No 96. 14.1.84. Chg wards.
387W. 13.2.84.
1067W. 28.4.84.
1886—4.6.84. Chg wards.
1523W. 18.6.84.

B/Pc 1910 Wdy 6th Augt 84

Communicate d

to the Supg: Engineer

VI Circle, with refce to

GO 1523 to d/ 18th June

1884

24.7.84

SE VI Circle

Ord. 84/7: Concptr

# 1884.

# Court of Wards,

## MADRAS.

SECRETARIAT TO GOVERNMENT
22 JUL 84
PUBLIC DEPARTMENT

*Printed July 8th.*

*Proceedings*, 19*th May* 1884, *No.* 1689.

Read 19/10 May 6th Augt 84

Passing orders on letter from Collector of Madura forwarding Mr. Vincent's report upon the *Irrigation Works* in the *Gandamanáyakanúr Zemindari*.

a Copies sent to Coly

With order.

# PROCEEDINGS OF THE COURT OF WARDS.

READ—the following letter from C. S. CROLE, Esq., Collector of Madura, to the Secretary to the Court of Wards, dated 20th April 1884, No. 115 :—

With reference to the Court's Proceedings, dated 14th February 1884, Mis. No. 1346, I have the honor to forward herewith, in original, Mr. C. Vincent's letter, addressed to the Court, with its accompaniments as per margin. I beg to add that I have no detailed comment to offer, as Mr. Vincent's investigations bear out the representations made to the Court in my letter printed with the Court's Proceedings, dated 20th December 1883, No. 3875.

* 1. His report on the Irrigation Works of the Gandamanáyakanúr Estate.
2. Index to do.
3. Sketch map of Estate.
4. Sections and quantities of Theppampati tank.
5. Sections and quantities of Ondikaradu tank.
6. Copy of Mr. Hardy's certificates.

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ENCLOSURE No. 1.

From C. VINCENT, Esq., Executive Engineer on Special Duty under Court of Wards, to the Secretary to the Court of Wards (through the Collector of Madura), dated 2nd April 1884.

I have the honor to forward herewith my Report on the Irrigation Works of the Gandamanáyakanúr Estate, to prepare which my services were lent to the Court of Wards in G.O., No. 213-W, of 23rd January 1884.

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ENCLOSURES NOS. 2 AND 3.

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REPORT on the Irrigation Works of the Gandamanáyakanúr Estate, in the Madura District.

1. *Report called for.*—On the 26th April 1883, in replying to a reference from the Collector of Madura regarding the pay of two store watchmen employed on the Gandamanáyakanúr Estate, the Court of Wards called for a list of the existing Engineering establishment of the estate, showing its total cost, together with another list, showing the sanctioned works and the works then actually in progress on the estate, with their estimated cost. These lists were furnished by the Collector with his letter of July 20, 1883. In a resolution thereon, the Court of Wards asked what could be done with the Engineer's bungalow, which had cost Rs. 4,260, and which was said to be apparently useless; and also expressed its grave dissatisfaction at the non-completion of several of the works entered in the lists, and desired the Collector to take an early opportunity of visiting the estate, inspecting the works alluded to, and reporting on them. The Collector's report in reply to this resolution was dated November 25, 1883. He had visited the estate in the previous month, and had inspected as many works as the incessant rain had permitted, and from what he saw, he was of opinion that there had been, to say the least of it, a great waste of money. He was also of opinion that, in the interest of the estate, a thorough examination of all the works completed and under progress should be conducted by an experienced officer of the Public Works Department, in order to ascertain at a very early date—

(1) Whether or not the outlay had been properly incurred.
(2) Whether there were any defects in the works which could be remedied.
(3) Which of the works should be abandoned and which prosecuted to completion.
(4) Whether any improvements to the irrigation of the estate were necessary and feasible.

The Court of Wards, in its Proceedings, No. 3875, of December 20, 1883, on the Collector's letter, supported the proposal he had made, and Government, in its Proceedings in the Public Works Department, No. 213 W, of January 23, 1884, was accordingly pleased to place my services at the disposal of the Court, and I was directed to take up the inquiry demanded immediately on my return from Calcutta, where I had been detained on duty as Acting Commissioner for Madras in the International Exhibition. I arrived in Madras from Calcutta on the morning of February 13, and I left for Madura on the morning of February 24, the intervening days having been occupied in procuring tents, camp furniture, horses and servants, with all of which I found myself absolutely unprovided. I spent three days in Madura collecting the necessary papers and consulting with the Collector and the Local Fund Engineer, and finally arrived at Gandamanáyakanúr on the morning of March 3.

2. *The Estate.*—I will now proceed to the subject-matter of my report.

In the first place, it may be well to give a few statistics regarding the Gandamanáyakanúr Estate. It is situated to the east of what is known as Cumbum Valley in the Periyakulam Taluk of the Madura District, and runs along and into the range of high hills separating that from the Tirumangalam Taluk. The estate covers an area of 181 square miles and has a population of 28,711. The principal town of about 3,000 inhabitants is Vallanadi, where there is a Post Office, a recently-opened Local Fund Dispensary and a Police Station. The accompanying sketch map gives a fairly accurate idea regarding the estate. The estate has been under the Court of Wards since November 4, 1867,—the present Zemindar, who is a minor, being under the tuition of Mr. Gell in Madras. He is now 17 years of age. M.R.Ry. N. Krishna Ayyar is the manager of the estate, and has held the post for four years.

3. *Its Revenue.*—The following table shows the Revenue collections, and the outlay on Maramut and other works, fasli by fasli, since the Court assumed charge:—



STATEMENT No. 1.

| Fasli. | Collections. | Outlay on Maramut Works. | Outlay on other than Maramut Works. | Total. |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| | RS. | RS. | RS. | RS. |
| 1277 ... ... ... ... ... | 42,506 | ... | ... | ... |
| 1278 ... ... ... ... ... | 47,348 | ... | ... | ... |
| 1279 ... ... ... ... ... | 35,932 | 517 | ... | 517 |
| 1280 ... ... ... ... ... | 33,247 | 263 | ... | 263 |
| 1281 ... ... ... ... ... | 33,554 | 240 | ... | 240 |
| 1282 ... ... ... ... ... | 45,280 | 973 | ... | 973 |
| 1283 ... ... ... ... ... | 44,164 | 1,591 | 268 | 1,859 |
| 1284 ... ... ... ... ... | 43,086 | 1,160 | 706 | 1,866 |
| 1285 ... ... ... ... ... | 51,623 | 490 | 456 | 946 |
| 1286 ... ... ... ... ... | 31,008 | 6,078 | 498 | 6,576 |
| 1287 ... ... ... ... ... | 45,611 | 1,962 | 1,623 | 3,585 |
| 1288 ... ... ... ... ... | 43,148 | 3,147 | 928 | 4,075 |
| 1289 ... ... ... ... ... | 48,720 | 24,490 | 7,343 | 31,833 |
| 1290 ... ... ... ... ... | 50,394 | 30,067 | 8,499 | 38,566 |
| 1291 ... ... ... ... ... | 38,258 | 13,731 | 7,138 | 20,869 |
| 1292 ... ... ... ... ... | 71,435 | 4,600 | 4,388 | 8,988 |
| Total ... | 7,05,314 | 89,309 | 31,847 | 1,21,156 |
| Average ... | 44,082 | 6,379 | 3,184 | 8,654 |

4. *Its cultivated Area.*—The following statement shows the cultivation and Revenue Settlement of the estate for the two last faslis for which figures are available:—

STATEMENT No. II.

| — | Fasli 1291. | Amount. | Fasli 1292. | Amount. |
|---|---|---|---|---|
| | ACRES. | RS. | ACRES. | RS. |
| Dry, including garden ... ... ... ... | 33,224 | 48,590 | 40,535 | 58,361 |
| Wet ... ... ... ... ... ... | 844 | 1,984 | 845 | 1,999 |

It will be observed that the irrigated area is extremely small, amounting in all to only about 850 acres, which is about the average.

5. *Its irrigated Area.*—The irrigation works on the estate are, practically speaking, only fifteen in number, as shown in the succeeding table:—

STATEMENT No. III.

Statement showing the Extent of Cultivation, Revenue, &c., both prior and subsequent to the repair of Irrigation Works in the Gandamanáyakanúr Estate.

| No. | Name of Work. | Estimate Amount. | Outlay on Works. | Ayacut. | | Repair when completed. | Average Extent of Cultivation during the 3 years prior to the repair. | | Average Extent of Cultivation during the 3 years subsequent to the repair. | | Probable Extent that may be brought under cultivation. | | Increase of Column 8 over Column 7. | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Extent of Acres. | Assessment. | | Extent of Acres. | Assessment. | Extent of Acres. | Assessment. | Extent of Acres. | Assessment. | Extent of Acres. | Assessment. | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | | Rs. | Rs. | | Rs. | | | Rs. | | Rs. | | Rs. | | Rs. | |
| 1 | Tank under old anicut .. | 9,260 | 7,962 | 176 | 600 | .. | .. | .. | .. | .. | .. | .. | .. | .. | No estimate sanctioned. |
| 2 | Ondikaradu tank .. | 7,635 | 7,556 | .. | .. | Fasli 90.. | 6 | 26 | 23 | 65 | 41 | 118 | 17 | 80 | |
| 3 | Sawmiappen anicut and channel. | .. | 10,929 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| 4 | Streepalacotta tank .. | 3,925 | 3,921 | 38 | 95 | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| 5 | Thathamoothen tank .. | 2,834 | 2,736 | 18 | 60 | Fasli 90.. | 23 | 65 | 80 | 476 | 6 | 20 | 23 | 80 | |
| 6 | Koduvilarputty do. .. | 1,580 | 1,578 | 26 | 65 | Do. 91.. | 26 | 65 | 129 | 476 | 6 | 20 | .. | .. | |
| 7 | Thadicherry tank .. | 3,615 | 3,594 | 135 | 450 | Do. 90.. | 21 | 37 | 129 | 476 | 3 | 7 | .. | .. | |
| 8 | Kovilangolum tank .. | 2,630 | 2,610 | 47 | 80 | Do. 91.. | .. | .. | .. | .. | 26 | 48 | .. | .. | |
| 9 | Periyakulam do. .. | 5,500 | 4,820 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| 10 | Sirooculam do. .. | 3,850 | 2,850 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| 11 | Peria anicut .. .. | 6,000 | 5,700 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| 12 | Oosoolampatty tank .. | 2,890 | 2,890 | .. | .. | Fasli 90.. | 14 | 34 | 14 | 34 | 10 | 26 | 14 | 34 | |
| 13 | Kannimarcolum do. .. | 1,997 | 1,992 | 1 | 2 | Do. 90.. | 6 | 15 | 6 | 15 | 12 | 35 | 6 | 15 | |
| 14 | Teppumputty do. .. | 12,100 | 8,250 | .. | .. | .. | .. | .. | .. | .. | 88 | 225 | .. | .. | |
| 15 | Athicary do. .. .. | 4,080 | 4,042 | 35 | 100 | Fasli 92.. | .. | .. | .. | .. | 35 | 100 | .. | .. | |
| | Total .. | 67,896 | 71,450 | 476 | 1,452 | .. | 176 | 578 | 225 | 724 | 280 | 734 | 49 | 146 | |

*N. B.*—The numbers in Column 1 correspond with the numbers on the sketch map.



It will be noticed that the ayacut of the fifteen works amounts to only 476 acres. I think, however, that the area has been under-estimated in some instances. The balance of wet crop is due to cultivation under wells and small ponds.

6. *Its Engineer Establishment.*—The following has been the arrangement regarding the construction and repair of the irrigation works on the estate since it came under the charge of the Court. An Overseer, S. M. Rangabashiyam Nayadu by name, was appointed in 1876, and in November 24, 1876, a Sub-Overseer, named T. Venkatarangam Nayadu, was appointed to assist him, and he had also a maistry. In July 15, 1875, a Surveyor was appointed under Colonel Fischer, R.E., the then District Engineer of Madura, to prepare estimates for the repair of the principal irrigation works on the estate. In 1879 Mr. Hardy was appointed to the charge of the Gandamanáyakanúr estate, and remained in sole charge till September 1882, when he was appointed Local Fund Engineer of Dindigul Circle in addition to the estate duties. In May 1883 he obtained three months' privilege leave, which he overstayed, and consequently forfeited his appointment; and Mr. Crole, in his letter of November 25, 1883, said he did not think it desirable to re-appoint him to the charge of even the estate works. It is alleged against him that in one case at least, that of Theppampatti tank, he was guilty, if not of absolute dishonesty, at least of culpable negligence, in that the earthwork billed for exceeded that actually executed, and it was presumed that similar circumstances might obtain as regards other works. It is also said that, whatever else he may be, he is certainly not an Irrigation Engineer. It will perhaps be better to defer the consideration of how far these charges are borne out by my investigations to a subsequent portion of this report. At present, however, a brief sketch of Mr. Hardy's career previous to his appointment as Zemindari Engineer may be appropriate.

7. *Mr. Hardy.*—Mr. J. T. Hardy would appear to have commenced his service in India about the year 1860. He had previously served his five years' apprenticeship under Mr. Mark W. Carr, and was brought to India by that gentleman, who became Chief Engineer of the Great Southern of India Railway. He was for two years on that line, and left in December 1862 to take up an appointment with the East India Irrigation and Canal Company in Orissa. He remained in the employ of this Company till September 1865, when ill-health compelled him to leave Orissa. He was then engaged by Messrs. Waring Brothers, who were contractors for the construction of a portion of the East India Railway, and he remained with them fifteen months, till December 1866, when he left owing to the near completion of the works. In April 1868 he was engaged by the Great Indian Peninsula Railway Company and worked as Assistant under Mr. Mesurier till October 1870, when his engagement was closed by a six months' notice on reduction of staff. Mr. Hardy states that subsequently he was engaged by one of the contractors employed on the Great Indian Peninsula line, and ultimately entered the service of the Company. In June 1872, however, he signed an agreement to go to Japan, but he re-appeared in India in 1877, was appointed a Special Famine Relief Officer, and was posted to the Tinnevelly District. He worked there for ten months and then went to the Bellary District, his services being dispensed with at the close of the famine in November 1878. On April 1, 1879, he received an appointment from the Court of Wards as Engineer to the Bodináyakanúr and Gandamanáyakanúr estates in the Madura District. In September 1879 the Zemindar of the former estate came of age, and Mr. Hardy's duties were confined to the latter. In October 1882 Mr. Crole, in consideration of a promise he had made to Mr. H. J. Stokes, appointed him Local Fund Engineer of Dindigul Circle in addition to his other duties. On May 25, 1883, he was granted three months' leave to England on medical certificate, which leave he overstayed, as has been already stated, and forfeited his appointment. He is now living in Madura, where he has lately recovered from an attack of small-pox. I gave him the option, unofficially, of accompanying me in my inspection of the works in the Gandamanáyakanúr Zemindari, but this offer he declined, stating that he was entirely out of funds. I attach to this report a copy of the certificates furnished me by Mr. Hardy, from which the Court will see that he has uniformly borne a good character. The last certificate of all is dated March 21, 1882, and is signed by Mr. H. J. Stokes. It is by no means the least favorable.

8. *Description of Works.*—I will now proceed to give a brief description of each of the various irrigation works on the estate. As I have already said in paragraph 2, there are practically only fifteen works that require to be noticed. I have visited each of these, and have carefully gone into the circumstances regarding it, aided by the Manager of the estate and by the Draughtsman who was employed under Mr. Hardy.

9. *Estimates and Outlay.*—The following statement shows the particulars of estimate and expenditure in the case of each work:—

STATEMENT No. IV.

| No. | Name of Work. | Amount of first Estimate and Date. | Second Estimate. | Third Estimate. | Fourth Estimate. | Total Sanction. | Expenditure previous to Mr. Hardy's appointment. | Expenditure subsequent to Mr. Hardy's appointment. | Total Expenditure. | Date of last Expenditure. | Date of Completion. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 1 | Tank under old Anicut .. | **Rs. 5,765—20th Aug. 1877.** | **Rs. 1,345—28th May 1878.** | Rs. 2,150—15th Jan. 1880. | .... | Rs. 9,260 | Rs. 1,254 | Rs. 6,727 | Rs. 7,982 | 30th Dec. 1880. | .... | Figures in antique type denote estimates prepared by Public Works Department. |
| 2 | Ondikaradu Tank (new work). | **Rs. 4,865—1877.** | **Rs. 2,243—6th Sept. 1877.** | Rs. 167—10th Mar. 1880. | Rs. 160—5th Mar. 1880. Rs. 200—31st Oct. 1881. | 7,635 | 4,181 | 3,375 | 7,556 | 28th May 1881. | 21st May 1881. | |
| 3 | Samiappen Anicut .. .. | Rs. 27,700—15th Mar. 1880. | .... | .... | .... | .. | .. | 10,929 | *10,929 | 4th Feb. ,, | .... | * No sanction to estimate, but this was the expenditure incurred. |
| | Samiappen Channel .. .. | Rs. 6,300—23rd Mar. 1880. | | | | | | | | | | |
| 4 | Sripalakota Tank .. .. | Rs. 3,000—6th Jan. 1880. | Rs. 550—3rd July 1880. | Rs. 375—24th Dec. 1880. | .... | 3,925 | .. | 3,921 | 3,921 | 30th June ,, | 10th May ,, | |
| 5 | Thathamuthan do. .. .. | **Rs. 2,500—15th Dec. 1876.** | Rs. 334—15th Jan. 1880. | .... | .... | 2,834 | 787 | 1,949 | 2,736 | 30th June ,, | 31st Apr. ,, | |
| 6 | Koduvilarpati do. .. .. | Rs. 1,580—25th Oct. 1880. | .... | .... | .... | 1,580 | .. | 1,578 | 1,578 | 30th Dec. ,, | 20th Dec. ,, | |
| 7 | Thadicheri do. .. .. | **Rs. 2,073—14th Sept. 1877.** | **Rs. 986—9th June 1878.** | Rs. 556—6th Jan. 1880. | .... | 3,615 | 450 | 3,114 | 3,594 | 30th June ,, | .... | |
| 8 | Kovilangulam do. .. .. | Rs. 2,550—10th Mar. 1880. | Rs. 80—17th Jan. 1883. | .... | .... | 2,630 | .. | 2,610 | 2,610 | 30th Mar. 1882. | 24th Oct. ,, | |
| 9 | Periyakulam do. .. .. | Rs. 5,500—15th Nov. 1880. | .... | .... | .... | 5,500 | .. | 4,820 | 4,820 | 6th July ,, | .... | |
| 10 | Sirukolam do. .. .. | Rs. 3,850—15th Nov. 1880. | .... | .... | .... | 3,850 | .. | 2,850 | 2,850 | 6th July ,, | .... | |
| 11 | Periya Anicut .. .. | Rs. 6,000—15th Nov. 1880. | .... | .... | .... | 6,000 | .. | 5,700 | 5,700 | 26th Apr. ,, | .... | |
| 12 | Oosoolamputty Tank .. | **Rs. 2,100—3rd Oct. 1877.** | **Rs. 248—9th Dec. 1878.** | Rs. 500—6th Jan. 1881. | Rs. 42—3rd July 1880. | 2,890 | 1,211 | 1,679 | 2,890 | 18th May 1880. | May 1880 .. | |
| 13 | Kunnimarcolum do. .. .. | **Rs. 1,292—14th Sept. 1877.** | **Rs. 55—18th July 1878.** | Rs. 600—12th Feb. 1880. | Rs. 50—15th Sept. 1881. | 1,997 | 665 | 1,327 | 1,992 | 31st Oct. ,, | 3rd Nov. 1880. | |
| 14 | Theppampati Tank (new work). | Rs. 12,100—9th Apr. 1880. | .... | .... | .... | 12,100 | .. | 8,250 | 8,250 | 26th Mar. 1883. | .... | |
| 15 | Athicary Tank .. .. | Rs. 4,080—25th Oct. 1880. | .... | .... | .... | 4,080 | .. | 4,042 | 4,042 | 26th Mar. ,, | 19th Mar. 1883. | |
| | Total .. | .... | .... | .... | .... | 67,896 | 8,578 | 62,871 | 71,450 | .... | .... | |

*N.B.*—The numbers in Column 1 correspond with the numbers on the sketch map.



10. *Details regarding each.*—A few remarks regarding each of the fifteen works are appended.

(1) *Tank under old Anicut.*—This is a tank situated close to the head-quarters village, and which was formerly supplied by an anicut across the river Vaigai, which is now in ruins. Mr. Hardy submitted a scheme for the construction of a new anicut a mile higher up the river than the old one, which was to supply this and other tanks. I shall have to speak of both of these anicuts again. It suffices to say now that, without some supply from the river, the tank is quite valueless, as its natural drainage basin is insufficient. The bund is about one and-a-half miles long, and the tank ayacut is said to be 300 acres, but both the ayacut and the bed are now, through long disuse, overgrown with scrub-jungle. The total expenditure on the tank has been Rs. 7,982 against an aggregate of estimates of Rs. 9,260. Although no completion report has been submitted, all that appears to be necessary has been carried out, and the execution of the work has been good.

(2) *Ondikaradu Tank.*—This is a new tank situated about 1 mile from the head-quarter village. It was designed to irrigate about 60 acres, but at present only serves 5 or 6 acres. The reason for this is that the land below the tank consists of scrub-jungle, and has not, with the above small exception, been yet adapted to wet cultivation. But under no circumstances would the assumed ayacut of 60 acres be approached. The supply is very small, and the bund has been made very much too high for the circumstances of the tank, the hydraulic details regarding which have evidently not been very carefully worked out. In no case, I should say, would the supply be sufficient for more than 20 acres.

(3) *Samiappen Anicut and Channel.*—It has been stated in connection with the so-called "*Tank under the old Anicut*" that this previously received a supply from an old work across the river Vaigai, which Mr. Hardy proposed to replace by a new work 1 mile higher up the river. He submitted his first estimates in October 1880. These amounted in the aggregate to Rs. 69,400, distributed as follows :—

| | Rs. |
|---|---|
| Anicut ... ... ... ... ... ... ... ... | 27,700 |
| Eastern Channel ... ... ... ... ... ... ... | 16,700 |
| Western do. ... ... ... ... ... ... ... | 25,000 |

It was calculated that 2,400 acres of additional cultivation would be supplied on the east side and 9,600 additional acres on the west side, resulting in an increased revenue to the estate of at least Rs. 25,000. These estimates were forwarded to the Court of Wards, and by it to the Chief Engineer for Irrigation for opinion, who returned them with his letter, No. 6-W., of February 4, 1881, for further information. The estimates were revised by Mr. Hardy and re-submitted in October 1881, the revision having increased the total to Rs. 97,500 as follows :—

| | Rs. |
|---|---|
| Anicut ... ... ... ... ... ... ... ... | 34,500 |
| Eastern Channel ... ... ... ... ... ... ... | 18,000 |
| Western do. ... ... ... ... ... ... ... | 44,500 |

The estimated return of Rs. 25,000 per annum remained unaltered. The papers were again forwarded by the Court of Wards to the Chief Engineer for Irrigation, who in an elaborate note, dated December 21, 1881, pointed out several defects in the designs, and the omission of much information that was absolutely essential to the proper consideration of so important a project. The estimates were finally re-submitted by Mr. Hardy on June 22, 1882, and amounted to Rs. 1,15,000 as follows :—

| | Rs. |
|---|---|
| Anicut ... ... ... ... ... ... ... ... | 35,000 |
| Eastern Channel ... ... ... ... ... ... ... | 18,000 |
| Western do. ... ... ... ... ... ... ... | 62,000 |

These were forwarded to the Court of Wards, which finally referred the question of the feasibility of the works to the Chief Engineer for Irrigation; and that of the right of the Zemindari to an increased supply from the river, which might and probably would prejudice riparian owners lower down, to the Government Pleader. Both opinions were adverse. Though the possibility of carrying out the works was admitted by the Chief Engineer for Irrigation, some of the designs were again condemned, and it was pointed out that no right to an additional supply could be recognized on account of the Periyar project, to the approaching execution of which reference had been made. The Government Pleader was of opinion that the Zemindari would not have a right to more water than had previously been supplied by the old anicut, and this finally settled and shelved the question of construction. Meanwhile, however, Rs. 10,930 had been spent in anticipation of sanction, on the authority of the late Collector, in preparing materials, in cutting a diversion channel for the river to facilitate the construction of the anicut, and in excavating a portion of the east channel. This must, therefore, be looked upon as wholly unremunerative outlay, as also must, at least for the present, the Rs. 7,982 spent on the "*Tank under the old Anicut.*"

(4) *Sripalakota Tank.*—This is an old tank situated some 8 miles to the south of the head-quarters village. It was apparently designed to irrigate 50 or 60 acres, but the bund is now perforated with breaches, so that no irrigation from it is possible, and the ayacut is waste. It is supplied, in addition to natural drainage, by a considerable jungle-stream, which has apparently breached the tank on a previous occasion. This breach has been well restored, but a very wide and deep breach due to the same cause now exists (in addition to smaller breaches), and a considerable expenditure and some very careful work would be required to render it sound and strong.

(5) *Thathamuthan Tank.*—This is an old tank situated 2 miles beyond the one last mentioned. It irrigates about 30 acres, and receives an apparently good supply by means of natural drainage. The bund is in good order, with the exception of a small and unimportant breach at the extreme east end. A small estimate for the repair of this has been sanctioned by the Collector.

(6) *Koduvilarpati Tank.*—This is a tank 4 miles west of Vallanadi, irrigating about 10 acres through one sluice. It receives a small supply by means of a jungle-stream, and is also said to be fed by the surplus of the tank to be next noticed, but this I should doubt. The bund, though considerably cut up, is still fairly strong and good. A small estimate for strengthening the bund of this tank has been sanctioned by the Collector.

(7) *Thadicheri Tank.*—An old tank, and by far the finest on the estate. It irrigates about 60 acres through one sluice, the second sluice not being used. The bund is throughout in very good order, and has a massive revetment for a portion of its length. It is curious that this is the only tank on the estate that has any revetment at all. It is supplied wholly by natural drainage, and contains six months' supply when full. It had at least two months' supply remaining when I saw it.

8. *Kovilangulam Tank.* (9.) *Periya Anicut.* (10.) *Periyakulam Tank.* (11.) *Sirukulam Tank.*—I will first say a few words with regard to these collectively, and then proceed to deal more particularly with each. They are all situated in what is known as the Warisanad valley, which belongs to the Gandamanáyakanúr estate, and runs for 25 or 30 miles into the hills towards Travancore parallel to the Cumbum valley. It is traversed from end to end by the river Vaigai, here, however, only a comparatively small stream. Mr. Crole says with regard to these works in his letter to the Court of Wards, No. 372, of November 25, 1883:—"They appear to have no ayacut at all, nor is the locality adapted for agricultural operations, for it is in the middle of what is, probably, the most deadly jungle in Southern India, infested by wild beasts. It is impossible to induce ryots to go and cultivate lands in that place." This is a very sombre, and perhaps rather too darkly-colored, picture. The valley is undoubtedly most unhealthy during certain periods of the year, March, April and May being reputed the worst months; but at other times, though of course fever is very prevalent, the jungle people who inhabit the place do actually cultivate dry crops, and would doubtless also cultivate wet crops if they had the opportunity. But the opportunity does not, and, except at an utterly unjustifiable expenditure, could not be made to exist. The portion of the valley where the works in question are situated is extremely wild, consisting of nothing but very dense scrub-jungle, and is such a favorite resort for elephants that the ground is almost as thickly strewn with evidences of their presence as is the neighbourhood of an Indian village with the evidences of cattle. If one could dispose of the elephants and clear the jungle, then it might be possible to usefully repair the few old irrigation works which I will now proceed to more particularly describe.

(8) *Kovilangulam Tank.*—This is the furthest up the valley of any of the tanks, and Rs. 2,610 were spent on its repair in 1881. A patch of ground, about 20 acres in extent, has been cleared in front of the bund, and some irrigation was attempted on this the year after the tank was repaired. But the one sluice which the tank possesses is now out of order, and the bund, the bed, and the supply channel are all overgrown with high jungle grass, and thick, thorny jungle. The said channel is about 4 miles long, and is fed by a dam across the river. Rs. 1,245 were spent in endeavors to clear and restore it in 1881 and 1883, but fruitlessly, for it is now again breached. It would be useless to think of spending any more money upon it, but it would be worth while, I think, to repair the tank sluice, which could be done at small cost, as the tank bund is strong and good. I would then let the cultivators, if any come forward bold enough to dispute the ayacut with the elephants and the jungle, take their chance of an occasional natural supply.

(9) *Periya Anicut.*—This is an old work and the existence of it goes to prove that irrigation was at one time possible in this portion of the valley. But the idea of its restoration and of that of the tanks under it rather savours of wildness. At any rate it would require a considerable expenditure to put the anicut into proper order, for it is in a somewhat rotten condition throughout, the water finding its way in considerable freedom round and under it. It is situated at a point where there seems to have been a sharp natural fall in the bed of the river and is about 150 feet long by 9 feet broad. An embankment carries the channel that runs from its right flank to some sand sluices 100 yards distant, through which all the water that now enters the channel



returns to the river, the channel below these sluices being silted up. About 5 feet of water passes over the dam during freshes. Mr. Hardy's expenditure was utilized in closing a breach in the dam, in raising its crest, and in restoring the apron. The closing of the breach remains good, but all the other work that is said to have been executed has practically disappeared. However, the dam is still sufficiently serviceable; but as it is of course useless, unless the channel and tanks dependent on it are in working order, which they are not, the expenditure may be treated as money thrown away.

(10) *Sirukulam Tank.*—The first tank below the Periya anicut, at a distance of about 1½ miles, is called Sirukulam. A considerable expenditure, Rs. 2,849, was incurred on this in restoring the bund and in making a cut for a new sluice, but it has been utterly wasted, for the whole place, tank-bed, bund, and ayacut, are now overgrown with close jungle, through which I with difficulty cut my way by the aid of half-a-dozen coolies armed with bill-hooks. It was utterly impossible, except here and there, to catch more than a glimpse of the bund. About a mile of so-called channel, but which is exactly similar to the ground I have just described, leads from Sirukulam to—

(11) *Periyakulam Tank.*—Of this I need only say that the bed, bund and ayacut are a trifle clearer of jungle than those of Sirukulam, but no water could get to it that had not previously passed through the latter.

(12) *Usilampati Tank.*—This is an old tank situated three miles to the east of Vallanadi which receives a small supply by means of a jungle stream. One high level and one low level sluice have been put into it, but only the latter is used to supply the 5 or 6 acres of precarious irrigation that the tank commands. The water-supply is evidently very deficient, and the bund has been made much higher and longer than was necessary.

(13) *Kannimarkulam Tank.*—This is situated two miles from the tank last mentioned and three miles north of Vallanadi. It is rain-fed and irrigates about 10 acres through one sluice. The bund is in fair order generally, but somewhat cut up in places. The supply is poor, and this bund also is higher and longer than is necessary.

(14) *Theppampati Tank.*—Further reference will be made to this tank in a subsequent portion of my report. It is a new tank and was estimated to cost Rs. 12,100, of which Rs. 8,250 have been actually expended. It curves round the base of some hills situated 10 miles east of Vallanadi. It is rain-fed, the water which falls on the hills collecting into a number of streams which it was intended should discharge into the tank. But the bund was never completed, those portions of it intended to close these streams never having been made, and I am very doubtful whether it is now worthwhile undertaking its completion. Heavy revetment and very careful earth-work, involving considerable expenditure, would be required where these streams run in, and it may on the whole be best to be satisfied with the present dry cultivation in the bed of and below the proposed tank, unless a very careful estimate of the financial results of its completion showed a sufficient and certain percentage of profit. The cost of completion may be estimated roughly at Rs. 10,000.

(15) *Athikari Tank.*—This tank is situated nine miles to the north of Vallanadi. It is an old work that used formerly to irrigate, it is said, 40 or 50 acres. It now irrigates about 6 acres through two sluices. It is rain-fed. The bund is good, except at the site of an old breach which has been badly closed, where it needs attention. The ryots complain that the crest of the calingulah is too low, and so it is for the height of the bund. The real fact however is that, in this as in other cases, the bund is too high and too long.

11. *Works omitted.*—This completes the list of the tanks on the estate that can be fairly classed as irrigation works. In the list submitted by Mr. Crole to the Court with his letter, No. 372 of 25th November 1883, eighteen works were entered, but I have omitted from my list the following—

(1) Theppam Tank Repair.
(2) Well in Minor's Garden.
(3) Senkulam Tank.

The first is not a tank, but simply a large well to supply a garden belonging to the minor with water. Rs. 1,219 have been usefully spent upon it. The second is simply a small well which cost Rs. 200 to excavate. To the third no work was executed. It is a tank situated in the Warisanad valley, and the same conditions obtain with regard to it as have been mentioned in connection with other works in the same locality. Only Rs. 100 were spent on it in clearing jungle to enable levels to be taken.

12. *No opinion regarding amount of work.*—It will doubtless be observed that in the foregoing remarks, I have carefully abstained from expressing my opinion as to whether there is, in the case of each work, full money value for the expenditure which has been charged against it. To this abstension I must, I regret to say, adhere, except in the case of the two new tanks, Theppampati and Ondikaradu, although it practically involves giving an only partial answer to the first of the questions, as mentioned in paragraph 1, referred to me for disposal. This result of my investigations, if at first sight considered disappointing, will not, I think, continue to be so

looked upon, when I say that, in the first place, any opinion on the point that I might express would be wholly empirical and unreliable, and that, in the second place, it is not of any great importance, in my estimation, that judgment should be pronounced either on one side or the other.

13. *Minor importance of question.*—The question may be looked at from two points of view, that of the estate and that of Mr. Hardy. As regards the first, in the case of each of the repair works no sections of the bund appear to have been taken when the estimates were prepared. At any rate none are now forthcoming. The only way therefore of calculating the quantity of earth-work executed would have been to measure the pits from which the earth was dug. Now as no measurement books appear to have been kept, as there is no one who can point out whence earth was taken, and as, in every case, several monsoons have passed over the pits, and if not entirely obliterated them, at least washed down their sides and silted up their beds, no measurements that I could have taken would have possessed the slightest value, even had I been able to discover the pits, as I was not. Check measurements, to have had any value, should have been taken two or three years ago.

But so far as the estate is concerned the question is one of very mediocre importance, for the bills for work executed—whether actually so or not—have long since been paid, and there can be no question, I take it, of a refund from any person or persons. Neither would there, in my opinion, be much use in instituting a criminal or civil prosecution against any one. The Overseer who was principally responsible for the works is dead, and negligence is probably the most that could be alleged against Mr. Hardy.

So far as Mr. Hardy's personal character is concerned, it may very well, I think, stand or fall by the result of the investigations regarding the two new tanks, Theppampati and Ondikaradu, to which I will now allude.

14. *Theppampati Tank.*—One investigation as regards the quantity of earth-work executed to Theppampati tank has previously been made by Mr. Harington, the Local Fund Engineer of the Madura Circle, in July of last year. He reported that whereas the earth-work billed and paid for amounted to no less than 81,890 cubic yards, the amount executed according to his measurements amounted to only 26,601 cubic yards. Another measurement of the pits made by an Overseer under Mr. Harington's orders gave a result of 43,568 cubic yards, but there were reasons for supposing that this last total was too large. Mr. Harington's own method was admittedly rough and approximate, so that in order to thoroughly test the question, I had sections taken of the bund as it exists, and the quantities deduced therefrom. By this means, I have included all the earth that has been washed down from the side slopes to the bottom of the bund since the earth-work was originally executed, and though it is impossible to say that the results I obtain are *absolutely* correct, it may be accepted as certain that they are so within, say, a margin of 10 per cent. In fact, I should call that a very liberal margin. The result at which I arrive is that 29,265 cubic yards were executed without allowing any margin, or 32,191 cubic yards with a 10 per cent. margin. It will be noticed that the result does not differ very greatly from that arrived at by Mr. Harington, and one is therefore forced to the unpleasant conclusion that 50,000 cubic yards, more or less, or nearly 200 per cent., were charged for than were actually executed.

The amount of earth-work allowed for in the estimate for Theppampati tank was 112,269 cubic yards, but no cross-sections exist to enable me to see how this amount was arrived at, and whether it was correctly calculated or not. Judging, however, by the tank as it now stands, I confess that the presumption is raised in my mind that the estimate amount was deliberately over-calculated, from which it would follow that a deep scheme was laid by the Overseer at the time he prepared the estimates to charge for more work than could ever have been actually carried out.

15. *Ondikaradu Tank.*—I regret to have to add that a very similar report has to be given with regard to Ondikaradu tank. The estimated amount of earth-work in that case was 61,558 cubic yards, the amount billed for was 64,393 cubic yards, and the amount executed was, according to my calculations, only 39,483 cubic yards, or 43,409 cubic yards, allowing a 10 per cent. margin.

16. *Summary of Mr. Hardy's case.*—My report so far has been a sort of review of Mr. Hardy's connection with the estate, and it seems therefore essential that I should now endeavour to sum up the case for and against him as impartially as I am able. The more specially so that he himself said to me: "My whole future career depends on the result of your investigations, for I stand charged with incompetency and shall never obtain employment in future unless I am exonerated."

17. *Case against him*—(1) *particularly.*—His case may best be stated, first, particularly as regards Theppampati and Ondikaradu tanks, and then generally as regards the other works on the estate. Now in the matter of Theppampati and Ondikaradu tanks very gross negligence is, I fear, the least verdict that can be pronounced. One naturally hesitates to go further and to say that Mr Hardy himself was guilty of deliberate fraud. My own impression, derived from the perusal of all his records during the time he was in charge of the estate, is that he was not fraudulent but negligent. I fancy he left everything in the hands of his Overseer, allowing the latter



to prepare the estimates with such little plans as were ever drawn, to measure the works, and to draw up the bills; and that he was most grossly and outrageously swindled.

18. *Case against him*—(2) *generally.*—It would also be idle to pretend that the general management of the other works on the estate has been good. The conditions obtaining with regard to each have not been accurately weighed, the designs have not been carefully prepared, and there has been much wholly useless and much needlessly excessive expenditure. The system by which advances were given to contractors, and the works only measured on completion, was very faulty; in addition to which no regular system of recording measurements, even when made, was adopted. Mr. Hardy persists in asserting that measurement books were maintained and were checked and initialled by him in the orthodox manner. These, he declares, disappeared when Overseer S. M. Rengabashiyam Nayadu died, whose papers, by the way, were found to be extremely incomplete and confused. But the evidence as to the non-existence of measurement books at any time is absolutely conclusive. That, as I take it, is the case against him.

19. *Case in his favor.*—On the other hand it must be stated that as an officer of the Irrigation Branch of the Public Works Department I am naturally inclined to judge even petty tank repairs by a very high standard.

Thanks to a long course of instruction by a succession of eminent hydraulic engineers, we have arrived at what I may term the apotheosis of scientific tank maintenance. And the same holds good, only, if possible, in a more stringent degree, with regard to designs for important works like the Samiappan anicut. And something very similar might be said with regard to our system of accounts, while there is an elaborate code to guide even the most ignorant in matters of petty detail. From the Public Works point of view then Mr. Hardy has been very much lacking, but it would be absurd to judge him by this high standard. He had no code to guide him, not much previous knowledge of the Government system of accounts, and no experience of tank repairs. What he has done he has done well. His earth-work is good and his sluices and calingulahs are not bad. And until almost the very close of his service in the estate he had always received the countenance and warm approval of his immediate superior, the Collector of the district. The system under which he kept his accounts was known and tolerated. His selection of works was approved. His Samiappan anicut was not only recommended for sanction, in spite of the doubts regarding it expressed by the Chief Engineer for Irrigation, but Rs. 10,000 were allowed to be spent upon it in anticipation of sanction. Being posted to Gandamanáyakanúr and being given a good salary (Rs. 350 per mensem), it was necessary for him to justify his existence. But it was like having to make bricks without straw. He had to repair useless works at an excessive cost and to invent unnecessary new ones. But had he not done so he could scarcely have been maintained in his appointment, and it is hard to blame a man because he endeavoured to prove that he was necessary. It was scarcely for him to say, "the estate does not require me, an Overseer on Rs. 100 a month with one clerk are all that is really necessary."

The following figures are, however, instructive:—

V.—Statement showing the Expenditure on Works and the Cost of the Maramat Establishment Fasli by Fasli.

| Fasli. | Expenditure on Maramat Works. | Cost of the Maramat Establishment. | Total Expenditure. | Remarks. |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| | RS. | RS. | RS. | |
| 1276 ... ... | ... | ... | ... | |
| 1277 ... ... | ... | ... | ... | |
| 1278 ... ... | ... | ... | ... | |
| 1279 ... ... | 517 | ... | 517 | |
| 1280 ... ... | 263 | ... | 263 | |
| 1281 ... ... | 240 | ... | 240 | |
| 1282 ... .. | 973 | ... | 973 | |
| 1283 ... ... | 1,591 | 268 | 1,859 | |
| 1284 ... ... | 1,160 | 706 | 1,866 | |
| 1285 ... ... | 490 | 456 | 946 | |
| 1286 ... ... | 6,078 | 498 | 6,576 | |
| 1287 ... .. | 1,962 | 1,623 | 3,585 | |
| 1288 ... ... | 3,147 | 928 | 4,075 | |
| 1289 ... ... | 24,490 | 7,343 | 31,833 | Year of Mr. Hardy's appointment. |
| 1290 ... ... | 30,067 | 8,499 | 38,566 | |
| 1291 ... ... | 13,731 | 7,138 | 20,869 | |
| 1292 ... ... | 4,600 | 4,388 | 8,988 | |
| Total ... | 89,309 | 31,847 | 1,21,156 | |

During Mr. Hardy's tenure Rs. 72,888 were spent on works and Rs. 27,368 on establishment, the proportion being 37·5 per cent.

That, I take it, is the general case in Mr. Hardy's favor.

20. *Further Points.*—This finishes everything I have to say in regard to the first point referred to me, viz., "whether or not the money has been properly expended."

The second, third, and fourth points are, whether there are any defects which can be remedied; which of the works should be abandoned and which prosecuted to completion; and whether any improvements to the irrigation of the estate are necessary and feasible. I can dispose of these very briefly, especially as I express my opinion about them with considerable reserve. Colonel Montgomerie, R.E., is, as the Court is probably aware, now engaged in preparing an elaborate scheme for the thorough restoration of every irrigation work worth maintaining in this portion of the Madura District, and as he includes the Gandamanáyakanúr Estate in the scope of his operations, and as his conclusions are certain to be adopted, my own opinions on the points in question possess only a temporary and very minor importance.

21. II. *Defects to be remedied—Whether there are any Defects which can be remedied.*—I think not. As I have said, all the work that has been done has been well done. Breaches of course should be repaired, where they exist, in the tanks it is intended to maintain, but this would form portion of the annual scheme of irrigation maintenance on the estate.

22. III. *Works to be abandoned—Which of the Works should be abandoned and which prosecuted to completion.*—The sluice of the Kóvilángulam tank in the Warisanád valley should be repaired. All the other works there situated should be abandoned. Theppampati tank should also be abandoned, in my opinion. All the remaining works on the estate should be maintained. They have all been completed, and only need ordinary maintenance.

23. IV. *Improvements feasible—Whether any Improvements to the Irrigation of the Estate are necessary and feasible.*—I think none are necessary with one exception, and that is the restoration of the old anicut across the Vaigai. This would have to be entirely rebuilt, and the channel cleared. The required outlay would not be less than Rs. 25,000, supposing the work to be thoroughly well done. A careful estimate of the probable resulting increase to revenue should be made in order to ascertain whether the outlay would be profitable.

24. *No Irrigation on Estate.*—The real fact is there is no irrigation worthy of the name on the estate; nor ever could be. The Vaigai as a source of supply may be put on one side, for it has been authoritatively laid down that the estate would have no right to diminish the supply in that river. And otherwise the rainfall is scanty (it averages 24 24 inches per annum at Periyakulam), and is almost all absorbed by the very extensive and excellent dry cultivation on the estate. The supply to every existing tank, with the exception of Thádichéri, is deficient from this cause, and no new tanks would ever be better circumstanced than are the old ones.

25. *Roads wanted.*—What the estate wants is not irrigation works but roads. It pays about Rs. 3,400 a year as Local Fund cess, but derives no corresponding benefit, for there is not a road on the estate, only village tracks. The estate has over 1½ lakhs of accumulated balance in hand, and if I may be permitted to express an opinion on a matter not directly referred to me, I should say that a portion of this amount could not be more profitably spent than in making one road from Vallanadi, 7 miles long, to meet the Cumbum-Gúdalúr road, and another road from the same place, 9 miles long, to meet the Andipati road. The Local Fund Board of the Dindigul Circle might fairly be expected to enter into an agreement to maintain these roads in perpetuity, provided the estate defrayed the whole cost of construction. A small amount might also be spent in improving the existing cart track from Vallanadi to Chinnammanúr, 14 miles in length, and the roads in the head-quarter village. Roughly speaking, a portion of the 1½ lakhs might be usefully spent as follows:—

| | Rs. |
|---|---|
| Road 7 miles long to join Gúdalúr road at Rs. 2,500 a mile. | 17,500 |
| „ 9 „ Andipati „ at „ 3,500 „ | 31,500 |
| Improving existing village track, 14 miles long to Chinnammanúr, at Rs. 1,000 per mile ... ... ... ... | 14,000 |
| Improving roads in Vallanadi ... ... ... ... | 5,000 |
| Total for roads ... | 68,000 |
| Restoring old anicut across the Vaigai ... ... ... | 25,000 |
| Total ... | 93,000 |

A good balance would thus still remain in hand.

26. *Necessary Establishment.*—As regards the execution of these and similar works, I think an Overseer on Rs. 60 to 80 a month should be engaged to carry them out. He would require a writer and a maistry, each on Rs. 15 a-month, and a couple of lascars. He should be under



the orders of the Estate Manager. In the case of the roads, the Local Fund Engineer of Dindigul Circle might give occasional assistance.

27. *Thanks to Manager.*—In conclusion, I desire to express my sense of the great assistance rendered me by the Manager of the estate, M. Krishna Ayyar, and of the courtesy he displayed in accompanying me in many of my inspections.

28. *Bungalow to be retained.*—I would also add that in my opinion the bungalow built by Mr. Hardy at Gandamanáyakanúr should decidely be retained for the use of the minor. It is well situated, and, though badly built, is still very serviceable, and could be improved at comparatively small cost.

29. *Papers to accompany Report.*—The following papers accompany this report:—

(1) Sketch-map of estate.
(2) Sections and quantities of Theppampati tank.
(3) Sections and quantities of Ondikaradu tank.
(4) Copy of Mr. Hardy's certificates.

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ENCLOSURE No. 4.—Sketch Map.

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ENCLOSURE No. 5.—Sections and contents of Ondikaradu tank bund with sketch.

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ENCLOSURE No. 6.—Sections and contents of Theppampati tank bund with sketch.

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ENCLOSURE No. 7.—Copies of Mr. Hardy's testimonials.

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RESOLUTION—dated 19th May 1884, No. 1689.

With this letter the Collector of Madura submits Mr. C. Vincent's report upon the irrigation works in the Gandamanáyakanúr Zemindari.

2. Mr. Hardy was appointed to be Estate Engineer in 1879 and retained the supervision of these works until he went on leave in 1883.

3. The work of most importance is the Samiappen anicut project which was finally rejected in accordance with G.O., 13th November 1882, No. 920 I. Upon this project some expenditure was incurred in anticipation of sanction, but this was done with the approval of the late Collector Mr. H. J. Stokes; a similar remark applies to the responsibility for expenditure on the works in the Warisanád valley, numbers 8, 9, 10 and 11 on Mr. Vincent's list. It may be that this valley, over-grown with jungle and infested by elephants, is not suited for the abode of cultivators, but, as Mr. Vincent points out, the remains of former works show that irrigation was once thought to be practicable, and, moreover, Mr. Hardy appears to have expended money in this valley with the knowledge and approval of Mr. H. J. Stokes, and cannot now be blamed because he carried out the policy of the late Collector.

4. The minor works, some of them rainfed tanks of trifling importance, may be passed over with brief notice. On No. 1 the work done by Mr. Hardy was good, No. 4 is breached, but Nos. 5, 6 and 7 are in good order, and in Nos. 12, 13 and 15 the bunds are too high for the expected supply.

5. No 2, the Ondikaradu tank, and No. 14, the Theppampatti tank, are new works executed by Mr. Hardy. In the Theppampatti tank, which is not finished, the amount of earth-work provided for in the estimate was 112,269 cubic yards. The amount which has been paid for is 81,890 cubic yards, but Mr. Vincent, upon measurement, could find only 29,265 cubic yards. If ten per cent. be allowed for inaccuracies of measurement the total would be 32,191 cubic yards. The measurements taken by Mr. Harrington showed only 26,601 cubic yards. From these figures it is evident

that payment has been made for about 50,000 cubic yards of earth-work which was never executed and had no existence except in the contractors' bills. A similar result is found in the Ondikaradu tank.

| | Cubic Yards. |
|---|---|
| Amount estimated ... ... ... ... ... ... | 61,558 |
| Amount paid for ... ... ... ... ... ... | 64,393 |
| Mr. Vincent's measurements ... ... ... ... | 39,463 |
| Adding ten per cent. ... ... .. ... ... | 43,409 |

The Overseer who drew up the bills is dead, and Mr. Vincent is of opinion that he exaggerated the necessary amount of earth-work in the estimates with a fraudulent intention. Mr. Hardy is responsible for these payments which were made on works executed under his supervision, and the Court are compelled to concur with Mr. Vincent in thinking that Mr. Hardy was negligent in this matter, and that the Collector is justified in declining to restore Mr. Hardy to the appointment which he forfeited by overstaying his leave.

6. The Court concur in the recommendations contained in paragraph 22 III of Mr. Vincent's report. The sluice of the Kóvilángulam tank should be repaired, but the other works in the Warisanád valley may be abandoned. The Theppampatti tank may also be abandoned, but the other works can be maintained.

7. The construction of roads in the estate is a matter for the consideration of the Local Fund Board which receives the road-cess paid by the Zemindar.

8. The thanks of the Court of Wards are due to Mr. Vincent for his lucid and interesting report, which will be of value to the Collector now and to the Zemindar when he attains his majority.

9. The Second Member is not a party to these proceedings, and has recorded a separate minute of dissent.

(True Copies and Extract.)

(Signed) G. MACKENZIE,
Acting Sub-Secretary.

To the Collector of Madura.
„ C. Vincent, Esq., C.E.
Copy to the President, Local Fund Board, Madura.
„ „ Secretary to Government, Revenue Department.

Exd. C. Veeatasubbaiyar.

P. W. D

# 1884.

# Court of Wards,

## MADRAS.

No. 1910 May 6th August

Communicated to the Suply Engineer VI Circle, with reference to G. O. 1523 IN dated 18th June 1882.

Sd/ J. L. S.

No. 1910 May 6th August/84

*Printed July 8th.*

*Proceedings*, 19*th May* 1884, *No.* 1689.

Passing orders on letter from Collector of Madura forwarding Mr. Vincent's report upon the *Irrigation Works* in the *Gandamanáyakanúr Zemindari.*

V. E. VI Circle.

With order



GOVERNMENT OF MADRAS.

## PUBLIC WORKS DEPARTMENT.

**Irrigation.**

No. 35.

READ—the following papers :—

G.O., dated 20th September 1882, No. 3082, Revenue.

From Major J. PENNYCUICK, R.E., Superintending Engineer, Third Circle, to the Chief Engineer for Irrigation, dated Bellary, 1st November 1882, No. 1386.

In returning the papers received with your No. 22 M.D. of 25th instant, I have the honor to state that the addition to the supply of the lower Vaigai caused by the Periyár water will be far greater than any amount that can be taken off for the proposed works in the Gandamanáyakanúr Zemindari, but that as the Periyár project provides for the utilization below the Peranny of all the water thus brought down in addition to the existing supply of the Vaigai any appropriation of the former to compensate for a demand upon the latter would diminish the amount of the former supply available for the expressed objects of the project, and would in fact amount to indirectly supplying the Zemindari with water at the expense of the Periyár works.

One Proceedings of Court of Wards with Estimate, &c.
„ Plan.

2. If, therefore, the Zemindari would not have the right to appropriate the water in question under present circumstances, the appropriation should certainly not be allowed merely because of the execution or proposed execution of the Periyár project.

3. The direct irrigation of the land in question with Periyár water would of course be impossible, as the latter comes down the Sooroolly and does not join the Vaigai till ten miles below the site of the proposed anicut.

4. Although outside the questions specially referred for my opinion, I may add that, from my knowledge of the Vaigai, I am convinced that the estimated discharge of 10,166 cubic feet per second for two months will be found to be greatly exaggerated.

No. 35-A.

G. O. dated 18th October 1882, Mis. No. 3431, Revenue.

*Read*—the following Proceedings of the Court of Wards, dated 11th October 1882, No. 2477 :—

Read—the following letter from H. H. SHEPHARD, Esq., Government Pleader, Madras, to the Sub-Secretary to the Court of Wards, dated 2nd October 1882, No. 78.

With reference to the Proceedings of the Court of Wards noted in the margin I have the honor to submit the following opinion :—

1st September 1882, No. 2180.

I understand that "the proprietors lower down the stream," referred to in the first question submitted to me, are riparian owners, as is the Gandamanáyakanúr Zemindar, with respect to the river Vaigai. This being so, they are

as such entitled to a flow of water not unreasonably diminished by the use of other riparian proprietor higher up the stream. The question how far the use of water by a riparian owner may extend without being wrongful is one of degree depending on the quantity of water available, the quantity used, the area irrigated, and all the other circumstances of the case. It is impossible to state in more precise terms what the rights of such persons are, but from what is said in the papers with regard to the proposed works I should be disposed to think that their rights would be infringed.

2. If the Gandamanáyakanúr Zemindar is, as I have supposed, a riparian proprietor, his right, not being in the nature of an easement, is not, I think, affected by the provisions referred to, and non-use of the water on his part would not, in my opinion, by itself deprive him of his right to use the water when he thought fit.

3. The circumstance referred to in the third question can, I think, have no effect on the question.

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Resolution—dated 11th October 1882, No. 2477.

Submitted to Government in continuation of Board's Proceedings, dated 1st September 1882, No. 2180.

(True Copy and Extract.)

(Signed) E. GIBSON,
Acting Secretary.

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*Order*—dated 18th October 1882, Mis. No. 3431, Revenue.

Transferred to the Public Works Department, Irrigation Branch, in continuation of this Department endorsement dated 20th September 1882, No. 3082.

(Signed) E. F. WEBSTER.
Secretary to Government.

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No. 115 I.

No. 35-B. *Note by the Acting Chief Engineer for Irrigation.*

With reference to the points on which the Court of Wards in paragraph 4 of their Resolution No. 2180, dated 1st September 1882, request the opinion of the Chief Engineer, the undersigned would remark that the proposed works are feasible and would probably, with some modification, be sufficient. The section of the anicut might certainly be improved, and it would be necessary to found part of it on wells, as 18 feet of solid foundations would be difficult to build. These are however matters of detail which hardly seem to need consideration at present. The objection to the scheme is the want of information as to the water-supply, the statement that the water usually flows for about two months and the depth shown in the plan needs confirmation.

2. To the second and third points mentioned by the Court, a letter from Major Pennycuick, R.E., the officer who is now engaged in revising the Periyár, replies, it would appear that the project provides for the utilization of all the water available, and there is no possibility of the lands referred to being irrigated by the project.

3. The opinion of the Government Pleader seems to be that the rights of the cultivators lower down the river would be infringed by the construction of the anicut. Though the fact of the anicut having been in ruins for twenty-two years should not be a bar to the Zemindar making use of the water.

4. Under these circumstances the Court of Wards will probably not sanction the work. Under any circumstances, it is considered that though it might be unobjectionable to allow the Zemindar to store any of the surplus flood-water he could catch,



when the river is not in flood he cannot have any claim to water for the irrigation of land in excess of the extent which the old anicut commanded.

(Signed) J. O. HASTED, Col., R.E.,
Acting Chief Engineer for Irrigation.

CHEPAUK,
6th November 1882.

To the Joint Secretary to Government,
Public Works Department, Irrigation Branch.

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No. 36.

ORDER—dated 13th November 1882, No. 920 I., Public Works.

Communicated to the Court of Wards through the Revenue Department.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Ag. Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Revenue Department, with twenty-seven enclosures.
" Superintending Engineer, Third Circle.
" Chief Engineer for Irrigation.
" Superintending Engineer, Sixth Circle.

Exd. S. T. Austin.
Spare Copies

IRRIGATION.

# Govt. of {1882} Madras.

## PUBLIC WORKS.

*Dated November, 13th.*

*Recd.* *Encl.*

**G.O., 13th Nov. 1882, No. 920 I.**

**NOVEMBER.**

**Nos. 35-36.**

## Vaigai River.

*Regarding the legal rights of the Zemindar of Gandamanáyakanúr to improve the irrigation of his lands by means of the works connected with the —.*

*To be substituted for G.O. of same number and date.*

23RD JANUARY 1884, No. 213 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

**General.**
**Establishment.**

READ—the following papers :—

Proceedings of the Court of Wards, dated 20th December 1883, No. 3875.

*Read*—again the following Proceedings of the Board of Revenue, dated 5th September 1883, Mis. No. 7547.

Read—the following letter from C. S. CROLE, Esq., Acting Collector of Madura, to the Secretary to the Court of Wards, dated 20th April 1883, No. 119.

I have the honor to state that two watchmen on Rs. 5 each per mensem were employed to watch the stores and the engineer's bungalow at Gandamanáyakanúr, and that their salary was met from the provision made in the estimates on account of petty supervision. The salary due to these men for February and March 1883 has not been paid to them, as there are few works now under progress in the estate, and the requisite sum to defray the charge is not in consequence available from the above source. The Engineer, Mr. Hardy, says, that the services of these men are very necessary, and requests sanction for the payment of the salary due to them for the above months out of the estate funds and for the inclusion of their names in the office permanent establishment roll in future.

2. I support Mr. Hardy's request and solicit sanction for the same. Provision will be made in the budget to be submitted for Fasli 1293 on account of this charge.

---

Reference on the above, dated 26th April 1883.

The Collector will be good enough to submit a list of the existing engineering establishment, showing its total cost, together with another list showing the sanctioned works, and works now actually in progress in the estate, with their estimated cost.

2. The nature and value of the stores which the two watchmen are required to guard should be stated.

(Signed) J. A. DAVIES,
Acting Sub-Secretary.

To the Collector of Madura.

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Read—the following letter from C. S. CROLE, Esq., Acting Collector of Madura, to the Secretary to the Court of Wards, dated Kodaikánal, 20th July 1883, No. 229.

Adverting to the Court's reference on G.R. No. 2885, dated 26th April 1883, I have the honor to submit herewith three lists—No. I, showing the existing engineering establishment, with its total cost; No. II, the sanctioned works and works now actually in progress in the estate, with their estimated cost; and No. III, the nature and value of the stores in the estate overseer's office.

Enclosures Nos. 1 to 3.—Lists.

Resolution.—dated 5th September 1883, Mis. No. 7547.

The Court of Wards observe that the stores are valued at Rs. 1,152, of which Rs. 840 are accounted for by four instruments of trifling size. These can be placed in the manager's care for deposit in the office strong room; the other stores can be kept in the manager's office under charge of his peons, and issued as required. The Collector will at once dismiss the watchmen, and is authorized to pass their pay at Rs 5 each per mensem up to date of discharge.

2. He is requested to state what can be done with the engineer's bungalow which recently cost Rs. 4,260, and is now apparently useless.

3. The Court cannot but express their grave dissatisfaction at the non-completion of several of the works entered in list II: items 1 and 3 have been lingering on since 1877, and are still incomplete, nor does it appear from the list that a single rupee has been spent on No. 3 during Fasli 1292. They desire that the Collector will take an early opportunity of visiting the estate and inspecting the works alluded to and reporting on them. They also desire explanation as to the large expenditure on items Nos. 7 and 8, which, though represented as sanctioned in column 3 of statement No. 2, are in the remark column, entered as pending sanction. The Court, however, have not sanctioned these estimates, nor is the matter pending before them.

4. They further observe that the entries in the column for expenditure in Fasli 1292 do not at all agree with the entries in the audit registers in the Court's office which show an expenditure of Rs. 856 on irrigation works, Rs. 995 on buildings and an unadjusted expenditure, not yet admitted for want of vouchers, of Rs. 8,435. This matter must also be fully explained.

5. The Collector is also requested to state whether he has been able to reduce the establishment as hoped in paragraph 3 of his letter, No. 155, of the 31st May last.

(True Copies and Extract.)

(Signed) F. A. NICHOLSON,
Acting Sub-Secretary.

To the Collector of Madura.

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Read—also the following letter from C. S. CROLE, Esq., Acting Collector of Madura, to the Secretary to the Court of Wards, dated 25th November 1883, No. 372.

With reference to the Court of Wards' proceedings, dated 5th September 1883, Mis. No. 7547, I have the honor to submit the following report on the maramut works of the Gandamanáyakanúr estate.

2. I had intended to address the Court on this subject sometime ago, but deferred it, pending a personal inspection of the works. I visited the estate last month and inspected as many works as the weather permitted me to do. It was incessantly raining during the term of my stay in the estate, and consequently I was not able to inspect all the works as I had intended to do; but from what I have seen, I am of opinion that there must have been, to say the least of it, a great waste of money. I enclose a statement showing the names of works, the outlay on them, their ayacut, revenue, &c. Of these works, Nos. 1, 2, 5, 6, 9, 11 and 17 were sanctioned and commenced before Mr. Hardy's appointment in March 1879, while works Nos. 3, 4, 7, 8, 10, 12, 13, 14, 15, 16 and 18 were estimated for and sanctioned after that date. They were, however, all begun before I took charge of the district.

3. A total sum of Rs. 71,800 has been spent on irrigation works since the commencement of the Court's management of the estate. Of this, Rs. 26,210 has been spent on completed works, and Rs. 45,590 on incomplete.



* Court of Wards' proceedings, No. 2180, 1st September 1882, and Board's proceedings, Mis. No. 10169, 22nd December 1882.

4. The incomplete works, except No. 4, the Samiappen anicut project, which has been virtually abandoned* are—

| | Estimate. Rs. | Outlay. Rs. |
|---|---|---|
| No. 3, Theppamputti tank ... ... ... ... | 12,100 | 8,250 |
| ,, 5, Tank under old anicut ... ... ... ... | 9,260 | 7,982 |
| ,, 6, Theppam ... ... ... ... ... ... | 1,270 | 1,130 |
| ,, 13, Periacolum ... ... ... ... ... ... | 5,500 | 4,554 |
| ,, 14, Siroocolum ... ... ... ... .. ... | 3,850 | 2,832 |
| ,, 15, Peria anicut ... ... ... ... ... ... | 6,000 | 5,692 |
| ,, 16, Sengolam ... ... ... ... ... ... | 300 | 100 |

5. *No.* 3, *Theppamputti tank.*—The minor's mother having, among other things, made a specific complaint that out of the Rs. 8,000 charged to this work, only Rs. 4,000 was actually spent on it, I asked Mr. W. S. Harington, who was then in charge of the estate works (Mr. Hardy having gone on leave to England), to inquire and report. The report submitted by him shows that there is, at the very least, a difference of 38,322 cubic yards of earthwork, representing a money value of Rs. 3,718, between the quantity shown in Mr. Hardy's bills and that found on actual measurement by him, and that this difference was arrived at by him after making every allowance for weather during the past three years. In other words, Mr. Harington reported that the complaint made by the minor's mother was true.

6. The overseer, who executed the work, is dead. On receipt of Mr. Harington's above report, I ordered the suspension of the present acting overseer, who was suboverseer at the time when the above work was executed and his writer, and desired Mr. Harington to obtain and forward their defence. He has accordingly submitted written statements, in which they deny *in toto* their connection with the fraud, and state that the late overseer alone was responsible. It was suggested by Mr. Haringston that the overseer's former writer, who is now a vakil in the Paramagudi Munsif's Court, might be able to give some information tending to throw light on the subject, and a list of interrogatories, as submitted by Mr. Harington, was sent to him, and his replies were obtained and forwarded to Mr. Harington for his remarks. But no real light has been thrown on the matter by the statements of these inculpated persons.

7. *No.* 5, *Tank under old anicut.*—I have seen this tank. I am not sure whether the full amount of work has been executed for the sum shown to have been spent on it. But I may say that the expenditure has been in vain, because, even if the tank is completed, it can be of no use for the present, the old anicut, which used to supply this tank, being in a ruined state, and the construction of the new Samiappen anicut, by which it was proposed by Mr. Hardy to supply this tank, being now out of the question.

8. *No.* 6.—This work is almost finished. It is simply a large well situated in the head-quarter village, and is used for garden cultivation and drinking purposes. Mr. Harington reports that measurements taken show that there is full value in this work for the money expended.

9. *Nos.* 13, 14, 15 *and* 16.—On these works I fear that the money spent, viz., Rs. 13,178, has been entirely thrown away. Judging from the discovery made in the case of the Theppamputti tank, it is not at all unlikely that a large deficiency may be found in the quantity of work done, if these works are examined and measured up. They appear to have no ayacut at all, nor is the locality adapted for agricultural operations, for it is in the middle of what is, probably, the most deadly jungle in Southern India infested by wild beasts. It is impossible to induce ryots to go and cultivate lands in that place.

10. Very soon after I took charge of this district, I saw that economy was required in the Public Works staff of the Gandamanáyakanúr estate. Certain papers, which passed through this office regarding the Samiappen anicut, also convinced me that, whatever else Mr. Hardy might be, he certainly was not an Irrigation Engineer. I therefore (as far as the estate was concerned gladly) redeemed a promise made to my predecessor, and appointed him Local Fund Engineer of the Dindigul circle. I also

immediately afterwards dispensed with the services of his estate establishment, except a draftsman. The remaining establishment also has been discontinued, as reported in my letter, dated 25th August 1883, No. 263, and a maistry is now temporarily appointed to look after the emergent works in the estate (*vide* Court's proceedings, dated 23rd October 1883, Mis. No. 8809).

11. It may not be out of place to mention here that in January last I was within an ace of reporting to the Court of Wards Mr. Hardy's conduct in having, in spite of every form of order and reminder, most unduly delayed the submission of vouchers for expenditure on certain works, regarding which an anonymous accusation of embezzlement had been received. As, however, when the accounts and vouchers were eventually received, an immediate examination of them showed that they were apparently in order, I dropped the matter, censuring Mr. Hardy for his delay in replying to my repeated telegrams. But from what has now come out in regard to the Theppamputti tank work mentioned in paragraph 5, and from the fact that the vouchers connected with this tank work also were received along with the other vouchers now alluded to, I am now reluctantly compelled to suspect fraud in the preparation of these accounts and vouchers.

12. The accompanying statement will show that there has been no return worth speaking for the outlay incurred on the completed works. While in regard to the incomplete works I have to remark that the selection of the localities was far from happy, and there is now even reason to doubt whether the completion of these works may not have been purposely postponed, lest their uselessness should come to light. It may be that their completion was put off in view to keep up the establishment for sometime longer, or until the minor come of age.

13. In regard to buildings also, it is impossible to conceive worse work than has been put by Mr. Hardy on his own (estate) bungalow at Gandamanáyakanúr. This work has cost more than Rs. 4,000, and it was only completed in 1881. Unfortunately last year, I had no opportunity of closely examining the building, as it was then occupied by Mr. Hardy. The building has now not the least appearance of being new, it leaks all over the joists, and the beams are dangerously sagged, so much so that I had to put a prop in one place which seemed to be coming down, and the wood-work is of the coarsest description. In paragraph 2 of the proceedings quoted at the head of this letter, the Court have called for a report as to what should be done with the engineer's bungalow at Gandamanáyakanúr. I beg to submit that it should be retained for the minor's use. The locality is good, being, as it is in the bank of the Vaigai, at a reasonable distance from the village, and in an open and airy place, and I think that it is better to repair and improve the building at an additional cost of, perhaps, Rs 1,000 or Rs. 1,200, than to lose altogether the large outlay of Rs. 4,000 and odd already incurred. The minor when he comes of age will doubtless be glad to have a bungalow at this place, and his mother and stepmother, who were consulted on the subject, are in favor of maintaining the building.

14. Mr. Hardy having returned to Madura rather unexpectedly in the middle of October, I at once called upon him for explanation of the Theppamputti tank business. I can only describe the response made by him as most disingenuous. The Court will perhaps be able best to form an opinion on this point by reference to the marginally noted correspondence (copies enclosed), which has passed between him and me and Mr. Harington. The gist of it all is, that Mr. Hardy declines to afford any explanation until measurement books, which never existed, are produced, quite oblivious apparently of the obvious fact that, if he is unable to show that the work charged for by him is, or ever was, in existence, he is the only person interested

1. Letter to Mr. Hardy, dated 19th October 1883, No. 251.
2. Mr. Hardy's reply, dated 20th October 1883.
3. Endorsement to Mr. Harington, dated 22nd October 1883, Mis. No. 243.
4. His reply, dated 26th October 1883, No. 55.
5. Letter to Mr. Hardy, dated 23rd October 1883, No. 257.
6. His reply, dated 1st November 1883.
7. Endorsement to Mr. Harington, dated 2nd November 1883, Mis. No. 253.
8. His reply, dated 8th November 1883, No. 60.
9. Letter to Mr. Hardy, dated 16th November 1883, No. 278.

Mr. Hardy's reply not yet received.



in the disappearance of documents, which would be proof of his own direct complicity in the fraud.

15. Mr. Hardy is not in charge of the estate works at present, as he overstayed his leave, and consequently forfeited his appointment as Local Fund Engineer, Dindigul circle, and I do not think it expedient to put him again in charge of the estate works.

16. The Court will probably agree with me in thinking that, in the interest of the estate, a thorough examination of all the works completed and under progress should be conducted by an experienced officer of the Public Works Department in order to ascertain at a very early date, (1) whether or not the money has been properly expended, (2) whether there are any defects which can be remedied, (3) which of the works should be abandoned and which prosecuted to completion, (4) and whether any improvements to the irrigation of the estate are necessary and feasible.

17. It appears that formerly the estimates for works in the estates under wardship in this district were subject to the scrutiny and examination by imperial engineer officers, and that the latter had, besides, a sort of general supervision over the works conducted by the estate officers. This system was ordered to be discontinued (*vide* G.O., dated 6th August 1877, No. 2453), and the entire management of the estate works was entrusted to the engineer specially appointed for it. I submit that if the former system had continued, such waste and incapacity, as there is only too good reason to suspect in the case of Gandamanáyakanúr, could not have occurred.

18. I would, therefore, strongly recommend that the Government be moved to issue orders to the Public Works Department to the effect that the estimates for all Court of Wards' estate works should hereafter be checked and countersigned by a competent officer of that department before they are submitted for sanction, that the works should be finally examined by the same department, and that the estates should bear such proportion of the costs of the Department of Public Works establishment as the Government may fix.

19. At present in the huge Ramnad estate there is no engineer at all, and I do not think that the present staff of supervisor and overseers can properly be entrusted with the practically uncontrolled execution of the important works in progress in that estate. Further, the Court will, I think, feel that the responsibility involved in these public works is not such as the Collector of a district, who acts as their agent, can fairly be saddled with.

20. Lastly, as the next working season should not be lost in completing any works which can profitably be finished, I have the honor to request that the Court of Wards be pleased to recommend to Government to direct the Superintending Engineer of the circle to take such steps as may be necessary for the inspection of all the Gandamanáyakanúr estate works, and to furnish me with information on the points mentioned in paragraph 16, for submission to the Court of Wards. I do not think that it will take more than two months to finish this work. The estate must, of course, meet the cost of this special establishment, but it will be money well spent.

21. In the proceedings under reference, the Court further remark that the stores may be made over to the manager for deposit in his office, and that the watchmen should be dismissed. I beg to report that the stores have been handed over to the manager. Of the watchmen, one has been removed, and the other's services are retained, as sanctioned in their proceedings, dated 4th November 1883, Miscellaneous No. 9443. They also desire information regarding the large expenditure on the Samiappen anicut (items 7 and 8 as quoted by the Court, but entered as No. 4 in the accompanying statement). On this subject I beg to refer them to their proceedings, dated 23rd September 1880, Miscellaneous No. 10414, in which they condoned the unauthorized expenditure incurred on that abortive project, which has subsequently been abandoned.

22. With regard to the Court's observation in paragraph 4 of the proceedings under reply that the entries in the column for expenditure in Fasli 1292 do not correspond with those in the Court's audit registers, I beg to be informed as to how the figures (as regards irrigation works) in the audit registers were obtained, and

under what items discrepancies occur, as without such information the account department informs me that it is impossible to render the required explanation.

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Enclosures Nos. 1 to 9.—Correspondence, &c, as per list.

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Enclosure No. 10.

List of papers forming enclosures to the letter to the Court of Wards, dated 25th November 1883, No. 372.

1. Statement of ayacut, revenue, &c., of the irrigation works in the Gandamanáyakanúr estate.
2. Letter to Mr. Hardy, dated 19th October 1883, No. 251.
3. Mr. Hardy's reply, dated 20th October 1883.
4. Mr. Harington's reply, dated 26th October 1883, No. 55.
5. Letter to Mr. Hardy, dated 23rd October 1883, No. 257.
6. His reply, dated 1st November 1883.
7. Mr. Harington's reply, dated 8th November 1883, No. 60.
8. Letter to Mr. Hardy, dated 16th November 1883, No. 278.
9. List of records of Gandamanáyakanúr overseer's office handed over to Local Fund Engineer.

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Read—petition from J. T. HARDY, Esq., Court of Wards' Engineer, Madura, dated 23rd November 1883.

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*Resolution*—dated 20th December 1883, No. 3875.

The Collector's letter will be forwarded to Government with the request that an officer of the Public Works Department may be deputed at once to the Madura district for service, temporarily, under the Court of Wards, and in order, first of all, to carry out the inquiry suggested in paragraph 16 of the Collector's letter relative to the completed and incomplete works, and the buildings, in the Gandamanáyakanúr estate, and then to check and supervise the expenditure on works in the Ramnad estate.

2. The Court also support the Collector's proposal in paragraph 18 of his letter that all estimates for works in estates under the Court of Wards should be checked and countersigned by the District Engineer of the district where each estate is situated before the works are carried out.

3. Paragraph 22 of the Collector's letter will be disposed of in separate proceedings.

(True Copies and Extract.)

(Signed) E. GIBSON,
Acting Secretary.

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Mis. No. 152, Revenue.

Transferred to the Public Works Department for disposal.

Fort St. George,
14th January 1884.

(Signed) H. E. STOKES,
Secretary to Government.

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Telegram from the Superintending Engineer, VI Circle, to the Secretary to Government, Public Works Department, dated Trichinopoly, 17th January 1884.

No officer can be spared now as it is working season.



Order—dated 23rd January 1884, No. 213 W., Public Works.

With reference to paragraph 1 of the Proceedings of the Court of Wards, the Government resolve to place at the disposal of the Court the services of Mr. C. Vincent, Temporary Executive Engineer, who will, on return from Calcutta, proceed to Madura, and at once take up the inquiry in connection with works on the Gandamanáyakanúr estate, as recommended in paragraphs 16 and 20 of letter from the Collector of Madura, No. 372, dated 25th November 1883.

2. The question raised in paragraph 2 of the Proceedings, as to the check and countersignature, by Public Works officers, of all estimates for works in estates under the Court of Wards, as well as the question of the check and supervision of works on the Ramnad estate, will be disposed of separately. It is considered that, should this duty be assigned to the Public Works Department, a percentage on the value of the works will have to be paid as a contribution to the cost of Public Works establishments, as is now done by all funds other than "Provincial," to which the establishment is directly chargeable. The Chief Engineer will, after consultation with Superintending Engineers, report what percentage may be fairly charged, having in view the nature of the check required.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Revenue Department, with enclosures.
To C. Vincent, Esq.
To the Chief Engineer for Irrigation.
„ Superintending Engineer, VI Circle.

Exd. E. Fernandez.
Spare Copies

GENERAL.
ESTABLISHMENT.

# Govt. of {1884} Madras.

PUBLIC WORKS.

*Dated January, 23rd.*

*Recd.* *Encl.*

**G.O., 23rd Jan. 1884, No. 213 W.**

**JANUARY.**

---

**Mr. C. Vincent, Temporary Executive Engineer**

The services of — placed at the disposal of the Court of Wards for work on the Gandamanáyakanúr estate, with remarks as to the undertaking of estate works under the Court of Wards by the Public Works Department.

P. W. DEPARTMENT.

No.173 C dated 24th.January 1884.

CIRCULAR

The Court of Wards having proposed that all estimates for works in Estates under their supervision should be checked and countersigned by local Public Works Officers, the Government are of opinion that, should this duty be undertaken by Public Works Establishments, it will be proper to charge a certain percentage on the value of works as a contribution to Provincial Funds, to which the Establishment of the Public Works Department is directly chargeable.

2. Superintending Engineers are now requested to favor the Chief Engineer with their opinions as to the amount of the percentage which may be considered fair, having in view the nature of the professional service required. It will be remembered that, for full professional services, including supervision and execution of works, Imperial and other funds are now charged 23 per cent on outlay.

W. Mansfield

Col. R.E.

Chief Engineer P.W.D

To

Superintending Engineers.

GOVERNMENT OF MADRAS.

## PUBLIC WORKS DEPARTMENT.

General.
Establishment.

READ—the following paper:—

Proceedings of the Court of Wards, dated 25th March 1884, Mis. No. 2724.

*Read*—G.O., dated 22nd February 1884, Mis. No. 858, Revenue.

*Resolution*—dated 25th March 1884, Mis. No. 2724.

The appended statement A shows the amounts allotted for works in the 36 estates now under the Court of Wards in the present fasli 1293. These are principally irrigation works but include buildings and communications. Statement B shows the works under execution in the Ganjam district, and statements C and D, those in the Ramnad and Gandamanáyakanúr estates of the Madura district.

2. The Court maintains a permanent establishment in four estates only, viz.:—

| | Annual Cost. RS. |
|---|---|
| Parlákimedi ... ... ... ... ... ... ... ... | 18,298 |
| Kangundi ... ... ... ... ... ... ... ... | 450 |
| Ramnad ... ... ... ... ... ... ... ... | 5,982 |
| Gandamanáyakanúr ... ... ... ... ... ... ... | 1,692 |

3. In the other estates the works are executed by petty establishment and no details of the works are in the Court's office.

(True Extract.)

(Signed) G. MACKENZIE,
Acting Sub-Secretary.

ENCLOSURE.

A

STATEMENT showing the Allotments for Maramut Works to be carried out in the Estates under the Court's Management during Fasli 1293.

| Districts. | Names of the Estates. | Allotments for Maramut Works including Establishment Charges for Fasli 1293 as per Budget. |
|---|---|---|
| | | RS. |
| Ganjam ... ... | 1. Parlákimedi ... ... ... ... ... | 1,42,100 |
| | 2. Chinnakimedi ... ... ... ... ... | 14,657 |
| | 3. Urlam ... ... ... ... ... ... | 11,003 |
| | 4. Járada ... ... ... ... ... ... | 2,823 |
| | 5. Merangi ... ... ... ... ... ... | 5,500 |
| | 6. Pondúr Mullavaram ... ... ... ... | 225 |
| Vizagapatam ... | 7. Mádugula ... ... ... ... ... | ... |
| | 8. Chidicada Jaganáthapuram ... ... ... | 1,600 |
| | 9. Sripuram ... ... ... ... ... | 3,100 |
| | 10. Chípurupalle ... ... ... ... ... | 750 |
| | 11. Lakkavaram ... ... ... ... ... | 3,865 |
| Godávari ... | 12. Kapileswarapuram and Kesanakurru ... ... | 900 |
| Cuddapah ... ... | 13. Chittecherla ... ... ... ... ... | 734 |
| Chingleput ... ... | 14. Soranjeri ... ... ... ... ... | 1,100 |
| North Arcot ... ... | 15. Kangundi ... ... ... ... ... | 18,024 |

Statement showing the Allotments for Maramut Works to be carried out in the Estates under the Court's Management during Fasli 1293—*cont.*

| Districts. | Names of the Estates. | Allotments for Maramut Works including Establishment Charges for Fasli 1293 as per Budget. |
|---|---|---|
| | | RS. |
| Tanjore ... ... | 16. Ukkadai ... ... ... ... ... ... | 550 |
| | 17. Velanganni ... ... ... ... ... | 20 |
| | 18. Gandharvakóta ... ... ... ... ... | 600 |
| | 19. Vadapatṛimangalum ... ... ... ... | 3,849 |
| | 20. Alúngudicheri ... ... ... ... ... | 400 |
| | 21. Mathur ... ... ... ... ... ... | 300 |
| | 22. Papanad ... ... ... ... ... ... | 820 |
| Trichinopoly ... | 23. Nangaveram ... ... ... ... ... | 700 |
| | 24. Peramur ... ... ... ... ... ... | ... |
| Madura ... ... | 25. Ramnad ... ... ... ... ... ... | 56,512 |
| | 26. Do. Devastanam ... ... ... ... | 30,300 |
| | 27. Do. Chuttrums, Durmamaymai ... ... | 15,200 |
| | 28. Gandamanáyakanúr ... ... ... ... | 26,900 |
| | 29. Vadagarai ... ... ... ... ... | 1,350 |
| Tinnevelly ... ... | 30. M. Dalavoi Komarasami Moodeliar ... ... | 1,350 |
| Coimbatore ... ... | 31. Paravipolayam ... ... ... ... ... | 20 |
| Salem ... ... | 32. Erumaipatti ... ... ... ... ... | 500 |
| | 33. Shuligiri ... ... ... ... ... ... | 776 |
| South Canara ... ... | 34. B. Survathama Row ... ... ... ... | 302 |
| Malabar ... ... | 35. Kavalpara ... ... ... ... ... | 13,659 |
| | 36. Mangara ... ... ... ... ... | 251 |
| | Total ... | 3,60,740 |

(Signed) G. MACKENZIE,
Acting Sub-Secretary.

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Mis. No. 1456, Revenue.

Transferred to the Public Works Department, with reference to the order in that department, dated 13th February 1884, No. 387 W., paragraph 4.

FORT ST. GEORGE,
2nd April 1884.

(Signed) H. E. STOKES,
Secretary to Government.

---

ORDER—dated 28th April 1884, No. 1067 W., Public Works.

With their proceedings recorded above, the Court of Wards submit the information called for in paragraph 3 of G.O., No. 387 W., dated 13th February 1884, in respect to the works under their management.

2. The Court recommended, in their proceedings of the 14th January 1884, No. 96, that the estimates of all estate works should be scrutinised by officers of the Public Works Department, and that the works, on completion, should be examined and passed by them, the Superintending Engineer of the circle having a general control over all estate works within his charge. The actual execution of the works would, it is understood, still remain in the hands of the servants of the Court of Wards, subject only to the "general control" of the Superintending Engineer.

3. The responsibility under such an arrangement would, the Government consider, be somewhat divided. It would be simpler if the works were handed over entirely to the Public Works Department, and the engineering establishment of the Court of Wards placed under the orders of the Executive Engineer or other officer intrusted



with supervision. A contribution of 23 per cent. on outlay might be paid for full professional services, the pay of Court of Wards' subordinate establishments being, however, allowed as a deduction from this contribution. The Superintending Engineer would, under this arrangement, regulate the strength of the subordinate establishment in each case.

4. The Court of Wards will be requested, in the Revenue Department, to state whether they are prepared to accept these proposals.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Revenue Department, with six original statements.
To Superintending Engineers, } with copy of G.O., No. 387 W.,
To the Examiner, Public Works Accounts, } dated 13th February 1884.

Exd. E. Fernandez.
Spare Copies

GENERAL.
ESTABLISHMENT.

# Govt. of {1884} Madras.

## PUBLIC WORKS.

*Dated April, 28th.*

*Recd.* *Encl.*

**G.O., 28th April 1884, No. 1067 W.**

**APRIL.**

## Estates under the Court of Wards

Suggesting, for the consideration of the Court, certain arrangements for the execution of works in —.

18TH JUNE 1884, No. 1523 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

## PUBLIC WORKS DEPARTMENT.

General.
Establishment.

READ—the following papers :—

Proceedings of the Court of Wards, dated 4th June 1884, No. 1866.

*Read*—G.O., dated 14th May 1884, No. 2034, Revenue.

*Resolution*—dated 4th June 1884, No. 1866.

The Court of Wards accept the proposal made by Government.

2. The works on estates under the Court will be placed under the Public Works Department, and a contribution of 23 per cent. upon the outlay will be paid to Government.

3. The Superintending Engineer will regulate the strength of the subordinate establishment to be entertained by any estate, and this establishment will be under his orders. The cost of this subordinate establishment will be deducted from the contribution of 23 per cent. on outlay payable to Government.

4. The Court beg to represent that the Public Works Department staff will require some addition in the Ganjam and Madura districts.

(True Extract.)

(Signed) G. MACKENZIE,
Acting Sub-Secretary.

Mis. No. 2487, Revenue.

Transferred to the Public Works Department, with reference to the order in that Department, dated 28th April 1884, No. 1067 W.

OOTACAMUND,
13th June 1884.

(Signed) H. E. STOKES,
Secretary to Government.

ORDER—dated 18th June 1884, No. 1523 W., Public Works.

Communicated to Superintending Engineers for information and guidance, with reference to G.O., No. 1067 W., dated 28th April 1884.

2. The Examiner, Public Works Accounts, will issue such subsidiary instructions, in regard to accounts, as may be needed to give effect to the arrangements approved by Government.

(True Extract.)

Major, R.E.,
Under Secy. to Govt., P.W.D.

To Superintending Engineers.
To the Examiner, Public Works Accounts.
„ Revenue Department.

Exd. E. Fernandez.

Spare Copies

GENERAL.
ESTABLISHMENT.

# Govt. of {1884} Madras.

PUBLIC WORKS.

*Dated June*, 18*th*.

*Recd.* *Encl.*

**G.O., 18th June 1884, No. 1523 W.**

**JUNE.**

## Works in Estates under the Court of Wards

*The Court's approval of the proposals of Government for the execution of* —, communicated to Superintending Engineers.

Revenue Department

Proceedings of the Madras Government

Read the following

COURT OF WARDS, 19TH MAY 1884, No. 1689.

## PROCEEDINGS OF THE COURT OF WARDS.

READ—the following letter from C. S. CROLE, Esq., Collector of Madura, to the Secretary to the Court of Wards, dated 20th April 1884, No. 115 :—

With reference to the Court's Proceedings, dated 14th February 1884, Mis. No. 1346, I have the honor to forward herewith, in original, Mr. C. Vincent's letter, addressed to the Court, with its accompaniments as per margin. I beg to add that I have no detailed comment to offer, as Mr. Vincent's investigations bear out the representations made to the Court in my letter printed with the Court's Proceedings, dated 20th December 1883, No. 3875.

* 1. His report on the Irrigation Works of the Gandamanáyakanúr Estate.
2. Index to do.
3. Sketch map of Estate.
4. Sections and quantities of Theppampati tank.
5. Sections and quantities of Ondikaradu tank.
6. Copy of Mr. Hardy's certificates.

ENCLOSURE No. 1.

From C. VINCENT, Esq., Executive Engineer on Special Duty under Court of Wards, to the Secretary to the Court of Wards (through the Collector of Madura), dated 2nd April 1884.

I have the honor to forward herewith my Report on the Irrigation Works of the Gandamanáyakanúr Estate, to prepare which my services were lent to the Court of Wards in G.O., No. 213-W, of 23rd January 1884.

ENCLOSURES NOS. 2 AND 3.

Index to Report on Irrigation Works of Gandamanáyakanúr Estate.


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REPORT on the Irrigation Works of the Gandamanáyakanúr Estate, in the Madura District.

1. *Report called for.*—On the 26th April 1883, in replying to a reference from the Collector of Madura regarding the pay of two store watchmen employed on the Gandamanáyakanúr Estate, the Court of Wards called for a list of the existing Engineering establishment of the estate, showing its total cost, together with another list, showing the sanctioned works and the works then actually in progress on the estate, with their estimated cost. These lists were furnished by the Collector with his letter of July 20, 1883. In a resolution thereon, the Court of Wards asked what could be done with the Engineer's bungalow, which had cost Rs. 4,260, and which was said to be apparently useless; and also expressed its grave dissatisfaction at the non-completion of several of the works entered in the lists, and desired the Collector to take an early opportunity of visiting the estate, inspecting the works alluded to, and reporting on them. The Collector's report in reply to this resolution was dated November 25, 1883. He had visited the estate in the previous month, and had inspected as many works as the incessant rain had permitted, and from what he saw, he was of opinion that there had been, to say the least of it, a great waste of money. He was also of opinion that, in the interest of the estate, a thorough examination of all the works completed and under progress should be conducted by an experienced officer of the Public Works Department, in order to ascertain at a very early date—

(1) Whether or not the outlay had been properly incurred.
(2) Whether there were any defects in the works which could be remedied.
(3) Which of the works should be abandoned and which prosecuted to completion.
(4) Whether any improvements to the irrigation of the estate were necessary and feasible.

The Court of Wards, in its Proceedings, No. 3875, of December 20, 1883, on the Collector's letter, supported the proposal he had made, and Government, in its Proceedings in the Public Works Department, No. 213 W, of January 23, 1884, was accordingly pleased to place my services at the disposal of the Court, and I was directed to take up the inquiry demanded immediately on my return from Calcutta, where I had been detained on duty as Acting Commissioner for Madras in the International Exhibition. I arrived in Madras from Calcutta on the morning of February 13, and I left for Madura on the morning of February 24, the intervening days having been occupied in procuring tents, camp furniture, horses and servants, with all of which I found myself absolutely unprovided. I spent three days in Madura collecting the necessary papers and consulting with the Collector and the Local Fund Engineer, and finally arrived at Gandamanáyakanúr on the morning of March 3.

2. *The Estate.*—I will now proceed to the subject-matter of my report.

In the first place, it may be well to give a few statistics regarding the Gandamanáyakanúr Estate. It is situated to the east of what is known as Cumbum Valley in the Periyakulam Taluk of the Madura District, and runs along and into the range of high hills separating that from the Tirumangalam Taluk. The estate covers an area of 181 square miles and has a population of 28,711. The principal town of about 3,000 inhabitants is Vallanadi, where there is a Post Office, a recently-opened Local Fund Dispensary and a Police Station. The accompanying sketch map gives a fairly accurate idea regarding the estate. The estate has been under the Court of Wards since November 4, 1867,—the present Zemindar, who is a minor, being under the tuition of Mr. Gell in Madras. He is now 17 years of age. M.R.Ry. N. Krishna Ayyar is the manager of the estate, and has held the post for four years.

3. *Its Revenue.*—The following table shows the Revenue collections, and the outlay on Maramut and other works, fasli by fasli, since the Court assumed charge:—



STATEMENT No. 1.

| Fasli. | Collections. | Outlay on Maramut Works. | Outlay on other than Maramut Works. | Total. |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| | RS. | RS. | RS. | RS. |
| 1277 ... ... ... ... ... | 42,506 | ... | ... | ... |
| 1278 ... ... ... ... .. | 47,348 | ... | ... | ... |
| 1279 ... ... ... ... ... | 35,932 | 517 | ... | 517 |
| 1280 ... ... ... ... ... | 33,247 | 263 | ... | 263 |
| 1281 ... ... ... ... ... | 33,554 | 240 | ... | 240 |
| 1282 ... ... ... ... .. | 45,280 | 973 | ... | 973 |
| 1283 ... ... ... ... ... | 44,164 | 1,591 | 268 | 1,859 |
| 1284 ... ... .. ... ... | 43,086 | 1,160 | 706 | 1,866 |
| 1285 ... ... ... ... ... | 51,623 | 490 | 456 | 946 |
| 1286 ... ... ... ... ... | 31,008 | 6,078 | 498 | 6,576 |
| 1287 ... ... ... ... ... | 45,611 | 1,962 | 1,623 | 3,585 |
| 1288 ... ... ... ... ... | 43,148 | 3,147 | 928 | 4,075 |
| 1289 ... ... ... ... ... | 48,720 | 24,490 | 7,343 | 31,833 |
| 1290 ... ... ... ... ... | 50,394 | 30,067 | 8,499 | 38,566 |
| 1291 ... ... ... ... ... | 38,258 | 13,731 | 7,138 | 20,869 |
| 1292 ... ... ... ... ... | 71,435 | 4,600 | 4,388 | 8,988 |
| Total ... | 7,05,314 | 89,309 | 31,847 | 1,21,156 |
| Average ... | 44,082 | 6,379 | 3,184 | 8,654 |

4. *Its cultivated Area.*—The following statement shows the cultivation and Revenue Settlement of the estate for the two last faslis for which figures are available:—

STATEMENT No. II.

| — | Fasli 1291. | Amount. | Fasli 1292. | Amount. |
|---|---|---|---|---|
| | ACRES. | RS. | ACRES. | RS. |
| Dry, including garden ... ... ... ... | 33,224 | 48,590 | 40,535 | 58,361 |
| Wet ... ... ... ... ... ... | 844 | 1,984 | 845 | 1,999 |

It will be observed that the irrigated area is extremely small, amounting in all to only about 850 acres, which is about the average.

5. *Its irrigated Area.*—The irrigation works on the estate are, practically speaking, only fifteen in number, as shown in the succeeding table:—

STATEMENT No. III.

Statement showing the Extent of Cultivation, Revenue, &c., both prior and subsequent to the repair of Irrigation Works in the Gandamanáyakanúr Estate.

| No. | Name of Work. | Estimate Amount. | Outlay on Works. | Ayacut. | | Repair when completed. | Average Extent of Cultivation during the 3 years prior to the repair. | | Average Extent of Cultivation during the 3 years subsequent to the repair. | | Probable Extent that may be brought under cultivation. | | Increase of Column 8 over Column 7. | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Extent of Acres. | Assessment. | | Extent of Acres. | Assessment. | Extent of Acres. | Assessment. | Extent of Acres. | Assessment. | Extent of Acres. | Assessment. | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | | Rs. | Rs. | | Rs. | | | Rs. | | Rs. | | Rs. | | Rs. | |
| 1 | Tank under old anicut .. | 9,260 | 7,982 | 176 | 600 | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| 2 | Ondikaradu tank .. .. | 7,635 | 7,556 | .. | .. | Fasli 90.. | .. | .. | 6 | 17 | 41 | 118 | 6 | 17 | |
| 3 | Sawmiappen anicut and channel. | .. | 10,929 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | No estimate sanctioned. |
| 4 | Streepalacotta tank .. | 3,925 | 3,921 | 38 | 95 | .. | .. | .. | .. | .. | 53 | 135 | .. | .. | |
| 5 | Thathamoothen tank .. | 2,834 | 2,736 | 18 | 60 | Fasli 90.. | .. | .. | 23 | 80 | 6 | 20 | 23 | 80 | |
| 6 | Koduvilarputty do. .. | 1,580 | 1,578 | 26 | 65 | Do. 91.. | .. | .. | 26 | 65 | 3 | 7 | .. | .. | |
| 7 | Thadicherry tank .. .. | 3,615 | 3,594 | 135 | 450 | Do. 90.. | .. | .. | 129 | 476 | 6 | 20 | .. | .. | |
| 8 | Kovilangolum tank .. .. | 2,630 | 2,610 | 47 | 80 | Do. 91.. | .. | .. | 21 | 37 | 26 | 48 | .. | .. | |
| 9 | Periyakulam do. .. .. | 5,500 | 4,820 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| 10 | Sirococlum do. .. .. | 3,850 | 2,850 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| 11 | Peria anicut .. .. .. | 6,000 | 5,700 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| 12 | Oosoolampatty tank .. | 2,890 | 2,890 | .. | .. | Fasli 90.. | .. | .. | 14 | 34 | 10 | 26 | 14 | 34 | |
| 13 | Kannimarcolum do. .. .. | 1,997 | 1,992 | 1 | 2 | Do. 90.. | .. | .. | 6 | 15 | 12 | 35 | 6 | 15 | |
| 14 | Teppumputty do. .. .. | 12,100 | 8,250 | .. | .. | .. | .. | .. | .. | .. | 88 | 225 | .. | .. | |
| 15 | Athicary do. .. .. | 4,080 | 4,042 | 35 | 100 | Fasli 92.. | .. | .. | .. | .. | 35 | 100 | .. | .. | |
| | Total .. | 67,896 | 71,450 | 476 | 1,452 | .. | 176 | 578 | 225 | 724 | 280 | 784 | 49 | 146 | |

*N.B.*—The numbers in Column 1 correspond with the numbers on the sketch map.



It will be noticed that the ayacut of the fifteen works amounts to only 476 acres. I think, however, that the area has been under-estimated in some instances. The balance of wet crop is due to cultivation under wells and small ponds.

6. *Its Engineer Establishment.*—The following has been the arrangement regarding the construction and repair of the irrigation works on the estate since it came under the charge of the Court. An Overseer, S. M. Rangabashiyam Nayadu by name, was appointed in 1876, and in November 24, 1876, a Sub-Overseer, named T. Venkatarangam Nayadu, was appointed to assist him, and he had also a maistry. In July 15, 1875, a Surveyor was appointed under Colonel Fischer, R.E., the then District Engineer of Madura, to prepare estimates for the repair of the principal irrigation works on the estate. In 1879 Mr. Hardy was appointed to the charge of the Gandamanáyakanúr estate, and remained in sole charge till September 1882, when he was appointed Local Fund Engineer of Dindigul Circle in addition to the estate duties. In May 1883 he obtained three months' privilege leave, which he overstayed, and consequently forfeited his appointment; and Mr. Crole, in his letter of November 25, 1883, said he did not think it desirable to re-appoint him to the charge of even the estate works. It is alleged against him that in one case at least, that of Theppampatti tank, he was guilty, if not of absolute dishonesty, at least of culpable negligence, in that the earthwork billed for exceeded that actually executed, and it was presumed that similar circumstances might obtain as regards other works. It is also said that, whatever else he may be, he is certainly not an Irrigation Engineer. It will perhaps be better to defer the consideration of how far these charges are borne out by my investigations to a subsequent portion of this report. At present, however, a brief sketch of Mr. Hardy's career previous to his appointment as Zemindari Engineer may be appropriate.

7. *Mr. Hardy.*—Mr. J. T. Hardy would appear to have commenced his service in India about the year 1860. He had previously served his five years' apprenticeship under Mr. Mark W. Carr, and was brought to India by that gentleman, who became Chief Engineer of the Great Southern of India Railway. He was for two years on that line, and left in December 1862 to take up an appointment with the East India Irrigation and Canal Company in Orissa. He remained in the employ of this Company till September 1865, when ill-health compelled him to leave Orissa. He was then engaged by Messrs. Waring Brothers, who were contractors for the construction of a portion of the East India Railway, and he remained with them fifteen months, till December 1866, when he left owing to the near completion of the works. In April 1868 he was engaged by the Great Indian Peninsula Railway Company and worked as Assistant under Mr. Mesurier till October 1870, when his engagement was closed by a six months' notice on reduction of staff. Mr. Hardy states that subsequently he was engaged by one of the contractors employed on the Great Indian Peninsula line, and ultimately entered the service of the Company. In June 1872, however, he signed an agreement to go to Japan, but he re-appeared in India in 1877, was appointed a Special Famine Relief Officer, and was posted to the Tinnevelly District. He worked there for ten months and then went to the Bellary District, his services being dispensed with at the close of the famine in November 1878. On April 1, 1879, he received an appointment from the Court of Wards as Engineer to the Bodináyakanúr and Gandamanáyakanúr estates in the Madura District. In September 1879 the Zemindar of the former estate came of age, and Mr. Hardy's duties were confined to the latter. In October 1882 Mr. Crole, in consideration of a promise he had made to Mr. H. J. Stokes, appointed him Local Fund Engineer of Dindigul Circle in addition to his other duties. On May 25, 1883, he was granted three months' leave to England on medical certificate, which leave he overstayed, as has been already stated, and forfeited his appointment. He is now living in Madura, where he has lately recovered from an attack of small-pox. I gave him the option, unofficially, of accompanying me in my inspection of the works in the Gandamanáyakanúr Zemindari, but this offer he declined, stating that he was entirely out of funds. I attach to this report a copy of the certificates furnished me by Mr. Hardy, from which the Court will see that he has uniformly borne a good character. The last certificate of all is dated March 21, 1882, and is signed by Mr. H. J. Stokes. It is by no means the least favorable.

8. *Description of Works.*—I will now proceed to give a brief description of each of the various irrigation works on the estate. As I have already said in paragraph 2, there are practically only fifteen works that require to be noticed. I have visited each of these, and have carefully gone into the circumstances regarding it, aided by the Manager of the estate and by the Draughtsman who was employed under Mr. Hardy.

9. *Estimates and Outlay.*—The following statement shows the particulars of estimate and expenditure in the case of each work:—

STATEMENT No. IV.

| No. | Name of Work. | Amount of first Estimate and Date. | Second Estimate. | Third Estimate. | Fourth Estimate. | Total Sanction. | Expenditure previous to Mr. Hardy's appointment. | Expenditure subsequent to Mr. Hardy's appointment. | Total Expenditure. | Date of last Expenditure. | Date of Completion. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 1 | Tank under old Anicut .. | **Rs. 5,765—20th Aug. 1877.** | **Rs. 1,345—28th May 1878.** | Rs. 2,150—15th Jan. 1880. | .... | Rs. 9,260 | Rs. 1,254 | Rs. 6,727 | Rs. 7,982 | 30th Dec. 1880. | .... | Figures in antique type denote estimates prepared by Public Works Department. |
| 2 | Ondikaradu Tank (new work). | **Rs. 4,865—1877.** | **Rs. 2,243—6th Sept. 1877.** | Rs. 167—10th Mar. 1880. | Rs. 160—5th Mar. 1880. Rs. 200—31st Oct. 1881. | 7,635 | 4,181 | 3,375 | 7,556 | 28th May 1881. | 21st May 1881. | |
| 3 | Samiappen Anicut .. .. | Rs. 27,700—15th Mar. 1880. | .... | .... | .... | .. | .. | 10,929 | *10,929 | 4th Feb. ,, | .... | * No sanction to estimate, but this was the expenditure incurred. |
| | Samiappen Channel .. .. | Rs. 6,300—23rd Mar. 1880. | | | | | | | | | | |
| 4 | Sripalakota Tank .. .. | Rs. 3,000—6th Jan. 1880. | Rs. 550—3rd July 1880. | Rs. 375—24th Dec. 1880. | .... | 3,925 | .. | 3,921 | 3,921 | 30th June ,, | 10th May ,, | |
| 5 | Thathamuthan do. .. .. | **Rs. 2,500—15th Dec. 1876.** | Rs. 334—15th Jan. 1880. | .... | .... | 2,834 | 787 | 1,949 | 2,736 | 30th June ,, | 31st Apr. ,, | |
| 6 | Koduvilarpati do. .. .. | Rs. 1,580—25th Oct. 1880. | .... | .... | .... | 1,580 | .. | 1,578 | 1,578 | 30th Dec. ,, | 20th Dec. ,, | |
| 7 | Thadicheri do. .. .. | **Rs. 2,073—14th Sept. 1877.** | **Rs. 986—9th June 1878.** | Rs. 556—6th Jan. 1880. | .... | 3,615 | 480 | 3,114 | 3,594 | 30th June ,, | .... | |
| 8 | Kovilangulam do. .. .. | Rs. 2,550—10th Mar. 1880. | Rs. 80—17th Jan. 1883. | .... | .... | 2,630 | .. | 2,610 | 2,610 | 30th Mar. 1882. | 24th Oct. ,, | |
| 9 | Periyakulam do. .. .. | Rs. 5,500—15th Nov. 1880. | .... | .... | .... | 5,500 | .. | 4,820 | 4,820 | 6th July ,, | .... | |
| 10 | Sirukolam do. .. .. | Rs. 3,850—15th Nov. 1880. | .... | .... | .... | 3,850 | .. | 2,850 | 2,850 | 6th July ,, | .... | |
| 11 | Periya Anicut .. .. | Rs. 6,000—15th Nov. 1880. | .... | .... | .... | 6,000 | .. | 5,700 | 5,700 | 26th Apr. ,, | .... | |
| 12 | Oosoolamputty Tank .. | **Rs. 2,100—3rd Oct. 1877.** | **Rs. 248—9th Dec. 1878.** | Rs. 500—6th Jan. 1881. | Rs. 42—3rd July 1880. | 2,890 | 1,211 | 1,679 | 2,890 | 18th May 1880. | May 1880 .. | |
| 13 | Kunnimarcolum do. .. .. | **Rs. 1,292—14th Sept. 1877.** | **Rs. 55—18th July 1878.** | Rs. 600—12th Feb. 1880. | Rs. 50—15th Sept. 1881. | 1,997 | 665 | 1,327 | 1,992 | 31st Oct. ,, | 3rd Nov. 1880. | |
| 14 | Theppampati Tank (new work). | Rs. 12,100—9th Apr. 1880. | .... | .... | .... | 12,100 | .. | 8,250 | 8,250 | 26th Mar. 1883. | .... | |
| 15 | Athicary Tank .. .. | Rs. 4,080—25th Oct. 1880. | .... | .... | .... | 4,080 | .. | 4,042 | 4,042 | 26th Mar. ,, | 19th Mar. 1883. | |
| | Total .. | .... | .... | .... | .... | 67,896 | 8,578 | 62,871 | 71,450 | .... | .... | |

*N.B.*—The numbers in Column 1 correspond with the numbers on the sketch map.

10. *Details regarding each.*—A few remarks regarding each of the fifteen works are appended.

(1) *Tank under old Anicut.*—This is a tank situated close to the head-quarters village, and which was formerly supplied by an anicut across the river Vaigai, which is now in ruins. Mr. Hardy submitted a scheme for the construction of a new anicut a mile higher up the river than the old one, which was to supply this and other tanks. I shall have to speak of both of these anicuts again. It suffices to say now that, without some supply from the river, the tank is quite valueless, as its natural drainage basin is insufficient. The bund is about one and-a-half miles long, and the tank ayacut is said to be 300 acres, but both the ayacut and the bed are now, through long disuse, overgrown with scrub-jungle. The total expenditure on the tank has been Rs. 7,982 against an aggregate of estimates of Rs. 9,260. Although no completion report has been submitted, all that appears to be necessary has been carried out, and the execution of the work has been good.

(2) *Ondikaradu Tank.*—This is a new tank situated about 1 mile from the head-quarter village. It was designed to irrigate about 60 acres, but at present only serves 5 or 6 acres. The reason for this is that the land below the tank consists of scrub-jungle, and has not, with the above small exception, been yet adapted to wet cultivation. But under no circumstances would the assumed ayacut of 60 acres be approached. The supply is very small, and the bund has been made very much too high for the circumstances of the tank, the hydraulic details regarding which have evidently not been very carefully worked out. In no case, I should say, would the supply be sufficient for more than 20 acres.

(3) *Samiappen Anicut and Channel.*—It has been stated in connection with the so-called "*Tank under the old Anicut*" that this previously received a supply from an old work across the river Vaigai, which Mr. Hardy proposed to replace by a new work 1 mile higher up the river. He submitted his first estimates in October 1880. These amounted in the aggregate to Rs. 69,400, distributed as follows :—

| | | Rs. |
|---|---|---|
| Anicut ... ... ... ... ... ... ... ... | | 27,700 |
| Eastern Channel ... ... ... ... ... ... ... | | 16,700 |
| Western do. ... ... ... ... ... ... ... | | 25,000 |

It was calculated that 2,400 acres of additional cultivation would be supplied on the east side and 9,600 additional acres on the west side, resulting in an increased revenue to the estate of at least Rs. 25,000. These estimates were forwarded to the Court of Wards, and by it to the Chief Engineer for Irrigation for opinion, who returned them with his letter, No. 6-W., of February 4, 1881, for further information. The estimates were revised by Mr. Hardy and re-submitted in October 1881, the revision having increased the total to Rs. 97,500 as follows :—

| | | Rs. |
|---|---|---|
| Anicut ... ... ... ... ... ... ... ... | | 34,500 |
| Eastern Channel ... ... ... ... ... ... ... | | 18,000 |
| Western do. ... ... ... ... ... ... ... | | 44,500 |

The estimated return of Rs. 25,000 per annum remained unaltered. The papers were again forwarded by the Court of Wards to the Chief Engineer for Irrigation, who in an elaborate note, dated December 21, 1881, pointed out several defects in the designs, and the omission of much information that was absolutely essential to the proper consideration of so important a project. The estimates were finally re-submitted by Mr. Hardy on June 22, 1882, and amounted to Rs. 1,15,000 as follows :—

| | | Rs. |
|---|---|---|
| Anicut ... ... ... ... ... ... ... ... | | 35,000 |
| Eastern Channel ... ... ... ... ... ... ... | | 18,000 |
| Western do. ... ... ... ... ... ... ... | | 62,000 |

These were forwarded to the Court of Wards, which finally referred the question of the feasibility of the works to the Chief Engineer for Irrigation; and that of the right of the Zemindari to an increased supply from the river, which might and probably would prejudice riparian owners lower down, to the Government Pleader. Both opinions were adverse. Though the possibility of carrying out the works was admitted by the Chief Engineer for Irrigation, some of the designs were again condemned, and it was pointed out that no right to an additional supply could be recognized on account of the Periyar project, to the approaching execution of which reference had been made. The Government Pleader was of opinion that the Zemindari would not have a right to more water than had previously been supplied by the old anicut, and this finally settled and shelved the question of construction. Meanwhile, however, Rs. 10,930 had been spent in anticipation of sanction, on the authority of the late Collector, in preparing materials, in cutting a diversion channel for the river to facilitate the construction of the anicut, and in excavating a portion of the east channel. This must, therefore, be looked upon as wholly unremunerative outlay, as also must, at least for the present, the Rs. 7,982 spent on the "*Tank under the old Anicut.*"

(4) *Sripalakota Tank.*—This is an old tank situated some 8 miles to the south of the head-quarters village. It was apparently designed to irrigate 50 or 60 acres, but the bund is now perforated with breaches, so that no irrigation from it is possible, and the ayacut is waste. It is supplied, in addition to natural drainage, by a considerable jungle-stream, which has apparently breached the tank on a previous occasion. This breach has been well restored, but a very wide and deep breach due to the same cause now exists (in addition to smaller breaches), and a considerable expenditure and some very careful work would be required to render it sound and strong.

(5) *Thathamuthan Tank.*—This is an old tank situated 2 miles beyond the one last mentioned. It irrigates about 30 acres, and receives an apparently good supply by means of natural drainage. The bund is in good order, with the exception of a small and unimportant breach at the extreme east end. A small estimate for the repair of this has been sanctioned by the Collector.

(6) *Koduvilarpati Tank.*—This is a tank 4 miles west of Vallanadi, irrigating about 10 acres through one sluice. It receives a small supply by means of a jungle-stream, and is also said to be fed by the surplus of the tank to be next noticed, but this I should doubt. The bund, though considerably cut up, is still fairly strong and good. A small estimate for strengthening the bund of this tank has been sanctioned by the Collector.

(7) *Thadicheri Tank.*—An old tank, and by far the finest on the estate. It irrigates about 60 acres through one sluice, the second sluice not being used. The bund is throughout in very good order, and has a massive revetment for a portion of its length. It is curious that this is the only tank on the estate that has any revetment at all. It is supplied wholly by natural drainage, and contains six months' supply when full. It had at least two months' supply remaining when I saw it.

8. *Kovilangulam Tank.* (9.) *Periya Anicut.* (10.) *Periyakulam Tank.* (11.) *Sirukulam Tank.*—I will first say a few words with regard to these collectively, and then proceed to deal more particularly with each. They are all situated in what is known as the Warisanad valley, which belongs to the Gandamanáyakanúr estate, and runs for 25 or 30 miles into the hills towards Travancore parallel to the Cumbum valley. It is traversed from end to end by the river Vaigai, here, however, only a comparatively small stream. Mr. Crole says with regard to these works in his letter to the Court of Wards, No. 372, of November 25, 1883:—"They appear to have no ayacut at all, nor is the locality adapted for agricultural operations, for it is in the middle of what is, probably, the most deadly jungle in Southern India, infested by wild beasts. It is impossible to induce ryots to go and cultivate lands in that place." This is a very sombre, and perhaps rather too darkly-colored, picture. The valley is undoubtedly most unhealthy during certain periods of the year, March, April and May being reputed the worst months; but at other times, though of course fever is very prevalent, the jungle people who inhabit the place do actually cultivate dry crops, and would doubtless also cultivate wet crops if they had the opportunity. But the opportunity does not, and, except at an utterly unjustifiable expenditure, could not be made to exist. The portion of the valley where the works in question are situated is extremely wild, consisting of nothing but very dense scrub-jungle, and is such a favorite resort for elephants that the ground is almost as thickly strewn with evidences of their presence as is the neighbourhood of an Indian village with the evidences of cattle. If one could dispose of the elephants and clear the jungle, then it might be possible to usefully repair the few old irrigation works which I will now proceed to more particularly describe.

(8) *Kovilangulam Tank.*—This is the furthest up the valley of any of the tanks, and Rs. 2,610 were spent on its repair in 1881. A patch of ground, about 20 acres in extent, has been cleared in front of the bund, and some irrigation was attempted on this the year after the tank was repaired. But the one sluice which the tank possesses is now out of order, and the bund, the bed, and the supply channel are all overgrown with high jungle grass, and thick, thorny jungle. The said channel is about 4 miles long, and is fed by a dam across the river. Rs. 1,245 were spent in endeavors to clear and restore it in 1881 and 1883, but fruitlessly, for it is now again breached. It would be useless to think of spending any more money upon it, but it would be worth while, I think, to repair the tank sluice, which could be done at small cost, as the tank bund is strong and good. I would then let the cultivators, if any come forward bold enough to dispute the ayacut with the elephants and the jungle, take their chance of an occasional natural supply.

(9) *Periya Anicut.*—This is an old work and the existence of it goes to prove that irrigation was at one time possible in this portion of the valley. But the idea of its restoration and of that of the tanks under it rather savours of wildness. At any rate it would require a considerable expenditure to put the anicut into proper order, for it is in a somewhat rotten condition throughout, the water finding its way in considerable freedom round and under it. It is situated at a point where there seems to have been a sharp natural fall in the bed of the river and is about 150 feet long by 9 feet broad. An embankment carries the channel that runs from its right flank to some sand sluices 100 yards distant, through which all the water that now enters the channel



returns to the river, the channel below these sluices being silted up. About 5 feet of water passes over the dam during freshes. Mr. Hardy's expenditure was utilized in closing a breach in the dam, in raising its crest, and in restoring the apron. The closing of the breach remains good, but all the other work that is said to have been executed has practically disappeared. However, the dam is still sufficiently serviceable; but as it is of course useless, unless the channel and tanks dependent on it are in working order, which they are not, the expenditure may be treated as money thrown away.

(10) *Sirukulam Tank.*—The first tank below the Periya anicut, at a distance of about 1½ miles, is called Sirukulam. A considerable expenditure, Rs. 2,849, was incurred on this in restoring the bund and in making a cut for a new sluice, but it has been utterly wasted, for the whole place, tank-bed, bund, and ayacut, are now overgrown with close jungle, through which I with difficulty cut my way by the aid of half-a-dozen coolies armed with bill-hooks. It was utterly impossible, except here and there, to catch more than a glimpse of the bund. About a mile of so-called channel, but which is exactly similar to the ground I have just described, leads from Sirukulam to—

(11) *Periyakulam Tank.*—Of this I need only say that the bed, bund and ayacut are a trifle clearer of jungle than those of Sirukulam, but no water could get to it that had not previously passed through the latter.

(12) *Usilampati Tank.*—This is an old tank situated three miles to the east of Vallanadi which receives a small supply by means of a jungle stream. One high level and one low level sluice have been put into it, but only the latter is used to supply the 5 or 6 acres of precarious irrigation that the tank commands. The water-supply is evidently very deficient, and the bund has been made much higher and longer than was necessary.

(13) *Kannimarkulam Tank.*—This is situated two miles from the tank last mentioned and three miles north of Vallanadi. It is rain-fed and irrigates about 10 acres through one sluice. The bund is in fair order generally, but somewhat cut up in places. The supply is poor, and this bund also is higher and longer than is necessary.

(14) *Theppampati Tank.*—Further reference will be made to this tank in a subsequent portion of my report. It is a new tank and was estimated to cost Rs. 12,100, of which Rs. 8,250 have been actually expended. It curves round the base of some hills situated 10 miles east of Vallanadi. It is rain-fed, the water which falls on the hills collecting into a number of streams which it was intended should discharge into the tank. But the bund was never completed, those portions of it intended to close these streams never having been made, and I am very doubtful whether it is now worthwhile undertaking its completion. Heavy revetment and very careful earth-work, involving considerable expenditure, would be required where these streams run in, and it may on the whole be best to be satisfied with the present dry cultivation in the bed of and below the proposed tank, unless a very careful estimate of the financial results of its completion showed a sufficient and certain percentage of profit. The cost of completion may be estimated roughly at Rs. 10,000.

(15) *Athikari Tank.*—This tank is situated nine miles to the north of Vallanadi. It is an old work that used formerly to irrigate, it is said, 40 or 50 acres. It now irrigates about 6 acres through two sluices. It is rain-fed. The bund is good, except at the site of an old breach which has been badly closed, where it needs attention. The ryots complain that the crest of the calingulah is too low, and so it is for the height of the bund. The real fact however is that, in this as in other cases, the bund is too high and too long.

11. *Works omitted.*—This completes the list of the tanks on the estate that can be fairly classed as irrigation works. In the list submitted by Mr. Crole to the Court with his letter, No. 372 of 25th November 1883, eighteen works were entered, but I have omitted from my list the following—

(1) Theppam Tank Repair.
(2) Well in Minor's Garden.
(3) Senkulam Tank.

The first is not a tank, but simply a large well to supply a garden belonging to the minor with water. Rs. 1,219 have been usefully spent upon it. The second is simply a small well which cost Rs. 200 to excavate. To the third no work was executed. It is a tank situated in the Warisanad valley, and the same conditions obtain with regard to it as have been mentioned in connection with other works in the same locality. Only Rs. 100 were spent on it in clearing jungle to enable levels to be taken.

12. *No opinion regarding amount of work.*—It will doubtless be observed that in the foregoing remarks, I have carefully abstained from expressing my opinion as to whether there is, in the case of each work, full money value for the expenditure which has been charged against it. To this abstension I must, I regret to say, adhere, except in the case of the two new tanks, Theppampati and Ondikaradu, although it practically involves giving an only partial answer to the first of the questions, as mentioned in paragraph 1, referred to me for disposal. This result of my investigations, if at first sight considered disappointing, will not, I think, continue to be so

looked upon, when I say that, in the first place, any opinion on the point that I might express would be wholly empirical and unreliable, and that, in the second place, it is not of any great importance, in my estimation, that judgment should be pronounced either on one side or the other.

13. *Minor importance of question.*—The question may be looked at from two points of view, that of the estate and that of Mr. Hardy. As regards the first, in the case of each of the repair works no sections of the bund appear to have been taken when the estimates were prepared. At any rate none are now forthcoming. The only way therefore of calculating the quantity of earth-work executed would have been to measure the pits from which the earth was dug. Now as no measurement books appear to have been kept, as there is no one who can point out whence earth was taken, and as, in every case, several monsoons have passed over the pits, and if not entirely obliterated them, at least washed down their sides and silted up their beds, no measurements that I could have taken would have possessed the slightest value, even had I been able to discover the pits, as I was not. Check measurements, to have had any value, should have been taken two or three years ago.

But so far as the estate is concerned the question is one of very mediocre importance, for the bills for work executed—whether actually so or not—have long since been paid, and there can be no question, I take it, of a refund from any person or persons. Neither would there, in my opinion, be much use in instituting a criminal or civil prosecution against any one. The Overseer who was principally responsible for the works is dead, and negligence is probably the most that could be alleged against Mr. Hardy.

So far as Mr. Hardy's personal character is concerned, it may very well, I think, stand or fall by the result of the investigations regarding the two new tanks, Theppampati and Ondikaradu, to which I will now allude.

14. *Theppampati Tank.*—One investigation as regards the quantity of earth-work executed to Theppampati tank has previously been made by Mr. Harington, the Local Fund Engineer of the Madura Circle, in July of last year. He reported that whereas the earth-work billed and paid for amounted to no less than 81,890 cubic yards, the amount executed according to his measurements amounted to only 26,601 cubic yards. Another measurement of the pits made by an Overseer under Mr. Harington's orders gave a result of 43,568 cubic yards, but there were reasons for supposing that this last total was too large. Mr. Harington's own method was admittedly rough and approximate, so that in order to thoroughly test the question, I had sections taken of the bund as it exists, and the quantities deduced therefrom. By this means, I have included all the earth that has been washed down from the side slopes to the bottom of the bund since the earth-work was originally executed, and though it is impossible to say that the results I obtain are *absolutely* correct, it may be accepted as certain that they are so within, say, a margin of 10 per cent. In fact, I should call that a very liberal margin. The result at which I arrive is that 29,265 cubic yards were executed without allowing any margin, or 32,191 cubic yards with a 10 per cent. margin. It will be noticed that the result does not differ very greatly from that arrived at by Mr. Harington, and one is therefore forced to the unpleasant conclusion that 50,000 cubic yards, more or less, or nearly 200 per cent., were charged for than were actually executed.

The amount of earth-work allowed for in the estimate for Theppampati tank was 112,269 cubic yards, but no cross-sections exist to enable me to see how this amount was arrived at, and whether it was correctly calculated or not. Judging, however, by the tank as it now stands, I confess that the presumption is raised in my mind that the estimate amount was deliberately over-calculated, from which it would follow that a deep scheme was laid by the Overseer at the time he prepared the estimates to charge for more work than could ever have been actually carried out.

15. *Ondikaradu Tank.*—I regret to have to add that a very similar report has to be given with regard to Ondikaradu tank. The estimated amount of earth-work in that case was 61,558 cubic yards, the amount billed for was 64,393 cubic yards, and the amount executed was, according to my calculations, only 39,463 cubic yards, or 43,409 cubic yards, allowing a 10 per cent. margin.

16. *Summary of Mr. Hardy's case.*—My report so far has been a sort of review of Mr. Hardy's connection with the estate, and it seems therefore essential that I should now endeavour to sum up the case for and against him as impartially as I am able. The more specially so that he himself said to me: "My whole future career depends on the result of your investigations, for I stand charged with incompetency and shall never obtain employment in future unless I am exonerated."

17. *Case against him*—(1) *particularly.*—His case may best be stated, first, particularly as regards Theppampati and Ondikaradu tanks, and then generally as regards the other works on the estate. Now in the matter of Theppampati and Ondikaradu tanks very gross negligence is, I fear, the least verdict that can be pronounced. One naturally hesitates to go further and to say that Mr Hardy himself was guilty of deliberate fraud. My own impression, derived from the perusal of all his records during the time he was in charge of the estate, is that he was not fraudulent but negligent. I fancy he left everything in the hands of his Overseer, allowing the latter



to prepare the estimates with such little plans as were ever drawn, to measure the works, and to draw up the bills; and that he was most grossly and outrageously swindled.

18. *Case against him*—(2) *generally.*—It would also be idle to pretend that the general management of the other works on the estate has been good. The conditions obtaining with regard to each have not been accurately weighed, the designs have not been carefully prepared, and there has been much wholly useless and much needlessly excessive expenditure. The system by which advances were given to contractors, and the works only measured on completion, was very faulty; in addition to which no regular system of recording measurements, even when made, was adopted. Mr. Hardy persists in asserting that measurement books were maintained and were checked and initialled by him in the orthodox manner. These, he declares, disappeared when Overseer S. M. Rongabashiyam Nayadu died, whose papers, by the way, were found to be extremely incomplete and confused. But the evidence as to the non-existence of measurement books at any time is absolutely conclusive. That, as I take it, is the case against him.

19. *Case in his favor.*—On the other hand it must be stated that as an officer of the Irrigation Branch of the Public Works Department I am naturally inclined to judge even petty tank repairs by a very high standard.

Thanks to a long course of instruction by a succession of eminent hydraulic engineers, we have arrived at what I may term the apotheosis of scientific tank maintenance. And the same holds good, only, if possible, in a more stringent degree, with regard to designs for important works like the Samiappan anicut. And something very similar might be said with regard to our system of accounts, while there is an elaborate code to guide even the most ignorant in matters of petty detail. From the Public Works point of view then Mr. Hardy has been very much lacking, but it would be absurd to judge him by this high standard. He had no code to guide him, not much previous knowledge of the Government system of accounts, and no experience of tank repairs. What he has done he has done well. His earth-work is good and his sluices and calingulahs are not bad. And until almost the very close of his service in the estate he had always received the countenance and warm approval of his immediate superior, the Collector of the district. The system under which he kept his accounts was known and tolerated. His selection of works was approved. His Samiappan anicut was not only recommended for sanction. in spite of the doubts regarding it expressed by the Chief Engineer for Irrigation, but Rs. 10,000 were allowed to be spent upon it in anticipation of sanction. Being posted to Gandamanáyakanúr and being given a good salary (Rs. 350 per mensem), it was necessary for him to justify his existence. But it was like having to make bricks without straw. He had to repair useless works at an excessive cost and to invent unnecessary new ones. But had he not done so he could scarcely have been maintained in his appointment, and it is hard to blame a man because he endeavoured to prove that he was necessary. It was scarcely for him to say, "the estate does not require me, an Overseer on Rs. 100 a month with one clerk are all that is really necessary."

The following figures are, however, instructive:—

V.—Statement showing the Expenditure on Works and the Cost of the Maramat Establishment Fasli by Fasli.

| Fasli. | Expenditure on Maramat Works. | Cost of the Maramat Establishment. | Total Expenditure. | Remarks. |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| | RS. | RS. | RS. | |
| 1276 ... ... | ... | ... | ... | |
| 1277 ... ... | ... | ... | ... | |
| 1278 ... ... | ... | ... | ... | |
| 1279 ... ... | 517 | ... | 517 | |
| 1280 ... ... | 263 | ... | 263 | |
| 1281 ... ... | 240 | ... | 240 | |
| 1282 ... .. | 973 | ... | 973 | |
| 1283 ... ... | 1,591 | 268 | 1,859 | |
| 1284 ... ... | 1,160 | 706 | 1,866 | |
| 1285 ... ... | 490 | 456 | 946 | |
| 1286 ... ... | 6,078 | 498 | 6,576 | |
| 1287 ... .. | 1,962 | 1,623 | 3,585 | |
| 1288 ... ... | 3,147 | 928 | 4,075 | |
| 1289 ... ... | 24,490 | 7,343 | 31,833 | Year of Mr. Hardy's appointment. |
| 1290 ... ... | 30,067 | 8,499 | 38,566 | |
| 1291 ... ... | 13,731 | 7,138 | 20,869 | |
| 1292 ... ... | 4,600 | 4,388 | 8,988 | |
| Total ... | 89,309 | 31,847 | 1,21,156 | |

During Mr. Hardy's tenure Rs. 72,888 were spent on works and Rs. 27,368 on establishment, the proportion being 37·5 per cent.

That, I take it, is the general case in Mr. Hardy's favor.

20. *Further Points.*—This finishes everything I have to say in regard to the first point referred to me, viz., "whether or not the money has been properly expended."

The second, third, and fourth points are, whether there are any defects which can be remedied; which of the works should be abandoned and which prosecuted to completion; and whether any improvements to the irrigation of the estate are necessary and feasible. I can dispose of these very briefly, especially as I express my opinion about them with considerable reserve. Colonel Montgomerie, R.E., is, as the Court is probably aware, now engaged in preparing an elaborate scheme for the thorough restoration of every irrigation work worth maintaining in this portion of the Madura District, and as he includes the Gandamanáyakanúr Estate in the scope of his operations, and as his conclusions are certain to be adopted, my own opinions on the points in question possess only a temporary and very minor importance.

21. II. *Defects to be remedied—Whether there are any Defects which can be remedied.*—I think not. As I have said, all the work that has been done has been well done. Breaches of course should be repaired, where they exist, in the tanks it is intended to maintain, but this would form portion of the annual scheme of irrigation maintenance on the estate.

22. III. *Works to be abandoned—Which of the Works should be abandoned and which prosecuted to completion.*—The sluice of the Kóvilángulam tank in the Warisanád valley should be repaired. All the other works there situated should be abandoned. Theppampati tank should also be abandoned, in my opinion. All the remaining works on the estate should be maintained. They have all been completed, and only need ordinary maintenance.

23. IV. *Improvements feasible—Whether any Improvements to the Irrigation of the Estate are necessary and feasible.*—I think none are necessary with one exception, and that is the restoration of the old anicut across the Vaigai. This would have to be entirely rebuilt, and the channel cleared. The required outlay would not be less than Rs. 25,000, supposing the work to be thoroughly well done. A careful estimate of the probable resulting increase to revenue should be made in order to ascertain whether the outlay would be profitable.

24. *No Irrigation on Estate.*—The real fact is there is no irrigation worthy of the name on the estate; nor ever could be. The Vaigai as a source of supply may be put on one side, for it has been authoritatively laid down that the estate would have no right to diminish the supply in that river. And otherwise the rainfall is scanty (it averages 24 24 inches per annum at Periyakulam), and is almost all absorbed by the very extensive and excellent dry cultivation on the estate. The supply to every existing tank, with the exception of Thádichéri, is deficient from this cause, and no new tanks would ever be better circumstanced than are the old ones.

25. *Roads wanted.*—What the estate wants is not irrigation works but roads. It pays about Rs. 3,400 a year as Local Fund cess, but derives no corresponding benefit, for there is not a road on the estate, only village tracks. The estate has over 1½ lakhs of accumulated balance in hand, and if I may be permitted to express an opinion on a matter not directly referred to me, I should say that a portion of this amount could not be more profitably spent than in making one road from Vallanadi, 7 miles long, to meet the Cumbum-Gúdalúr road, and another road from the same place, 9 miles long, to meet the Andipati road. The Local Fund Board of the Dindigul Circle might fairly be expected to enter into an agreement to maintain these roads in perpetuity, provided the estate defrayed the whole cost of construction. A small amount might also be spent in improving the existing cart track from Vallanadi to Chinnammanúr, 14 miles in length, and the roads in the head-quarter village. Roughly speaking, a portion of the 1½ lakhs might be usefully spent as follows:—

| | Rs. |
|---|---|
| Road 7 miles long to join Gúdalúr road at Rs. 2,500 a mile. | 17,500 |
| „ 9 „ Andipati „ at „ 3,500 „ | 31,500 |
| Improving existing village track, 14 miles long to Chinnammanúr, at Rs. 1,000 per mile ... ... ... ... | 14,000 |
| Improving roads in Vallanadi ... ... ... ... | 5,000 |
| Total for roads ... | 68,000 |
| Restoring old anicut across the Vaigai ... ... ... | 25,000 |
| Total ... | 93,000 |

A good balance would thus still remain in hand.

26. *Necessary Establishment.*—As regards the execution of these and similar works, I think an Overseer on Rs. 60 to 80 a month should be engaged to carry them out. He would require a writer and a maistry, each on Rs. 15 a-month, and a couple of lascars. He should be under



the orders of the Estate Manager. In the case of the roads, the Local Fund Engineer of Dindigul Circle might give occasional assistance.

27. *Thanks to Manager.*—In conclusion, I desire to express my sense of the great assistance rendered me by the Manager of the estate, M. Krishna Ayyar, and of the courtesy he displayed in accompanying me in many of my inspections.

28. *Bungalow to be retained.*—I would also add that in my opinion the bungalow built by Mr. Hardy at Gandamanáyakanúr should decidely be retained for the use of the minor. It is well situated, and, though badly built, is still very serviceable, and could be improved at comparatively small cost.

29. *Papers to accompany Report.*—The following papers accompany this report:—

(1) Sketch-map of estate.
(2) Sections and quantities of Theppampati tank.
(3) Sections and quantities of Ondikaradu tank.
(4) Copy of Mr. Hardy's certificates.

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ENCLOSURE No. 4.—Sketch Map.

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ENCLOSURE No. 5.—Sections and contents of Ondikaradu tank bund with sketch.

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ENCLOSURE No. 6.—Sections and contents of Theppampati tank bund with sketch.

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ENCLOSURE No. 7.—Copies of Mr. Hardy's testimonials.

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RESOLUTION—dated 19th May 1884, No. 1689.

With this letter the Collector of Madura submits Mr. C. Vincent's report upon the irrigation works in the Gandamanáyakanúr Zemindari.

2. Mr. Hardy was appointed to be Estate Engineer in 1879 and retained the supervision of these works until he went on leave in 1883.

3. The work of most importance is the Samiappen anicut project which was finally rejected in accordance with G.O., 13th November 1882, No. 920 I. Upon this project some expenditure was incurred in anticipation of sanction, but this was done with the approval of the late Collector Mr. H. J. Stokes; a similar remark applies to the responsibility for expenditure on the works in the Warisanád valley, numbers 8, 9, 10 and 11 on Mr. Vincent's list. It may be that this valley, over-grown with jungle and infested by elephants, is not suited for the abode of cultivators, but, as Mr. Vincent points out, the remains of former works show that irrigation was once thought to be practicable, and, moreover, Mr. Hardy appears to have expended money in this valley with the knowledge and approval of Mr. H. J. Stokes, and cannot now be blamed because he carried out the policy of the late Collector.

4. The minor works, some of them rainfed tanks of trifling importance, may be passed over with brief notice. On No. 1 the work done by Mr. Hardy was good, No. 4 is breached, but Nos. 5, 6 and 7 are in good order, and in Nos. 12, 13 and 15 the bunds are too high for the expected supply.

5. No 2, the Ondikaradu tank, and No. 14, the Theppampatti tank, are new works executed by Mr. Hardy. In the Theppampatti tank, which is not finished, the amount of earth-work provided for in the estimate was 112,269 cubic yards. The amount which has been paid for is 81,890 cubic yards, but Mr. Vincent, upon measurement, could find only 29,265 cubic yards. If ten per cent. be allowed for inaccuracies of measurement the total would be 32,191 cubic yards. The measurements taken by Mr. Harrington showed only 26,601 cubic yards. From these figures it is evident

that payment has been made for about 50,000 cubic yards of earth-work which was never executed and had no existence except in the contractors' bills. A similar result is found in the Ondikaradu tank.

| | Cubic Yards. |
|---|---|
| Amount estimated ... ... ... ... ... ... | 61,558 |
| Amount paid for ... ... ... ... ... ... | 64,393 |
| Mr. Vincent's measurements ... ... ... ... | 39,463 |
| Adding ten per cent. ... ... .. ... ... | 43,409 |

The Overseer who drew up the bills is dead, and Mr. Vincent is of opinion that he exaggerated the necessary amount of earth-work in the estimates with a fraudulent intention. Mr. Hardy is responsible for these payments which were made on works executed under his supervision, and the Court are compelled to concur with Mr. Vincent in thinking that Mr. Hardy was negligent in this matter, and that the Collector is justified in declining to restore Mr. Hardy to the appointment which he forfeited by overstaying his leave.

6. The Court concur in the recommendations contained in paragraph 22 III of Mr. Vincent's report. The sluice of the Kóvilángulam tank should be repaired, but the other works in the Warisanád valley may be abandoned. The Theppampatti tank may also be abandoned, but the other works can be maintained.

7. The construction of roads in the estate is a matter for the consideration of the Local Fund Board which receives the road-cess paid by the Zemindar.

8. The thanks of the Court of Wards are due to Mr. Vincent for his lucid and interesting report, which will be of value to the Collector now and to the Zemindar when he attains his majority.

9. The Second Member is not a party to these proceedings, and has recorded a separate minute of dissent.

(True Copies and Extract.)

(Signed) G. MACKENZIE,
Acting Sub-Secretary.

To the Collector of Madura.
„ C. Vincent, Esq., C.E.
Copy to the President, Local Fund Board, Madura.
„ „ Secretary to Government, Revenue Department.

Order thereon 19th July 1884 No. 3113

Communicated to the Public Works Department with reference to the Proceedings in that Department dated 23rd January 1884. No. 213 W.

/ True Extract /
H Elliot
Secy to Govt.

X B. Transfer in Madras

Exd. C. Venkatasubbaiyar.

To The Public Works Department