

Public Works (1896) Department.

G.O., No. 1049-509

DATED 12 December

[Despatch Abstract.]

Floods in the Trichinopoly D.C. Communicating with remarks to officers concerned - Note by the Chief Engr. for Trichinopoly reviewing the reports on the Cauvery and Coleroon - at the end of July and beginning of August last.

Floods in the Trichinopoly D.C.: Forwarding Pro. Contg. with remarks to officers concerned - Note by the Chief Engineer for Trichinopoly reviewing the reports on the Cauvery and Coleroon - at the end of July and beginning of August last.

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G.O. No.	Department	Date
912	P. 2	30.10.96
441	"	20.10.96
746	"	25.9.96

FURTHER PAPERS.		
G.O. No.	Department	Date

IRRIGATION.

Government (1896) of Madras.

PUBLIC WORKS.

Recd.	} 1896.	Enclosures
Regd.		Spare copies

G.O., Nos. 1049, 1050 I., 12th December 1896.

DECEMBER.

Floods in the Trichinopoly District

Forwarding Proceedings communicating, with remarks, to officers concerned note by the Chief Engineer for Irrigation reviewing the reports on the Cauvery and Coleroon — at the end of July and beginning of August last.

GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

Irrigation.

READ—the following papers:—

From Lieutenant-Colonel O. V. BODDY, R.E., Superintending Engineer, VI Circle, to the Chief Engineer for Irrigation, dated Trichinopoly, 11th November 1896, No. 1824 T.C.

In continuation of this office letter No. 1606 T.C., dated 1st October 1896, I have the honour to forward, herewith, copy of Executive Engineer's No. 459 S.E. of the 19th ultimo, with copies of its enclosures, submitting full report of damages, &c., caused by the recent floods in the Trichinopoly division.

ENCLOSURES.

From P. ROSCOE ALLEN, Esq., Executive Engineer, Trichinopoly Division, to the Superintending Engineer, VI Circle, dated Trichinopoly, 19th October 1896, No. 459 S.E.

I have the honour to submit, herewith, my report on the late floods in the Cauvery which reached their maximum height on the 31st July last.

2. This was the second considerable flood we have had in the Cauvery during the year 1896, the previous one which reached the height of 221.3 on the Cauvery bridge gauge and 212.40 at the upper anicut having occurred on the 26th June. Both these floods were purely river floods, there being absolutely no local rain.

3. As regards the former it will be seen that it is the highest river flood as yet recorded and second only in height to the flood of 1858 which was a combined land and river flood. The records of the 1858 flood are generally discredited, but there is ample evidence to show that it was a considerably higher flood than the late one. From records it would almost appear that the severity of these river floods is progressive. There are I consider two reasons, for this, the first being that the river is more effectively confined within its banks than formerly and the second that the clearance of the land within the catchment area of the river for cultivation rapidly progresses. Regarding the first of these reasons, I would very strongly recommend that it should not be over-rated. I do not suppose that since 1858 so much land has been protected by flood banks as to exert any very great influence on the height of the floods in the river, at any rate above Trichinopoly town. If my reasoning is correct, it would appear that the height of the river floods in the future is likely to continue to be progressive.

4. A statement is attached showing the height the water rose to on 31st July 1896 on various masonry works within this division. I do not propose in this report touching on all the minor details of the damage done by the floods as what are not here noted are carefully recorded in the accompanying report of the North Sub-division officer and to which I would refer you. The right bank of the Cauvery all the way down from its head at the junction of the Amaravati to the Cauvery bridge

near the Trichinopoly town was found efficient. Two very small areas were flooded in the Kulittalai taluk, one by water finding its way through a disused drainage sluice and the other by water passing up through a drainage bridge on the South Indian Railway, which passes the drainage of the Kulittalai Kattovari into the Wyakondan channel.

5. Our difficulties with the set in the 36th mile were aggravated, but a favourably situated accretion has formed, which encourages me to hope that an economical solution of our difficulties is not at all impossible.

6. If you will refer to the taluk map you will find that an area of 3,500 acres was flooded by water backing up through the Kodamurti bridge. The Kodamurti bridge is an opening left in the flood bank for the discharge of the combined floods of Kodingal drain and Koriar. It is of six segmental arches, 30 feet span, 12.5 feet to springing level. This Koriar and Kodingal, together represent the area drained by all cross drainages of the Wyakondan from its head to Trichinopoly, and to this must be added the area enclosed between the Wyakondan and the Cauvery right flood bank—a total area of 512 square miles.

7. From time to time local agitations have been started for works to protect this area liable to submersion by floods. As will be seen above it is subjected to being flooded by river floods and by land floods. To protect it from river floods it would be necessary to fit up the Kodamurti bridge with shutters. This however would certainly not protect it from submersion by land floods and the immense size of any structure fitted up with shutters and of sufficient water-way to pass a land flood stamps the idea as altogether absurd from a commercial point of view. Again, it has been proposed to so raise the northern bank of the Kodingal drain as to protect the portion between that drain and the river flood bank. Had such been done, it would have protected an area of 1,650 acres from submersion during the late floods. Were such a bank, however, made it would assuredly be breached during a land flood, as the opening left for the discharge of the same would be most inadequate. River floods usually occur at a time of year when cultivation has not advanced very far and thus do not do much damage and as there is no practicable manner evident for protecting this area against land floods, I am unable to recommend that any protection work be undertaken.

8. The Kodamurti bund which protects the Trichinopoly town from flooding was eroded by the severe action of the waves. An estimate for raising this bank where necessary and of raising the protecting stone revetment has already been submitted.

9. Below the Cauvery bridge, as far as the old Vennar Lead, the right bank is used as a road. Here was where I anticipated that most damage would be done, as on a late inspection I found that the surface of this road was for the most part about on a level with the flood of 1893 and which this flood exceeded by 2 feet. Had this bank breached, very great damage would have been done. In the immediate vicinity several villages would have been flooded and a very great deal of damage done in the Tanjore district. The difficulty, moreover, of stopping such a breach would have been immense, as the water would have found its way into the old Vennar channel and it can only be imagined what would have happened. Here I was aided by a trusty subordinate supervisor Abdul Latif Sahib, of whom I cannot speak too highly. From the levels now in my office of this road it can be seen the flood was nearly everywhere on a level with its surface and in many places for some distance above it. At one time the water actually began to flow over the bank, but it was stopped in time, small banks erected and the danger averted. In this I consider the supervisor has done substantial service to the Government and I very strongly recommend him for a substantial reward. His great influence also with the Revenue officials of the Trichinopoly taluk was exceedingly advantageous to us elsewhere. The levels of this bank are now in my office and I shall shortly submit an estimate for raising it. In the Srirangam island a bad breach occurred near the head-sluice of the Srirangam nattoovoikal which let the river into this channel. This was caused by two trees which were standing on the bank blowing down. This breach was the cause of partially flooding Srirangam town. It did much damage to the Srirangam nattoovoikal, but the area flooded by it was not great. I was fortunate enough to secure the services of a

company of the IV Pioneers to assist me in closing this breach and through their good work we have now a secure ring bund round it and cultivation under the channel can proceed without hindrance.

10. Both protecting banks of the Srirangam island above the bridge are too low and too small in section. The Cauvery left bank was completely saturated with water and I am surprised it did not go in several places. It leaked badly or rather escaped badly. The height of this bank above the highest flood-level differs in places, but in one or two it was barely one foot. Levels of these banks will be taken and estimates submitted for necessary improvements. The road between the bridges is too low. Water actually flowed from the downstream side (to which the flood had uninterrupted access) to the upstream side. I consider that the district board should be requested to consider the advisability of raising this portion of this road. Below the road the whole of the island was flooded—water had, as above noted, uninterrupted access to every part of it. The Uthamachery, Thiruvadasolai, Thiruplathurai, Kondiampettah, Melur, Kilikudu, &c., were completely swamped and had to be abandoned. Such protecting banks as these are to this part of the island are low and weak and were breached in many portions. It is considered advisable to keep these banks low and weak, as the surplusage facilities from Cauvery to Coleroon are at present insufficient. One of the disadvantages of the land being flooded in this manner is the undesirable deposit which the floods leave on it. I am told this is not generally appreciable, but in the vicinity of breaches it is very great. I have good reason, however, for stating that only a few areas in the whole island have been temporarily rendered uncultivable by this means. Every possible precaution to protect cultivation has been taken.

11. For the opposite side of the river, the North Sub-division officer has given such ample details of the damage done by the floods in his carefully compiled report that I have enclosed a copy. It discloses the fact that we must carefully look to our left bank from the head of the river to Musiri as well as at Musiri itself and devise schemes for its improvement.

12. The danger experienced at the Musiri nattoovoikal head-sluices and the breaches at the Ponnéri channel head-sluice were both caused in the same manner. The case is one where a long channel with an open head starts from the river banked on the river side and runs a more or less lengthy course to a head-sluice. There being no escape to the river, the water in entering the open channel runs into a *cul de sac* piles up and in less than no time the water in the channel near the head-sluice stands considerably higher than the water in the river close by. In such cases danger must exist and the necessity for an escape near the head-sluice of such channel leading to the river has been amply demonstrated. The utility of such a construction moreover as a means of keeping the leading channel free of silt points further to necessity of their provision in all such cases.

13. The measures for the protection of the Kubur village which you have ordered us to take are now well in hand and regarding this and other breaches I am making every endeavour immediately to ensure the present safety of cultivation and further to so push forward repair work as to secure them against any large land flood which may occur later in the year and which the absence of any rain hitherto points to as a very probable contingency.

14. The advisability of providing with drainage sluices many of the open drainage cuts which exist in the Coleroon left bank below Nandiyar anicut has already engaged my earnest attention and I think the late floods made out a case for the one at Pudukkottai without the necessity of further proof. Plans therefore for this will be submitted soon. The remainder may not prove quite so simple a matter.

15. The question of providing flood banks to the larger drainage lines entering the Coleroon on its left bank will be considered each on its merits. I think something certainly should be done to the left bank of the Marudayar. As high ground here is not so very far off, I do not anticipate that this will be a very expensive matter. As to the Coleroon left bank from Vappur to the lower anicut for several reasons this has been kept low—sufficiently low for any considerable flood to spill over it. I believe the reasons for this state of things to be that, considering the

uncertainty of the amount of flood water which the lower anicut will pass, it is better to permit the water to spill over this bank than to concentrate the whole flood and deliver it, as concentrated, at the lower anicut for discharge for fear that such might endanger the safety of the lower anicut, and again, as a further reason, that in spilling over there is not much likelihood of extensive damage being done nor of a great area of land being submerged. The above are, I believe, the reasons correctly stated.

16. When the flood spilt over the bank, the water on the land side very rapidly rose until its level at a point a few miles further down stream was higher than the water in the river and which caused a discharge again into the river as the bank top has a fall corresponding to the fall in the river.

17. It can be seen from the survey sent herewith that this redischarge occurred in two places. The relief therefore afforded to the river by spilling over this bank was but slight and temporary. The road from the lower anicut to South Arcot certainly through breaching afforded some relief, but the damage so done must be so very great that I do not think it can be recommended that this road be kept in such a state as to breach in the future on the occurrence of another such flood. Such relief cannot therefore be depended on in the future. A section of this road as breached is sent herewith. Altogether 34 breaches occurred in this portion and, together with damage done to the Ponnéri channel, it will take Rs. 11,000 to put right the damage done.

18. In the statement of loss of crop, houses and food-grains from No. 14 to 26 appertains to this portion. The figures were supplied by the Revenue Department. The total area submerged in this portion was 15,800 acres or 24,687 square miles.

19. From the levels given of the flood from upper to lower anicut, it will be seen that the surface level is not the same throughout, but that the fall lessens as the lower anicut is approached.

20. If, as I believe, it has been ascertained by Colonel Smart that the lower anicut cannot, in its present state, pass such a flood as the late one without liability to injury, I would submit for consideration extending its waterway sufficiently to enable it to do so. From what I have observed it would appear that the only relief of any moment afforded to the river was through the breaches in the North Arcot road. These must have caused very much damage and apart from this I do not think the district board are at all likely to have the road in a state which will allow of its breaching so conveniently another time. The Vadavar head and North Rajah voikal head-sluiice are according to accepted ideas badly situated. I am told that the channels of each silt up badly at the head and such must appear to be the case. I would therefore propose that the idea of removing both to a better situation be considered and extending the lower anicut across the site they at present occupy.

21. In conclusion it is with much pleasure that I have to inform you that the North Sub-division officer and the rest of the staff of the division showed great devotion to their duty and did everything in their power to avert danger and to repair damages.

22. I request you will convey my cordial thanks to Mr. Roberts, the Head Assistant Collector, the Tahsildar of Musiri and Town Sub-Magistrate of Trichinopoly for timely assistance rendered by them.

TRICHINOPOLY DIVISION.
Register of anicuts showing the levels of the principal parts and flood-levels.

No.	River.	Name of anicut.	Ascertained flood-levels above the crest of anicut.				Calculated M.F.L.	Levels of principal parts.					Remarks.	
			Year and level.			Year and level.		Anicut.		Head-sluiice.				
			Year and level.	Year and level.	Year and level.			Under sluice sill.	Crest.	Top of wing wall.	Sill.	Shutter platform.		Roadway.
1	Cauvery ..	Upper anicut	7.50 1896	7.50 1892	4.50 1891	4.70 1893	..	236.79 236.85	..	257.46	..	..	..	South branch crest = 242.20.
			7.40 1896	6.50 1892	4.00 1891	4.00 1893	..	235.44	..	257.19	..	..	..	..
2	Do. ..	Grand anicut	6.40 1897	7.00 1893	7.40 1896	6.10 1892	..	179.60	..	..	..	..	..	Crest = 199.30. Presumed M.F.L. is 16.06 on sill over regulator— Sill = 184.25.

South branch crest = 242.20.

North branch crest = 242.44.
Calculated M.F.L. is 13.00 over the crest of Cauvery dam—
Crest of Cauvery dam = 236.24 above M.S.L.

Crest = 189.30.
Presumed M.F.L. is 16.06 on sill over regulator—
Sill = 186.25.

N.B.—These anicuts are in charge of members of the Public Works Department of Tanjore division.

(Signed) ABDUL LATIF SAHIB.

TRICHINOPOLY DIVISION.

STATEMENT showing the difference of level between the highest flood of the year 1896 and top of bank at every mile.

Miles.				Reading to top of bank.	Reading to H.F.L. of 1896.	Difference.		Remarks.	
						Above M.F.L.	Below M.F.L.		
Agenda Convey Right Bank (Kulstales).									
0	..	..	..	4.70	8.08	3.38	..	Stone is missing. Do.	
1	..	..	..	4.28	8.70	4.42	..		
2	..	..	..	4.50	8.12	3.62	..		
3	..	..	..	4.18	7.30	3.12	..		
4	..	..	..	3.98	8.05	4.07	..		
5	..	..	..	4.05	7.23	3.18	..		
6	..	..	..	8.08	8.80	0.72	..		
7	..	..	..	4.70	8.24	3.54	..		
8	..	..	..	4.40	8.70	4.30	..		
9	..	..	..	4.88	7.95	3.07	..		
10	..	..	..	4.18	8.80	4.62	..		
11	..	..	..	4.82	7.88	3.06	..		
12	..	..	..	2.90	8.30	5.40	..		
13	..	..	..	4.38	7.28	2.90	..		
14	..	..	..	4.00	8.38	4.38	..		
15	..	..	..	4.78	8.78	4.00	..		
16	..	..	..	4.80	8.85	4.05	..		
17	..	..	..	4.30	8.40	4.10	..		
18	..	..	..	4.88	8.88	4.00	..		
19	..	..	..	4.68	8.75	4.07	..		
20	..	..	..	4.20	7.08	2.88	..		
21	..	..	..	4.68	10.28	5.60	..		
22	..	..	..	1.98	8.90	6.92	..		
Trichinopoly.									
23	..	..	..	8.00	9.88	1.88	..		
24	..	..	..	4.78	9.88	5.10	..		
25	..	..	..	4.80	10.88	6.08	..		
26	..	..	..	4.68	8.38	3.70	..		
27	..	..	..	4.48	10.18	5.70	..		
28	..	..	..	2.88	7.60	4.72	..		
Convey Right Bank.									
29	..	..	..	4.48	8.08	3.60	..		
30	..	..	..	4.68	8.00	3.32	..		
31	..	..	..	4.88	8.43	3.55	..		
32	..	..	..	4.95	8.22	3.27	..		
33	..	..	..	4.84	7.72	2.88	..		
34	..	..	..	4.80	8.48	3.68	..		
35	..	..	..	4.78	10.70	5.92	..		
36	..	..	..	4.60	8.85	4.25	..		
37	..	..	..	4.88	7.53	2.65	..		
38	..	..	..	6.10	8.70	2.60	..		
39	..	..	..	4.68	7.30	2.62	..		
40	..	..	..	4.48	8.83	4.35	..		
41	..	..	..	3.88	8.08	4.20	..		
42	..	..	..	4.84	8.82	3.98	..		
43	..	..	..	4.10	8.48	4.38	..		
Convey Left Bank.									
1	..	..	..	4.80	7.24	2.44	..		
2	..	..	..	4.98	8.90	3.92	..		
3	..	..	..	8.60	7.85	0.25	..		
4	..	..	..	6.84	8.84	2.00	..		
5	..	..	..	4.84	7.10	2.26	..		
6	..	..	..	4.90	8.63	3.73	..		
7	..	..	..	4.88	8.18	3.30	..		
8	..	..	..	4.83	8.78	3.95	..		
9	..	..	..	4.80	8.70	3.90	..		
10	..	..	..	4.60	8.98	4.38	..		
11	..	..	..	4.78	7.08	2.30	..		
12	..	..	..	4.78	8.23	3.45	..		
13	..	..	..	4.98	8.88	3.90	..		
Coleroon Right Bank.									
6	..	..	..	4.73	8.30	3.57	..		
7	..	..	..	4.88	8.10	3.22	..		
8	..	..	..	4.35	8.48	4.13	..		
9	..	..	..	4.78	8.55	3.77	..		
10	..	..	..	8.00	8.15	0.15	..		
11	..	..	..	4.68	8.88	4.20	..		
12	..	..	..	4.83	8.70	3.87	..		
13	..	..	..	4.80	8.28	3.48	..		
14	..	..	..	4.10	8.20	4.10	..		
The flood overtopped the bank beyond this.									

(Signed) ABDUL LATIF SAHIB.

STATEMENT showing the height of flood-levels, &c., at the different masonry works in the Trichinopoly Division, VI Circle.

No.	Name of work.	Position.		Flood-level, mean sea-level.										Remarks.	
		Miles.	Feet.	1858.	1868.	1877.	1880.	1882.	1886.	1887.	1890.	1892.	1893.		1896.
Kattalai Taluk.															
1	Kattalai nattoovoikal head-slue	..	..	..	..	..	..	..	..	..	..	..	..	..	Sluice gauge reading.
2	Surplus weir ..	..	..	..	..	..	..	..	..	..	..	..	..	..	Above sill.
3	Do. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	Do.
4	Head-slue, Manamai ..	..	..	..	..	..	..	..	..	..	..	..	..	..	Above sill.
5	Surplus sluice of Kattalai nattoovoikal	..	..	..	..	..	..	..	..	..	..	..	..	..	Above sill.
6	Head-slue of Mayanur ..	..	..	..	..	..	..	..	..	..	..	..	..	..	Do.
7	Surplus weir ..	..	..	..	..	..	..	..	..	..	..	..	..	..	Do.
8	Surplus sluice ..	1	500	..	..	..	..	..	..	..	..	..	..	..	Do.
9	Do. ..	2	2,800	..	..	..	..	..	..	..	..	..	..	..	Do.
10	Kumbakuli surplus sluice	3	2,730	..	..	..	..	..	..	..	..	..	..	..	Do.
11	Krishnaswaram head-slue	4	600	..	..	..	..	..	..	..	..	..	..	..	Do.
12	Mahadaswaram head-slue	5	630	..	..	..	..	..	..	..	..	..	..	..	Do.
13	Marudur head-slue ..	5	2,810	..	..	..	..	..	..	..	..	..	..	..	Do.
14	Do. surplus weir ..	5	3,310	..	..	..	..	..	..	..	..	..	..	..	Do.
15	Vadhyar head-slue ..	11	850	..	..	..	..	..	..	..	..	..	..	..	Do.
16	Nangoovoikal head-slue	15	4,160	..	..	..	..	..	..	..	..	..	..	..	Do.
17	Surplus weir No. 2 ..	20	640	..	..	..	..	..	..	..	..	..	..	..	Do.
18	Surplus weir No. 3 ..	21	3,435	..	..	..	..	..	..	..	..	..	..	..	Do.
Trichinopoly Taluk.															
18	Wyakondan head-slue	..	..	..	..	..	..	..	..	..	..	..	..	..	Do.
19	Do. surplus weir	..	..	..	..	..	..	..	..	..	..	..	..	..	Do.
20	Ramavothalai head-slue	32	2,810	..	..	..	..	..	..	..	..	..	..	..	Do.
21	Puduvothalai head-slue	38	2,840	..	..	..	..	..	..	..	..	..	..	..	Do.
22	Elanthavothalai head-slue	39	3,010	..	..	..	..	..	..	..	..	..	..	..	Do.
23	Kodamurthy bridge	32	4,280	..	..	..	..	..	..	..	..	..	..	..	Do.
24	Surplus sluice ..	37	860	..	..	..	..	..	..	..	..	..	..	..	Do.
25	Do. ..	39	2,610	..	..	..	..	..	..	..	..	..	..	..	Do.
26	Do. ..	39	980	..	..	..	..	..	..	..	..	..	..	..	Do.
27	Do. ..	3 L.F.	680	..	..	..	..	..	..	..	..	..	..	..	Do.
28	Do. ..	39	4,010	..	..	..	..	..	..	..	..	..	..	..	Do.
29	Do. ..	39	4,340	..	..	..	..	..	..	..	..	..	..	..	Do.
30	Do. ..	40	230	..	..	..	..	..	..	..	..	..	..	..	Do.
31	Do. ..	4 L.F.	240	..	..	..	..	..	..	..	..	..	..	..	Do.
32	Do. ..	41	1,320	..	..	..	..	..	..	..	..	..	..	..	Do.
33	Do. ..	43	3,900	..	..	..	..	..	..	..	..	..	..	..	Do.
34	Do. ..	Left Bank 4	..	..	..	..	..	..	..	..	..	..	..	..	Do.
35	Do. ..	9	..	..	..	..	..	..	..	..	..	..	..	..	Do.
36	Do. ..	10	320	..	..	..	..	..	..	..	..	..	..	..	Do.
37	Do. ..	12	90	..	..	..	..	..	..	..	..	..	..	..	Do.
38	Do. ..	12	1,650	..	..	..	..	..	..	..	..	..	..	..	Do.
39	Do. ..	12	3,050	..	..	..	..	..	..	..	..	..	..	..	Do.
40	Do. ..	12	3,950	..	..	..	..	..	..	..	..	..	..	..	Do.

Caverry river.

Statement showing the height of flood-levels, &c., at the different masonry works in the Trichinopoly Division, IV Circle—cont.

No.	Name of work.	Flood-levels, mean sea-level.										Remarks.
		Position.		1838.	1858.	1877.	1890.	1892.	1893.	1894.		
		Miles.	Feet.									
Tiruchirappalli Taluk—cont.												
{ 40 41 42 River-canal.	Thirupattanam head-sluice ..	13	150	..	..	..	..	..	..	..	7-60	Above sill.
	Surplus sluice ..	13	2,910	..	..	..	..	..	..	..	7-15	Do.
	Do. ..	14	..	..	..	..	..	..	..	..	7-42	Do.
	Surplus sluice ..	Eight Tank 7	3,960	..	..	..	..	..	..	..	7-46	Above sill.
{ 43 44 45 46 47 Coleroon.	Do. ..	8	1,700	..	..	..	..	..	..	..	10-10	Do.
	Do. ..	8	3,190	..	..	..	..	..	..	..	10-15	Do.
	Coleroon bridge ..	8	3,960	..	..	..	..	..	..	..	11-25	Sluice gauge reading.
	Surplus sluice ..	8	4,720	..	..	..	..	..	..	..	7-23	Above sill.
	Do. ..	9	240	..	..	..	..	..	..	..	215-90	..
	Do. ..	9	1,790	..	..	..	..	..	..	..	218-13	..
	Do. ..	9	2,610	..	..	..	..	..	..	..	217-32	..
	Do. ..	9	2,410	..	..	..	..	..	..	..	7-90	Above sill.
	Do. ..	9	4,010	..	..	..	..	..	..	..	7-90	Do.
	Do. ..	10	320	..	..	..	..	..	..	..	217-97	..
{ 50 51 52 53 54 55	Do. ..	11	240	..	..	..	..	..	..	..	210-25	..
	Do. ..	11	54	..	..	..	..	..	..	..	203-63	..
	Do. ..	12	4,310	..	..	..	..	..	..	..	204-78	..

(Signed) P. ROSCOE ALLEN,
Executive Engineer, Trichinopoly Division.

19th October 1896.

COPY of report from M. R. Ry. T. SUBRAMANIA AIYAR Avargal, Assistant Engineer in charge of North Sub-division, Trichinopoly, to the Executive Engineer, Trichinopoly Division, No. 1900, dated 25th September 1896.

I have the honour to submit herewith my report on the floods down the Cauvery and the Coleroon in July last as called for in your No. 1054 S., dated 14th August 1896.

2. The south-west monsoon burst early in June 1896 and water rose rapidly in the Cauvery from the 21st to 26th when there was 4.5 feet passing over the north arm of the upper anicut crest + 242.40. This flood was too early for the year and, unlike ordinary floods, which used to subside in one or two days, lasted for over a fortnight from 22nd June to 5th July 1896. The flood water on 26th June 1896 was only 2 feet 3 inches below that of 1847 floods at upper anicut and only 1 foot 6 inches below at Naudiyar anicut of 1887 and one foot below that of 1892.

3. From 6th to 15th July water went down steadily, notwithstanding the unusually strong west wind, when water was flush with the crest of the north arm at upper anicut. From 16th it rose again rapidly, so much so that on the evening of the 17th there was 3.7 flowing over the crest. It was then anticipated that it would rise higher as there was no abatement in the severity of the west wind; water, on the other hand, steadily though slowly went down from the 18th to 25th, when there was a foot of water on the crest.

4. From the 26th July water rose rapidly again for the third time and reached the unprecedented level of 7.5 feet over the crest on the 31st July. I say unprecedented as the record of 1858 seems to be incorrect and should be left out of account. There is no record available of the F.L. of 1858 for the portion below Naudiyar anicut to Lower anicut. It is true the bank on left side of the Coleroon has been raised with reference to this assumed F.L. of 1858 from Coleroon bridge at 8½ mile to Kilambil 22 miles. This I consider unnecessarily too high as in no other portion of the whole length of embankment from Iylur to Lower anicut the bank has been raised to this height; more of this afterwards—vide paragraph 7 (3).

5. *Precautionary Measures taken.*—On the 28th July, when water rose to 6 feet over crest at upper anicut, watchers were kept to patrol the banks and to report of any accidents, strict orders were sent to village officers to watch the banks in their village limits both day and night and to protect the weak portions with brushwood and stakes or turf, and the subordinates and superintendents were made to watch the masonry works and other places which were considered very weak. The Head Assistant Collector with his subordinates watched the banks near Musiri and did excellent work in averting a breach in this portion.

6. Agunda Cauvery—

(1) The left bank of the Agunda Cauvery is wholly in Musiri taluk and is 33 miles long. There was no bank formed by our department in the first 8½ miles, i.e., up to Karapottanur anicut, as the ground itself is high except in places in 7th and 8th miles; water spilled over these low places in the late floods six inches to a foot, and breached in two places for a total length of 200 feet. Below Karapottanur anicut there is the head sluice to Tottiam Chinna voikal, where the flood water rose nearly to platform level, and as the bund below is not strong it was breached for a length of 150 feet and flooded the fields of Nattam and Puttur.

(2) From 8½ to 9½ miles there is no bank. The padugai in this portion belongs to Kottoputhur mittadar. The Tottiam Chinna voikal goes under cutting here. The ground to the left or north side of this channel was flush with the late F.L.

(3) From 9½ to 11½ the bank is low and weak and not of proper section. F.L. overtopped the bank in this portion in places and breached it in two places for a total length of 70 feet and eroded badly for a length of 800 feet in 10th mile, breached in four places for a length of 420 feet and eroded 1,320 feet in 11th mile, and eroded about a furlong in 12th mile. The R. stone groyne just above the outlet at 11 miles 2 furlongs has been completely undermined and has slipped down.

(4) *Mullikarai Head Sluice.*—Water rose to 3 inches below shutters platform. New revetment below has slipped down.

(5) From 11 miles 2 furlongs or Mullikarai head sluice to 17 miles the flood bank is in pretty good order and 3' to 4' 6" above late F.L. Only 880 feet of inside slope eroded in the 13th and 15th miles.

(6) From 17 to 22 miles or Musiri the bank is used as the main road to Salem and is high except between 1½ and 1¾ where a guard bund has been placed which requires strengthening; between 1¾ and 2¾ water overflowed 3 inches for 4 furlongs, between 2¾ and 3¼ for 870 feet and nearly 4 furlongs in the 22nd mile for a depth of one foot. The road in this portion should be raised to at least 2 feet above late F.L. throughout or a guard bank placed in front.

(7) *Nattoorikal Kurumbu Channel.*—The right bank of this channel has been cut away for over a mile, all except the rear slope, and has been breached in two places each 80 feet long and 3 to 8 feet deep. Water rose to one foot of top of bund.

(8) *Flood Bank from Nattoovoikal Head Sluice to Salem Road.*—This was also partly eroded and was only 2 to 2½ feet above late F.L. This bank should be raised to 4' 6" above F.L. with 9 feet top width and treated as the main bank. There is no necessity, on the other hand, to maintain the right bank of Kurumbu channel at such a high level.

(9) *Nattoovoikal Head Sluice.*—Water rose to one foot below top of front parapet. The right bank of the Kurumbu channel from the head up to sand escape acted as a dam and water in the channel was one foot higher than that in the river close by. The head sluice was in danger. It was protected with turf sods and earth thrown in rear of parapet to serve as a back-bank on the right side up to sand escape.

(10) *Agunda Cauvery Left Bank from 22½ to 23.*—The bank here is subject to very strong current, the river here taking a bend and the width of the river very much contracted. The inner slope has been protected with dry stone revetment grouted in places, and masonry steps in three places to serve as a bathing ghât for the villagers of Musiri. The inner slope overflowed the bathing ghât close to the choultry.

The inner slope of bund was subject to great wave action and was greatly eroded all along up to a furlong below 24th milestone. This portion was protected with pike and brushwood and turf bund at a cost of Rs. 300, as a breach here would have been disastrous to all the villages from Musiri to Kousailam.

(11) *Umayapuram Srt.*—The bund here stood very well although the navel planting and molaesal work done this year were completely washed away. A good berm or pulugai in this portion is very necessary. This can only be secured by lopping off a portion of the forest on the right side of the river to allow more waterway. Near the 24th milestone inner slope has been eroded for a length of 860 feet.

(12) Bank from 24th to 29th miles in good order.

(13) From 29th to 33 the local fund road forms the left bank. There is, however, a guard bank in low places which is being raised to required height on maintenance estimate up to 31 miles. In 32 mile the road is low. A guard bank here also is necessary.

(14) The height of the bank all along with reference to late F.L. is given in statement No. 1, the extent of land flooded is given in tracing No. 1, and the amount spent in urgent repairs and in preventing breaches is Rs. 530 as detailed in statement No. 2.

(15) Precautionary measures required in this portion seem to be the following:—

- (1) Providing and strengthening of a flood bank from Musiri Nattoovoikal head sluice to Salem road at 22 mile and a guard bank along the road up to Koudamari bridge.
- (2) Providing a self-acting drainage sluice to the drainage culvert in 22nd mile to prevent the flood water from backing up and flooding the fields of Musiri and Teruvengai-malai.
- (3) Providing screw shutters to Musiri Nattoo, Mettoo and Pallavoikal for better and easy regulation.
- (4) Re-building in slipped portion and raising to one foot above late F. L. the revetment and steps at Musiri.
- (5) Allowing proper waterway in 23 mile by denuding as much of the forest on right side as is absolutely necessary and reserving it as river proper.

(16) At Nattam and Kousailam the flood water will back up and must inundate the fields. It will not be possible except by costly works to provide proper flood banks.

(17) The river bank is sufficiently high in most places. The little raising that has to be done can be done out of the maintenance estimates.

(18) The R. stone groynes at (1) Mullikarai, (2) Musiri and (3) Umayapuram require repacking where displaced.

(19) Two new sluices were built to Aylur and Siplaputhur channels in the 5th mile. As the masonry was grown when the floods came and as there was no time to pack revetments in front, and as the water rose to tops of wings, a breach occurred between the two sluices and washed away the wings of both the sluices adjoining. This could be set right at a cost of Rs. 150.

(20) A statement No. 3 of observed flood levels at important masonry works is herewith submitted. It will be seen from this that the levels now recorded are higher than that of 1882 and 1887 and that the average flood full per mile is 3' 34 feet.

(21) The approximate cost of repairing the damages and making improvements will be Rs. 6,600 as detailed in statement No. 4.

7. The Coleroon from Upper Anicut to Nandiyar Anicut, 28 miles—

(1) *Iyenoikal Head Sluice.*—Water rose 6 inches above rails of screw boxes, i.e., to + 249.90. The head sluice is in good condition and the parapets sufficiently high. The revetment in front on the right slipped after the floods subsided for a length of 23 feet right up to bed level. This is due to the insufficient slope now given, ½ to 1. It should be repacked to a slope of 1 to 1 and grouted.

(2) *River Bank from head up to 8½ miles.*—This portion was subject to heavy water pressure from the river side as the main Iyen channel runs close by on the outside, and, there being no berm in most places, the bank slipped badly in thirty places, and a little below Thoydayur bridge water leaked so badly that a breach was considered imminent. All the slips were well protected timely and breaches averted. The banks are nowhere less than 4 feet above late F.L. It would be better to conserve the channel and form a good berm in rear of bank so as to make it safe against future floods.

(3) *From 8½ to 22 miles.*—The bank in this portion was raised, on an estimate sanctioned for Rs. 82,300 some years ago, 4' 6" above the assumed flood level of 1858. This is now 7 to 10 feet above late flood level.

In 1858, when this flood bank was non-existent and when the country was swamped everywhere, it is understood how this record of 1858 was made out. The Kuhur village in the 18th mile was left unprotected and a nasty bend allowed in the bund at 19 miles, and as the same was made up of mere sand with a coating of mud, a big breach occurred here 860 feet long and bank washed away one-half for about 500 feet above, and the village of Kuhur was flooded and sixty houses fell down. The inner slope of bund has been eroded in several places, though not materially, and at drainage sluices on the outer slope, also for some distance above. A little below drainage sluice at 22 miles the flood water from Kuhur village and breach at 19 miles breached the bank for a length of 250 feet right up to ground level and there is only 40 feet of bank to support the masonry.

It was well this breach had occurred or the masonry would have been washed away.

Malattar and Kaduvai channels were also breached by the breaches above mentioned, viz., in 19 and 19 miles, and the villages of Kilambil, Maugamapuram and Ariyur were in danger but were saved only by the breach at 22 miles.

(4) *From 22 to 26 miles.*—Road No. XX forms the left bank. There is, however, a guard bank placed all along which is 2 to 4 feet above late F.L.

(5) *Kuliyur and Nandiyar anicuts.*—Water backed up by these two anicuts and swamped the fields of Ariyur, Kalligudi, Alangudi and Pettai. It might, perhaps, be better to provide proper regulation with screw-gating shutters for these, so that these villages may not be affected by river floods.

(6) Statement of breaches, cost of repairing flood damages and the approximate amount of loss of crop and damage to houses, &c., will be found in statements Nos. 4 to 8.

8. Nandiyar Anicut to Vappur, 52 miles—

(1) *Nandiyar Head Sluice.*—Water rose to 8 inches below top of parapet. The Superintendent took much pains to protect the masonry with turf sods and earth thrown at the approaches. The flood bank up to Vadani was also protected by him as the water rose to 1 foot 6 inches to 2 feet below top of bund and a breach here would have caused loss to Nandiyar system.

(2) *Nandiyar Anicut.*—Water rose 8.75 feet above crest or to + 163.25. The flood level of 1887 was + 161.66 or 1.59 lower than the late F.L., and 5 inches higher than the F.L. of 1892, viz., + 161.22.

(3) The parapets of the head-slucies must be raised and establishment sheds built for better up-keep and protection of the head works in times of emergency.

(4) *Bank from 28 to 34 miles.*—The bank in this portion is 1' 6" to 3' 0" above late F.L. and requires raising to 4' 8" throughout above it.

(5) *Breach at Pudukkottai, 32 mile.*—Water backed up by this breach and swamped 240 acres of wet crops and totally destroyed them. The village of Pudukkottai was saved only by the villagers working constantly day and night forming a flood bank round their village and breaching our bank just above their village for a length of 30 feet. The amount of loss is approximately Rs. 3,000. It is quite necessary to build a masonry drainage sluice provided with self-acting shutters. The fields were nearly under 5 feet of water.

(6) *Bank from 34 to 39.*—In pretty good order except that a breach occurred above Karpakam village in 37 mile for a length of 150 feet. The villagers of Annimangalam protected the banks in their village limits and averted a breach at old breach site. The flood bank to the west of their village requires raising and extending to meet the high ground. The breach at Karpakam has already been closed at a cost of Rs. 180.

(7) *Bank from 40 to 41.*—Here there is Vilupanakurichy Odai with an open cut-water backing up through this swamped a good portion (750 acres) of the country from Tiruvengiam to Peramurai. From reports received from Revenue authorities it appears that 171 acres of dry crops were destroyed as also 2½ houses. Owing to want of rain the land submerged was not cultivated, otherwise the damage done would have been great. The bank for about five furlongs above the open cut was entirely washed away excepting the inside slope. This is due to the rush of water both when the flood entered and receded. It is very necessary to build a drainage sluice here also as at Pudukkottai.

(8) A little above Peramurai village there is another small open cut which has also done proportionate mischief this time. A small drainage sluice will suffice as at Tirumanur.

(9) *Arasanjeri Head Sluice*.—Water rose to + 115.75 or 0.8 below platform level. No damage done to the masonry. The water down this sluice over-topped the bund of Arasanjeri tank and scoured it very badly, and, notwithstanding the timely care and trouble taken by the ryots, breached the bund in two places, and the worst of it is that a considerable portion of the water came back to the river by the head sluice when the river subsided. This head sluice has its sill on too high a level with reference to the river here, and unless some Kurumbu works are provided and its head kept near Viluppanakurichy this channel will be very ineffective for irrigating 780 acres now under it and the tank.

(10) *Bank from 41 to 52*.—The bank here is in pretty good order and is 1 foot 6 inches to 3 feet above late F.L. It requires raising to 4 feet 6 inches above it. The Thelur Odai at 47 miles has also done considerable damage to Thelur, Narianur, Kuravadi and Thuthur villages. Four houses in Thelur fell down and the village of Kuravadi was under water. A drainage sluice here also is very necessary.

(11) *Vaccappukurichi Drainage Sluice*.—This was built in 1895, and has acted very well during late floods. The villagers state that they would have suffered very much as their neighbours but for this.

(12) *Raminallur Island*.—There are two villages in this, the upper one of which was fully flooded and 28 houses fell down. The lower village was badly eroded near the temple, which is in danger of being undermined unless protected. The dry crops to the extent of 332 acres were entirely destroyed and a good portion of the island silted up with sand. The only hope of protecting the fields and villages in the island is by forming a strong flood bank all round.

9. *Ponnéri-Kurumbu Channel*.—Water rose to + 95.0 at 52 miles, and, obstructed as it was by the old head sluice, rose to + 93.75 at new head sluice and Marudayar under tunnel, or three inches above front parapet. The earth connection on left side gave way and a big breach (40' x 25') was formed and with it the left wing and return fell down. The ground in rear of training wall was swept away 10 feet deep as also the return of the latter, and a big scour channel also was silted up to a depth of 6 feet for the first 600 feet and an average of 2 feet below up to old head sluice. With great difficulty the breaches above the under tunnel were closed and bank made up and protected. The sand in Kurumbu head is being removed. As the right return of the head sluice is also cracked and as it is not so very safe to keep the head sluice at its present place as there is a heading up of more than 3 feet and as a breach like this may endanger the safety of the tunnel itself, it would be better to build a new head sluice at site of old one near Vappur sheds.

10. *Marudayar Under Tunnel*.—The flood level rose to + 91.00 or three inches over the left side wall and removed the earth connection on the right down-stream side for a length of 40 feet for a depth of 10 feet. This has now been made up and protected with masonry work. There is a flood bank on the left side of Marudayar extending from the tunnel to road No. XX which has breached in five places (vide statement No. 6). This bund must be made up to proper height if it is to be maintained.

11. *River Bank from Under Tunnel to Sattanahadi Bridge*.—This bank forms the right bank of the Ponnéri channel and water rose on both sides to the top of bank and no serious damage occurred. Water overflowed over the left bank of the channel nearly 2 feet in several places. This requires raising.

12. *Road No. XX from 52 to 67½ miles or Lower Anicut*.—This road was purposely kept low to prevent accidents to lower anicut, but it will be seen from the actual facts stated below that there is no necessity whatever to keep miles of bank at such a low level. All the flood water down the Coleroon has found its way over the lower anicut except what passed over the Madras road* by the breaches in it in the 15th mile. A cross section of this road along the roadway is herewith, from which it will appear that only a small quantity of water surplused over this road. It is evident from this and from actual observation that the numerous breaches (34 in all) were not all caused by the river water entering the land side. The flood water entering by open cuts and breaches up above breaches the road lower down from the land side. For instance, from Sattanahadi to Arankottai water flowed from the land to the river side and lower down from Vallakurichy to Karappur. The breaches in this portion will cost nearly Rs. 10,000 to make up. In this connection it would be well to consider two things: (1) the raising of the road to a safe height from Vappur up to Kodali breach at 66 miles; (2) diverting of the road from this bank to Ponnéri channel right bank from Anakkudi weir downwards.

If the road is diverted, there is no necessity to raise a broad bank. The normal width of 9 feet top width will be enough. By the breach at Kodali sufficient water could be made to escape and surplus over Madras road to keep the lower anicut safe. If by the improvements now sanctioned the lower anicut could be made to pass all the drainage, then necessary drainage sluice may be built at Kodali breach also to keep off all the river floods.

Ponnéri main channel has its right bank very broad in most places, so much so that it could be converted into a pretty good road in two or three years out of the maintenance grant allowed for the upkeep of road No. XX, viz., Rs. 50 per mile.

13. Statement of breaches with the cost of closing and making up the banks at eroded places is herewith (vide statements Nos. 4 to 8).

14. A tracing showing flood and bank levels at every mile all along from upper to lower anicut and tracings of taluk maps showing country swamped and the direction of the flood are also herewith (vide plans Nos. 2, 3 and 4).

15. *Ponnéri Main Channel*.—Five breaches occurred in this channel in the 13th mile above Balasundrapuram village (vide statement No. 5).

16. *Ponnéri Branch No. I*.—The whole length of the channel was subject to the floods, as the country in and around was one sheet of water. The channel was breached in 24 places and silted up for about a mile at tail end. (For details of breaches and cost of closing vide statement No. 4).

17. The cost of making good all flood damages in the sub-division will in round numbers be Rs. 32,000 (vide details in statement No. 4).

Musiri Taluk

STATEMENT showing the height of bank or roadway above F.L. from 10 to 33 miles.

Mileage.	Height of bank above F.L. of 31st July 1896.	Remarks.
10	1.6	Nominal flood bank.
11	1.3	Do.
11	— 0.3	Water overflowed.
12	3.1	Flood bank begins.
13	4.4	Do.
14	4.7	Do.
15	4.6	Do.
16	4.3	Do.
17	4.8	Flood bank ends.
18	2.6	
19	0.6	
20	0.6	
21	0.5	Salom road forms the left bank.
22	1.5	This requires raising.
22	2.0	
23	5.0	
24	5.0	
25	5.27	
26	4.4	Flood bank.
27	4.13	
28	3.66	
29	3.1	
30	2.4	
31	3.83	Road runs all along here.
32	2.50	A guard bank is put up from 29th to 31st miles.
33	4.93	

(Signed) T. SUBRAMANIA AIYAR,
Assistant Engineer.

No. I-A.—STATEMENT of breaches in Musiri taluk.

Name of work.	Locality.	Number of breaches in each work.	Length.	Average depth.	Remarks.
1. Agunda Cauvery left bank	8th mile	1	80	4	
	9th "	2	160	20	
	10th "	8	40	4.6	
	11th mile	4	30	3.5	
		5	90	8	
		6	200	3	
		7	90	6	
	13th mile	8	40	3	
		9	100	8	
		10	80	7.6	
	23rd "	11	80	2.6	

(Signed) T. SUBRAMANIA AIYAR,
Assistant Engineer.

No. 2.—STATEMENT of expenditure incurred on the emergent repairs to Agunda Cauvery left bank during floods.

No.	Nature and situation of work.	Value of work done.	Remarks.
1	Cost of labour employed in Musiri and Umayapuram limits or say in B. No. 23 and 24. Materials such as bamboos, coco leaves, turf, &c.	Rs. A. P. 261 2 0	Voucher and hand receipt for Rs. 233-8-0 already submitted and for the remaining will be shortly submitted after payments made.
2	Cost of labour employed in Konamale limit i.e., in B. No. 31).	58 6 6	
3	Approximate value of work done and the cost of materials, &c., supplied by Contractor K. G. Nutha Aiyar from Mullikarai to Varadarajapuram, i.e., 11½ to 15 B. M.	16 1 6	Voucher will be submitted shortly after payment.
4	Approximate value of work done by Seelapilaputhur village including cost of materials purchased, &c.	100 0 0	Accounts not yet received. As soon as it is received will be submitted for orders.
	Total quantity of work done	530 10 0	The work has been done under Kudimarumathoo.

(Signed) T. SUBRAMANIA AIYAR,
North Sub-Division officer.

No. 3.—STATEMENT showing flood levels of 1862—1887 and 1896 on important masonry works in Musiri taluk.

No.	Name of work.	Position or distance from head.		Flood level.			Remarks.
		M.	Ch.	1892.	1887.	1896.	
1	Aryalur head sluice	4	45	..	..	245-12	Bill 337-12 M.S.L. Bill 335 92.
2	Siplaputhur upper head sluice	4	46	..	..	245-17	
3	Do. lower do.	4	46	..	..	241-17	
4	Karipattan sluice	5	29	340-63	..	241-51	
5	Thottam Chinna voikal upper head sluice.	8	29	..	328-47	329-43	Bill 317-41. Crest 312-63. Top of wing 321 68. Bill 304-62. Bill 300-24. Bill 299-47. Crest 284-30. Top of wing. 298-64. Crest 276-64. Top of wing. 232-97.
6	Do. sand escape	10	29	322-60	..	329-43	
7	Thottam Chinna voikal lower head sluice..	11	30	320-52	321-02	321-72	
8	Thottam Peria voikal head sluice	13	87	310-19	..	311-04	
9	Krinivannallur channel do.	14	30	310-13	..	310-94	Bill 252-23. Bill 249-14.
10	Kondamalai bridge	19	28	..	..	294-34	
11	Nattu voikal sand escape	22	37	..	..	281-67	
12	Onago pillar at Musiri	22	47	..	..	281-67	
13	Amur head sluice	28	74	261-49	262-69	263-03	Bill 249-14.
14	Konamale head sluice	29	64	269-14	260-14	260-74	
15	Upper anicut	32	10	..	249-10	249-90	

Total flood fall in 28 5 miles is 345-12 —
249-90 or 95-22 or per mile

(Signed) T. SUBRAMANIA AIYAR,
Assistant Engineer.

No. 4.—STATEMENT of cost of repairing flood damages in Trichinopoly and Udaiyarpalaiyam taluks.

Name of work.	Cost.
I. Coleroon left bank—	Rs.
(a) Repairing slips and erosions	5,000
(b) Closing breaches	10,000
II. Road No. XX.	10,000
III. Marudayar flood bank	250
IV. Kaduvai channel	300
V. Ponnéri main channel	90
VI. Do. branch channel No. 1	400
Total	26,040

* Includes breach at 19, 30, 37 and 53 miles.
† Cost of closing 34 breaches and raising the roadway.
‡ Closing 6 breaches and restoring the eroded portion of bank.
§ Includes cost of closing 24 breaches and clearing tail end of channel.

STATEMENT of cost of repairing flood damages in Musiri Taluk.

	Rs.
1. Repairing flood damages to Aryalur and Siplaputhur channel head sluices	150
2. Forming bank from 6½ to 8½ miles	1,000
3. Closing breaches in Karaipottan bridge	300
4. Raising bank from 9½ to 11½ miles	1,000
5. Restoring groyne at Mallikarai	500
6. Forming guard bank from 18½ to Nattuvoikal head sluice	1,500
7. Providing self-acting shutters to drainage culvert in 21st mile of road	200
8. Improving revetments, stone groynes and steps in 23rd mile at Musiri	1,000
9. Providing screw shutters to Nattu Mettu and Pollavoikal head sluices, raising parapet walls	600
10. Raising guard bank in 32nd mile	350
Total	6,600

Total for the sub-division ... 32,640

(Signed) T. SUBRAMANIA AIYAR,
Assistant Engineer.

No. 5.—STATEMENT of breaches in Kaduvai channel.

Name of work.	Locality.	Number of breaches in each work.	Length.	Average depth.	Remarks.
Kaduvai channel	22nd mile	1	30	3	
		2	40	3.6	
		3	50	4	
		4	60	5	
		5	65	6	
		6	250	6	Above Kaduvai anicut.

STATEMENT of breaches in Marudayar flood bank.

Name of work.	Locality.	Number of breaches in each work.	Length.	Average depth.	Remarks.
Marudayar flood bank	53rd mile	1	20	3	
		2	40	3.6	
		3	70	4.0	
		4	60	3.75	
		5	100	6.0	

STATEMENT of breaches in Ponnéri main channel.

Name of work.	Locality.	Number of breaches in each work.	Length.	Average depth.	Remarks.
Ponnéri main channel ..	13th mile ..	1	15	4	
		2	20	4.25	
		3	18	5	
		4	20	6.0	
		5	40	8.0	

(Signed) T. D. SANKARA SASTRY,
Overseer.

STATEMENT of breaches in No. I Ponnéri branch channel.

Name of work.	Locality.	Number of breaches in each work.	Length.	Average depth.	Remarks.
No. I Ponnéri branch channel ..	The whole length of the channel from head to tail end.	1	9	3	The channel at tail end is much silted up for a distance of over 5,000 feet.
		2	12	4	
		3	14	5	
		4	20	4	
		5	30	3	
		6	11	4	
		7	30	3	
		8	21	3	
		9	30	3.5	
		10	40	3	
		11	44	5	
		12	28	6	
		13	60	4.8	
		14	60	5.5	
		15	70	3.75	
		16	25	5.25	
		17	16	5.50	
		18	72	6.25	
		19	21	7.00	
		20	49	3.25	
		21	61	6.0	
		22	70	6.5	
		23	72	7.0	
		24	80	8.0	

No. 6.—STATEMENT of breaches in Coleroon left bank.

Name of work.	Locality.	Number of breaches in each work.	Length.	Average depth.	Remarks.
Coleroon left bank ..	19th mile ..	1	860	13	Bank washed away 600 feet above this. Bank washed both sides 1,900 feet.
	23rd mile ..	1	250	10	
	23rd " ..	1	30	4	
	27th " ..	1	150	8	
	33rd " ..	1	85	25	
	33rd " ..	2	40	12	
Total ..		7	1,415	12	

STATEMENT of breaches in Road No. XX.

Name of work.	Locality.	Number of breaches in each work.	Length.	Average depth.	Remarks.
Road No. XX ..	44th mile ..	1	40	4	
	56th " ..	2	120	8	
	" ..	3	40	7.5	
	58th " ..	4	80	3	
	" ..	5	150	4	
	" ..	6	390	8	
	" ..	7	780	8	
	" ..	8	700	8.5	
	" ..	9	650	5	
	60th mile ..	10	440	6	
	" ..	11	670	6	
	61st " ..	12	180	5	
	" ..	13	170	3	
	" ..	14	140	3.5	
	" ..	15	270	3	
	62nd mile ..	16	120	2.5	
	" ..	17	100	9.25	
	" ..	18	230	6.5	
	" ..	19	60	11	
	" ..	20	150	6	
	" ..	21	440	9.5	
	63rd mile ..	22	1,430	8	
	" ..	23	140	5.5	
	" ..	24	40	9.5	
	" ..	25	70	14	
	64th " ..	26	580	4.25	
	" ..	27	890	3	
	" ..	28	150	4	
	65th " ..	29	370	7.5	
	" ..	30	70	7.75	
	" ..	31	170	4	
	66th " ..	32	70	4	
	" ..	33	50	7	
	67th " ..	34	1,078	5.5	
			10,870		

(Signed) T. SUBRAMANIA AIYAR,
Assistant Engineer.

No. 7.
STATEMENT showing loss of crops, wet or dry, of houses, animals and food-grains, seeds, &c., by the flood of 31st July 1896 from upper to lower anicuts.

Number.	Names of villages.	Wet cultivation in acres.	Approximate value of col. in Rs.	Dry cultivation in acres.	Approximate value of col. in Rs.	Number of houses, &c.	Approximate value of col. in Rs.	Number of animals lost.	Approximate value of col. in Rs.	Food-grains and seeds, &c., lost.	Approximate value of col. in Rs.	Remarks.
Trichangopoly Taluk.												
1	Jenanthinathapuram	60 col.	200	1	..	..	..	..	..	40 kullams.	100 0 0	..
2	Kuhar	40 col.	100	..	..	60	3,000	..	..	20	50 0 0	..
3	Alangunnapuram	10 kullams.	25	..	..	..	..	..	..	80	150 0 0	..
	Total	110	325	..	..	60	3,000	..	..	..	..	..
Udaiyarpalayam Taluk.												
1	Kolamantham	196	..	..	..	..	..	..	..	..	..	..
2	Kadathetham	29	..	..	..	..	..	..	..	..	..	..
3	Tirumalavadi	14	..	..	..	..	..	..	..	..	..	..
4	Anaimangalam	10	..	..	..	..	..	..	..	..	..	..
5	Karapaham	..	..	20 collams.	..	..	..	..	..	..	..	..
6	Thirumangur	..	..	0-10	..	..	..	..	..	..	..	..
7	Thiruvannur	..	..	130	..	..	..	..	..	..	..	..
8	Varappankurichi	..	..	..	..	..	..	..	..	..	..	..
9	Sullangudi	..	..	..	..	..	..	..	..	..	..	..
10	Periyannur	..	..	10	..	..	..	..	..	..	..	..
11	Tharkeloor	..	..	35	..	..	..	..	..	..	..	..
12	Ramasalloor	..	..	12 loam.	..	..	..	..	..	..	..	..
13	Thathur	..	..	316 patta.	..	..	..	..	..	..	..	..
14	Anagudi	..	..	607 purnaboke.	..	..	..	..	..	..	..	..
15	Arumalai	..	..	..	..	..	..	..	..	..	..	..
16	Madanathur	..	..	..	..	..	..	..	..	..	..	..
17	Palakmarachi	..	..	..	..	..	..	..	..	..	..	..
18	Adarmanthi	..	..	..	..	..	..	..	..	..	..	..
19	Thendichijerumatham	..	..	..	..	..	..	..	..	..	..	..
20	Vakkannur	..	..	..	..	..	..	..	..	..	..	..
21	Arumangampettai	..	..	..	..	..	..	..	..	..	..	..
22	Karuppoor	..	..	..	..	..	..	..	..	..	..	..
23	Kodai	..	..	..	..	..	..	..	..	..	..	..
24	Vanboogudi	..	..	..	..	..	..	..	..	..	..	..
25	Kottigaram	..	..	..	..	..	..	..	..	..	..	..
26	Vanavalloor	..	..	..	..	..	..	..	..	..	..	..

(Signed) T. D. SANKARA SASTRY,
Overseer.

No. 8.

STATEMENT showing flood levels on important masonry works in Coleroon left bank from Upper to Lower anicuts.

Number.	Name of work.	Position or distance from head, that is upper anicut.		Flood levels.			Remarks.
		Miles.	Chains.	1858 (assumed).	1882.	1896.	
1	Upper anicut	..	..	249-65	..	249-90	Crest 242-40 M S L.
2	Iyca volkal head sluice	..	..	249-65	..	249-90	Sill 236-21, platform 249-81.
3	Surplus sluice in Emaahorai limits.	11	10	213-87	209-43 (1892)	210-68	Sill 201-86.
4	Surplus sluice in Thandan-karai.	11	14	212-67	207-16 (")	210-00	Do. 202-49.
5	Surplus sluice in Pachampet, Thandan-karai.	13	16	207-13	204-89 (")	207-50	Do. 194-89.
6	Surplus sluice in Periavalachery.	14	37	202-23	202-64 (")	204-97	Do. 190-95.
7	Surplus sluice in Periavalachery.	16	4	201-36	198-25 (")	199-17	Do. 189-00.
8	Surplus sluice in Mailrangam, Periavalachery.	15	16	200-84	198-66 (")	197-98	Do. 185-40.
9	Surplus sluice in Edayathumangalam.	16	9	197-93	193-12 (")	195-62	
10	Surplus sluice in Kubur limits.	17	14	194-70	191-80 (")	193-80	Sill 182-80.
11	Surplus sluice in Kubur limits.	18	40	190-23	..	188-14	Do. 180-35.
12	Surplus sluice in Melambil limits.	21	17	181-99	..	178-45	Do. 167-95.
13	Surplus sluice in Kilambil limits.	22	1	179-75	..	175-68	Do. 163-92.
14	Kuliyar anicut	25	40	166-84	..	164-90	Crest 184-85, wing 167-39.
15	Nandyar anicut	26	20	165-03	..	165-25	Crest 154-50, wing 164-63.
16	Head sluice to Nandyar channel.	26	22	165-03	..	163-25	Flood 161-23.
17	Tumaturam drainage sluice.	29	70	..	..	151-86	147-40.
18	Alambady do.	30	70	..	..	161-03	141-65.
19	Arumankuru channel drainage sluice.	36	80	..	..	133-63	124-07.
20	Karapaham drainage sluice.	37	10	..	130-00	131-49	127-91.
21	Arasanjeri head sluice	43	..	..	112-90	115-76	101-38, platform 110-55.
22	Maradayar under-tunnel and Ponnéri head sluice.	52	40	..	89-00	93-76	Sill 71-67 F., platform 89-27.
23	Anakudi Calingula	59	20	..	79-76	81-76	Crest 76-09.
24	Valakuruchi drainage sluice.	61	80	..	71-60	72-91	62-51. Floor.
25	Karuppan do.	66	70	..	61-00	64-40	Crest 51-40.
26	Lower anicut	67	35	62-20	60-25	62-40	

(Signed) T. B. SANKARA SASTRY,
Overseer.

It is believed that the flood levels of 1858 were correctly recorded at the Upper and Lower anicuts. The levels at intermediate points are not known except at the Grand anicut.

21st November 1896.

(Intld.) W. H.

No. 217 I.

Note by the Chief Engineer for Irrigation.

There has been considerable delay in the submission to this office of the accompanying detailed reports on the Cauvery and Coleroon floods in the Trichinopoly district at the end of July and beginning of August. The reports however are very complete and as regards the Coleroon above the Lower anicut give the information required to fix the proper height of the embankments. The flood line in lower floods was previously known; but the great irregularity in the section of the river made

calculations of the level in extreme floods unreliable. The observations made of the flood levels in the Aginda Cauvery and Cauvery are useful as supplementing previous knowledge.

2. The flood of 1882, which was also entirely a Cauvery flood, was lower than that of 1896 by about 9 inches at the Upper anicut, and 2 feet 2 inches at the Lower anicut, the great difference being due to the exclusion from the delta, of water in excess of what the rivers could safely carry. This was effected by means of the Cauvery Veuniar regulator, built in 1897. Though not stated in so many words, it has always been recognised, that in the event of such a flood as the recent one, it would be right to save the delta by forcing as much water as necessary into the Coleroon at the Grand anicut. The protection of the delta is not however complete. The right bank of the Coleroon was raised to what was considered the necessary height from the Grand anicut to the Lower anicut, a distance of 49 miles, but the project of raising both banks between the Lower anicut and the sea, a distance of 35 miles, was laid aside owing to the large amount of the estimate, and for other reasons.

3. The Executive Engineer gives a list of breaches in the left bank of the Coleroon. These are chiefly in the bank carrying road No. XX for 13 miles above gated by Lieutenant-Colonel Smart. The difficulty about the left bank between the Upper and Lower anicuts is that for the whole 60 miles the country to the north, about mile 26, drainage sluices are provided, but below this there are merely openings in the bund, and whether much would be gained by building sluices in these places is doubtful. Sluices would have to be very large to pass the drainage during heavy land floods, without backing up the water to such an extent as to flood the villages.

4. The flood of 1858 though $\frac{3}{4}$ foot lower than the recent one at the Upper, and $\frac{1}{4}$ foot at the Lower anicut is still the greatest of which there is any record. It began as a Cauvery flood, and during its continuance a cyclone occurred in the neighbourhood of Trichinopoly, and a large volume of water entered the Cauvery from the south and Coleroon from the north. The river bunds were lower then than now, and the water spread all over the country, a great portion passing over the Tanjore delta. The maximum flood level between Trichinopoly and the Grand anicut is probably 2 feet higher than the 1896 flood, and the District Board can therefore not be allowed to raise the road forming the Cauvery left bank between those two places, unless large flood openings are left for discharge over Srirangam island to the Coleroon. There may be difficulties in arranging for anything of this sort, as the interested ryots will probably object to having the spill too closely localised. The question of raising the right bank road will also have to be considered in connection with this.

5. With regard to the embankments of the Srirangam island generally, it is considered inexpedient to strengthen them below Srirangam.

6. The left embankment of the Aginda Cauvery and of the Cauvery above Trichinopoly require to be raised. Estimates for this will be made out.

7. The Kodamurti right bank on which the safety of Trichinopoly depends should be strengthened as soon as funds can be provided. Owing to the revetment not being high enough the bank was much eroded by waves and would have been made quite unpassable for traffic, but for the measures taken to protect it.

8. The damage done by the floods would have been much more extensive, but for the exertions of the officers and subordinates of the Public Works and Revenue Departments who worked unremittingly, and co-operated as fully as possible in trying to save the banks. The Executive Engineer brings especially to notice the exertions of the Sub-Divisional officer Mr. Subramania Iyer and Supervisor Abdul Latiff. He was himself also most active in preventing or closing breaches and directing the labours of his subordinates and others.

CHEPÁK,
1st December 1896.

(Signed) F. J. WILSON,
for Chief Engineer for Irrigation.

ORDER—No. 1049 I., dated 12th December 1896.

Communicated to the Superintending Engineer, VI Circle, and the Superintending Engineer on special duty, Cauvery Delta Completion Estimate.

2. His Excellency the Governor in Council is pleased to note the good services rendered on this occasion by the officers and subordinates of the Public Works and Revenue Departments.

3. Copy of these Proceedings will be forwarded for the information of the Government of India.

[Here enter No. 1050 I., dated 12th December 1896.]

(True Extract.)

(Signed) W. HUGHES,
Joint Secy. to Government,
Irrigation Branch.

To the Superintending Engineer, VI Circle.

" " " V " on special duty,
Cauvery Completion Estimate.

" Chief Engineer for Irrigation.
Public Works Department.

" Revenue Department.

" Local and Municipal Department.

ENDORSEMENT—No. 1050 I., dated 12th December 1896.

Forwarded accordingly.

(By order.)

(Signed) W. HUGHES,
Joint Secy. to Government,
Irrigation Branch.

1045 8 12 10 26
PROCEEDINGS OF THE MADRAS GOVERNMENT.

Under date the

Read the following

Print with
all enclos.

From the Supg: Engineer, Sixth Circle, (H.F. No: 1824 T.C. dated 11th Novr: 1906)

Note by the Chief Engr: for Irrigation (H.F. No: 2171, dated 1st Decr: 1898)

Handwritten notes and signatures:
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Public Works (1896) Department.

CURRENT No. 11237

Order

From Mr. Chief Engineer for the

No. 217 J

Dated 1st December 1896

Received 11.12.96

Enclosures ~~2~~ 22 (6 plans)

Spare copies

SUBJECT.

Notes submitting with various
full reports of damages
caused by the recent floods
in the Trichinopoly Division.

BACK PAPERS.

G.O.	No.	Department.	Date.
Receipt	63	J.C.	11. 11 96
do	57	J.C.	1. 10 96
same	37	J.C.	26. 9. 96
0.	912.9	original	30. 10 96
0	786.9	do	25. 9. 96
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FURTHER PAPERS.

[illegible]

Note by the Chief Engineer for Irrigation.

There has been considerable delay in the submission to this Office of the accompanying detailed reports on the Cauvery and Coleroon floods in the Trichinopoly District at the end of July and beginning of August. The reports however are very complete and as regards the Coleroon above the Lower ... Anicut give the information required to fix the proper height of the embankments. The flood line in lower floods was previously known but the great irregularity in the section of the river made calculations of the level in extreme floods unreliable. The observations made of the flood levels in the ... Aranda Cauvery and Cauvery are useful as supplementing previous knowledge.

2. The flood of 1832, which was also entirely a Cauvery flood, was lower than that of 1896, by about 9 inches at the .. Upper Anicut, and 2ft 2 inches at the Lower Anicut, the great difference being due to the exclusion from the Delta, of water in excess of what the rivers could safely carry. This was effected by means of the Cauvery Vennar Regulator, built in .. 1827. Though not stated in so many words, it has always been recognised, that in the event of such a flood as the recent .. one, it would be right to save the Delta by forcing, as much .. water as necessary into the Coleroon at the Grand Anicut. This protection of the Delta is not however complete. The right .. bank of the Coleroon was raised to what was considered the .. necessary height from the Grand Anicut to the Lower Anicut, a distance of 49 miles, but the project of raising both banks .. between the Lower Anicut and the sea, a distance of 35 miles, was laid aside owing to the large amount of the estimate, and for other reasons.

3. The Executive Engineer, gives a list of breaches in the left bank of the Coleroon. These are chiefly in the bank.. carrying road No:XX for 13 miles above the Lower Anicut. The whole question of raising the Coleroon tanks will be investigated.

ted by Lt: Colonel Smart. The difficulty about the left tank between the Upper and Lower Anicuts is that for the whole 66 miles the country to the North, about 1100 square miles in area, drains into the river. Down to the Nandyar Anicut, about mile 26, drainage sluices are provided, but below this there are merely openings in the bund, and whether much would be gained by building sluices in these places is doubtful. Sluices would have to be very large to pass the drainage during heavy land floods, without backing up the water to such an extent as to flood the villages. The flood of 1853 though 3ft lower than the recent one at the Upper, and 1ft at the Lower Anicut is still the greatest of which there is any record. It began as a Cauvery flood, and during its continuance a cyclone occurred in the neighbourhood of Trichinopoly, and a large volume of water entered the Cauvery from the South and the Coleroon from the North. The river banks were lower then than now, and the water spread all over the country a great portion passing over the Tanjore Delta. The maximum flood level between Trichinopoly and the Grand Anicut is probably 2ft higher than the 1896 flood, and the District Board can therefore not be allowed to raise the road forming the Cauvery left tank between those two places, unless large flood openings are left for discharge over ~~Srinagum~~ island to the Coleroon. There may be difficulties in arranging for anything of this sort, as the interested ryots will probably object to having the spill too closely localised. The question of raising the right tank road will also have to be considered in connection with this.

5. With regard to the embankments of the ... ~~Srinagum~~ island generally, it is considered inexpedient to strengthen them below ~~Srinagum~~.

6. The left embankment of the Aganda Cauvery and of the Cauvery above Trichinopoly requires to be raised. Estimates for this will be made out.

7. The Kodamurti right bank on which the ... safety of Trichinopoly depends should be strengthened as

soon

soon as funds can be provided. Owing to the revetment not being high enough the tank was much eroded by waves and would have been made quite unpassable for traffic, but for the measures taken to protect it.

8. The damage done by the floods would have been much more extensive, but for the exertions of the Officers and Subordinates of the Public Works and Revenue Departments who worked unremittingly, and co-operated as fully as possible in trying to save the banks. The Executive Engineer brings especially to notice the exertions of the Sub Divisional Officer Mr: Subramania Iyer and Supervisor Abdul Latiff. He was himself also most active in preventing or closing breaches and directing the labours of his subordinates and others.

For Chief Engineer for Irrigation.

Chempauk

1st Dec
1896.

Public Works (1896) Department.

CURRENT No.

110200

Order

From

The Suptg Engineer 11 Cont

No. 124 J.C.

Dated 11th November 1896

Received

Enclosures

Spare copies

SUBJECT.

Damages caused by the
recent floods in the Leich,
Do. Submitting full report
of —

G.O.	No.	Department.	Date.

FURTHER PAPERS.

[illegible]

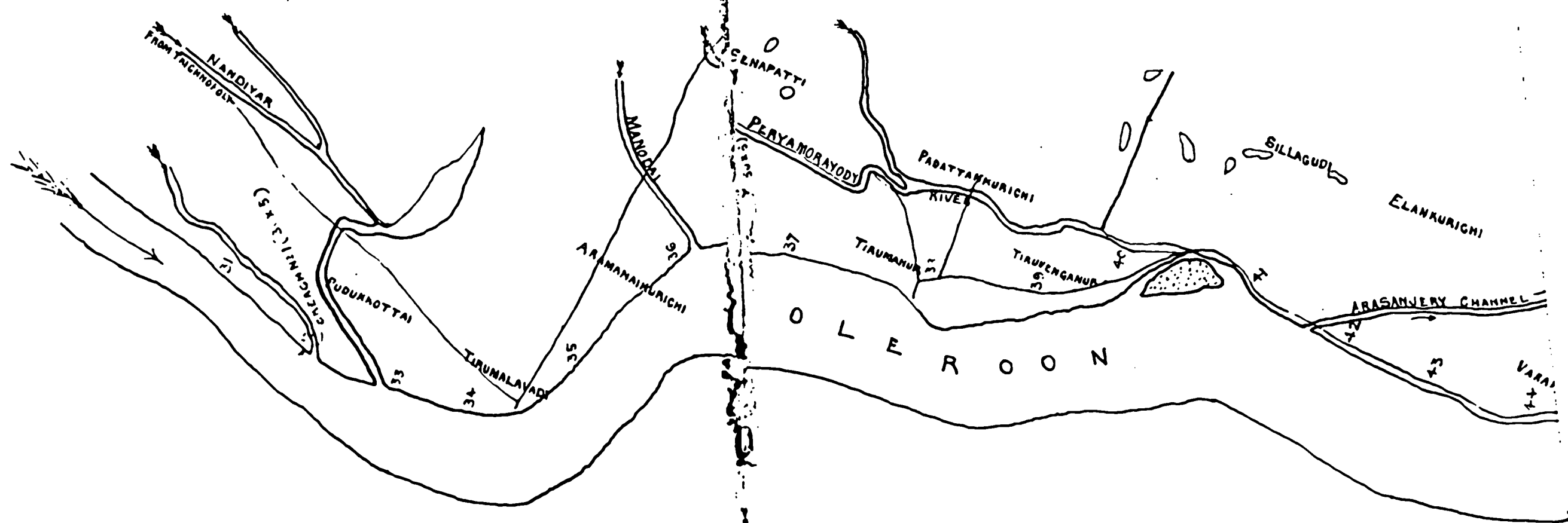
Handwritten map showing the intersection of Highway 1 and Highway 2. The map includes labels for 'KIRIYAMA', 'NAGASAKI', and 'BRANCH'.

6" CIRCLE

TRICHINOPOLY DIVISION

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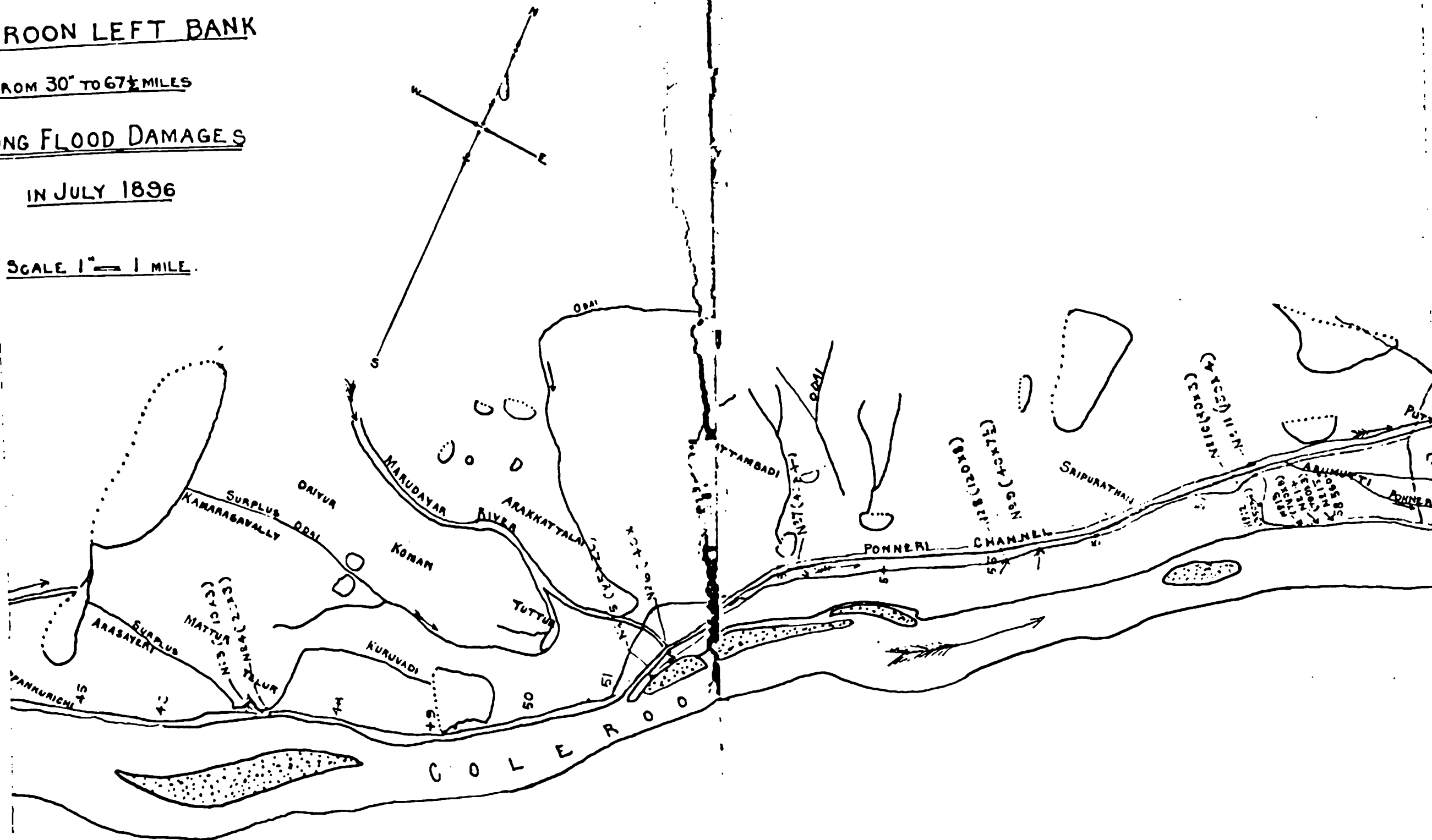
ERON LEFT BANK

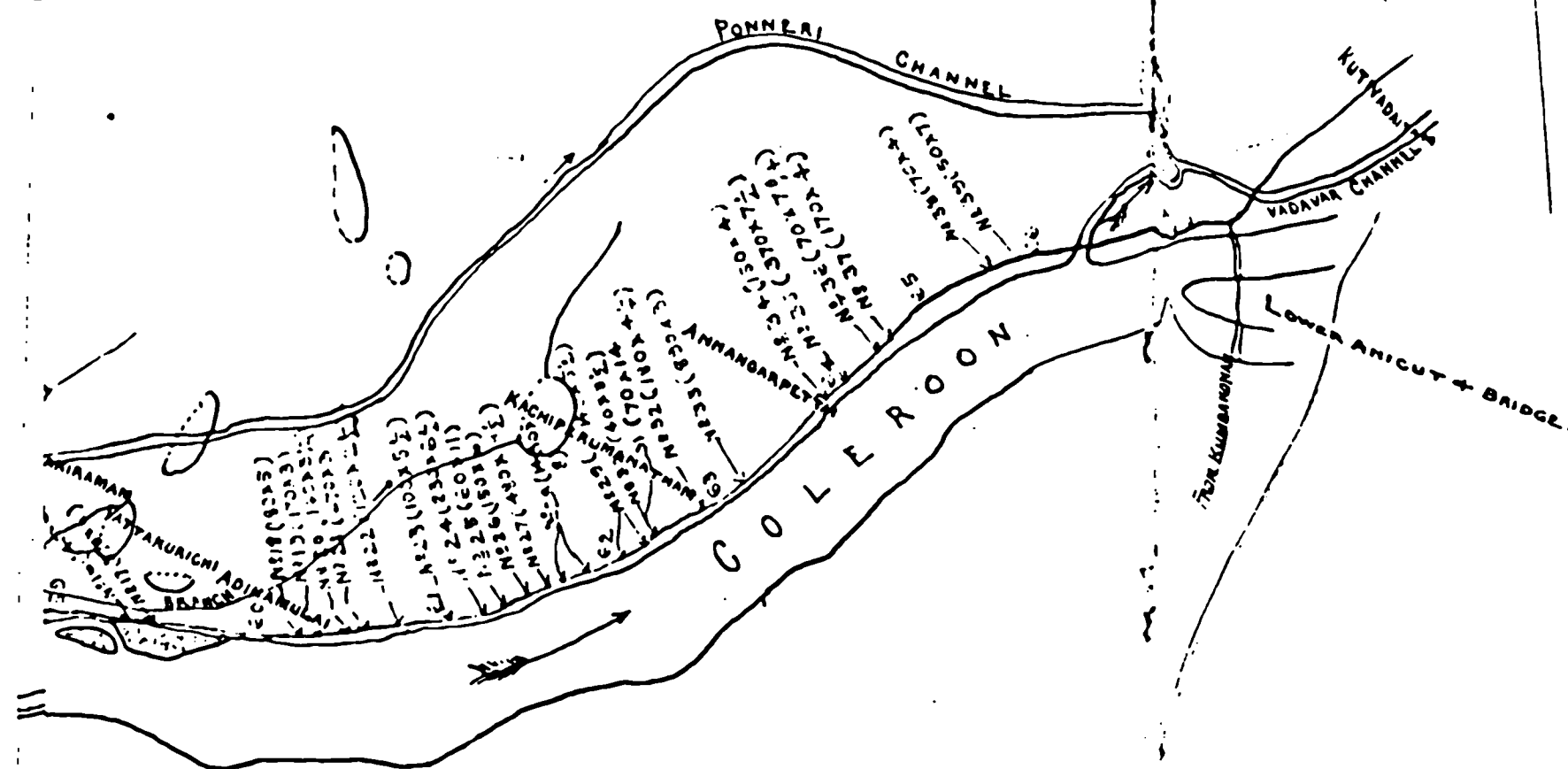
FROM 30° TO 67½ MILES

ING FLOOD DAMAGES

IN JULY 1896

SCALE 1" = 1 MILE.





(56) T O SANK.

(Sd) T. SUBRAMANIAM
ASSIST. ENGINEER

25-9

D.V. Buckley LT COL R.E.
SUPERENGINEER VI CIRCLE.

11-11-96.

P. ROSCOE ALLEN.

EX: ENGINEER.
TRACHINOPOLY DIVISION.
19.10.96

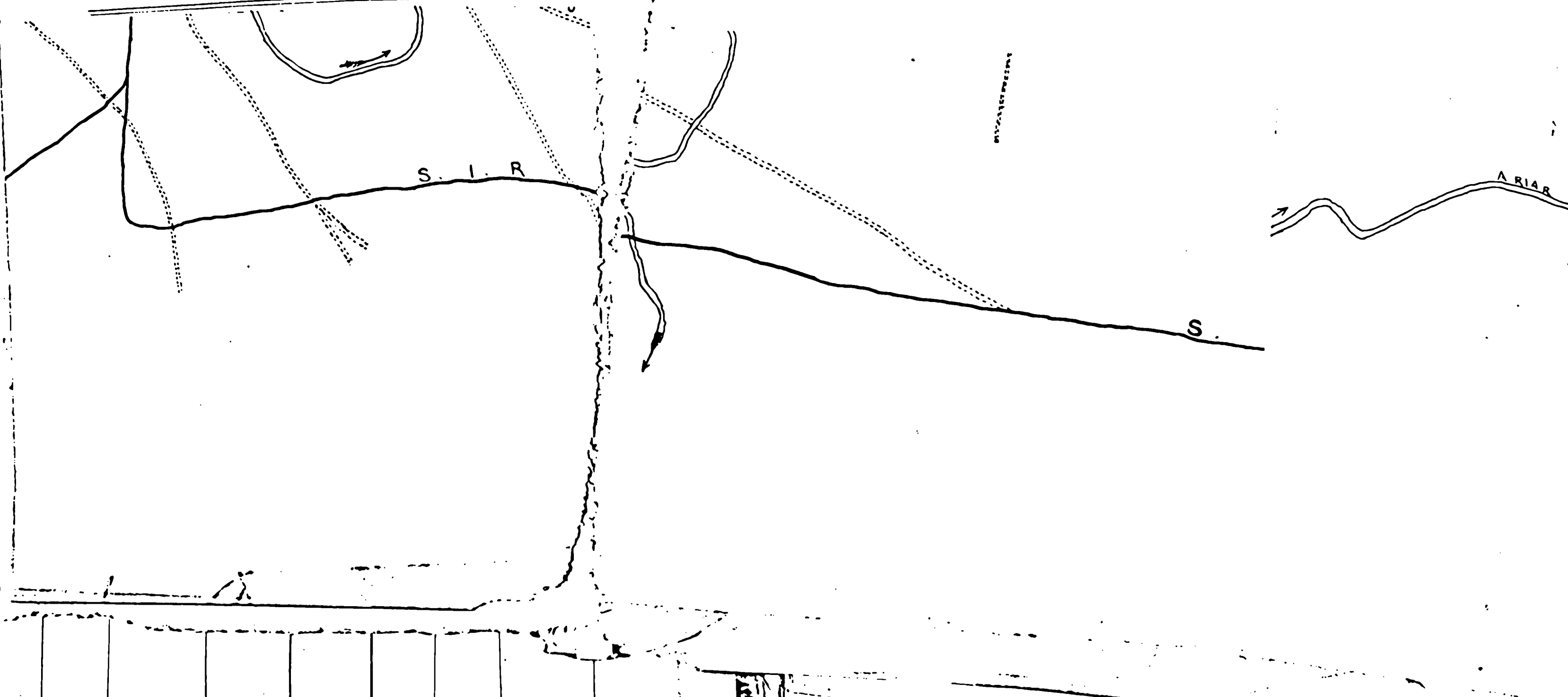
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FLOODS OF JULY-1896

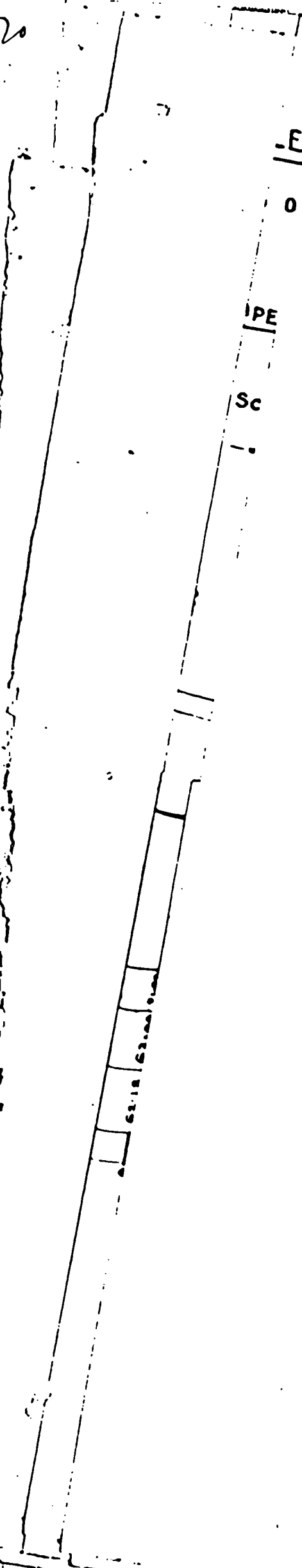
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TO ACCOMPANY FLOOD REPORT No. DA.



20



OFFICE OF THE SUPERINTENDING ENGINEER,
6th CIRCLE, /

No. 10247C

Tichinopoly, 11 November 1896.

From Lieut Col. O.V. Boddy R.R.
The Superintendent Engineer,
6th Circle.

To
The Chief Engineer.

for irrigation.

SIR,

ENCLOSURES. 20.

1. Copy of Executive
Resolutions No
4595.2
19-10-96 with
19 enclosures.

In continuation of this
office letter No 1606 T.C dated 1st October 1896,
I have the honor to forward herewith the Copy
of Executive Resolutions No 4595.2 of the 19th
Oct 1896, with Copies of its enclosures, submitting
full report of damages &c. caused by
the recent floods in the Tichinopoly
Division.

I have the honor to be
Sir,

Your most obedient servant

O. V. Boddy Lieut Col R.R.

Superintendent Engineer 6th Circle

P. W. D. 6th CIRCLE.

FROM

THE SUPERINTENDING ENGINEER,
6th CIRCLE.

TO

THE CHIEF ENGINEER,

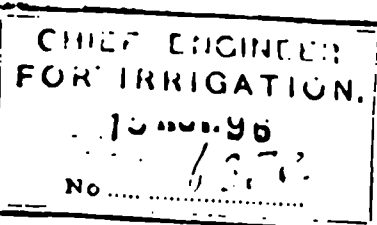
NO.

Dated.

Received.

189 .

Enclosure.



2522
11237/56

No. 459 S.E.

Executive Engineer's Office
Trichinopoly. 19 October 1896.

From

P. Roseau Allen Esquire,
Executive Engineer
Trichinopoly du.

To.

The Superintending Engineer,
The Kanchi.
Trichinopoly

Sir,

Enclosures -

3. Statement.
1. Map.
1. North India
officers report
with 14 Encls.

I have the honor to submit herewith my report on the lake floods in the Canyery which reached their maximum height on the 31st July last.

1. This was the 2nd Considerable flood we have had in the Canyery during the year 1896 the previous one which reached the height of 221.3 on the Canyery bridge gauge & 242.40 at the Upper ancient her occurred on the 26 June. Both these floods were purely river floods there being absolutely no local rain.

2. As regards the former it will be seen that it is the highest river flood as yet recorded and second only in height to the flood of 1858 which was

Combined land and river flood. The records of the 1858 flood are generally discredited but there is ample evidence to show that it was a considerably higher flood than the lake one. From records it would almost appear that the severity of these river floods is progressive. There are I consider two reasons for this the first being that the river is more effectively confined within its banks than formerly and the second that the clearance of the land within the catchment area of the river for cultivation rapidly progresses. Regarding the first of these reasons I would very strongly recommend that it should not be increased. I do not suppose that since 1858 so much land has been protected by flood banks as to exert any very great influence on the height of the floods in the river at any rate above Trichinopoly town. If my reasoning correct it would appear that the height of the river floods in the future likely to continue to be progressive.

A statement is attached showing

81
The height the water rose to on 31-7-98 on various masonry works within this division. I do not propose in this report touching on all the minor details of the damage done by the flood as what are not here noted are carefully recorded in the accompanying report of the North Sub-Division Officer and to which I would refer you. The Right bank of the Cauvery all the way down from its head at the junction of the Amravati to the Cauvery bridge near the Trichinopoly town was found efficient. Two very small areas were flooded in the Kullitalai Taluk one by water finding its way through a dis-used drainage sluice and the other by water passing up through a drainage bridge on the South Indian Railway which passes the drainage of the Kullitalai Taluk into the Vya-kondan Channel.

4. Our difficulties with the set in the 36 inch were aggravated but a favorably situated accretion has formed which encourages me to hope

c that an economical solution of our difficulties is not at all impossible.

5. If you will refer to the Talag Map you will find that an area of 3,500 acres was flooded by water backing up through the Kodamurti bridge -

The Kodamurti bridge is an opening left in the flood bank for the discharge of the Combined floods of the Kodingal drain and Koriar. It is of 6 Segmental arches 30 feet span & 12.5 feet to springing level. This Koriar and Kodingal together represent the area drained by all cross drainages of the Vyahondan from its head to Trichinopoly and to this must be added the area enclosed between the Vyahondan & the Gauney Right flood bank - a total area of $5\frac{1}{2}$ Square miles.

6. From time to time local agitation have been started for works to protect this area liable to submersion by floods. As will be seen above it is subjected to being flooded by river flood and by land flood. To protect it

it from river flood it would be necessary to fit up the Kodamurti bridge with shutters. This however would certainly not protect it from submersion by land flood and the immense size of any structure fitted up with shutters and of sufficient waterway to pass a land flood stamps the idea as altogether absurd from a commercial point of view.

Again it has been proposed to raise the northern bank of the Kodingal drain as to protect the portion between that drain and the river flood bank. Had such been done it would have protected an area of 1,650 acres from submersion during the lake flood. Were such a bank however made it would assuredly be breached during a land flood as the opening left for the discharge of the same would be most inadequate. River floods usually occur at a time of year when cultivation has not advanced very far & then do not do much damage & as there is no practicable manner evident

27 for protecting this area against land
28 flood I am unable to recommend that
29 any protection work be undertaken.

30 7. The Kodamurki bund which
31 protects the Trichingopoly Town from
32 flooding was eroded by the severe
33 action of the waves. An estimate
34 for raising this bank where necessary
35 and of protecting stone revetment
36 has already been submitted.

37 8. Below the Cannery bridge as far
38 as the old Vinnar head the right
39 bank is used as a road. There was
40 where I anticipated that most da-
41 mage would be done as on a lake
42 inspection I found that the sur-
43 face of the road was for the most
44 part about on a level with the
45 flood of 1873 and which this flood
46 exceeded by 2 feet. Had this bank
47 breached very great damage would
48 have been done. In the immediate
49 vicinity several villages would have
50 been flooded and a very great deal
51 of damage done in the Tanjore
52 District. The difficulty moreover

53 of stopping such a breach would have
54 been immense as the water would
55 have found its way into the old
56 Vinnar Channel and it can only
57 be imagined what would have hap-
58 -pened. Here I was aided by a
59 trusty Subordinate Supervisor
60 + Abdul Latif Sahib of whom I
61 cannot speak too highly. From the
62 levels now in my office, of this road
63 it can be seen the flood was nearly
64 everywhere on a level with its sur-
65 -face and in many places for
66 some distance above it. At one
67 time the water actually began to
68 flow over the bank but it was stopped
69 in time, small banks erected and
70 the danger averted. In this I con-
71 sider the Supervisor has done sub-
72 -stantial service to the Govt. & I
73 very strongly recommend him for
74 a substantial reward. His great
75 influence also with the Revenue
76 officials of the Trichingopoly Taluk
77 was exceedingly advantageous & use-
78 ful here. The levels of this bank are

These trees were
primarily planted as
a windbreak for the
trees, but they are
now being used for
firewood.

surprised it did not go in several places. It leaked badly or rather weeped badly. The height of this bank above the highest flood level differs in places but in one or two it was barely 1 foot. Levels of these banks will be taken and estimates submitted for necessary improvements. The road between the bridges is too low - water actually flowed from the downstream side (& which the flood had uninterrupted access) to the upstream side. I consider that the District Board should be requested to consider the advisability of raising this portion of this road. Below the road the whole of the island was flooded - water had as above noted, uninterrupted access to every part of it. The Athamashy, Thiruvadasalai, Thiruplathurai, Kondiam, Puthab, Incher, Kilikuduru &c were completely swamped and had to be abandoned. Such protected banks as there are to this & free of the island are low & easily of

and were breached in many portions. It is considered advisable to keep these banks low and weak as the surplusing facilities from the Cannery to Holbrook are at present insufficient. One of the disadvantages of the land being flooded in this manner is the undesirable deposit which the floods leave on it. I am told this is not generally appreciable, but in the vicinity of breaches it is very great. I have good reason however for stating that only a few areas in the whole island have been temporarily rendered uncultivable by this means. Every possible precaution to protect cultivation has been taken.

10. For the opposite side of the river the North Sub-Dn officer has given such ample details of the damage done by the floods in his carefully compiled re-

*The
natural
inevitable*
I have enclosed a copy.
The fact that we must
look to our left bank from

71
the head of the river to Musiri as well as at Musiri itself & devise schemes for its improvement.

11. The danger experienced at the Musiri Raktovalkal Head Sluice and the breaches at the Ponney Channel Head sluice were both caused in the same manner. The case is one where a long channel with an open head starts from the river bank, on the river side and runs a more or less lengthy course to a head sluice. There being no escape to the river the water in entering the open channel runs up a cut de sac picks up & in less than no time the water in the channel near the Head Sluice stands considerably higher than the water in the river close by. In such cases danger must exist & the necessity for an escape near the Head sluice of such channel leading to the river has been amply demonstrated. The utility of such a construction moreover as a means of keeping the leading channel free of silt points further to necessity of

their provision in all such cases.

12. The measures for the protection of the Kukur village which you have ordered us to take are now well in hand & regarding this & other branches I am making every endeavour immediately to ensure the present safety of cultivation & further to so push forward repair work as to secure them against any large land flood which may occur later in the year and which the absence of any rain hitherto points to as a very probable contingency.

13. The advisability of providing with drainage sluices many of the open drainage cuts which exist in the Koleroon left bank below Randier aient has already engaged my earnest attention and I think the late flood made out a case for the one at Puducottah without the necessity of further proof. Plans therefore for this will be submitted soon. The remainder may not prove quite so simple a matter.

14. The question of providing flood banks to the larger drainage lines entering the Koleroon on its left bank will be considered each on its merits. I think something should be done to the left bank of the Narundaya. A high flood here is not so very far off I do not anticipate that this will be a very expensive matter. As to the Koleroon left bank from Vapper to the Lower aient, for several reasons this has been kept low - sufficiently low for any considerable flood to spill over it. I believe the reasons for this state of things to be that, considering the uncertainty of the amount of flood water which the Lower aient will pass, it is better to permit the water to spill over this bank than to concentrate the whole flood and deliver it, as concentrated, at the Lower aient for discharge for fear that such might endanger the safety of the lower aient, and again, as a further reason, that in spilling

over there is not much likelihood of extensive damage being done nor of a great area of land being submerged. The above are, I believe the reasons correctly stated.

15. When the flood spilt over the bank the water on the land side very rapidly rose until it levelled at a point a few miles further down stream was higher than the water in the river and which caused a discharge again into the river as the bank top has a fall corresponding to the fall in the river.

16. It can be seen from the Survey sent herewith that this redischarge occurred in 2 places. The relief therefore afforded to the river by spilling over this bank was but slight and temporary. The road from the Lower ancient to South Creek certainly through breaching afforded some relief but the damage so done must be so very great that I do not think it can be recommended that this road be kept in such a state as

as to breach in the future on the occurrence of another such flood. Such relief cannot therefore be depended on in the future. A section of this road as breached is sent herewith. Altogether 34 breaches occurred in this portion & together with the damage done to the Pommeri Channel it will take \$11,000 to put right the damage done.

17. In the statement of loss of crop, houses and food grains from Nos. 14 & 26 appertaining to this portion. The figures were supplied by the Revenue Dept. The total area submerged in this portion was 15,800 acres or 24.687 Square miles.

18. From the levels given of the flood from Upper to Lower ancient it will be seen that the surface level is not the same throughout but that the fall becomes as the Lower ancient is approached.

19. If, as I believe it has been ascertained by Colonel Smart, that the Lower ancient cannot in

its present state pass such a flood as the lake one without liability to injury, I would submit for consideration extending its waterway sufficiently to enable it to do so. From what I have observed it would appear that the only relief of any moment afforded to the river was through the breaches in the North-South Arast Road. These must have caused very much damage & apart from this I do not think the District Board are at all likely to leave the road in a state which will allow of its breaching so conveniently another time. The Vadava head & North Rajah mihal head sluice are according to accepted ideas badly situated. I am told that the channels of each silt up badly at the head & such must appear to be the case. I would therefore propose that the idea of removing both to a better situation be considered and extending the lower channel across the site they at present occupy.

20. In conclusion it is with much

pleasure that I have to inform + you that the North-South officer and the rest of the staff of the Division showed great devotion to their duty & did everything in their power to avert danger and to repair damages.

21. I request you will convey my cordial thanks to Mr. Colver, the Head Assistant Collector, the Tahsildar of Musiri, and Town Sub Magistrate of Trichi-nopoly for timely assistance rendered by them.

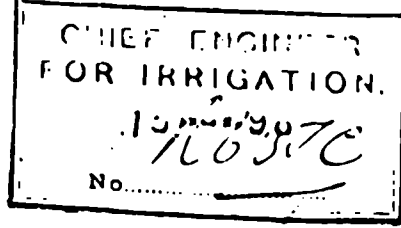
I have &c
Signed P. Roscoe Allen
Executive Engineer
Trichinopoly

/ True copy /

J. V. Boddy
11-11-96. Lt. Col. R. B.
Superintending Engineer
Trichinopoly

[Signature]
7/11

1005.11
11237/56



Trichinopoly Division

Register of ariants showing the level of the principal parts and flood levels.

No.	River	Name of Ariant	Contained flood levels above the crest of ariant			Level of principal parts		Remarks
			Year level	Year level	Year level	Present	Head Skier	
1	Cavery	Upper ariant - cut	7.50	7.50	4.50	4.70	236.79	Sill of Upper Cavery = 242.20 Ante branch crest = 242.44 Calculated M.F.L. is 13.00 over the crest of Cavery dam = 236.24 above M.S.L.
			1896	1882	1881	1883	236.85	
			7.40	6.50	4.00	4.00	235.44	
2	Cavery	Lower ariant	6.80	7.00	7.60	6.10	179.60	Sill of Lower Cavery = 189.20 Assumed M.F.L. is 16.05 Sill over Regulation Sill = 184.25
			1887	1893	1891	1892		

N.B. The ariants are in charge of members of the P.W.D. of Tanjore Dist.

Three copy

J. V. Woodley Lt. Col. R.E.

Superintendent, Tanjore

19-10-20

637C
2

Trichinopoly

Statement showing the difference of level between the highest flood of the year 1896 & top of bank at every mile

Miles	Reading		Difference		Remarks.
	to top of bank	H. F. L. of 1896	above	Below	
			M.F.L.	M.F.L.	
Agonda Country R.R. (Trichinopoly)					
0	4.70	8.08	3.38	"	Stone is missing
1	4.38	8.70	4.32	"	
2	4.50	8.12	3.62	"	Stone is missing
3	4.15	7.30	3.15	"	do.
4	3.95	6.95	3.00	"	
5	4.65	7.23	2.58	"	
6	5.08	8.80	3.72	"	
7	4.70	8.24	3.54	"	
8	4.40	6.70	2.30	"	
9	4.85	7.95	3.10	"	
10	4.18	6.80	2.62	"	
11	4.82	7.58	2.76	"	
12	2.90	6.30	3.40	"	
13	4.35	7.25	2.90	"	
14	4.00	8.35	4.35	"	
15	4.76	8.75	3.99	"	
16	4.50	6.85	2.35	"	
17	4.30	8.40	4.10	"	
18	4.85	9.68	4.83	"	
19	4.55	8.75	4.20	"	
20	4.20	7.08	2.88	"	
21	4.68	10.28	5.60	"	Stone is missing
22	1.98	5.90	3.92	"	do
<u>Trichinopoly</u>					
23	5.00	9.88	4.88	"	
24	4.78	9.88	5.07	"	
25	4.80	10.55	5.75	"	
26	4.65	6.38	1.73	"	

Res. 2
1237/96

CHIEF ENGINEER
FOR IRRIGATION.
15 MAR. 96
No. 637C

229.3
11237/96

Statement showing the height of Flood levels at the different masonry works in the Trichinopoly Du. VI. Levels

No.	Name of Work	Position		Flood levels near Sea Level											Remarks
		Miles	Fath.	1858	1868	1877	1880	1882	1886	1887	1890	1892	1893	1896	
<u>Kulitalai Taluq</u>															
1	Kakkalai Rakko Vothab Hd Sluice														
2	Surplus weir								9.85					6.19	Sluice gauge reading above sill
3	Do														do
4	Hd Sluice Manavasi					6.25			6.60						
5	Surplus Sluice of Kakkalai Rakko Vothab					347.92	346.47	348.22	47.34	349.03				350.32	
6	Head Sluice of Mayamur					3.45	1.97	4.00						5.45	above sill
7	Surplus weir							347.30						347.65	
8	Surplus Sluice	1	500											8.63	above sill
9	Do	2	2880											6.52	do
10	Kumbakudi Surplus Sluice	3	2730											5.08	do
11	Krishnaperumam Hd Sluice	4	560								335.41			337.51	
12	Mahadampuram Hd Sluice	5	630											333.10	
13	Manudon Head Sluice	5	2830											328.21	
14	Do Surplus weir	11	3210							328.93				329.29	
15	Vadhyam Hd Sluice	15	880											309.35	
16	Kungavothab Hd Sluice	20	4160							287.50				290.02	
17	Surplus weir No 2	21	640											281.28	
			3435		279.68	280.88	277.38	280.43						277.12	
							271.87								
<u>Trichinopoly Taluq</u>															
18	Vyakondam Hd Sluice	22	2810											274.73	
19	Do Surplus weir	22	2840							274.33				276.3	
20	Ramavithalai Hd Sluice	28	3010			274.43		274.23						252.32	
21	Puduvottalai Hd Sluice	27	4280											249.44	
22	Elanthavottalai Hd Sluice	32	350											210.64	
23	Kodamurthy bridge	37	2640							210.14				227.19	
24	Surplus sluice	39	980											221.02	
25	Do	3 L.F.	650				219.40							219.82	
26	Do	39	4010											222.21	
27	Do	39	4340								219.47			220.95	
28	Do	40	220											221.09	
29	Do	4 L.F.	240											217.52	
30	Do	"	"											7.25	above sill
31	Do	41	1320						6.70					6.55	do
32	Old Venuar Head	43	3960	210.58				207.51		208.21		206.97	208.65	208.84	

VI. *Niveli*
 Statement showing the height of Flood levels seen at the different masonry works in the Trichinopoly Str.

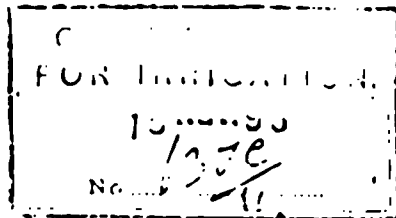
No.	Name of Work	Position		Flood levels . Mean Sea Level												Remarks
		Miles	Fath.	1858	1868	1877	1880	1882	1886	1887	1890	1892	1893	1896		
	Th. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.															
Launary	33 Hd Shice Surangam	L.Bk.														
	Ratto Vaidhak	4	"	"	"	"	"	"	"	"	"	"	"	"	"	
	Launary Bridge	9	"	"	"	"	"	"	236.72	"	236.07	"	237.75			
	Surplus Shice	10	320	"	"	"	"	"	"	"	"	"	223.22			
	Do	12	90	"	"	"	"	"	"	"	"	"	10.93		above sill	
	Bridge over Surangam	12	15.50	"	"	"	"	"	"	"	"	"	8.76		do	
	Ratto Vaidhak	12	3050	"	"	"	"	"	"	"	"	"	10.60		do	
	Thiruvadavalai Hd Shice	12	3960	"	"	"	"	"	"	"	"	"	10.10		do	15-
	Surplus Shice	13	150	"	"	"	"	"	"	"	"	"	221.92			
	Thirupattinam Hd Shice	13	2940	"	"	"	"	"	"	"	"	"	7.80		above sill	
Caleroon	42 Do	14	"	"	"	"	"	"	"	"	"	"	7.15		do	
				"	"	"	"	"	"	"	"	"	7.42		do	
	43 Surplus shice	R.Bk														
	44 Do	7	3960	"	"	"	"	"	"	"	"	"				
	45 Do	8	1700	"	"	"	"	"	"	"	"	"	7.46		do	
	46 Do	8	3120	"	"	"	"	"	"	"	"	"	10.00		do	
	46 Caleroon Bridge	8	3960	"	"	"	"	"	"	"	"	"	10.85		do	
	47 Surplus Shice	8	4720	"	"	"	"	"	"	"	"	"	22.22		Shice gauge reading	
	48 Do	9	240	"	"	"	"	"	"	"	"	11.25	7.25		above sill	
	49 Do	9	1790	"	"	"	"	"	"	"	"	"	217.60			
	50 Do	9	2640	"	"	"	"	"	"	"	"	215.80	218.13			
	51 Do	9	3410	"	"	"	"	"	"	"	"	"	217.32			
	52 Do	9	4020	"	"	"	"	"	"	"	"	"	7.90		above sill	
	53 Do	10	320	"	"	"	"	"	"	"	"	"	7.00		do	
	54 Do	11	260	"	"	"	"	"	"	"	"	"	217.87			
55 Do	12	4240	"	"	"	"	"	"	"	"	"	210.28				
				"	"	"	"	"	"	"	"	203.13				

[Signature]

(True copy)

I.V. B. *[Signature]* Lt Col. R. G.
 11-11-96. *[Signature]* Lt Col. R. G.

By Capt. P. Rose Allen
 Executive Engineer
 Trichinopoly Str.
 19-10-96



165
Copy of Report from M. R. Ry. J. Subrama-
-nia aiyar aiyar, Assistant Engineer
in charge of North Sub. Division, Trichinopoly
to the Executive Engineer Trichinopoly
Division No. 1900 dated 25-9-96:—

Factor: 14
Trace: 5
Statement: 9.
14

I have the honor to submit herewith
my report on the floods down the Banveri
and the Boleroon in July last as called
for in your No. 1054 & dated 14th August/96.

2. The South west monsoon burst early
in June 1896 and water rose rapidly in
the Banvery from the 21 to 26: when there
was 4.5 feet passing over the north arm
of the upper ancient crest + 242.40. This
flood was too early for the year and
unlike ordinary floods which used to
subside in one or two days, lasted for
over a fortnight from 22nd June to 5th July
1896. The flood water on 26.6.96 was
only 2'-3" below that of '87 floods at upper
ancient and only 1'-6" below at Hundyar
ancient of '87 and one foot below that of
1892.

3. From 6th to 15th July water went down
steadily, notwithstanding the unusually
strong west wind, when water was flush
with the crest of the north arm at upper
ancient. From 16th it rose again rapidly

so much so that on the evening of the 17th there was 3.7 flowing over the crest. It was then anticipated that it would rise higher as there was no abatement in the severity of the west wind; water on the other hand steadily though slowly went down from the 18th to 25th when there was a foot of water on the crest.

From the 26th July water rose rapidly again for the 3rd time and reached the unprecedented level of 7.5 ft over the crest on the 31st July. I say unprecedented as the record of 1858 seems to be incorrect and should be left out of account. There is no record available of the F. L. of 1858 for the portion below Handrijar aicut to Lower aicut. It is true the bank on left side of the boleroon has been raised with reference to this assumed F. L. of 1858 from boleroon bridge at 8 1/2 miles to Kilambil 22 miles. This I consider unnecessarily too high as in no other portion of the whole length of embankment from Sylur to Lower aicut the bank has been raised to this height - more of this afterwards vide para 7 (3).

5. Precautionary measures taken. On the 26th July when water rose to 6 feet over crest at Upper aicut watchers were kept to patrol the banks and to report of any accidents

Probably the
information is
that the gauge
level has
been altered. The
zero is now at
the mean level
of the aicut
cut.

accidents, strict orders were sent to village officers to watch the banks in their village limits both day and night and to protect the weak portions with brushwood and stakes or turf and the subordinates and superintendents were made to watch the masonry works and other places which were considered very weak. The Head Assistant Collector with his subordinates watched the banks near Musiri and did excellent work in averting a breach in this portion.

b. Agunda banveri.

(1) The L. B. of the Agunda banveri is wholly in Musiri Taluk and is 33 miles long. There was no bank formed by our Department in the first 8 1/2 miles, i.e. up to Karipotannur aicut as the ground itself is high except in places in 7th & 8th miles water spilled over these low places in the late floods 6 inches to a foot, and breached in two places for a total length of 200 feet. Below Karipotannur aicut there is the Head sluice to Iotham Bhuma workal where the flood water rose nearly to platform level and as the bund below is not strong it was breached for a length of 150 feet and flooded the fields of Nattani and Puthur.

(2) From 8 3/4 to 9 1/4 miles there is no bank. The padungai in this portion belongs to

Kothaputhur

Kattoorathur Mittadar. The Tottham Shina
vorkal goes under cutting here. The ground
to the left or north side of this channel
was flush with the late F.L.

(3) From $9\frac{1}{4}$ to $11\frac{1}{4}$ the bank is low
and weak and not of proper section.
F.L. overtopped the bank in this portion
in places and breached it in two places
for a total length of 70 feet and eroded
badly for a length of 800 feet in $10\frac{1}{2}$ mile,
breached in four places for a length of
420 ft. and eroded 1320 ft. in $11\frac{1}{2}$ mile,
and eroded about a furlong in $12\frac{1}{2}$ mile.
The R. Stone groyne just above the outlet
at 11 m 2 f. has been completely undermined
and has slipped down.

(4) Mullikarai Head Sluice. Water rose to
3 inches below shutter platform. New rivetment
below has slipped down.

(5) From 11 m. 2 f. or Mullikarai Head Sluice to
17 miles the Flood bank is in pretty good order
and 3' to 4'-6" above late F.L. Only 880 feet of
inside slope eroded in the $13\frac{1}{2}$ to $15\frac{1}{2}$ miles.

(6) From 17 to 22 miles or Musiri the bank is
used as the main Road to Salem and is high
except between $\frac{16}{10}$ to $\frac{18}{10}$ where a guard bund has
been placed which requires strengthening; bet-
ween $\frac{19}{10}$ to $\frac{20}{10}$ water overflowed 3 inches for 4 fur-
-longs, between $\frac{20}{10}$ to $\frac{21}{10}$ for 870 ft. and nearly 4 fur-
-longs in the $22\frac{1}{2}$ mile for a depth of one foot. The
road in this portion should be raised to at least
2 feet above late F.L. throughout or a guard bank
placed

placed in front.

(7) Nattoorikal Kurumbu channel. The Right
bank of this channel has been cut away for over a
mile, all except the rear slope, and has been
breached in two places each 80 ft long and
3 to 8 feet deep. water rose to one foot of top
of bund.

(8) Flood bank from Nattoorikal Head Sluice
to Salem Road. This was also partly eroded and
was only 2 to $2\frac{1}{2}$ feet above late F.L. This bank
should be raised to 4'-6" above F.L. with 9 feet
top width and treated as the main bank.
there is no necessity on the other hand to
maintain the Right bank of Kurumbu channel
at such a high level.

(9) Nattoorikal Head Sluice. water rose to one
foot below top of front parapet. The right bank
of the Kurumbu channel from the head up to sand
escape acted as a dam and water in the chan-
-nel was one foot higher than that in the
river close by. The Head sluice was in danger.
It was protected with turf sods and earth thrown
in rear of parapet to serve as a backing. It
is quite necessary to raise the parapets and
roadway to a safe height and to remove the
bank on the Right side up to sand escape.

(10) Agunda Cauveri L. B. from $22\frac{1}{2}$ to 23. The
bank here is subject to very strong current
the river here taking a bend and the width
of the river very much contracted. The inner
slope has been protected with dry stone
revetment grouted in places and masonry

steps

steps in 3 places to serve as a bathing ghat for the villagers of Musiri. Water rose to top revetment and overflowed the bathing ghat close to the choultry. The river slope of bund was subject to great wave action and was greatly eroded all along up to a furlong below 23 mile stone. This portion was protected with piles and brushwood and turf bund at a cost of Rs 300 as a breach here would have been disastrous to all the villagers from Musiri to Kousalam.

(11) Unayapuram str. The bund here stood very well, although the plant planting and nodassal work done this year were completely washed away. A good berm or Padingsodi in this portion is very necessary. This can only be secured by lopping off a portion of the forest on the right side of the river to allow more waterway. Near the 24th mile stone inner slope has been eroded for a length of 860 feet.

(12) Bank from 24th to 29th miles in good order.

(13) From 29th to 33 the Local Fund Road forms the left bank. There is however a guard bank in low places which is being raised to required height on maintenance estimate up to 31 miles. In 32 mile the road is

placed

is low. A guard bank here also is necessary. (14) The height of the bank all along with reference to late F.L. is given in statement No I, the extent of land flooded is given in tracing No I, and the amount spent in urgent repairs and in preventing breaches is Rs 530 as detailed in statement No 2.

(15) Precautionary measures required in this portion seems to be the following:-

(1) Providing and strengthening of a flood bank from Musiri Nattoorvikal Head sluice to Salem road at 22 mile and a guard bank along the road up to Koudamari bridge.

(2) Providing a self acting drainage sluice to the drainage culvert in 22nd mile to prevent the flood water from backing up and flooding the fields of Musiri and Tennengaimalai.

(3) Providing screw shutters to Musiri Nattoor, Mettoor and Pallavorkal for better and easy regulation.

(4) Re-building in slipped portion and raising to one foot above late F.L. the revetment and steps at Musiri.

(5) allowing proper water way in 23 mile by denuding as much of the forest on right side as is absolutely necessary and reserving it as river proper.

(16)

13/11/27

(16) At Nattam and Konasikam the flood water will back up and must inundate the fields. It will not be possible except by costly works to provide proper flood banks.

(17) The River bank is sufficiently high in most places. The little raising that has to be done can be done out of the maintenance estimates.

(18) The R. Stone groynes at (1) Mullikani (2) Musiri and (3) Umayapuram require repacking where displaced.

(19) Two new sluices were built to Ayhur and Siplaputhur channels in the 5th mile. As the masonry was green when the flood came and as there was no time to pack revetments in front and as the water rose to tops of wings a breach occurred between the two sluices and washed away the wings of both the sluices adjoining. This could set right at a cost of Rs. 150.

(20) A statement No. 3 of observed Flood levels at important masonry works is herewith submitted. It will be seen from this that the levels now recorded are higher than that of 1882 and 87 and that the average flood fall per mile is 3.34 feet.

(21) The approximate cost of repairing the

The F.L. must have been given by the design.

the damages and making improvements will be Rs. 6,600 as detailed in statement No. 4.

7. The Coleroon from Upper ancient to near - near ancient 26 miles.

(1) Iyenvorkal Head Sluice - water rose 6 inches above rails of screw boxes. i.e. to + 249.90. The Head sluice is in good condition and the parapets sufficiently high. The revetment in front on the right slipped after the floods subsided for a length of 23 feet right up to head level. This is due to the insufficient slope now given $\frac{1}{2}$ to 1. It should be repacked to a slope of 1 to 1 and grouted.

(2) River bank from head up to 8 1/2 miles. This portion was subject to heavy water pressure from the River side as the main Iyen channel runs close by on the outside and there being no berm in most places the bank slipped badly in 30 places and a little below Thoydayur bridge water leaked so badly that a breach was considered imminent. All the slips were well protected timely and breaches averted. The banks are now where less than 4 feet above lake F.L. It would be better to conserve the channel and form a good berm in rear of bank so as to make it safe against future floods.

floods.

(3) From $8\frac{1}{2}$ to 22 miles. The bank in this portion was raised on an estimate sanctioned for Rs 82,300 some years ago 4'-6" above the assumed flood level of 1858 - This is now 7 to 10 feet above late flood level.

In 1858 when this flood bank was non-existent and when the country was swamped everywhere it is understood how this record of 58 was made out. The Kukur village in the 18 mile was left unprotected and a nasty bund allowed in the bund at 19 miles and as the same was made up of mere sand with a coating ^{of mud} a big breach occurred here 860 feet long and bank washed away one half for about 500 ft above, and the village of Kukur was flooded and 60 houses fell down. The inner slope of bund has been eroded in several places though not materially and at drainage sluices on the outer slope, also for some distance above. A little below drainage sluice at 22 miles the flood water from Kukur village and breach at 19 miles breached the bank for a length of 250 feet right up to ground level and there is only 40 feet of bank to support the masonry -
It

It was well this breach had occurred or the masonry would have been washed away.

Malattar and Kaduvor channels were also breached by the breaches above mentioned, viz in 18 and 19 miles and the villages of Kilambil, Mangammapuram and Ariyur were in danger but were saved only by the breach at 22 miles.

(4) From 22 to 26 miles. Road No XX forms the left bank. There is however a guard bank placed all along which is 2 to 4 feet above late F.L.

(5) Kudiur and Mundiar ariunto. water backed up by these two ariunto and swamped the fields of Ariyur, Kalligudi, Alangudi and Pettai. It might perhaps be better to provide proper regulation with screw gear - ing shutters for these so that these villages may not be affected by river floods.

(6) Statement of breaches, cost of repairing flood damages and the approximate amount of loss of crop and damage to houses &c will be found in Statement Nos 4 to 8.

8. Mundiar ariunto to Vappur 52 miles:-

(1) Mundiar Head Sluice. water rose to 8 inches below top of parapet. The Superintendent

1. Tendent took much pains to protect the masonry with turf sods and earth thrown at the approaches. The flood bank up to Tadani was also protected by him as the water rose to 1'-6" to 2 feet below top of bund and a breach here would have caused loss to handym system.

(2) Handym current: water rose 8.75 ft above crest or to +163.25. The flood level of 87 was +161.66 or 1.59 lower than the late F.L.; and 5 inches higher than the F.L. of 1892. viz +161.22.

(3) The parapets of the Head Sluice must be raised and Establishment sheds built for better up-keep and protection of the Head works in times of emergency.

(4) Bank from 26 to 34 miles. The bank in this portion is 1'-6" to 3'-0" above late F.L. and requires raising to 4'-6" throughout above it.

(5) Breach at Puducottah. 32 mile. water backed up by this breach and swamped 240 acres of wet crops and totally destroyed them. The village of Puducottah was saved only by the villagers working constantly day and night forming a flood bank round their village and breaching our bank just above their village for a length of 30 feet. The amount of loss is approximately Rs 3,000. It is quite necessary to build a masonry drainage sluice provided

with

with self acting shutters. The fields were nearly under 5 feet of water.

(6) Bank from 34 to 39. In pretty good order except that a breach occurred above Karupakam village in 37 mile for a length of 150 feet. The villagers of Annimangalam protected the banks in their village limits and averted a breach at old breach site. The flood bank to the west of their village requires raising and extending to meet the high ground. The breach at Karupakam has already been closed at a cost of Rs 180.

(7) Bank from 40 to 41. Here there is Vituparakurichy Odai with an open cut. Water backing up through this swamped a good portion of the country from Irumunjiam to Peramurai. From reports received from Revenue authorities it appears that 171 acres of dry crops were destroyed as also 22 houses. Owing to want of rain the land submerged was not cultivated otherwise the damage done would have been great. The bank for about five furlongs above the open cut was entirely washed away excepting the inside slope. This is due to the rush of water both when the flood entered and receded. It is very necessary to build a drainage sluice here also as at Puducottah.

* 750 acres.

(8) A little above Perumurai village there is another small open cut which has also done proportionate mischief this time. A small drainage sluice will suffice as at Timmanur.

(9) Arusanjeri Head sluice. - water rose to +115.75 or 0.8 below platform level. No damage done to the masonry. The water down this sluice overtopped the bund of Arusanjeri tank and scoured it very badly and notwithstanding the timely care and trouble taken by the ryots breached the bund in two places and the worst of it is that a considerable portion of the water came back to the river by the Head sluice when the river subsided. This Head sluice has its sill on too high a level with reference to the river here and unless some kumbur works are provided and its head kept near Vituppanakurichi this channel will be very ineffective for irrigating 700 acres now under it and the tank.

(10) Bank from 41 to 52. The bank here is in pretty good order and is 1'-6" to 3 feet above late F.L. It requires raising to 4'-6" above it. The Thelur Odai at 47 miles has also done considerable damage to Thelur, Narianur, Kuravadi & Thuthur villages.

256
villages and the fields being dry and uncultivated the loss to crop and seedlings were not much. Four houses in Thelur fell down and the village of Kuravadi was under water. A drainage sluice here also is very necessary.

(11) Varappukurichi drainage sluice. This was built in 1895 and has acted very well during late floods. The villagers state that they would have suffered very much as their neighbours but for this.

(12) Ramanallur Island. There are two villages in this, the upper one of which was fully flooded and 28 houses fell down. The lower village was badly eroded near the temple which is in danger of being undermined unless protected. The dry crops to the extent of 332 acres were entirely destroyed and a good portion of the island silted up with sand. The only hope of protecting the fields and the villages in the island is by forming a strong flood bank all round.

9. Ponneri Kumbur Channel. water rose to +95.0 at 52 miles and obstructed as it was by the old Head sluice rose to +13.75 at new Head sluice and mandyam under tunnel or 3 inches above front parapet. The earth connection on left side gave way and

This is not a
for village

a big breach (80 x 25') was formed and with it the left wing and return fell down. The ground in rear of training wall was swept away 10 feet deep as also the return of the latter and a big scour was formed beyond for a length of 100 feet - 15 feet deep. As flood subsided the Kurnub channel also was silted up to a depth of 6 feet for the first 600 feet and an average of two feet below up to old Head sluice. With great difficulty the breaches above the Under tunnel were closed and bank made up and protected. The sand in Kurnub head is being removed. As the right return of the Head sluice is also cracked and as it is not so very safe to keep the Head sluice at its present place as there is a heading up of more than 3 feet and as a breach like this may endanger the safety of the tunnel itself it would be better to build a new Head sluice at site of old one near Vappur sheds.

(10) Marudayar Under tunnel. The flood level rose to +91.00 or 3 inches over the left side wall and removed the earth connection on the right downstream side to for a length of 40 ft for a depth of 10 feet.

This

vruayer

This has now been made up and protected with nodasul work. There is a flood bank on the left side of Marudayar extending from the tunnel to Road No XX which has breached in five places (vide statement No 6). This bund must be made up to proper height if it is to be maintained.

11. River bank from Under Tunnel to Sattambadi Bridge. This bank forms the R.B. of the Pomeri channel and water rose on both sides to the top of bank and no serious damage occurred. Water overflowed over the L.B. of the channel nearly 2 feet in several places. This requires raising.

12. Road No XX from 52 to 67½ miles or Lower aicut. This road was ~~pur-~~^{posely} kept low to prevent accidents to Lower aicut, but it will be seen from the actual facts stated below that there is no necessity whatever to keep miles of bank at such a low level. All the flood water down the baleroon has found its way over the Lower aicut except what passed over the Madras Road by the breaches in it in the 15½ mile. A cross section of this road

* and by any breaches on the R.B. of the Coleroon.

road along the road-way is herewith from which it will appear that only a small quantity of water surplussed over this ~~the~~ road. It is evident from this and from actual observation that the numerous breaches 34 in all were not all caused by the river water entering the land side. The flood water entering by open cuts and breaches up above breaches the road lower down from the land side - for instance from Sattanbadi to Arankottai water flowed from the land to the river side and lower down from Val-lacurichy to Karuppur. The breaches in this portion will cost nearly Rs 10,000 to make up. In this connection it would be well to consider two things

(1) the raising of the road to a safe height from Tappur up to Kodakal breach at 66 miles.

(2) Diverting of the road from this bank to Pomeri channel Right bank from Anakudi weir downwards.

If the road is diverted there is no necessity to raise a broad bank - the normal width of 9 feet top width will

will be enough. By the breach at Kodali sufficient water could be made to escape and surplus over Madras Road to keep the Lower ariant safe. If by the improvements now sanctioned the Lower ariant could be made to pass all the drainage, then necessary drainage sluice may be built at Kodali breach also to keep off all the river floods.

Pomeri main channel has its Right Bank very broad in most places so much so that it could be converted into a pretty good road in two or three years out of the maintenance grant allowed for the up-keep of Road No. XX viz Rs 50 per mile.

13. Statement of breaches with the cost of closing and making up the banks at eroded places is herewith (vide Statement No. 4 to 8).

14. A tracing showing flood & bank levels at every mile all along from Upper to Lower ariant and tracings of Taluk maps showing country swamped and the direction of the flood are also herewith (vide plans No. 2, 3 & 4).

15. Pomeri main channel. Five breaches occurred

occurred in this channel in the 13 mile above Balasundrapuram village (vide statement n: 5).

16. Ponneri Branch n: I. The whole length of the channel was subject to the floods as the country in and around was one sheet of water. The channel was breached in 24 places and silted up for about a mile at tail end. (For details of breaches + cost of closing vide statement n: 4).

17. The cost of making good all flood damages in the Sub. Division will in round numbers be Rs 32,000 (vide details in statement n: 4)

CHIEF ENGINEER
FOR IRRIGATION.
13.11.96
No. 607C

True copy /
Sd/- J. R. Allen
Exo. Engineer

Trichy Dt 19.10.96

True copy /

J. V. Boddy Lt Col. R.E.
11.11.96. Supr Engineer, Trichy

Musiri Taluq.

Statement showing the height of Bank or Roadway above F.L. from 10 to 33 miles.

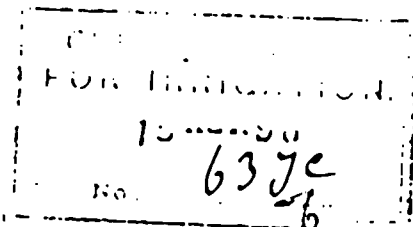
Mileage	Height of bank above F.L. of 31-7-96	Remarks.
10	1.6	Nominal flood Bank.
11	1.3	Do
11 1/3	0.3	water overflowed.
12	3.1	Flood Bank begins.
13	4.4	Do
14	4.7	Do
15	4.6	Do
16	4.3	Do
17	4.8	Flood Bank ends.
18	2.6	Salem Road forms the left Bank. This requires raising
19	0.6	
20	0.6	
21	0.5	
22	1.5	
22 1/2	2.0	Flood Bank.
23	5.0	
24	5.0	
25	5.27	
26	4.4	Road runs all along here. A guard bank is put up from 29 to 31 1/2 miles.
27	4.13	
28	3.66	
29	3.1	
30	2.4	True copy /
31	3.83	
32	2.50	
33	4.93	

Signed J. Subramonia aiyar
Assistant Engineer

True copy /

Sd/- P. Roscoe Allen
Exo. Engineer
Trichy Dt 19.10.96

J. V. Boddy Lt Col. R.E.
11.11.96 Supr Engineer b: circle.



No 1-a.

Musiri Taluq.
Statement of Breaches in :-

Name of works	Locality	No of breaches in each work.	Length	average dept.	Remarks.
1. Ayanda Cannery Left Bank. 8 ¹ / ₂ mile		1	80	4	
	9 ¹ / ₂ --	2	150	20	
	10:	3	40	4.5	
		4	30	3.5	
	11 ¹ / ₂	5	90	3	
		6	200	3	
		7	90	5	
		8	40	3	
	13 ¹ / ₂ .	9	100	9	
	22	10	80	7.5	
	23	11	80	2.5	

Signed J. Subramonia aiyar
assistant Engineer.

Signed P. Roscoe Allen
Executive Engineer
Trichy

True Copy
- 19-10-96

J. V. Wadley
11-11-96.
Supr Engineer b¹/₂ circle.
Lieut Col Rb



CH. ENGINEER
 FOR IRRIGATION.
 10-11-90
 No. 637C

No 2
 Statement of expenditure incurred on the emergent repairs to Agunda Bummy Sept Bank during floods.

No	Nature and situation of work.	Value of work done. Rs.	Remarks.
1	Cost of labor employed in munsiri and Umanapuram limits or say in B. No. 23624 - materials such as bamboo concrete leaves turf etc.	261 2 -	Voucher and hand receipt for Rs 233-8-0 were submitted & for the remaining will be shortly submitted after payments made.
2	Cost of labor employed in Kousalem limit ie in B. No. 21 1/2	53 6 6	
3	Approximate value of work done and the cost of materials etc supplied by contractor Regunatha aiyar from Mullikarai to Varadachalapuram (ie) 1 1/2 15 15 B. M.	16 1 6	Voucher will be submitted shortly after payment. Accounts not yet received - as soon as it is received will be submitted for orders.
4	Approximate value of work done by Selapilaputhoor villagers including cost of materials purchased etc.	100 - -	The work has been done under Kudi. - memorandum.
	Total quantity of work done. Rs.	530 10 -	

June copy
 Signed J. Subramonia aiyar
 North Sub. En. Office
 12th P. Rosee Allen
 Executive Engr 19-10-90
 11.11.78 P. V. Worthington
 Engrs Engineer 61 miles

N: 3

Statement showing flood levels of 1882-1887 and 1896 on important masonry works in Musiri Taluq.

No.	Name of work.	Position or distance from head.	Flood Level.			Remarks.
			m	ch		
			1882	1887	1896	
1	Aryalur Head Sluice — 4 45.				345.12	Sill 337.12 M.S.L.
2	Sippalaputhur Upper Head Sluice — 4 46				345.17	Sill 335.92
3	— 0: — Lower 0: — 5 46	340.63			341.51	
4	Kurairpottanur aicut 8 29		328.47	329.43		
5	Thattum chimma vikal Upper Head Sluice — 8 30	328.47			329.43	Sill 317.41.
6	— 0: — 0: — 2nd escape 10 29	322.60			324.64	Crest 312.53 Top of wing 321.66
7	— 0: — 0: — Lower 4: Sluice 11 30	320.52	321.02		321.72	Sill 308.52.
8	— 0: — Peria vikal Head Sluice — 13 57	310.19			311.04	Sill 300.26
9	Srinivasanallur ch. — 0: — 14 30	310.12			310.94	Sill 299.47
10	Kondamuni Bridge — 19 28				294.34	Crest 284.30 Top of wing 296.5
11	Kattu vikal 2nd escape — 22 37				284.67	0: — 276.54 0: — 282.97
12	Gauge Pillar at Musiri — 22 47				284.35 284.67	
13	Amoor Head Sluice — 28 74	261.69	262.69	263.03		Sill 252.23.
14	Konaculam Head Sluice 29 66	259.14	260.14	260.74		0: — 249.14
15	Upper aicut — 33 10.		249.10	249.90		

Total flood fall in 28.5 miles is 345.12 - 249.90 or 95.22
or per mile — 3.34 ft

Signed J. Subramonia aiyar
Assistant Engineer

True copy

Signed P. Roscoe Allen
Executive Engineer
Trichy Dt 19-10-96

D. V. Baddeley Lieut. Col. R.E.
" " " " 96.
Supr. Engineer to Circle

1911

13/11/11

FOR INFORMATION
10/11/11

No 4

Statement of cost of Repairing Flood Damages in Irishinopoly and Udayarpalayam Taluqs.

Names of works.	Cost Rs.	Remarks.
I Koteran Left Bank.		
(a) Repairing slips & erosions.	5000	
(b) Closing breaches.	10000	
II Road No. X X.	10000	Including breach at 19.30.37 + 53 miles.
III Munnayan Flood Bank.	250	Cost of closing 34 breaches & raising the roadway.
IV Kichuvai Channel	300	Closing 6 breaches and restoring the road portion of bank.
V Pomeri main channel.	90	
VI Pomeri branch channel No. 1.	400	Includes cost of closing 24 breaches and clearing tail end of channel.
Total Rupees.	26040	

Statement of cost of Repairing Flood Damages in Musiri Taluq.

1. Repairing flood damages to irregular and disordered channel head sluices.	150
2. Filling tail from 6 1/2 to 8 1/2 miles.	1000
3. Closing breaches in Kuraiyottanur Bridge.	300
4. Raising bank from 9 1/2 to 11 1/4 miles.	1000
5. Restoring groynes at Mallikarai.	500
6. Fanning guard bank from 18 1/2 to 19 1/2 miles.	1500
7. Providing self-acting shutters to drainage culvert in 2 1/2 mile of road.	200
8. Improving reinforcements stone groynes and steps in 2 3/4 mile at Musiri.	1000
9. Providing screw shutters to water meter and call worked head sluices raising parapet walls.	600
10. Raising guard bank in 3 1/2 mile.	350
Total Rupees.	6600
Total for the Sub. Dist. Rs.	32640

Signed J. Subramonia Aiyar
Assistant Engineer

Signed P. Roscoe, Allen
Executive Engineer
19-10-96.

True copy.

J. V. Boddely District Col. Q.R.
"11-96. Supd Engineer 62 Circle.

[Signature]

No 5-

Statement of Breaches in Kaduvoy Channel.

81

Name of work.	Locality.	No of breaches in each work.	Length	average depth.	Remarks.
Kaduvoy Channel.	22 ¹ / ₂ mile.	1	30	3	above Kaduvoy ancient.
		2	40	3.5	
		3	50	4	
		4	50	3	
		5	65	5	
		6	250	5.	

Statement of Breaches in Mandayar Flood Bank.

Mandayar Flood Bank.	53 ¹ / ₂ mile	1	20	3	
		2	40	3.5	
		3	70	4.0	
		4	60	3.75	
		5	100	6.0	

Statement of Breaches in Ponneri Main Channel.

Ponneri Main Channel.	13 ¹ / ₂ mile	1	15	4	
		2	20	4.25	
		3	18	5	
		4	30	6.0	
		5	40	8.0	

Sd/ J. B. Sankarabastri
overseer.

Ine copy

Sd/ P. Roseoe Allen
Cue. Engineer

Trichy Dt. 12/10/96

D. P. Bastley, Lieut. Col. R.R.

11.11.96 Supd. Engineer b. circle.

[Signature]

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Statement of Branches in No. I Ponneri Branch channel.

13-11-30
13.72
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name of work.	Locality	no. of branches in each work.	length	average depth	Remarks.
No. I Ponneri Branch channel	The whole length of the channel from head to tail end.	1	9	3	The channel at tail end is much silted up for a distance of over 5,280 feet.
		2	12	4	
		3	12	3	
		4	20	4	
		5	30	3	
		6	11	4	
		7	20	3	
		8	21	3	
		9	30	3.5	
		10	40	3	
		11	45	5	
		12	38	6	
		13	50	4.6	
		14	60	5.5	
		15	70	3.75	
		16	25	5.25	
		17	16	5.50	
		18	73	4.25	
		19	21	7.00	
		20	49	3.25	
		21	61	6.0	
		22	70	6.5	
		23	72	7.0	
		24	80	8.0	

[Signature]

13/11/30

Statement of Breaches in Boleroon Left Bank.

names of works	Locality	no. of breaches in each work	Length	average depth.	Remarks.
Boleroon Left Bank.	19 th mile.	1	860	13	Bank washed away 600 ft. above this or both sides 1900 feet.
	23 rd mile	1	250	10	
	33 -- --	1	30	4	
	37 -- --	1	150	8	
	53 -- --	1	85	25	
		2	40	12	
Total		7	1415	7.2	✓

Statement of breaches in Road Nº XX

name of works	Locality	no. of breaches in each work	Length	average depth.	Remarks
Road Nº XX.	54 th mile.	1	40	4	
	56 -- --	2	120	8	
		3	40	7.5	
	58 th -- --	4	80	3	
		5	150	4	
		6	390	6	
		7	780	8	
		8	700	3.5	
		9	560	5	
	60 th -- --	10	440	6	
		11	570	6	
	61 st -- --	12	180	5	
		13	170	3	
		14	140	3.5	
		15	270	3	
		16	120	2.5	
	62 nd -- --	17	100	9.25	
		18	230	6.5	
		19	60	11	
		20	150	6	
		21	480	9.5	
		22	1430	8	
	63 rd -- --	23	140	5.5	
		24	40	9.5	
		25	70	14	
	64 th -- --	26	580	4.25	
		27	890	3	
		28	150	4	
	65 th -- --	29	370	7.5	
		30	70	7.75	
		31	170	4	
	66 th -- --	32	70	4	
		33	50	7	
	67 th -- --	34	1070	5.5	

25.12
1227.50

[Signature]

11-11-96

O.V. Harkley
Superintendent Boleroon

[Signature]

True copy

10 11 96

Sgt J. Subramonia aiyar

Sgt P. Rose Allen
Mess Augt. Trichy

OFFICE OF THE
FOR INFORMATION
15-00000
NO. 6308
17

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2378

N:7

Statement showing loss of crops wet or dry, of houses, animals and food grains sub. to by the flood of 31-7-96 from upper to lower aints.

Number	Names of villages.	Wet cultivation in acres.	Appreciate value of crop in Rs.	Dry cultivation in acres.	Appreciate value of crop in Rs.	No. of houses & loss.	Appreciate value of crop in Rs.	Food grains & loss.	Appreciate value of crop in Rs.	Remarks.
1	Trichinopoly Taluq									
2	Javanthineethelpuram	60 Cst 200	-	-	-	-	-	40 Kallu 100	-	
3	Kishur	40 Cst 100	-	-	-	60 3000	-	20 50	-	
	Mungamupuram	10 Kallu 25	-	-	-	-	-	-	-	
	Total	110 325	-	-	-	60 3000	-	60 150	-	
1	Poddayarpalayam Taluq									
2	Kolamunkam	196	-	1	-	-	-	-	-	
3	Kam drathatham	29	-	-	-	-	-	-	-	
4	Trimalavadi	14	-	-	-	-	-	-	-	
5	Chinnangalam	10	-	20 Cst 200	-	20 40	-	-	-	
6	Keraparakam	-	-	40	-	0 30	-	-	-	
7	Thirumanur	-	-	0-10	-	-	-	-	-	
8	Thiruvengalur	-	-	130	-	0 16	-	-	-	
9	Varuppankuchi	-	-	6	-	7 14	-	-	-	
10	Shillungudi	-	-	10	-	-	-	-	-	
11	Perambrai	-	-	25	-	-	-	-	-	
12	Therkloor	-	-	13 2000 3000 1000 1000	-	28 270	-	-	-	
13	Ramanallor	-	-	-	-	-	-	-	-	
14	Thurthar	-	-	-	-	-	-	-	-	
15	Chingudi	-	-	-	-	2 20	-	-	-	
16	Chumalai	-	-	-	-	7 50	-	-	-	
17	Medanthur	6-90	-	-	-	33% 261	-	-	-	
18	Pulakurichi	0-96	-	-	-	25 188	-	-	-	
19	Adakurulai	-	-	-	-	3 30	-	-	-	
20	Therkatchi Perumalantham	-	-	-	-	174 1674	-	-	-	
21	Vakkuramari	14-13	-	-	-	13 49	-	-	-	
22	Thiruvengurpettai	-	-	-	-	104 1637	-	-	-	
23	Kampoor	-	-	-	-	55 960	-	-	-	
24	Kodalai	-	-	-	-	28 190	-	-	-	
25	Vembogudi	-	-	-	-	0 55	-	-	-	
26	Kottayam	-	-	-	-	5 33	-	-	-	
27	Vannalloor	-	-	-	-	21 11	-	-	-	

4 6 1-1
Signed J. B. Sankaradasary.
Oversee.

Signed P. Rose Allen
Executive Engineer
Trichy 07-10-96

11-11-96. P. V. Vally Smt. Col. R. R.
Supd Engineer 6th Circle.

10/11

CHIEF OF BUREAU
FOR IRRIGATION.
J.D. ... 90
No. 6370
1/2

CHIEF OF BUREAU
FOR IRRIGATION.
J.D. ... 90
No. 6370
1/2

1. ... 100-
(23)

Public Works (1896) Department.

CURRENT No.

Order

From
The Chief Engineer for Bridges

No. 37 J.C.

Dated 24 September 1896

Received
196

196
197-93
194-7
190.

CT.

aid by the
Chief

Statement showing Flood levels on important m
from Upper to Lower ariants.

No 8

No.	Name of work.	Position or dis- tance from the station is indicated.	in chains	1858 assumed	1882
1	Upper ariant			249.65	
2	Lyam Vokkal head sluice.			249.65	
3	Surplus sluice in Bernakani limits.	11	10	213.87	209.43
4	— 82 — in — Thundakani	11	14	213.67	207.16
5	— 82 — Pachampet — 82 —	13	15	207.13	204.89
6	— 82 — Perinavalachery —	14	37	202.23	202.1
7	— 82 — — 82 —	15	4	201.36	196
8	— 82 — Mailrangum — 82 —	15	16	200.84	
9	— 82 — Edayarthangulam —	16	9	197.93	
10	— 82 — Kicher limits —	17	14	194.7	
11	— 82 — — 82 —	18	40	190.	
12	— 82 — Melambil — 82 —	21	7		
13	— 82 — Kilambil — 82 —	22	1		
14	Kuliyar ariant	25			
15	Kandiyar ariant	26			
16	Head sluice to Maildyan channel.				
17	Surplus sluice in Orange sluice				
18	— 82 — — 82 —				

It is believed that the flood

level of 1858 were correctly

recorded at the Upper and

Lower ariants. The level at

intermediate points are not

known except at the Lower ariant

with

11.11.96

O.V. Hards

Supd Eng

Copy

True copy

1	Aranamankur ch3 - 09 -	3
20	Karuppanam — 82 —	4
21	Arumangiri head sluice —	52
22	Manndayam under tunnel + Pomeri head sluice.	58
23	Anakudi Balingula —	61
24	Vakuranchi drainage sluice	66
25	Karuppan drainage sluice	67
26	Lower ariant —	62.2

Public Works (1896) Department.

CURRENT No.

Order

From *The Chief Engineer for Design*

^{VI}
No. 37 J.C.

Dated 24 September 1896.

Received

Enclosures

Spare copies

SUBJECT.

Damages are caused by the recent floods in the Trenching of Dr. Requests to state when the full report promised of — may be expected in this Office

[illegible][illegible]

Wess.

with reference to his

^x
No 1349-TC dated 17 Aug.

1896, the Supvy. Engineer, Sixth
Circle, is requested to be so good
as to state when the "full report"
therein promised, of
of damages, caused by these
recent floods in the Irish ports
division, may be expected in this

Price

201/9

7. The Super-Engineer
Sixth Circle.

6. 13/11/2011

Public Works (1896) Department.

CURRENT No.

Order

From

The Supt. Engineer
Vic. circle.

No. 16067c

Dated 1st October 1896.

Received 13 - 10 - 96

Enclosures -

Spare copies

SUBJECT.

Damages &c caused by the
recent floods in the Terichin.
poly on: —

Informing that the full
report of — is under prepara-
tion & will be submitted shortly.

Received 14/10/96
Record 13-10-96
13/10
14/10

BACK PAPERS.

G.O. No.	No.	Department.	Date.
P 37	7C	24-9-96	
R 50	J. C.	17.8.96	

FURTHER PAPERS.

G.O. No.	No.	Department.	Date.
R 63	J. C.	11.11.96	

OFFICE OF THE SUPERINTENDING ENGINEER,
6th CIRCLE,

Trichinopoly, 1st October 1896.

From P. Rosee ^{5th Circle} *Allen Engineer*
Offg. The Superintendent Engineer,
6th Circle.

To

The Chief Engineer.

SIR,

for Irrigation

ENCLOSURES.

With reference to your Memorandum No. ⁵¹ 3772 of 24 September 1896, I have the honor to inform you that the full report of damages &c caused by the recent floods in the Trichinopoly Dn, is now drafted, but the Executive Engineer has had to send ^{to} the Lower Agent for a little information. On its receipt the report will be submitted. The information required having special reference to the discharge of the breaches in the Lower agent, South Arcot road is considered to be of considerable importance.

I have the honor to be, Sir,
Your most obedt. Servant.

P. Rosee Allen
Offg. Supg Engr, 6th Circle

30/9

10/90
P. W. D. 6th CIRCLE.

FROM
THE SUPERINTENDING ENGINEER,
6th CIRCLE.

TO
THE CHIEF ENGINEER.

NO.

Dated. }
Received. } 189 .

Enclosure.

R57/2
R57-2

140