At present a portion of the creek waters are diverted into a race about three miles and a half from, and 250 ft. above, Ross Township, and 370 ft. above sea-level. The race runs on the left bank of the stream, and is served by a small rough catchwater dam or weir, about 7 ft. high.

Although the present supply is sufficient, a larger amount of water is required to work the claims during the dry season, and it has been for some time proposed to construct a high earthen dam on the same site if the locality is considered suitable. The catchwater weir has been placed in a narrow gorge, rock-bound, in the best available position in the creek, and the head-race carries at a minimum two Government sluice-heads continually day and night in the dry season, and in flood-time the creek is reported to run as much as 240 heads.

It is a rapid heavily bouldered creek, with deep firm banks, and a considerable sum would have to be expended alone in preparation for the foundations of a strong dam. There is a fairly flat open space free of timber at the back of the Gorge, averaging about 5½ chains in width and 14 chains in length, and a dam 50 ft. in height would be required to impound the water with any serviceable utility at an average depth of about 20 ft. Looking up the gulley on the left bank of the Creek, the rock is almost perpendicular, and outwardly appears to be sound, but on the other bank is loose and broken, and slopes away from the creek at about 1½ to 1. All this portion I think would require to be cleared away to the bed-rock, not only for the core, but for the foundation of the dam itself. From the left bank of the Creek about 66 ft. of the dam would have a nearly uniform depth of 50 ft., then probably rising at an inclination of 1½ to 1 for 2½ chains, a mean depth of 25 ft., and a total length on the crest of 230 ft. Considering its size, however, it would be a comparatively inexpensive dam to construct; there being an abundance of good small gravel material and rock. The Creek-bed rises rapidly at the back of the proposed reservoir, and a small temporary dam could be constructed and a service-pipe with a good pressure brought down to sluice in the material. The dam could be constructed approximately for, if there is no trouble with the foundations, £3,000.

With reference to reporting on the drainage of the Ross Flat, there appears to have been some misunderstanding in communicating by telegram from Hokitika, because to have made such an exhaustive examination as the importance of the subject requires would have involved at least a month's work, a proceeding I knew at the time the department did not contemplate, or would be likely to approve.

I have, &c.,

The Under-Secretary, Mines Department, Wellington. T. PERHAM.

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