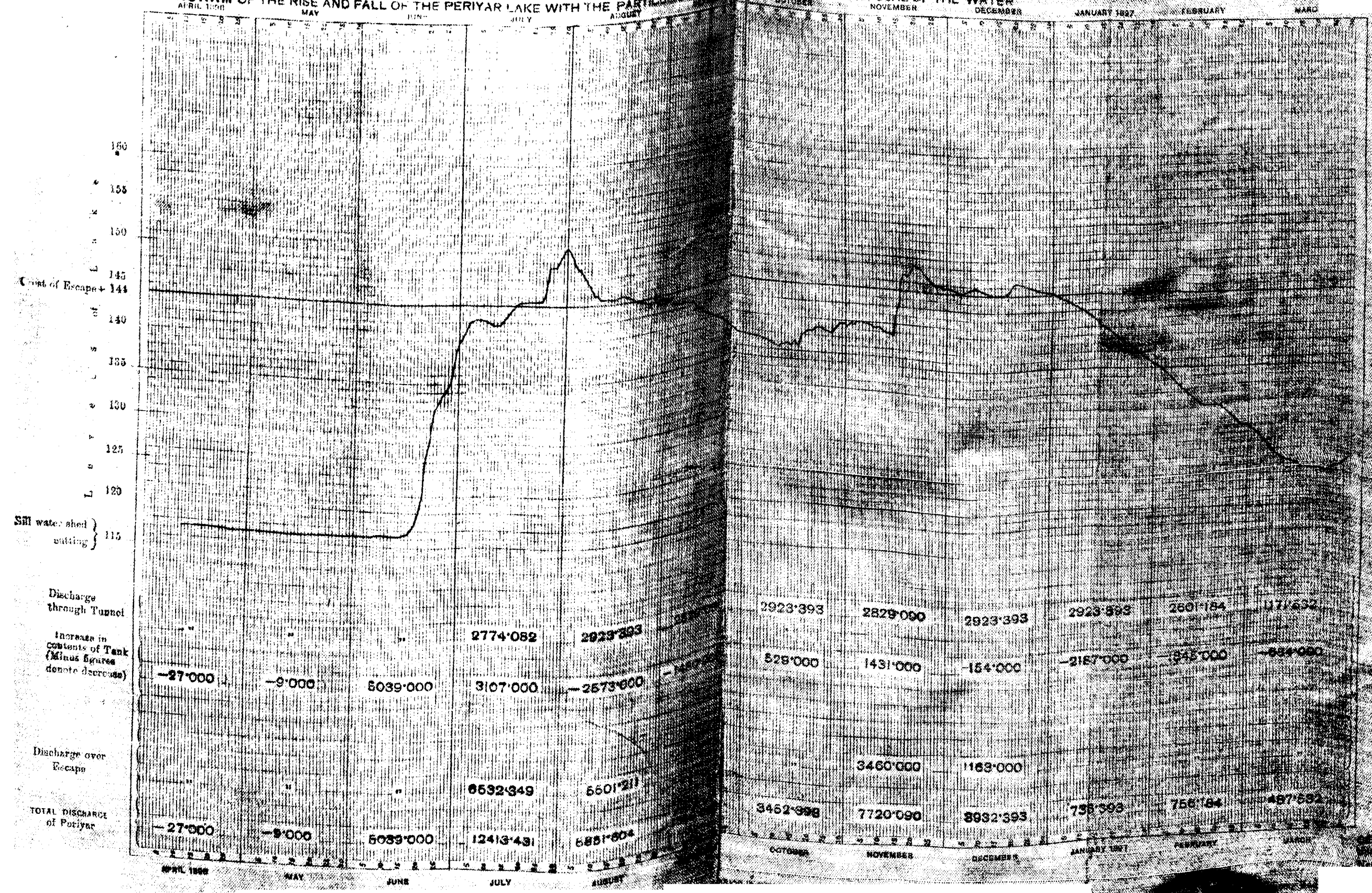
MADURA DIVISION

1896-97

8th CIRCLE

DIAGRAM OF THE RISE AND FALL OF THE PERIYAR LAKE WITH THE PARTICULARS

DISTRIBUTION AND DISPOSAL OF THE WATER



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