

1913.  
NEW ZEALAND.

---

# RANGITAIKI LAND DRAINAGE:

REPORT FOR THE YEAR ENDED 31st MARCH, 1913; TOGETHER WITH STATEMENT  
OF ACCOUNTS.

---

*Presented to both Houses of the General Assembly pursuant to Section 10 of the Rangitaiki  
Land Drainage Act, 1910.*

---

SIR,—

Department of Lands and Survey, Wellington, 2nd June, 1913.

I have the honour to submit herewith the report upon the drainage operations in the Rangitaiki Plains for the year ended 31st March, 1913, pursuant to the provisions of the Rangitaiki Land Drainage Act, 1910.

The total area affected by the Act is 87,100 acres, the greater part of which is either freehold, leasehold, or Native land.

Great difficulty was experienced during the year with the cutting of the Rangitaiki River diversion canal, let to Messrs. Rich and Jeffreys, who finally abandoned the work, which is now being proceeded with by the Land Drainage Branch of this Department, as well as the remaining works in progress.

I visited and inspected the operations during November and satisfied myself that the officers in charge and their parties are carrying out the varied works entrusted to them in a highly efficient manner.

The expenditure up to date has been as follows :—

					£	s.	d.
For the year ended 31st March, 1912	..	..	..	..	12,140	0	0
"                    "          1913	..	..	..	..	15,203	0	0
Total	..	..	..	..	£27,343	0	0

The detailed report of the Land Drainage Engineer (Mr. J. B. Thompson) sets forth the nature of the operations undertaken and proposed. To that officer and his assistant (Mr. O. N. Campbell), together with their staffs, the greatest credit is due.

The accompanying statement of accounts shows the expenditure for the year.

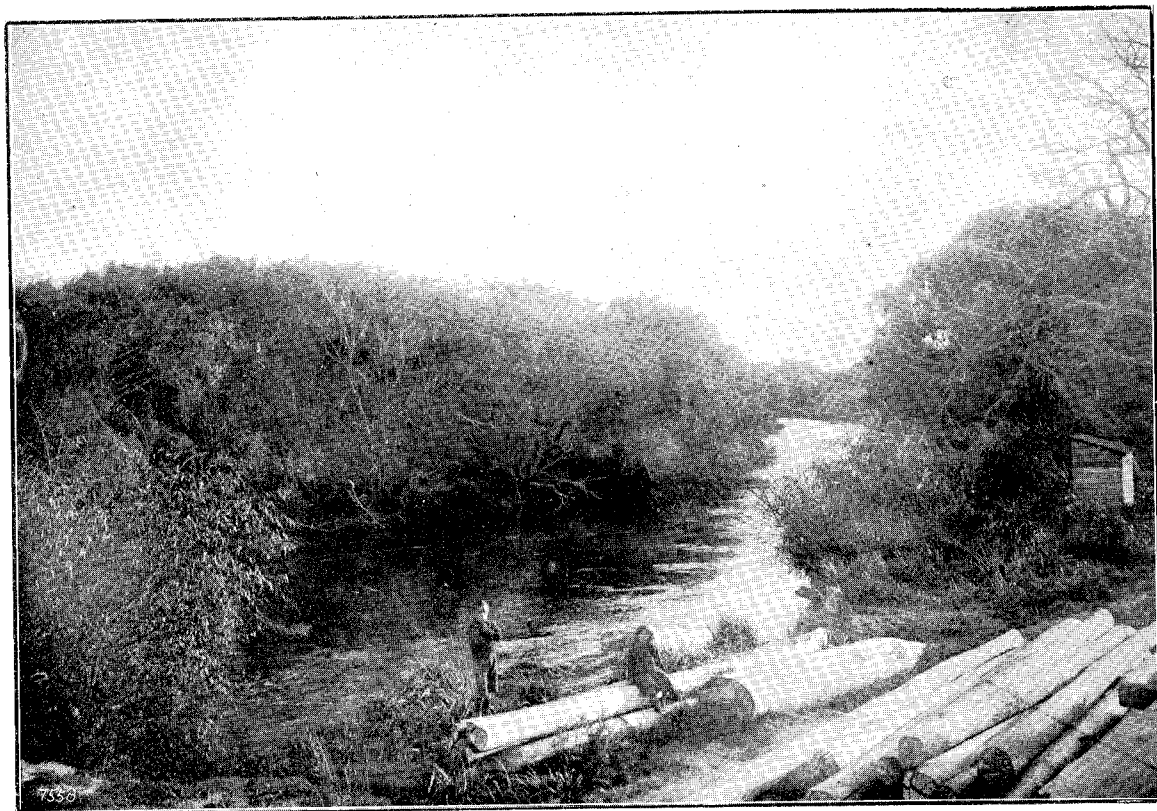
I have, &c.,

JOHN STRAUCHON,

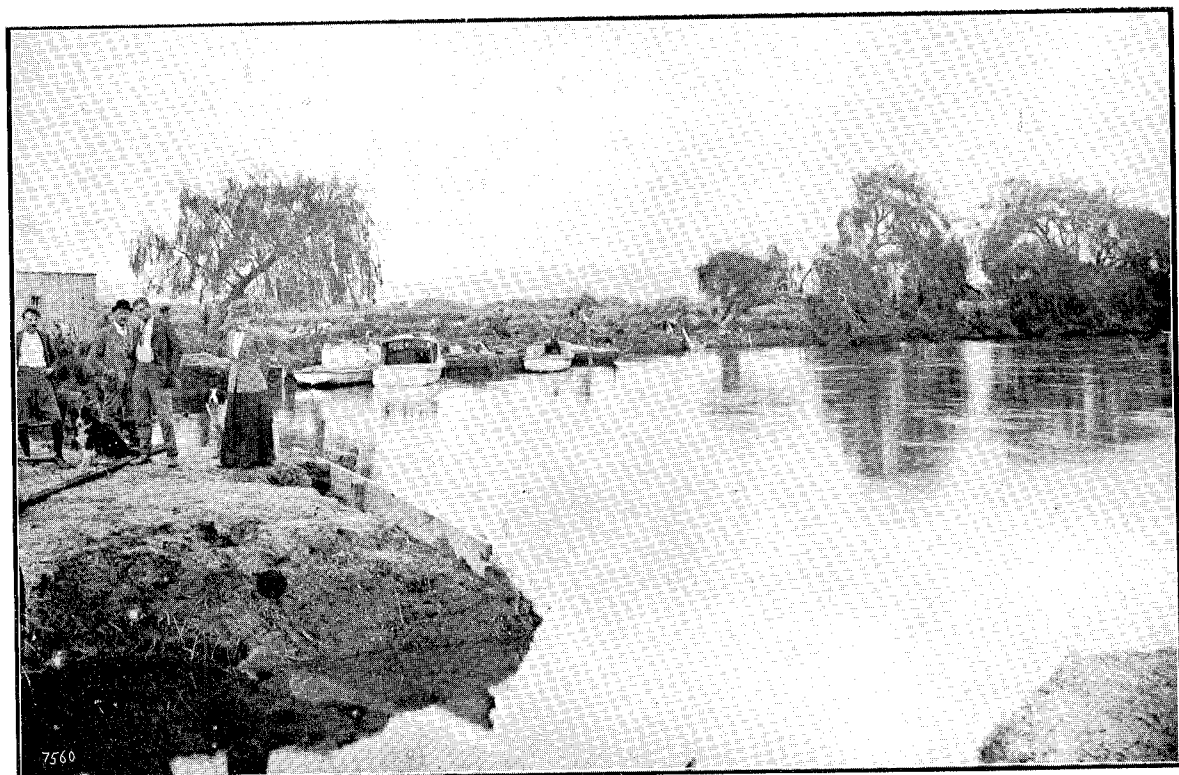
The Hon. W. F. Massey, Minister of Lands.

Under-Secretary for Lands.

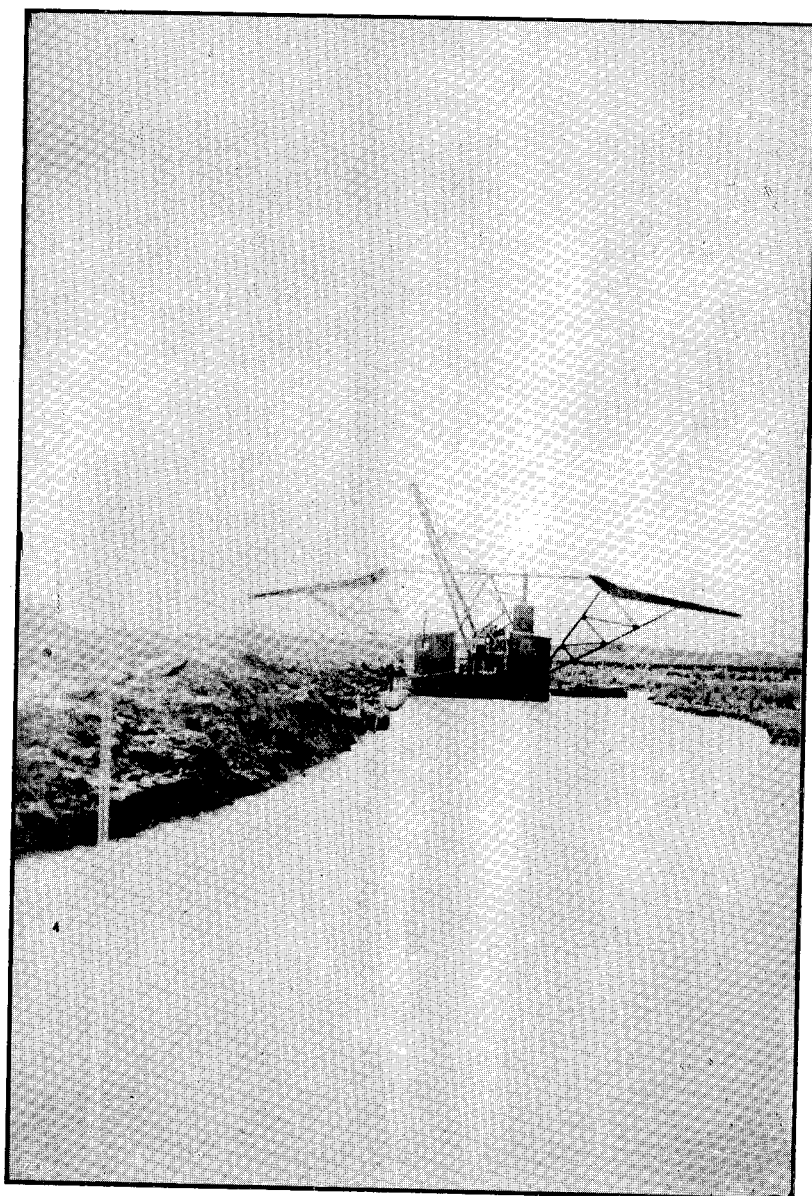




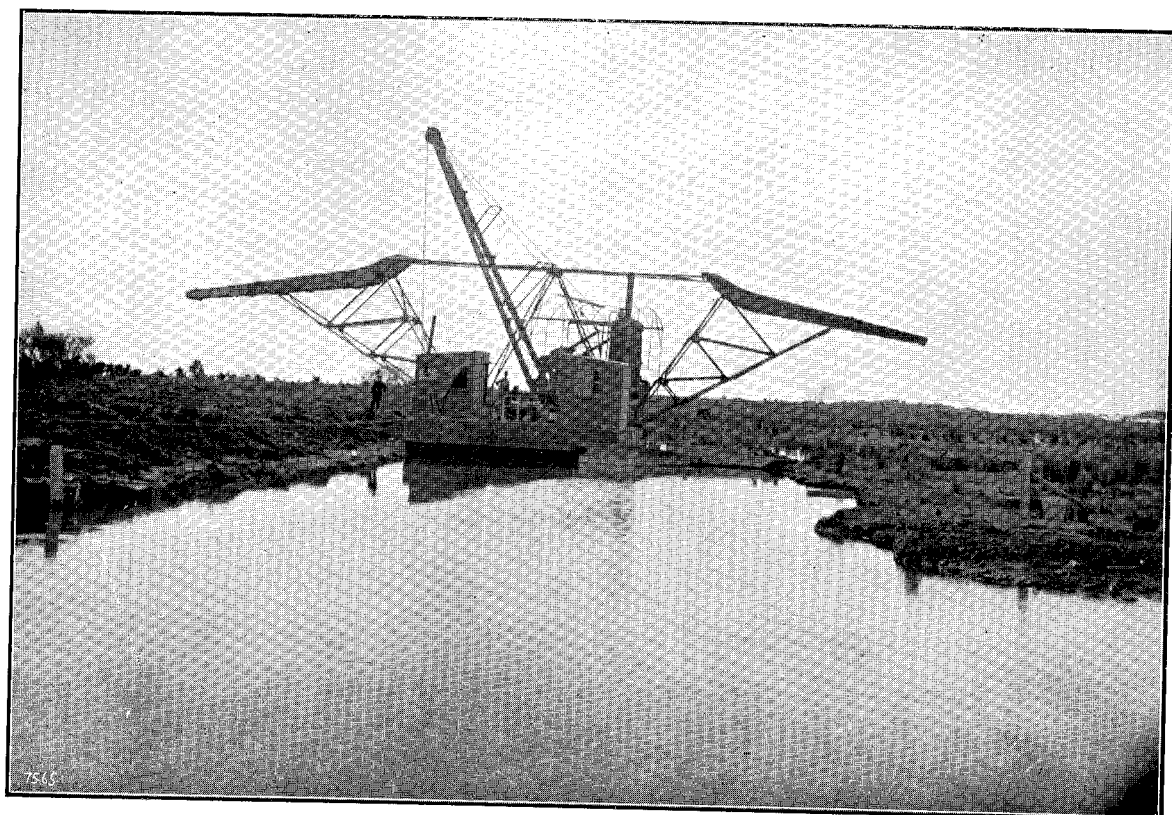
THE BEND, RANGITAKI RIVER (DOWN-STREAM).



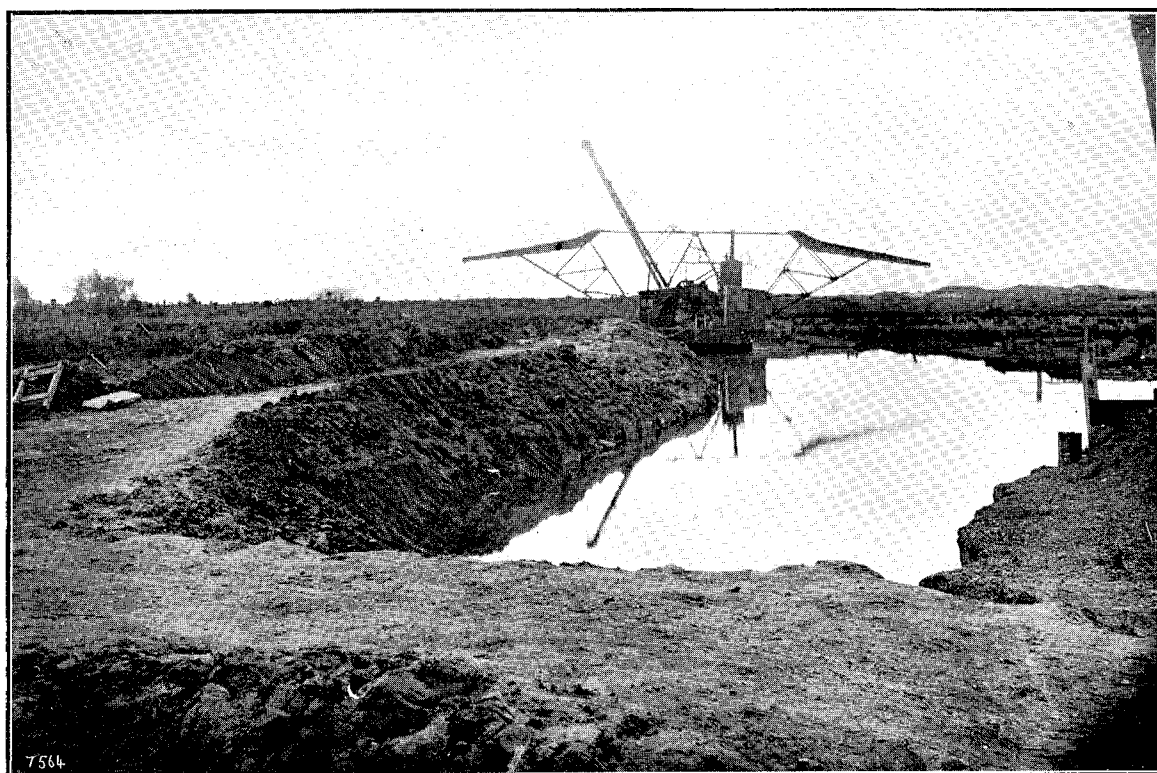
THE BEND, RANGITAKI RIVER (UP-STREAM).



DREDGE NO. 4, RANGITAIKI RIVER DIVERSION.



DREDGE NO. 4, RANGITAIKI RIVER DIVERSION.



DREDGE NO. 4, RANGITAKI RIVER DIVERSION.



RANGITAKI RIVER DIVERSION.—SCOOP TEAMS AT WORK ON EXCAVATION OF SANDHILLS.

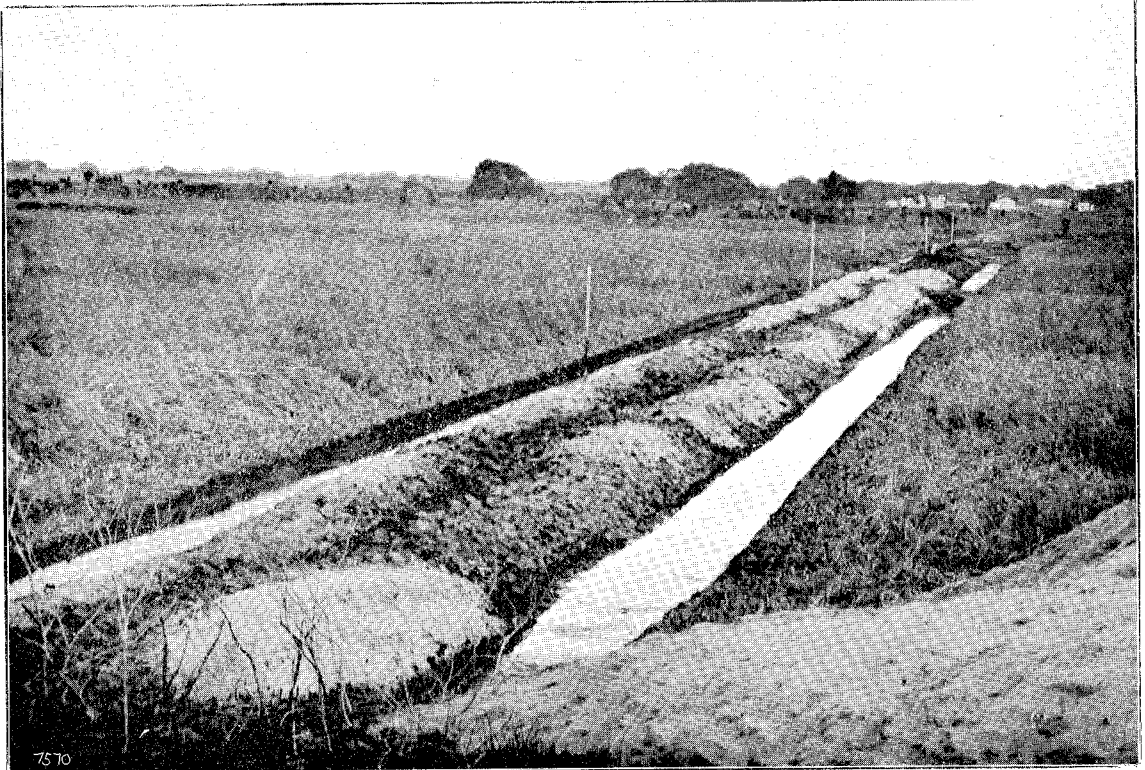




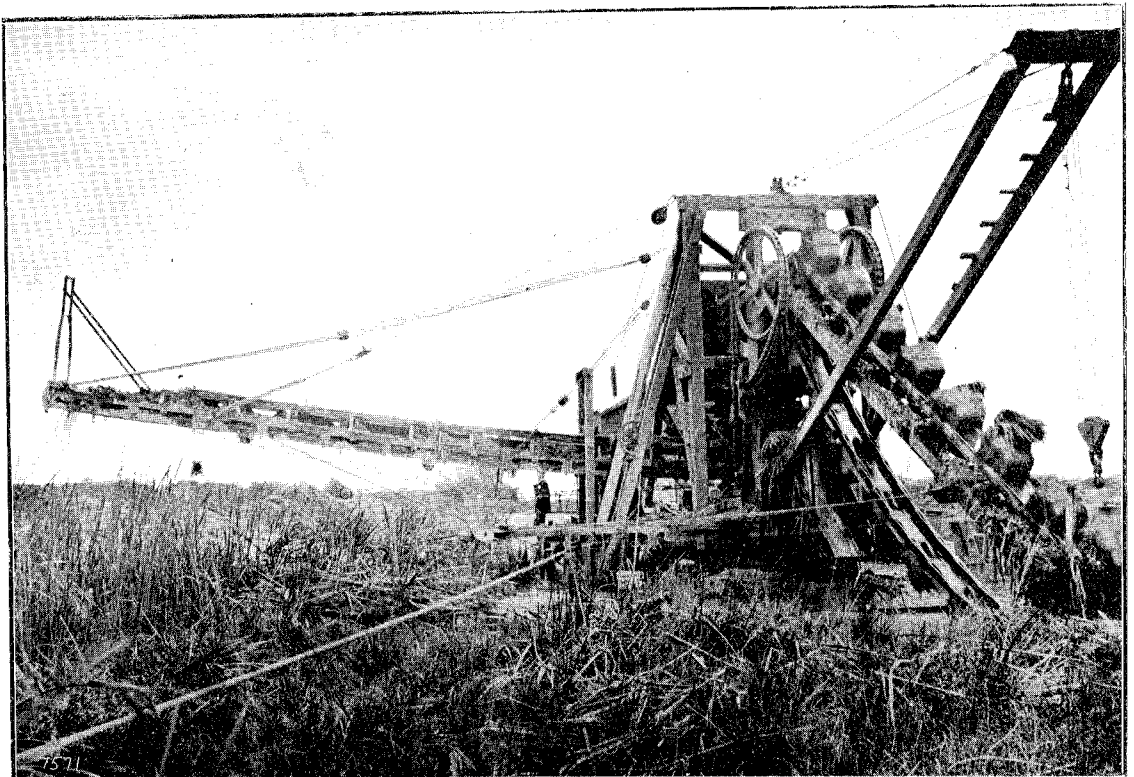
RANGITAHI RIVER DIVERSION.—SCOOP TEAMS EXCAVATING SANDHILLS.



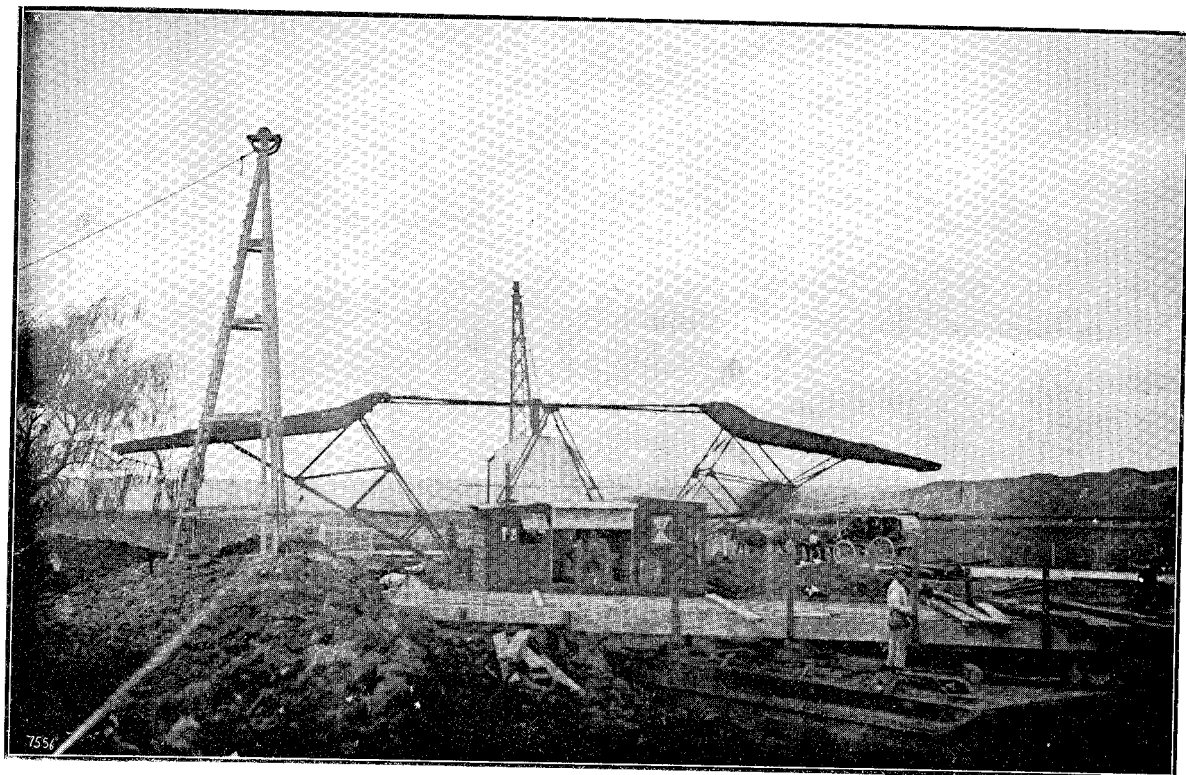
WHEEL SCOOPS ON SAND-DUNES.



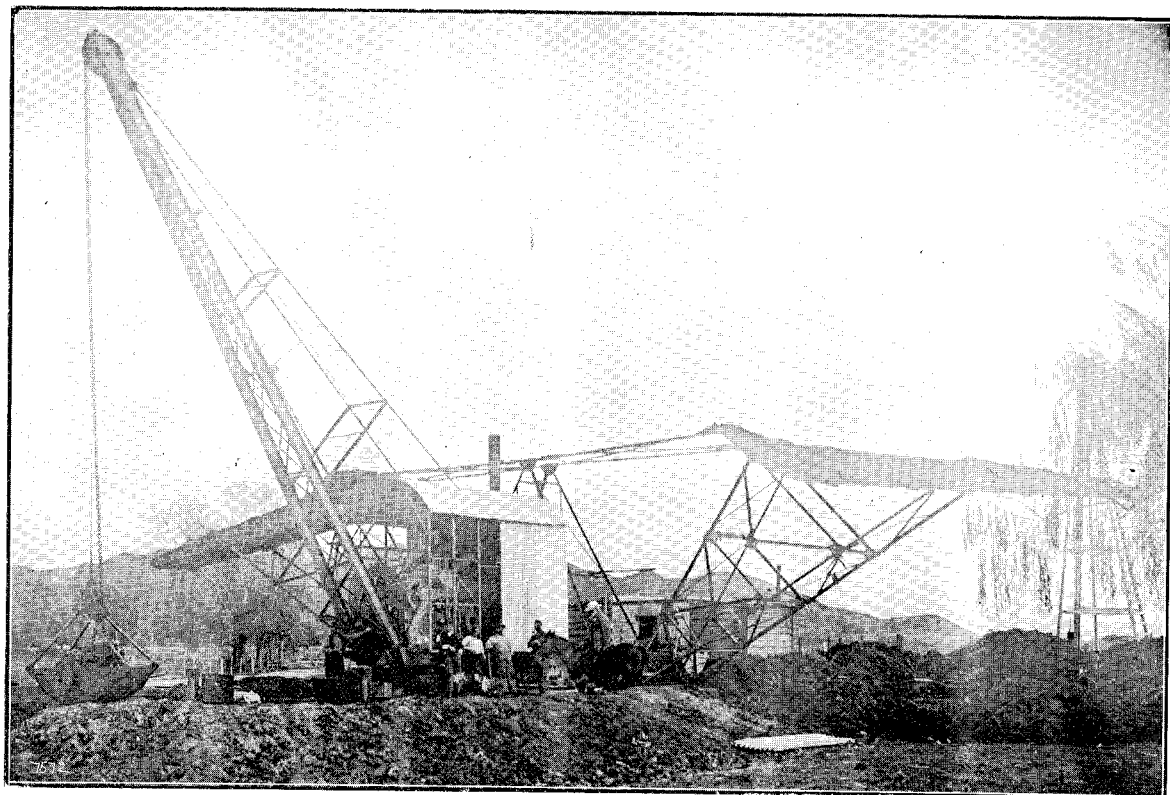
RANGETAIKI RIVER DIVERSION. STOP-BANK UNDER CONSTRUCTION.



HAMMOND PONY DREDGE.

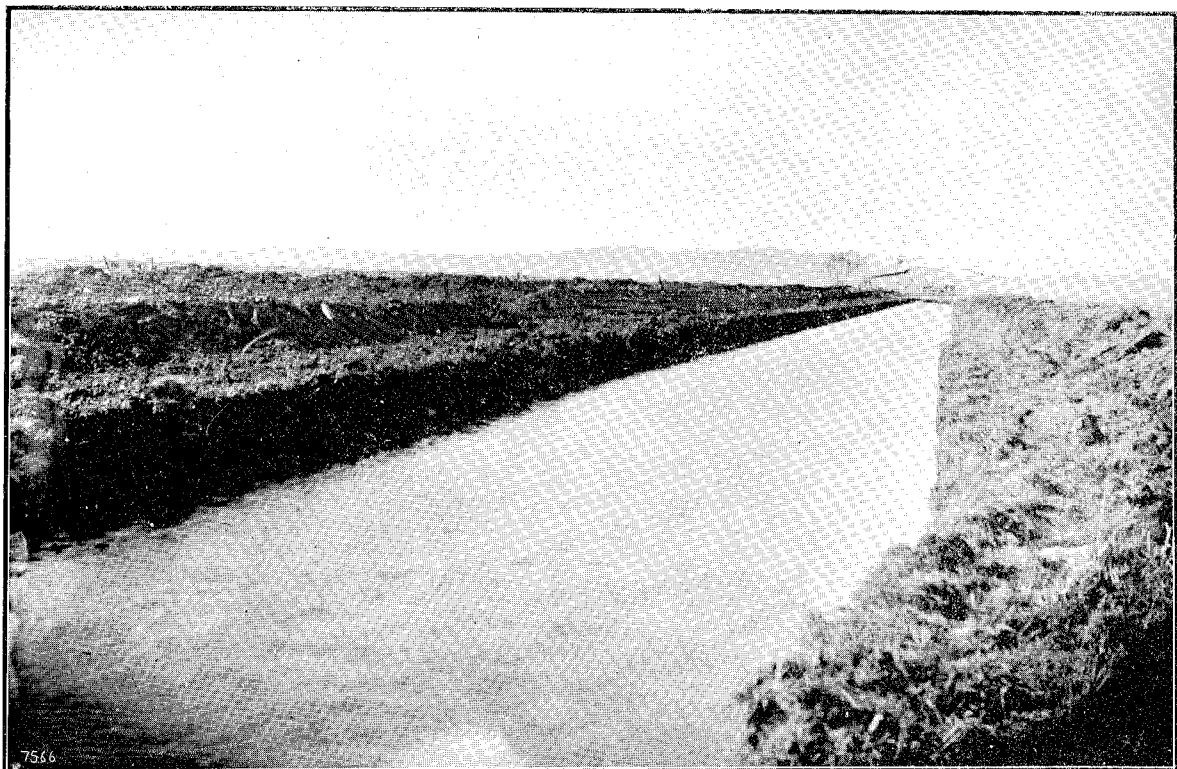


MANGAROA - TE RAHU OUTFALL.- DREDGE NO. 3 AT NEW MANGAROA BRIDGE.

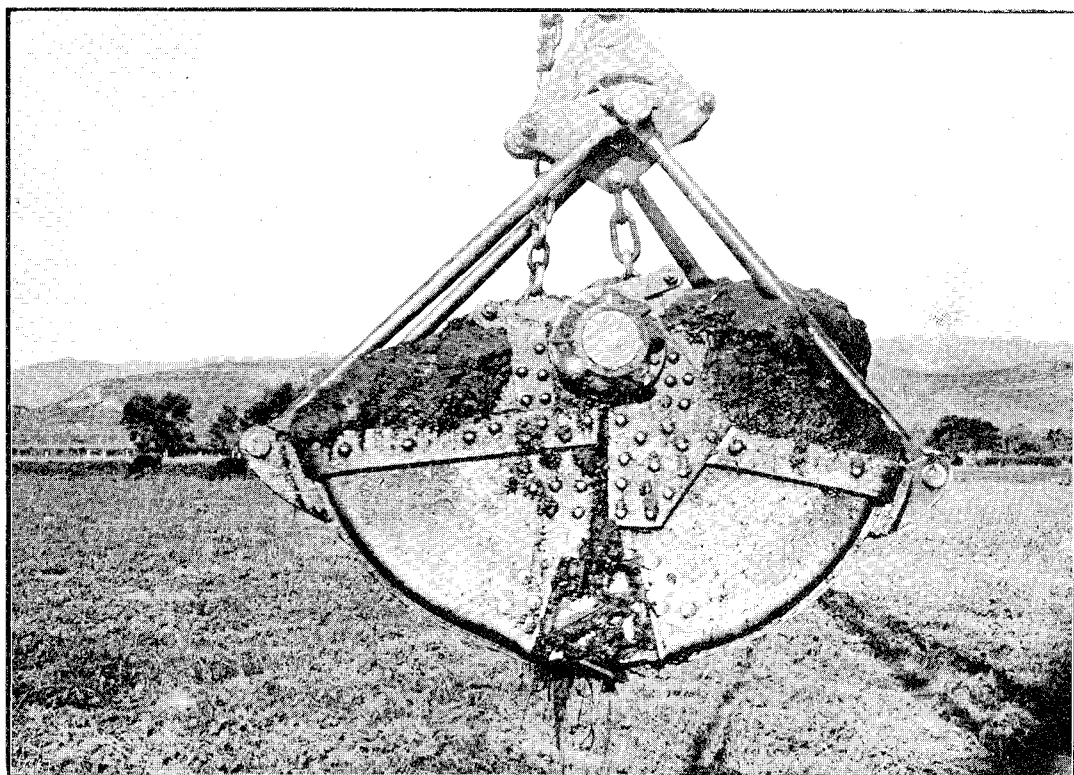


DREDGE NO. 3, MANGAROA - TE RAHU OUTFALL.

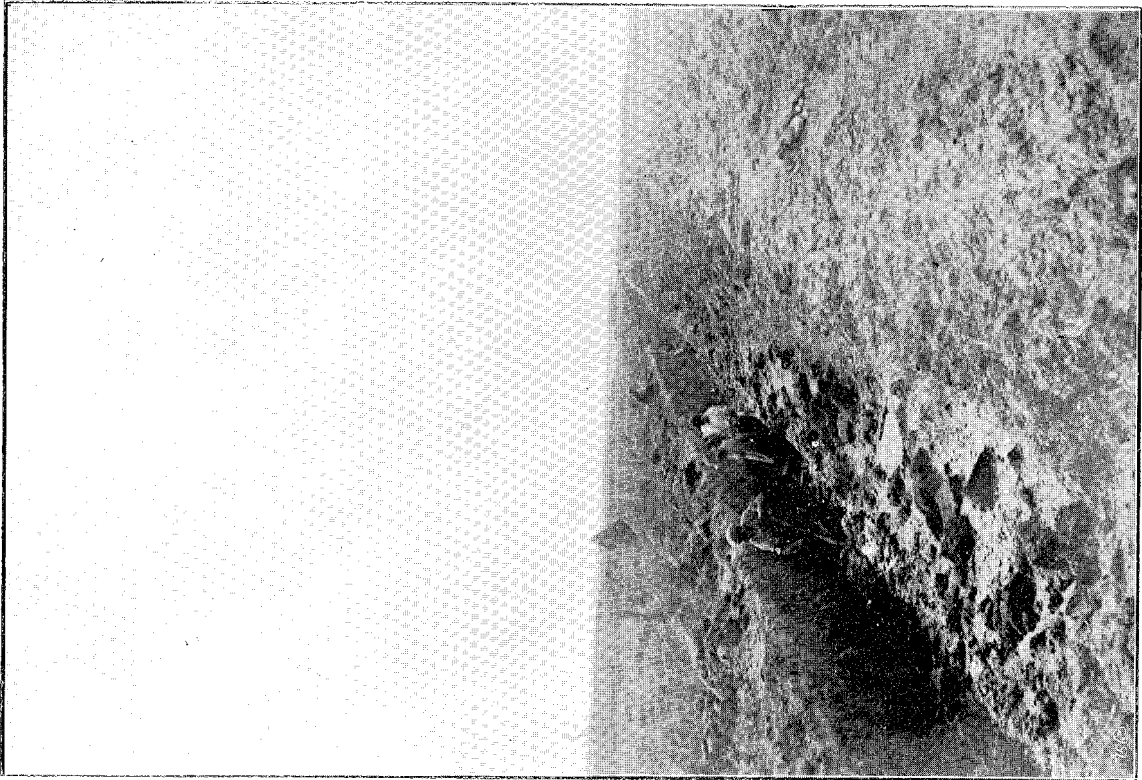




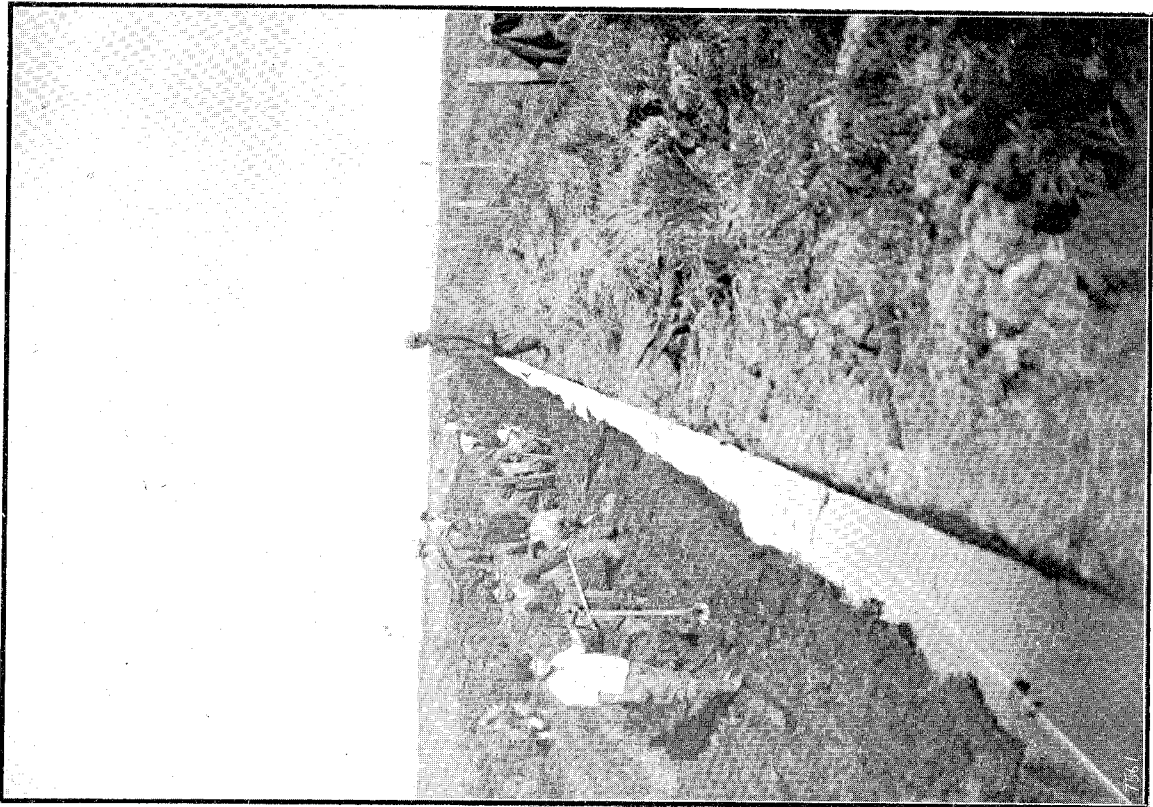
MANGAROA - TE RAHU OUTFALL.—DREDGE NO. 3 EXCAVATING IN DISTANCE.



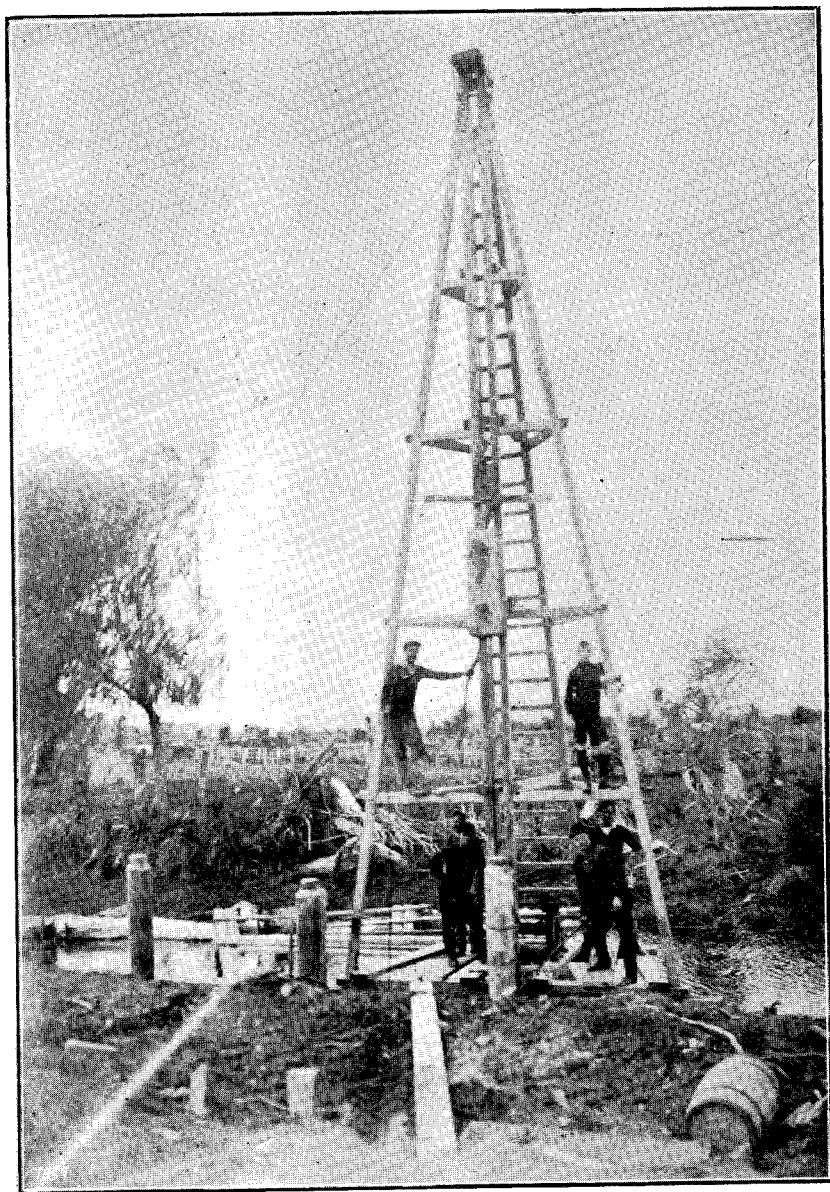
A FULL BUCKET.



PORTION OF WESTERN ROAD DRAIN.



PORTION OF WESTERN ROAD DRAIN.



PILE-DRIVING PLANT.

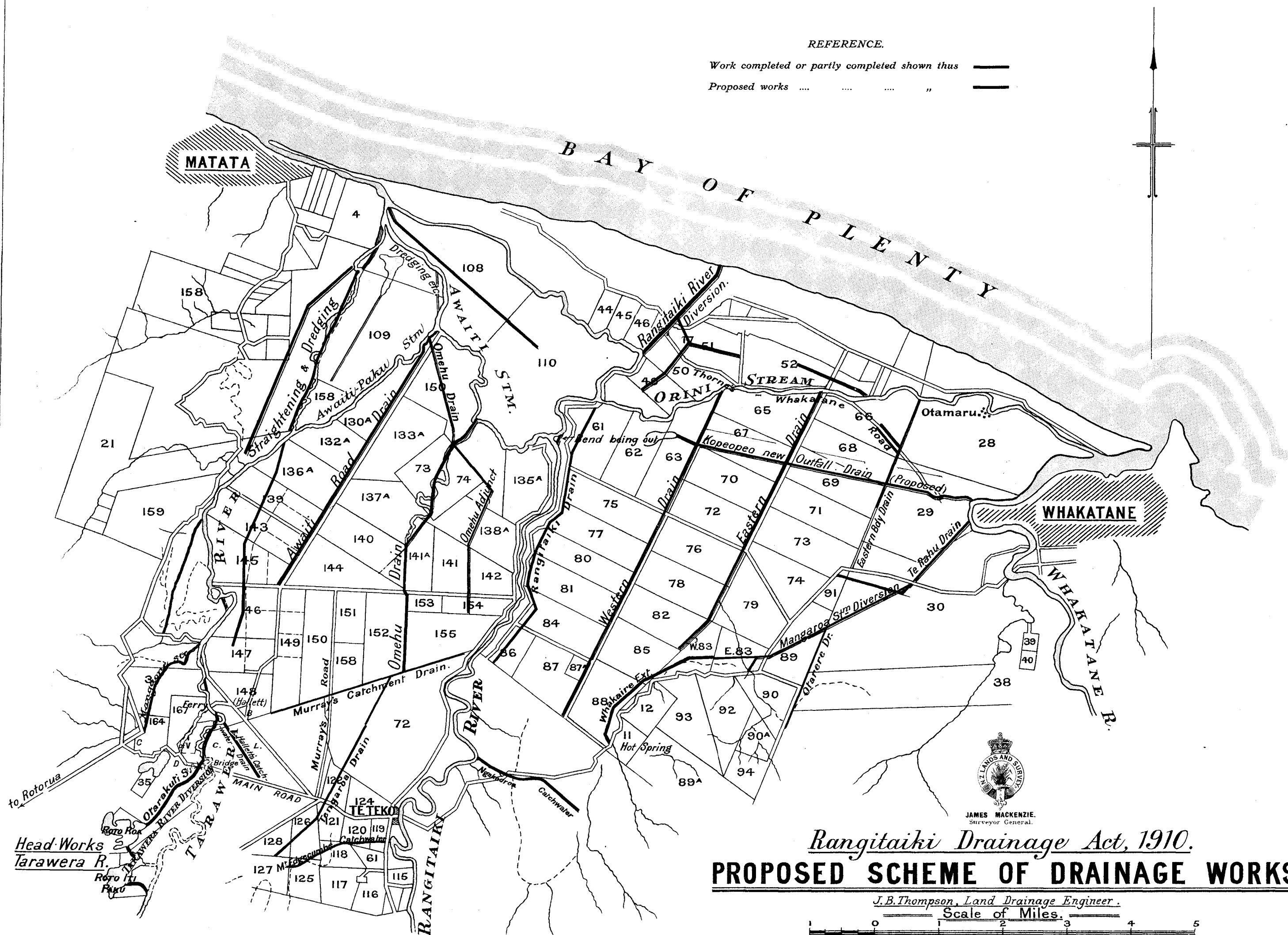




## REFERENCE.

Work completed or partly completed shown thus ———

Proposed works .... .. " ———



*Rangitaiki Drainage Act, 1910.*  
**PROPOSED SCHEME OF DRAINAGE WORKS**

*J.B. Thompson, Land Drainage Engineer.*  
 Scale of Miles.



On the upper Tarawera nothing further has been done: the river is still lowering and scouring out its own bed. These works have been most successful, the main coach-road across the swamp, previously flooded by this river, being perfectly dry throughout last winter.

Considerable attention is, of course, given to the groynes, &c., at the headworks near the lakes.

#### RANGITAIKI RIVER DIVERSION CONTRACT.

As mentioned previously, this contract has been abandoned. The contractors (Messrs. Rich and Jeffreys), pursued by misfortune, met with unlooked-for difficulties throughout, and finally, before bringing their suction plant into an efficient state, abandoned the work. Acting on your instructions I took charge of the contract (11th March, 1913). No time was lost in mapping out a scheme of operations and getting the works into going-order again. A Priestman grab dredge, as before mentioned, was at once taken up to the site and started on the excavation of the channel. The erection of the necessary stop-banks and the cutting-away of the sandhills are now in hand, and all works will be fully manned at an early date.

The importance of this work is fully recognized, and no effort will be spared in bringing it to a speedy and, I feel sure, successful finish. It is expected that the channel will be through within thirteen months or less.

#### TE RAHU-MANGAROA OUTFALL.

A preliminary cut with 10 ft. bottom and a depth of 4 ft. above the final bottom has been made throughout this outfall. This, besides carrying off a large volume of water, which previously percolated through the swamp, has considerably settled the country and rendered it excellent dredging. As mentioned before, a Priestman grab dredge is now at work on this outfall, having just started, and excellent work is being done. This excavation will take the best part of fifteen months to complete, and the dredge will then commence the cutting of the Kopeopeo outfall.

#### OMEHU DRAIN.

The old Omehu watercourse has been straightened, cleaned, and deepened throughout, and this work has brought about a marked improvement in the adjoining country. A large area in its upper reaches is now permanently dry, and settlers are busily engaged "breaking in" and grassing their land.

#### SNAGGING RANGITAIKI RIVER.

This river, from Kokohinau to Te Teko, a distance of 4 miles 10 chains, has been snagged to a width of 33 ft., and made navigable for launches and punts, thus providing a through waterway from Te Teko to Matata Harbour.

#### MINOR WORKS, OUTLET DRAINS, ETC.

Recognizing the delay that must necessarily occur in completing the main outfalls, it was decided to proceed as far as possible with the minor works. This departure from the systematic method of working a drainage scheme has resulted in the southern half of the swamp being practically fully drained at least two years earlier than would otherwise have been the case, whereas the northern and low-lying portion has not been noticeably affected. Consequently, now, as the main outfalls are advanced, results will come doubly quick.

These minor portions of the scheme are all well advanced and showing good results. During the year 15 miles 13 chains of new drains have been cut and 8 miles 68 chains cleared and deepened.

#### AWAITI BEND DIVERSION.

This work, started last season and discontinued owing to winter floods, is now well on to completion. Wheel scoops have been used with great success, and the excavation is now complete, and the willows on the river-bank at intake and outlet are now being blown out preparatory to opening the intake.

For some considerable time this channel will act as a spillway, and can if necessary be deepened by dredging later on. The total amount excavated to date is 13,720 cubic yards.

#### FLOATING PLANT.

This consists of two Priestman grab dredgers, one Hammond bucket dredge, one suction dredge (incomplete), one oil-launch, three pontoons, one ferry punt, and sundry small punts. All are in good order and condition.

I intend very shortly transferring one of the Hauraki Plains launches to these works, as one launch is now not able to cope with the work of towing, &c.

#### BARGES AND PONTOONS.

During the year two large pontoons were built in readiness to receive the Priestman dredging machinery, that built at Matata being 55 ft. by 24 ft. by 6 ft., and the one built inland at Mangaroa being 55 ft. by 22 ft. by 6 ft.

Two coal-punts and one barge for river-snagging were also built. All this work was done by our workmen.

#### TELEPHONE.

A private telephonic connection has been made between Matata and the Engineer's quarters at the "outlet," and is most useful.

#### BUILDINGS.

These consist of an office, Engineer's and men's quarters at the "outlet," men's quarters at Mangaroa, and a smithy and engineering workshop at Matata. This workshop is fitted with a 4½ h.p. standard oil-engine, lathe, drills, and general engineering workshop tools, it having been found necessary to do so owing to the inaccessibility of these works and the consequent delays, inconveniences, and expenses that occurred in effecting machinery repairs at Auckland.

## ROAD-CONSTRUCTION.

Roadworks are being carried out with moneys from accrued "thirds" and Government grants only. During this year 3 miles 30 chains of new roads have been constructed and completed, 75 chains of this being double-drain formation.

## FENCING.

During the next twelve months a considerable amount of fencing-in of main outfalls will have to be undertaken so as to preserve them from damage by trespassing stock, and also in justice to settlers through whose properties land has been taken for large outfalls.

## SUMMARY OF WORKS PERFORMED.

During this past year the following works have been carried out: Dredged, 31,486 cubic yards; new drains, 15 miles 13 chains; drains cleaned and deepened, 8 miles 68 chains; river-snagging, 4 miles 10 chains; one sill bridge erected; five pontoons built (two for Priestman dredgers, two for coal-carrying, and one for river-snagging); one coal-hopper jetty and one landing-stage erected; clearing and stumping, 67½ chains; understrutting Te Ngaukoro Bridge; excavating dredge basin at Mangaroa; fitting out machinery-shop at Matata; erection of quarters at "outlet" and Mangaroa; excavation of Awaite Bend diversion, 10,220 cubic yards; erection of dredges and general repairs; improvements and maintenance of existing works. Drains constructed to date total 40½ miles, and river-snagging 9¼ miles.

All the above works were performed either by piecework contract or day labour. The average daily number of men employed on the various works was ninety. Difficulty has been experienced in obtaining labour, but this condition is now improving.

## PROPOSED WORKS.

The principal works to be carried out during the current financial year are as follows:—

- (1.) Continuance and maintenance of works in hand, with probable completion of the Rangitaiki River diversion and the Te Rahu—Mangaroa outfalls.
- (2.) Erection of bridges over outfalls.
- (3.) Continuance of road-construction.

## SURVEYS.

A party has been engaged throughout the year on land and engineering surveys. Series of levels have been taken throughout the swamp, and these have now been connected up and "closed," and are fairly complete.

The land surveys of the various outfalls are well up to date.

## ACQUISITION OF NATIVE LANDS.

During the year 370 acres, comprising twenty-nine sections of Native land, were acquired for the more efficient carrying-out of the drainage and other works. Sundry other small areas were acquired for road purposes.

## WORKS EXPENDITURE FOR THE YEAR.

On account of piecework contracts and day labour of all descriptions employed upon drainage operations, pontoon-building, erection of buildings, engineering surveys, erection of machinery, &c., the sum of £7,074 3s. 11d. was paid out of local imprest. There were no payments to contractors in connection with the Rangitaiki River diversion during the year.

In connection with road-construction, out of special grants the sum of £284 17s. 9d. was paid from local imprest.

The number of piecework contracts was twenty.

## OFFICE.

The books in connection with these works are kept at the Thames office.

Many plans, including road, Proclamation, and engineering, besides tracings, were made.

The Assistant Land Drainage Engineer, Mr. O. N. Campbell, who is in charge of the works, has done his utmost to ensure the success of all operations, and my thanks are due to him for his assiduous attention to all matters. Mr. G. Tuck, foreman dredgemaster, has also laboured hard in connection with the building of pontoons and erection of machinery, most expeditious work having been done in this connection.

The accompanying plan shows works in hand and those proposed.

I have, &c.,

J. B. THOMPSON,

Land Drainage Engineer.

The Under-Secretary, Department of Lands and Survey.

*Approximate Cost of Paper.*—Preparation, not given; printing (1,700 copies), £2 17s. 6d.