

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 Rangitai 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.