

DREDGES.

Eight dredges have been engaged on river-improvements, canal, stop-bank, and drain-construction in connection with the Hauraki Plains reclamation scheme, but not all of these plants have been operating continuously during the year. The total quantity excavated by these machines was 390,611 cubic yards, at an average unit cost of 7·99d. per cubic yard. The following schedule gives the quantities excavated by the dredges during the past twelve years:—

Year.				Cubic Yards.	Cost per Cubic Yard.
1920-21	..	..	..	158,865	7·42d.
1921-22	..	..	..	246,022	7·29d.
1922-23	..	..	..	440,092	8·20d.
1923-24	..	..	..	508,654	7·27d.
1924-25	..	..	..	822,286	5·86d.
1925-26	..	..	..	856,653	6·32d.
1926-27	..	..	..	647,182	7·42d.
1927-28	..	..	..	652,413	7·32d.
1928-29	..	..	..	619,911	6·54d.
1929-30	..	..	..	595,565	6·25d.
1930-31	..	..	..	536,692	8·32d.
1931-32	..	..	..	390,611	7·99d.

No. 1 Priestman dredge has been operating in the Piako River deepening the channel between 18 m. and 20 m. 40 ch. The willows on both sides of the river are being removed to allow the dredge to deposit the spoil on the banks. The marked depression of the low-water level both in and above the improved reach is a sure indication that the work will have the desired effect of reducing local flooding. The quantity of material removed by this dredge during the year's operations in the process of deepening the river-channel was 38,800 cubic yards, at a unit cost of 8·54d. per cubic yard.

No. 2 Priestman dredge worked in the Maukoro-Waitakaruru Canal during the months of April and May only. Before the plant was laid up a bench was excavated on the side of the canal on which the dredge was beached when the canal water-level, which is controlled by dams, was lowered. After repairs to the hull had been effected the dredge was refloated and used to remove one of the dams in the canal. During two months operation the dredge excavated 7,700 cubic yards of material at a cost of 8·54d. per cubic yard.

No. 6 Priestman dredge: The pontoon of this dredge has for some time been unsafe for use in deep water owing to general decay of the timber, and the machinery has been removed and stored at Kerepeehi.

No. 11 Kingston dredge was employed in the Awaitei Canal during April and May. In June the plant was completely overhauled and the boiler removed and replaced with the boiler from No. 6 dredge. Early in July this dredge was again put into commission between the 6-mile peg and the Ngatea bridge (8 m. 8 ch.), where shoals and slips were removed. While deepening the channel in the neighbourhood of Ngatea wharves and bridge, pontoons were used to dispose of the excavated material. During part of November and December the dredge crew was temporarily transferred to No. 2 dredge, and during the last quarter of the year the plant has been operating in the Piako River between Kerepeehi and Kaihere, and in the Puhanga Canal. The output for the year was 40,100 cubic yards, and the unit cost 9·63d. per cubic yard.

No. 15 Bucyrus excavator completed the widening of the Waikaka diversion channel in August. During the period September to November the machine was engaged widening and deepening the Piako River between Kaihere Wharf (14 m. 45 ch.) and the lower end of the Waikaka diversion (15 m. 50 ch.), operating from the left bank of the river. Since December the plant has been operating from the right bank on the same reach. The internal-combustion engine was completely overhauled and new cylinder heads fitted in October. On the diversion channel a 35 ft. boom and 1-cubic-yard bucket was used, but for the river-improvement work a 50 ft. boom with half-yard bucket was used. The output for the year was 70,800 cubic yards, and the average cost 6·79d. per cubic yard.

No. 16 Bucyrus excavator completed a section of stop-bank on the left side of the Awaitei Canal early in April, and was shipped to Kerepeehi for extensive overhaul, including renewal of the caterpillar traction equipment. During the period August-October the machine completed the stop-bank on the left side of the Piako River, between the Ngatea bridge and the Puhanga Canal (8 m. 19 ch. to 8 m. 57 ch.). Since November the plant has been engaged widening the Piako River upstream from Kerepeehi between 11 m. 41 ch. and 12 m. 10 ch., also strengthening the right stop-bank with the spoil removed from the river. Using extension boom of 50 ft. and half-yard bucket, 40,300 cubic yards of material was handled during the year at average cost of 11·71d. per cubic yard.

No. 19 dredge has been working downstream on the right bank of the Piako River from 14 m. 33 ch. to 13 m. 18 ch., widening and deepening the river-channel. This machine excavated 81,300 cubic yards of material during the year at unit cost of 6·35d., which is a very creditable performance in view of the fact that most of the excavated material is transported 200 ft.

No. 23 steam dipper dredge has been out of commission practically the whole year. As the country through which the Elstow Canal is being constructed is exceptionally soft peat, it was found advisable to lower the water-level in the canal to allow the land to drain and consolidate.

No. 24 steam dipper dredge commenced work in April on the Pouarua Canal above the temporary dam at Ngatea West Road, and during the year constructed 85 chains of new canal and deepened 34 chains of existing canal. Owing to the soft nature of the country, excessive bank-caving could be avoided only by maintaining a high canal water-level and gradually deepening the canals. By