(No. 143.)

1883.

TASMANIA.

HOUSE OF ASSEMBLY.

IRRIGATION:

REPORT FROM THE SELECT COMMITTEE, WITH MINUTES OF THE PROCEEDINGS AND EVIDENCE.

Brought up by Mr. Braddon, and ordered by the House to be printed, October 19, 1883.

***SELECT COMMITTEE** appointed on Thursday, 16th August, 1883, to enquire into and report upon the probable Cost and Results of providing a Scheme of Irrigation for Tasmania, or such portions thereof as the Committee may recommend.*

MEMBERS OF THE COMMITTEE.

Mr. Reibey.	Mr. Braddon.
Mr. Bird.	Mr. Pillinger.
Mr. Archer.	Mr. Shoobridge. *(Mover.)*
Mr. Scott.	

DAYS OF MEETING.

Thursday, 30th August. Thursday, 18th October.

MINUTES OF MEETINGS.

No. 1.

THURSDAY, 30th AUGUST, 1883.

The Committee met at 12·15 P.M.

Present.—Messrs. Shoobridge, Scott, Reibey, Bird, Pillinger, Braddon.

1. Mr. Braddon was voted Chairman ; in his absence Mr. Reibey took the chair *pro tem.*

2. The Chairman read the Resolution appointing the Committee.

3. The Secretary was instructed to obtain the Plans of Major Cotton's Irrigation Scheme for the information of the Committee.

4. Mr. Braddon assumed the Chair.

5. A set of questions was prepared, and the Secretary was instructed to forward them to Messrs. Kermode, Charles Sutton (Tunbridge), Hon. W. Hodgson, M.L.C., D. Cameron, T. and G. Parramore, Robert J. Archer, J. R. Pillinger, James Cox (Clarendon), G. Keach, M.L.C., Thomas Riggall, William Gibson, jun., (Scone), William Dodery, M.L.C., A. O'Connor (Connorville), J. Walker (Clarendon), asking them to reply at their earliest convenience, and that a copy of Major Cotton's Irrigation Report be forwarded with them :—

1. What has been your experience of Irrigation in Tasmania?
2. Will you describe such Irrigation works as you have seen in this Colony?
3. To what extent have such works failed or succeeded?
4. Where there has been a greater or less degree of failure, to what cause do you attribute such failure?
5. Can you suggest any scheme by which a general system of Irrigation for Tasmania might be carried out?
6. Would such a scheme be, in your opinion, practicable, as being within the means of the Colony?
7. How far would a national system of Irrigation be reproductive under existing conditions as to population and area of cultivation?
8. To what extent would Irrigation tend to increase the area under cultivation by making land productive that would not be productive without Irrigation?
9. Have you seen any instances of land being seriously injured by Irrigation, whether by efflorescence of salts or otherwise?
10. Speaking from your personal observation, what have been the profits reaped by individuals from Irrigation—(1) By increased crop, and (2) Increase in value of land?
11. What are the seasons during which Irrigation is (as a general rule) necessary, and with what degree of frequency should the water be laid on during those seasons?
12. Can you suggest the localities specially adapted by nature to an Irrigation system, and any central source or sources from which a national system of Irrigation might radiate?
13. Have you any further remarks to make on this subject?

No. 2.

THURSDAY, 18TH OCTOBER, 1883.

The Committee met at 3 P.M.

Present.—Mr. Shoobridge, Mr. Scott, Mr. Bird, Mr. Archer, Mr. Braddon (Chairman).

The Minutes of last meeting were read and confirmed.

Replies to questions read from the following gentlemen :—

1. Arthur O'Connor, Esq., Lake River.
2. The Hon. W. Dodery, M.L.C.
3. The Hon. W. Hodgson, M.L.C.
4. C. Sutton, Esq.
5. George Parramore, Esq.
6. Thomas Parramore, Esq.
7. The Hon. D. Cameron, M.L.C.
8. James Cox, Esq.

The Draft Report was read and adopted.

The Committee adjourned at 3·40, *sine die.*

REPORT.

YOUR Committee have the honor to submit to your Honorable House the following Report :—

Your Committee have obtained such local information on the subject of Irrigation as presented itself (*vide* written replies to a series of Questions—Appendix.): They have carefully considered this, together with documentary evidence, consisting of Major Cotton's Report and Acts of Victoria and Queensland, which provide for water supply and the conservation and distribution of water; and they have arrived at the conclusion that any national system of Irrigation for Tasmania is impracticable.

Great as are the advantages of Irrigation under certain conditions and with adequate means of drainage, it must be conceded that no national system of Irrigation could prove remunerative unless there were a very large and constant demand for the water artificially supplied; and it must be further admitted as against Irrigation, that, whether owing to defective drainage or other causes, it has sometimes the effect of depreciating the value of the land to which it is applied. In Tasmania this has been experienced in a lesser degree. In India the effect upon lands lying within the distribution area of the Ganges and Jumna Canals has been to utterly destroy thousands of acres.

In Tasmania the physical conditions of the country are against any large general system of water supply from any one centre, and the climate and moisture of the country are such as would preclude all hope of any national scheme proving remunerative, if it were practicable. Irrigation in Tasmania should, your Committee think, be confined to private enterprise.

But your Committee entertain the opinion that private enterprise in this direction should be aided by legislative enactment. Defects in the existing law are indicated in the evidence appended to this Report; and Parts VII. and VIII. of the Victorian Act "to provide for the conservation and distribution of Water throughout Victoria," 45 Victoria, No. 47, show how such defects may be, to some extent, remedied.

E. BRADDON, *Chairman.*

APPENDIX.

QUESTIONS FORWARDED.

1. What has been your experience of Irrigation in Tasmania?

2. Will you describe such Irrigation works as you have seen in this Colony?

3. To what extent have such works failed or succeeded?

4. Where there has been a greater or less degree of failure, to what cause do you attribute such failure?

5. Can you suggest any scheme by which a general system of Irrigation for Tasmania might be carried out?

6. Would such a scheme be, in your opinion, practicable, as being within the means of the Colony?

7. How far would a national system of Irrigation be reproductive under existing conditions as to population and area of cultivation?

8. To what extent would Irrigation tend to increase the area under cultivation by making land productive that would not be productive without Irrigation?

9. Have you seen any instances of land being seriously injured by Irrigation, whether by efflorescence of salts or otherwise?

10. Speaking from your personal observation, what have been the profits reaped by individuals from Irrigation—(1) By increased crop; (2) Increase in value of land?

11. What are the seasons during which Irrigation is (as a general rule) necessary, and with what degree of frequency should the water be laid on during those seasons?

12. Can you suggest the localities specially adapted by nature to an Irrigation system, and any central source or sources from which a national system of Irrigation might radiate?

13. Have you any further remarks to make on this subject?

REPLIES TO QUESTIONS.

ARTHUR O'CONNOR, *Esquire.*

1. I have had none.

2. I have seen none worth calling Irrigation works.

3. Only to make the land worse than it was in its natural state.

4. The land not being properly prepared, and not a sufficient supply of water when required.

5. No, I cannot. To store water for a sufficient supply would be too expensive.

6. No, I think not. It could not be carried out.

7. Not at all, in my opinion.

9. Yes. By a miserable attempt at Irrigation, filled the place with rushes.

10. I have not heard of any.

11. Spring, Summer, and Autumn.

12. No, I cannot.

13. Only that it would be useless to attempt it, and I have no doubt would be a failure.

ARTHUR O'CONNOR, *Lake River.*

JAMES COX, *Esquire.*

1 and 2. Have not sufficient intimacy with the details to describe them.

3. Judging simply from observations, they appear to have somewhat failed.

4. To moisture in excess of the requirements of the soil, or of the capacity of the sun and air to utilize or counteract.

5. I cannot.

6. Certainly not.

7. It would not be reproductive at all, except in isolated cases; the good arising from which, would, in all probability, be more than counterbalanced by corresponding losses in a greater proportion of other cases.

8. To only a small extent in exceptional cases. On by far the greater extent of our Tasmanian land which is amenable to cultivation the drawback is rather excess of moisture, requiring drainage, than an artificial application of what already exists, to a degree prejudicial to the safe production of crops likely to be remunerative,—notably wheat, considered more especially in its relation to rust.

9. I have noticed a steady increase in the growth of rushes and coarse looking grasses on irrigated land, appearing to indicate that a greater bulk was produced at a sacrifice of nutritive properties.

10. I have no means of saying.

11. As a general rule, and for general purposes of agriculture and pasturage in the cool moist climate of Tasmania, I should say none.

12. Hop-grounds, gardens, *et hoc genus omne*. The idea of a national system which should really be of national use and value, is bunkum.

13. I have not.

JAMES COX.

HON. WM. DODERY, *M.L.C.*

1. I have had no experience or any opportunity of judging its advantages.

WM. DODERY.

HON. W. HODGSON, *M.L.C.*

1. Limited.
2. At Campania.
4. To want of under-draining.
5. No.
6. I think the scheme premature.

W. HODGSON.

MR. C. SUTTON.

1. Very little.
2. Mona Vale and Somercotes, but I never examined them.
3. Generally succeeded.
4. To want of drains to carry off surplus water.
5. No, but I could about this part of the country.
6. I should think so, if not too costly.
7. I cannot say with certainty.
8. Have not had sufficient experience to give an opinion.
9. Only by water laying too long.
10. My own experience is too limited to say.
11. Usually from October to March, once a fortnight if season is dry.
12. Only from the lakes and other localities to be pointed out.
13. None.

CHARLES SUTTON.

GEORGE PARRAMORE, *Esquire.*

1. I have had the management, for some years, of about 250 acres of grass land under Irrigation.

2. This land is watered by a race from a dam across the Macquarie River, led for about a mile through an adjoining estate.

3. In this instance the work has been a decided success.

5. I believe the matter was thoroughly gone into during the administration of Governor Sir G. Arthur, under the auspices of Major Cotton. All papers relating to his proposals and surveys are, no doubt, available for reference in Hobart.

6, 7, 8. I am unable to express any opinion on these points.

9. I am not aware of any such instances.

10. I have no experience of crops under Irrigation. I should say that the grass land here has been at least quadrupled in value.

11. In this part of the country, where the average rainfall is very small, Irrigation is occasionally needed from September to March. This, however, depends entirely on the actual rainfall, as also does the frequency of application. In perfectly dry weather the water is required about once in fourteen days.

12. See No. 5.

13. The greatest obstacle to Irrigation by private individuals seems to be the unavoidable narrowness of the frontages, making it impossible to get the water from any stream at a sufficient height to command any extent of land without water-rights through adjoining properties. I believe the most promising direction in which assistance may be given to Irrigation is as follows :—1st. By facilitating joint action of inhabitants in any locality for the purpose of storage of water. 2nd. By removing, as far as possible, the difficulties in the way of individuals procuring water-rights from their neighbours.

GEORGE PARRAMORE.

THOMAS PARRAMORE, *Esquire.*

1. I had for many years the management of 230 acres of irrigation, now the property of my brother, Mr. George Parramore.

2. This tract is irrigated by a race from the Macquarie River, brought through the adjoining property A small weir is placed across the river to divert the stream into the race. The water is distributed over the land by gravitation through smaller watercourses or carriers issuing from the main one.

3. These works have been successful.

5. I believe there will be found in possession of the Government full particulars of a general scheme proposed and surveyed by Major Cotton.

6 and 7. No doubt it can be done, and, I should think, within the means of the Colony. Whether it would return interest on the expenditure is quite another thing, and, in my opinion, very doubtful indeed.

8. I am unable to say. My experience has been confined to grass land, and I think the area that specially needs Irrigation is so small compared to the whole area of the Colony, that a scheme for its irrigation could scarcely be called a national one.

9. I have seen small patches of a peculiar description of land injured by efflorescence of salts, but nothing sufficient to affect the general favorable result.

10. I estimate the fee simple of grass land is increased fourfold by Irrigation.

11. In this dry part of the Island Irrigation is sometimes required from the middle of September to end of March. The frequency of application must be regulated by the amount of rainfall. In dry seasons it would be required once a month. I used to apply the water once a fortnight, but am now fully convinced this was too often, and that once a month would be enough.

12. See reply to Question 5. The greater portion of Tasmania does not require irrigation, the natural rainfall being sufficient. Of the few dry spots I am acquainted with I may name the Macquarie Valley, south of the Hummocks Hills; a considerable area in the vicinity of Campbell Town; also the Bothwell District. I believe also the Swanport District is at times very dry. I believe there are many spots in the hills where water may be stored for Irrigation purposes in addition to those already in use, such as the Long Marsh on the North Branch of the Macquarie, Bell's Bottom on the Glen Morriston Rivulet, the Race-course Marsh on the Blackman, &c.

13. Any steps that can be taken to encourage private enterprise would be more likely to lead to practical results. In order to command sufficient land to make it worth while incurring the expense of Irrigation, the water would, in a majority of instances, require to be brought through the lands of adjoining owners; greater facilities for doing this are required. The Irrigation and Drainage Act needs amendment. It is at present very defective, and almost unworkable. It requires a plan of race be put in with the notice to adjoining owner, and provides no means of entry on the land in order to make the survey.

I regret being unable to spare time enough to go into these questions as fully as I could have wished.

THOMAS PARRAMORE.

HON. DONALD CAMERON, *M.L.C.*

1. My knowledge of Irrigation is confined to my own experience, and, as far as that goes, I speak with confidence, that it has been and continues a great success, though I have had great difficulties to contend with.

2. I am not qualified to give an opinion of other works of Irrigation, not having inspected them.

3. I know of no failure where the drainage was properly attended to. Carelessness of this all-important matter would be followed by the land producing rushes.

4. Want of knowledge or carelessness.

5. It would require an expert to answer this question. Many things have to be considered. We have great natural advantages. The number and elevation of our lakes offer great facilities. The surplus water from the Campbell Town Water Works could be utilised. Tooms' Lake might be easily added to and increased, yielding a far larger supply of water, thus irrigating a largely increased acreage of land along the Macquarie River Plains, at a comparatively small cost.

6. I dare not hazard an opinion without knowing the probable cost.

7. A national system of Irrigation necessitates bringing water from the Lakes. The cost would be the one important question. The use of water in sufficient volume would be a great addition to the prosperity of Tasmania. It would double or quadruple the producing power of every acre of good land brought under its influence. Population, as a natural result, would follow. Small farms would be given off for cultivation. One hundred acres of irrigated land would produce more than five hundred in its natural state. Large sheepwalks would be broken up; land would naturally rise in value from the increasing demand for small farms.

8. The probable extent I could not state, but very large, as much of the land has been impoverished by bad farming, and exhausted. The application of water would give fresh vitality to it.

9. Not by efflorescence of salts,—by bad and negligent drainage, resulting in a free growth of rushes.

10. Nearly all crops are increased by the judicious use of water, and the value of the land doubled.

11. I begin about the middle of October and continue until the middle of March, much depending on the rainfall. When the water is in large quantity, from twenty days to a month, depending on the evaporation. Water should not remain on the ground more than from two to three days. The drainage being good this is easily accomplished.

12. The Lakes are the centre from which any comprehensive system of Irrigation must radiate, and primary action necessitates that correct surveys and levels be taken showing the difficulties there are to be surmounted, and approximate probable cost, as on that important fact the whole scheme depends. If found practicable and within our means, the water could be taken along the upper levels trending to the lower lands leading to Salt Pan Plains and other districts. The Blackman River would receive and carry off the drainage, again to be used on lower lands, and joining the water from Tooms' lake, thus giving a greater supply to the Valley of the Macquarie. The same plan could be adopted with the Isis, Lake Meander, and other rivers. This basin, embracing Norfolk Plains and the surrounding country and other localities, would, if irrigated, teem with fertility. It will be observed I have only indicated a few lines of country well adapted for irrigation, though there are many places where the advantages are equally great. The splendid Valley of the South Esk ought also to be noticed, extending to Evandale and Longford. There are, however, difficulties to contend with here in an insufficient supply of water. How this is to be overcome I hardly know,—possibly by tapping the lake near the source of the South Esk.

13. As a rule I generally subordinate my opinion to fact. In the matter of Irrigation I see no end to the benefits that will accrue if the measure can be successfully carried out. Where land is irrigated the grass is green, succulent, and rich, capable of carrying and fattening a large quantity of stock. Where the water is not laid on, the herbage is dry, withered, and scanty, and comparatively unproductive. Again, the sluices or ditches used for irrigation in summer become most important factors in carrying off the flood-water in winter, thus serving a double purpose, and leaving the land dry. Should it be found that the obstacles to be overcome are too great to enter upon a large and comprehensive measure beyond our means, still much might be done by private and individual enterprise. Some of our rivers carry a large body of water during the summer months—that is, up to Christmas. Now what I should advise is that the present Irrigation Act be amended, allowing persons to take out water at higher levels through the lands of other parties by giving compensation. By this means alone (though imperfect) great benefits would result. If the greater plan is carried out, an assessment could be levied on the irrigated land according to the benefits derived, so as to recoup the State for the interest of the money expended. What this Colony requires, with its arid climate, is water. No longer would it be unable to produce meat enough for its own consumption, but possibly become an exporter. I would only add, what is applicable to one part of the Colony is equally so to all, conditions being equal.

WILLIAM THOMAS STRUTT,
GOVERNMENT PRINTER, TASMANIA.