

SESSION II.
1912.
NEW ZEALAND.

RANGITAIKI LAND DRAINAGE:

REPORT FOR THE YEAR ENDED 31ST MARCH, 1912; 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, Wellington, 1st June, 1912.

I have the honour to submit the report upon the drainage operations in the Rangitaiki Plains, pursuant to the provisions of section 10 of the Rangitaiki Land Drainage Act, 1910.

The total area affected by the Act is 87,100 acres, the greater part of which has been disposed of either in freehold or under leasehold tenures, or remains in the hands of the Maoris.

Operations were commenced at the beginning of 1911, when the necessary preliminary engineering surveys were made. The report of the Land Drainage Engineer (attached) shows what has been done since that date. The chief work is the diversion of the Rangitaiki River. A contract for the excavation of a canal from the Oherero Bend to the sea has been let to Messrs. Rich and Jeffreys, and they have now commenced work. The contract price was £11,123. Most of the remaining drainage-works are being undertaken by the staff of the Land Drainage Branch of the Department, under the direction of the Land Drainage Engineer (Mr. J. B. Thompson) and his assistant (Mr. O. N. Campbell). Very satisfactory progress is being made.

During the year it was necessary to effect the classification of the drainage-area in accordance with section 6 of the Act, and the requisite regulations were gazetted on the 16th March, 1911. Mr. H. Lundius, Crown Lands Ranger, Wanganui, was appointed as arbitrator for the Government; and at a public meeting held at Te Teko on the 19th April, 1911, Mr. Edward Allen, of Cambridge, was elected the arbitrator to act on behalf of the occupiers of land in the Rangitaiki Land Drainage District. The classification was made during May, and subsequently the Valuer-General revised the valuations of the various holdings, in order that the rates to cover payment of interest on the outlay and repayment of principal may be levied.

At the end of the year Mr. William C. Kensington, I.S.O., retired from the position of Under-Secretary of the Department, and relinquished his supervision of the drainage scheme, which was initiated under his personal direction and advice. I hope to be able to visit the locality and inspect the works at an early date.

The whole of the moneys raised under the Act for the drainage and reclamation of the plains will subsequently be repaid by the settlers by means of a special rate, the first instalment of which will probably be levied during the current year. Since the passing of the Act and the commencement of drainage operations the values of lands in the plains have greatly increased. Much of the leasehold land was originally let to tenants at rents based on a capital value of about 10s. per acre. Sales have lately been reported at prices of £14 and £16 per acre, showing the great reliance placed by purchasers on the ultimate success of the operations, and the consequent improvement of the lands.

The accompanying plan shows the works in progress and in contemplation. The statement of accounts shows the expenditure.

I have, &c.,

JOHN STRAUCHON, Under-Secretary.

Hon. Thomas Mackenzie, F.R.G.S., Minister of Lands.

Te Teko from Rotorua. This diversion of river has made the main coach-road quite dry where previously a considerable length of it was under water. It will be necessary very shortly to temporarily close the main road from Otarakuti to Seccombe's, and a new road *via* Tarawera Free Ferry has been made to carry the diverted traffic. The Otarakuti Bridge will require replacing eventually by a new structure, but will in the meantime be repaired by the addition of a temporary span of 25 ft., and the renewal of approaches, which the enlargement of diversion is affecting. This diversion has avoided some 200 acres of pumice flats, formed by the old river-bed, and it is considered that the two lakes through which the diverted river now passes will "trap" any pumice and sand travelling from the southwards, and form a settling-bed capable of holding, at a low estimate, four million cubic yards of silt. It will be apparent that such a result is of supreme importance.

On the lower Tarawera River the Hammond "pony dredge" is now cutting diversions with a view to straightening this river. This plant is of the bucket-ladder type, and has a capacity of $1\frac{1}{2}$ cubic yards per minute, the spoil being carried to banks by an elevator. The power used is a 30 B.h.p. Standard oil-engine, and the plant will prove very suitable, but has not had time to make a big show as yet. The bucket ladder works in an arc of 28 ft., and can excavate to a depth of 12 ft. Altogether it is proving very satisfactory. The pontoon to carry plant was built on the works. One of the Priestman grab dredgers on order will be also placed on this river to straighten its course. It will be fitted with automatic steel chutes reinforced with a water-jet. The pontoon, 55 ft. by 24 ft. by 6 ft., is almost complete, and is being built on the works. It is hoped to lower the general surface level of the Tarawera River by 1 ft. per mile.

Kopeopeo Outfall.—Tenders were invited for construction of an outfall some $4\frac{1}{2}$ miles long, but none were received. Arrangements have now been made to first run up a drain with a 10 ft. bottom, and to afterwards place a dredge—when available—in the same and enlarge it.

Mangaroa—Te Rahu Outfall.—No tenders were received for this work, which comprises some $4\frac{1}{2}$ miles of outfall, with an average width of 20 ft. It was then decided to order plant on behalf of the Lands Department, and a Priestman grab dredger was accordingly ordered for the work. This plant will be erected on a pontoon 22 ft. by 55 ft. by 6 ft., and automatic steel chutes will also be placed on same. Water-jets will also be used in connection with the chutes. On account of the fall in country, the dredge will be fitted up some 4 miles inland and worked down on a falling grade, water being supplied from the Mangaroa Stream.

Awaiti Bend Diversion.—This work is in hand, being half completed. Wheel scoops have been used, but work has had to be discontinued for this summer. Some 3,500 cubic yards of material has been moved to bank.

Awaiti Stream.—This has been snagged and cleaned for a distance of $1\frac{1}{2}$ miles, and is now navigable for launches. The willows throughout a distance of $1\frac{1}{2}$ miles have been ringbarked, and treated with "Noxine." This river will eventually be improved by dredging.

Orini Stream.—Some 6 miles of snagging and clearing has been done, and launches can now navigate the waterway.

Mangaone Stream.—This has been diverted for some 40 chains, and now, instead of spreading broadcast over the country, is confined within banks. A very noticeable difference is apparent in surrounding country.

Eastern Boundary Drain.—This has been deepened, widened, and improved for some 144 chains, and more deepening will be done next season.

Western Drain.—Some 454 chains of this drain has been greatly improved by deepening and widening, and further work in this connection will be done next season.

Eastern Drain.—The course of this drain was widened and deepened for a distance of 360 chains, but more depth requires to be gained.

Te Rahu Drain.—Very great benefit was obtained by the substantial deepening and widening of some 110 chains of this main drain. This drain will eventually form portion of the main outfall.

Ngakauroa Stream and Catchwater.—This was cleaned and straightened for some 65 chains, and a continuation of 49 chains was carried across the swamp to foothills. Considerable relief has been effected by this work, and a large tract of country has been made available.

Omehu Stream.—This has been straightened, cleaned, and deepened for a distance of 80 chains, and a lowering of the winter level of at least 18 in. water at its upper end has occurred.

Awaiti Road Drain.—Important work in the direction of widening and deepening some 245 chains of this drain has been done, and the drain is now 8 ft. on bottom, and averages 4 ft. 9 in. deep. This work, in conjunction with the diversion of the Tarawera River, has very largely improved the Tarawera country.

Road-deviation.—Owing to the diversion of the Tarawera River it became necessary to provide another traffic-road, the small bridge spanning the Otarakuti Stream not being long enough to allow, with any degree of safety, the passage of the extra volume of water that would be brought under it. A deviation of some 3 miles in length was therefore constructed, and where the road touches the Tarawera River, opposite Hallett's, a pontoon ferry was installed. A ferryman is stationed here, and when portion of the coach-road across the swamp is closed for repairs all traffic from Rotorua to Opotiki will be temporarily diverted to this new road. This road, besides providing a temporary deviation for traffic, is very necessary for the general roading scheme of the district, and steps are being taken to proclaim it a public road.

Other Works performed.—These consist of the following: Deepening and widening Rangitaiki drain, 260 chains; clearing, &c., of Orini drain, 100 chains; widening and deepening drain through Section 109, 140 chains. These items, together with drains mentioned under special headings, represent a total length of 25 miles 8 chains of work done during year by either day labour or piecework. Many other small services, too numerous to mention, have also been performed.

Works Expenditure for Year.—On account of piecework contracts and day labour of all descriptions employed upon drainage operations, pontoon-building, engineering surveys, &c., the sum of £5,135 2s. 6d. was paid out of local imprest. The sum of £572 ls. was paid out through Treasury on account of progress-payments due on special contracts, and £3,615 6s. 3d. was advanced to contractors on account of plant, machinery, and material on ground, the value of the security on the latter amount being estimated at £6,025 10s. 5d.

Proposed Principal Works for next Year.—(1) Completion Rangitaiki River diversion; (2) continued improvements to Tarawera River; (3) dredging of Mangaroa—Te Rahu outfall; (4) general development of drainage-system.

Office.—Many road, Proclamation, and engineering plans and tracings were made by the office staff. The amount passed through Rotorua imprest was £4,998 5s. 1d., and some 334 vouchers were certified for payment.

General.—Since commencing operations the whole of Rangitaiki Plains has progressed wonderfully, and land-values have risen very considerably, in some cases from £3 to £15 per acre. Many improvements are being effected by settlers now that the drainage operations have placed them in a position to do so. The coming year will see all drainage-work in full swing, as all the plant will then be available, the dredging machinery being due to arrive about the end of June next, and every effort is being made to have the pontoons ready awaiting same. Naturally, the first year of operations of such magnitude cannot show great results, as so much preparatory work and organization has to be faced, and, as before mentioned, the long distance from any workshop base is a serious inconvenience when repairs are required to machinery, not to mention the chance of vessels being bar-bound for days at a time and export or delivery of material being hindered.

Mr. O. N. Campbell was appointed Assistant Drainage Engineer in local charge of operations, and has been indefatigable in his efforts to push the operations ahead, and my thanks are due to both him and my staff for the way in which the wishes of the Department are being carried out. All books are kept at Thames office by the local staff.

The accompanying plan shows works in hand or completed and those proposed.

J. B. THOMPSON,

Land Drainage Engineer.

The Under-Secretary, Department of Lands and Survey.

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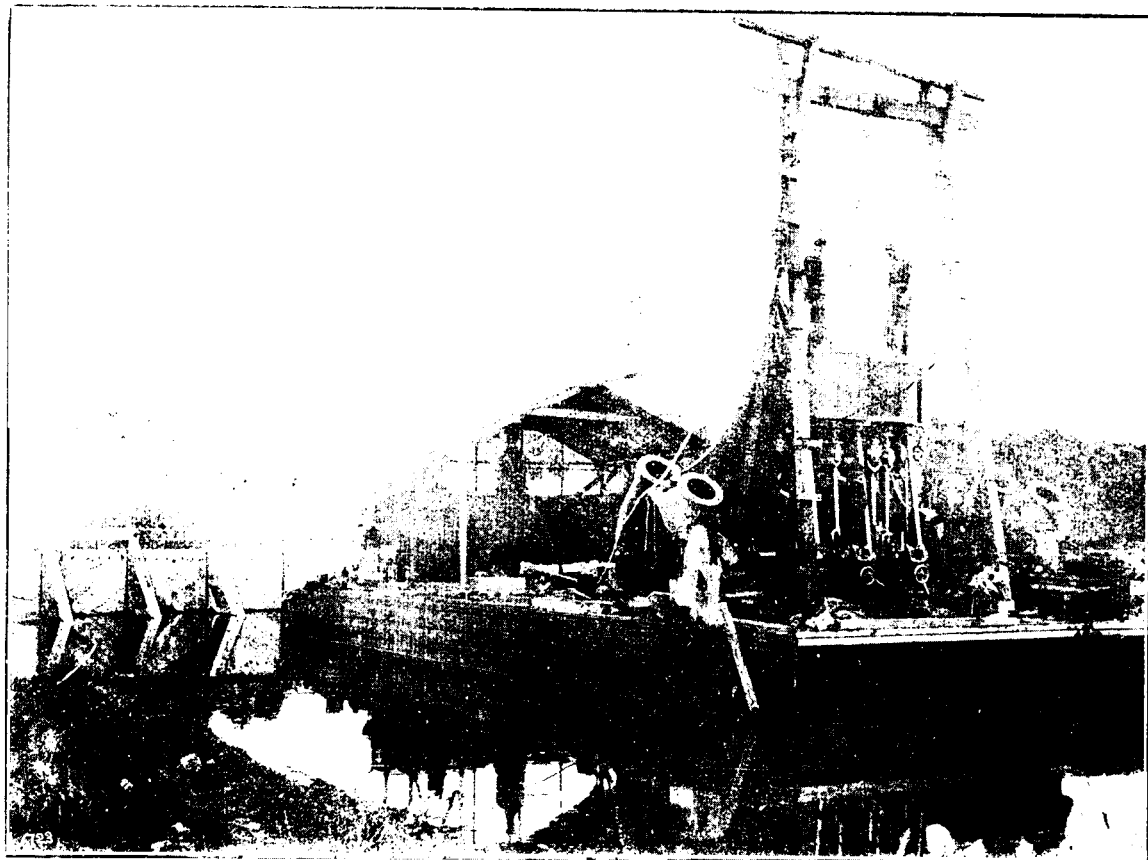
SOOPS ON AWAHI BEACH.



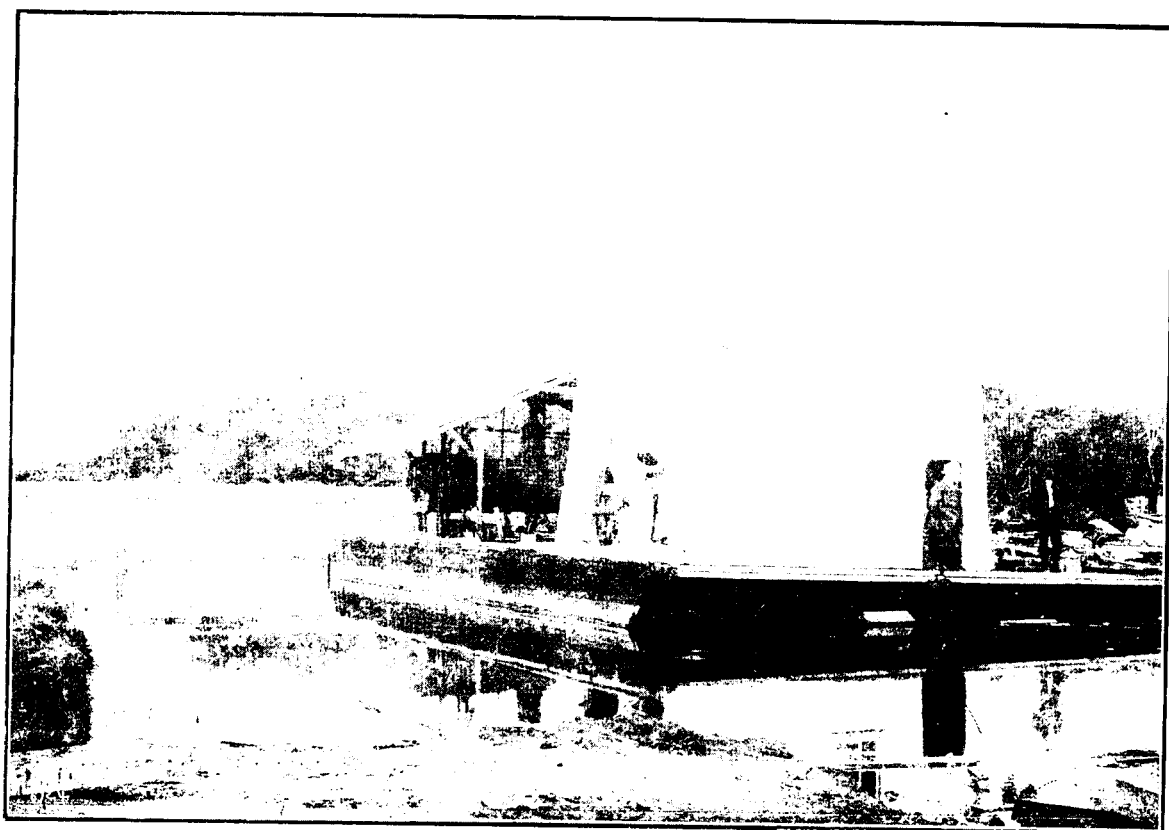
TARAWERA RIVER. NEW CHANNEL BETWEEN LAKES.



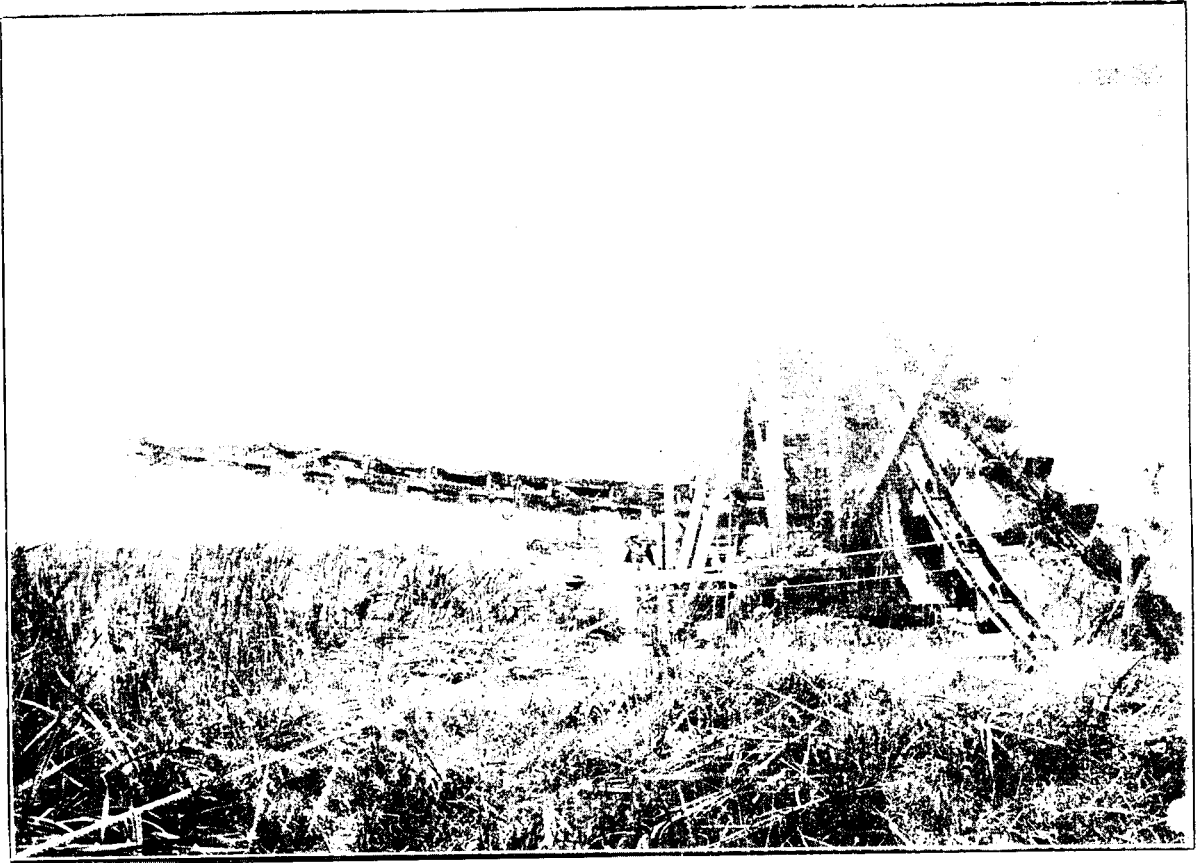
TE PUHO PUHO, RANGIARI RIVER.



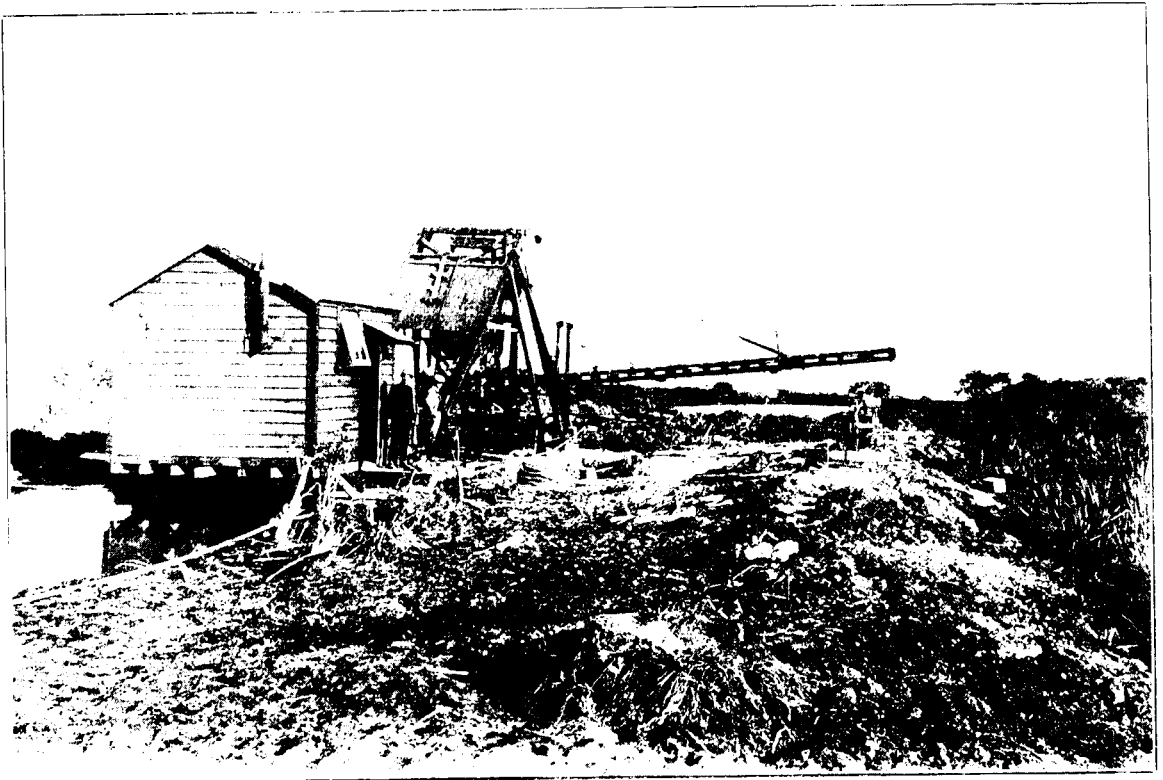
SECTION DREDGER, RANGEPAKE RIVER, DAVENPORT, IOWA



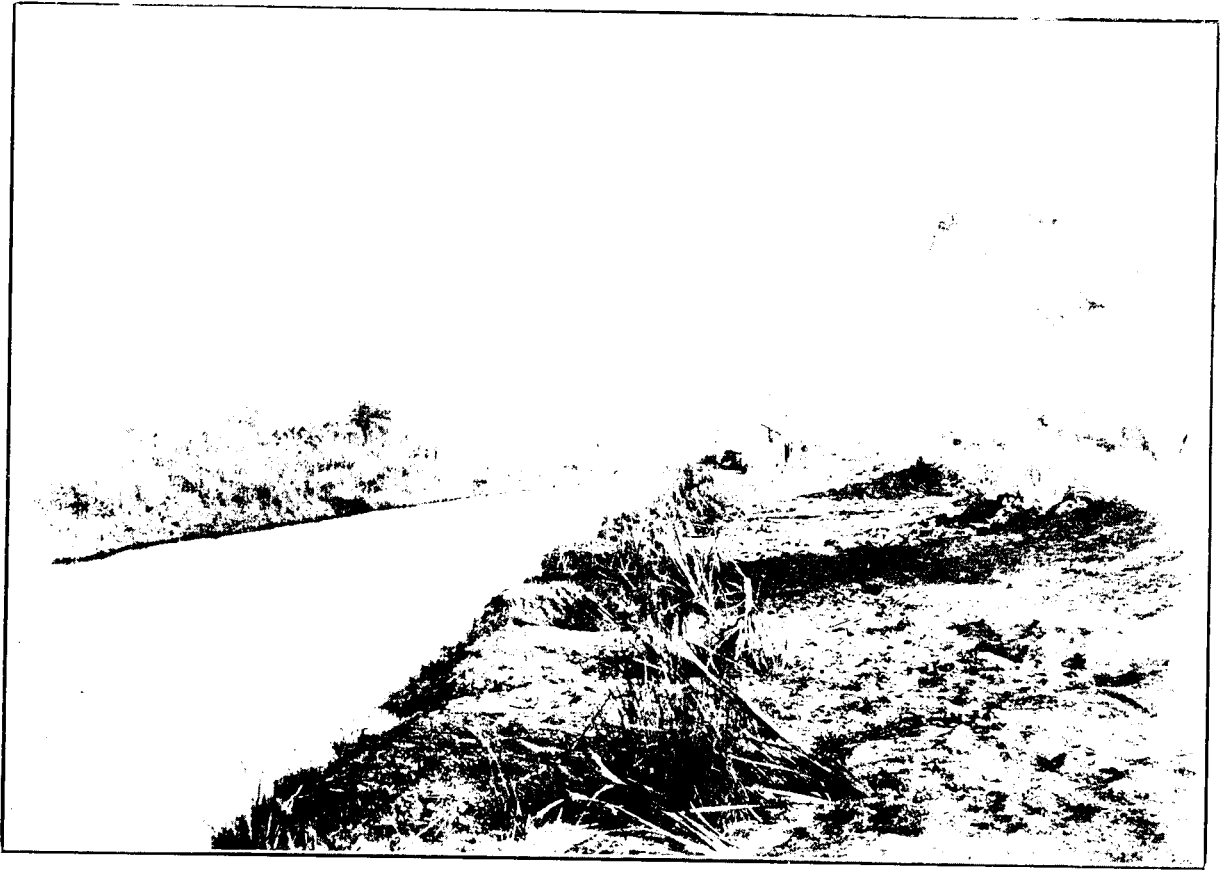
SECTION DREDGER, RANGEPAKE RIVER, DAVENPORT, IOWA, SHOWING SEED CASES



HAYSTACK PONY DREDGE



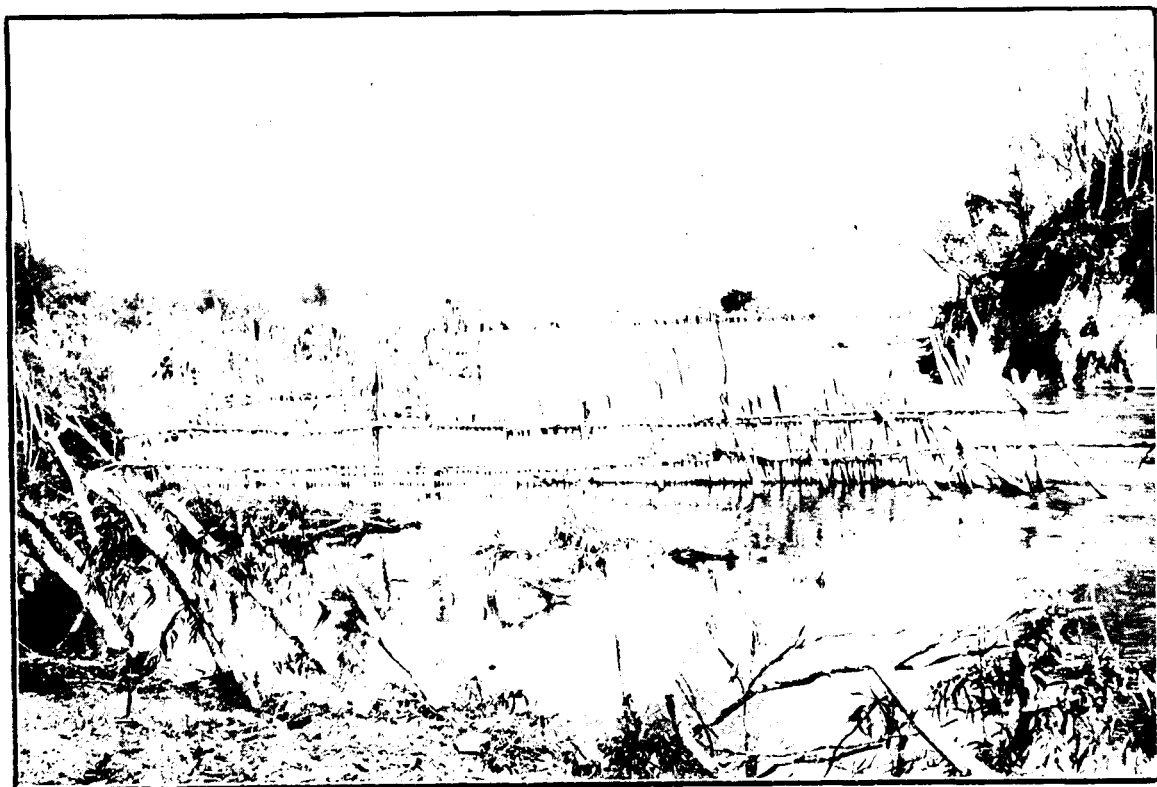
HAYSTACK PONY DREDGE - REAR VIEW



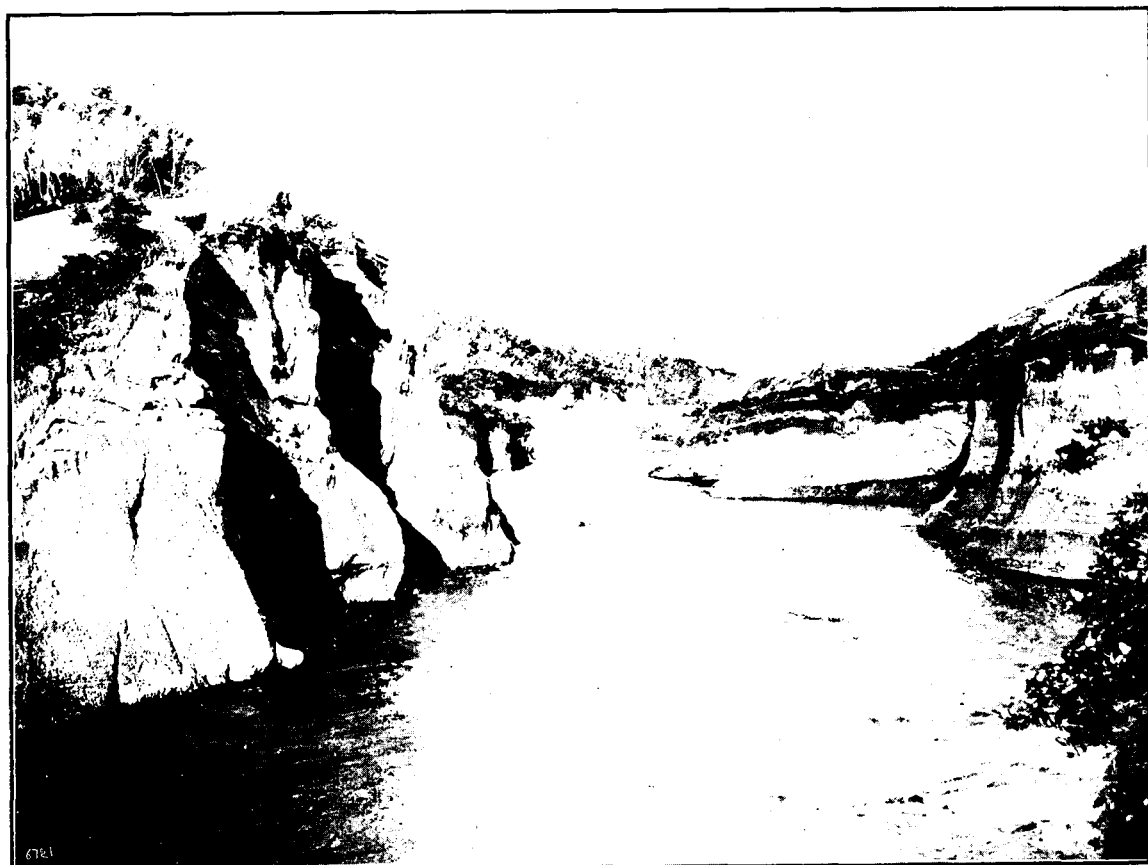
POSA DIVERSION, NEW CHANNEL



FAIRVIEW RIVER, DIVERSION, OLD CHANNEL



TARAWERA RIVER. — ENTERING THE FIRST LAKE. MOUNT EDGECUMBE AT BACK.



TARAWERA RIVER. — NEW COURSE OF RIVER LEAVING LAKE.

