and is pitched with stone, the outside slope being 2 to 1, and covered with grass-turf. The maximum depth of this reservoir is 48ft. At one side of the embankment a by-wash is constructed with stone, 20ft. wide and 4ft. 6in. deep. This by-wash, in conjunction with a storm-water channel which is constructed for nineteen chains in length, is capable of carrying all the surplus water in the highest flood. At the reservoir there is a stone-valve tower with inlet and outlet pipes, the latter being laid under the embankment on stone-pillars. From the reservoir the water is conveyed to Dunedin in cast-iron pipes 12in. in diameter, which are calculated to deliver at the town boundary 2,777gal. of water per minute, or 166,620gal. per hour. The maximum height of this reservoir above the city is 372ft. The cost of the main supply was £142,650, and the extensions within the city £16,971, making a total of £159,621.

The southern supply is obtained from a creek known as the Silver Stream, the water-shed of which is about twelve thousand acres. At the present time only one branch of this creek has been utilized. The head-works are situated about three miles from the city boundary, and comprise a main reservoir capable of holding 23,000,000gal. of water, cast-iron standpipes for valves within inlet and outlet pipes, and storm-water channel. The dam is constructed with an earthwork embankment, having a puddle-wall in the centre, 402ft. in length and 12ft. in width on the top. The slope on the breast is 3 to 1, covered with stone pitching, and the outside slope is 2 to 1, covered with grass-turf. The maximum depth of water in the reservoir is 43ft. On one side of the embankment is a by-wash, 8ft. wide and 3ft. deep, to carry off the surplus water. When this reservoir is full its maximum height above the city is 422ft. This reservoir is supplied with water from an open conduit—with short tunnels lined with brick going through the spurs—which is about twenty miles in length, and follows the contour round the hills. This conduit is 3ft. wide at the bottom and 2ft. 6in. deep, having a fall or gradient of 4ft. per mile. The several creeks on the line of conduit are crossed with stone culverts or wooden fluming set on stone piers. The whole of these creeks are intercepted above the line of conduit by a dam and inlet-gate to a short subsidiary race leading into the main conduit. At the head of the main conduit there is a concrete weir constructed across the bed of the Silver Stream, which acts as a dam; and from this the water is admitted into the main conduit by an inlet-gate.

The water from the reservoir is carried under the embankment of the dam in cast-iron pipes 18in. in diameter, and from this for a distance of one mile in pipes 14in. in diameter. From this point into the city there are two branches, one of pipes 14in. and the other of pipes 12in. in diameter respectively. These pipes are calculated to be capable of delivering 3,999gal. of water per minute, or 479,166gal. per hour. The cost of the works in connection with this supply was £80,636, making the total cost of both supplies £240,257. The rates charged for water are as follows: For domestic purposes, upon all lands and buildings whose annual rateable valuation does not exceed £12 10s., the charge for water is 10s. per annum; from £12 10s. to £100 annual valuation, 7 per cent.; from £100 to £200, 6 per cent.; from £200 to £300, 5 per cent.; exceeding £300, 4 per cent. Water-closets—for hotels, per annum, for the first, £4; for every other, £1: in private houses, the first free; the second, £2; every other, £1. Baths—in hotels, the first, free; the second, £2; every other, £1: private houses, free. Hydraulic lifts, 1s. 6d. per 1,000gal. Steam boilers and other purposes not otherwise specified, 1s. per 1,000gal. Water supplied to shipping, 2s. per 252gal. Meter-rent—up to 1½in. in diameter, £1 per annum; exceeding 1½in. but not exceeding 2in. in diameter, £1 10s. per annum; exceeding 2in. but not exceeding 3in., £2 10s. per annum. Water supplied to suburban boroughs, 6d. per 1,000gal. Water for motive-power or any other purpose or use not specified above, as per special agreement.

New Plymouth Water-supply.—The water-supply for the Town of New Plymouth is taken from the Waiwakaiho River at a point about three miles above the town. A weir is constructed across the bed of the river which raises the surface of the water 5t. 9in. This weir is constructed of concrete blocks laid across the bed of the river, having a slope or batter on the breast and outside of 1 to 1, forming, as it were, an equilateral triangle set up across the river, with the top edge cut off, so as to fix a wood coping, which is held down by bolts to the concrete-blocks, on the down-stream side. There are two rows of piles driven, one row close to the concrete wall, and the other row about 12ft. distant, the space between these rows of piles being filled in with boulders. The object of having these two rows of piles is to carry a timber apron, which is 14ft. in length, having an inclination of 1 in 5. The width of the river at the point where the weir is constructed is 200ft. There is an open conduit constructed from the weir for twenty-seven chains in length, where a fall of 12ft. 6in. is obtained. At this point there are two low-pressure turbine-wheels erected, which are used to pump the water from the river to a height of 150ft., into a service-reservoir. This reservoir is constructed in the shape of a frustrum of a cone, the base being uppermost; the width across the top being 192ft. in one direction and 126ft. in another, and it has a depth of 12ft. This reservoir is excavated for 6ft. under the level of the surface, and banked up for 6ft. above the surface, and lined with concrete 6in. in thickness. Its holding capacity is estimated at 1,250,000gal. of water. Before the water is lifted into this reservoir it is roughly filtered through gravel- and charcoal-beds. The maximum height of the reservoir above the town is 240ft., and the minimum height 160ft. The mains are laid from the reservoir to the town, consisting of cast-iron pipes 10in. in diameter and three miles in length. There are also six miles of service-mains, varying from 3in. to 8in. in diameter. These works were designed by Messrs. Barr and Oliver, engineers, and cost £22,000. The rates charged for water are—7 per cent. on the annual valuation of property when the water is taken in dwelling-houses; when not used in dwelling-houses, 3½ per cent. on annual valuation; when used in shops, 2½ per cent. on annual valuation; for working small machinery, from £8 to £16 per annum, according to the quantity of water required.

Nelson Water-supply.—The water-supply for the Town of Nelson is exclusively a gravitation scheme. The main supply is taken from a tributary of the Maitai River, at a point about four miles from the town. The head-works consist of a reservoir constructed with stone, capable of holding 500,000gal. of water; there is also a second reservoir, built of stone and cement, which is capable