

3. *Hon. Mr. Fraser.*] Was that report made since last year, or was it the one you put in last year?—I did not put one in last year. It is dated the 4th May, 1912, and is as follows:—

The Hon. Minister of Public Works, Wellington.

SIR,—

*Taupo Railway.*

I have the honour to inform you that, pursuant to instructions, I have examined the country over which the various proposed routes would pass to connect Taupo with the existing railway system, with the object of reporting upon the relative merits of each route, and now beg to do so as follows:—

The country around Rotorua, thence to Taupo and back across to Putaruru, is, on the whole, inferior, from which a heavy farming traffic can never be expected.

There are several areas of limited extent of native forest, which will provide a traffic of only a temporary nature, as the native forest is practically non-regenerative. The Prisons and Forestry Departments are planting with suitable forest-trees large areas between Rotorua, Waio-tapu, and the Kaingaroa Plains, which will afford with reafforestation a perpetual source of revenue to a railway.

At Rotorua, Waio-tapu, Tarawera, Wairakei, and Taupo are thermal districts, of which Rotorua attracts by far the largest number of visitors owing to its facility of access by existing railway communication. There is no doubt but that a great many more of the Rotorua visitors would proceed on to Waio-tapu and Taupo if they could do so in less time, at less expense, and more conveniently than is possible at present. It is on the excursionist as distinguished from the tourist that a railway to Taupo must depend for a considerable part of its revenue, and it is this traffic that will probably decide whether a line can be worked at a profit or loss. Considerable importance must therefore be given to this traffic in deciding upon the best route to adopt.

It is probable that the sources of traffic will relatively range as follows: (1) Passengers; (2) timber; (3) farm-produce.

The passenger traffic will always be a constant source of revenue, increasing as time goes on. The native-timber traffic will only be temporary, but the forests being planted will yield a constant traffic. The farm-produce traffic will depend entirely upon whether or not it is possible to successfully cultivate the volcanic lands throughout the whole district. As it has been already demonstrated that introduced forest-trees grow well, it remains to be demonstrated whether forestry or farming will be the more remunerative; on this will depend their relative values as sources of railway traffic.

It appears that only such parts of this country as can be cultivated will ever be susceptible to sufficient improvement to enable farming to be carried on; the remainder, consisting of the parts which are too rough or absolutely too poor to cultivate, can be remuneratively dealt with by afforestation; and, as such areas exist along all possible routes for a railway, there is no doubt but that in course of time, when a perpetual timber industry is established, more than one railway will be required.

The practicable routes are shown approximately on the accompanying map, marked P.W.D. 31678, and are briefly described thus: (1) Putaruru to Taupo *via* Oruanui; (2) Putaruru to Taupo *via* Atiamuri; (3) Rotorua to Taupo *via* Orakeikorako; (4) Rotorua to Taupo *via* Waio-tapu.

1. *Putaruru to Taupo via Oruanui.*

Over a considerable part of this route the Taupo Totara Timber Company's private line is working—viz., to the 46½-miles peg. This line was primarily constructed for the conveyance of timber from the company's sawmill at Mokai to the Government railway at Putaruru, and not for passengers, consequently the class of construction was cheapened as much as possible. From Putaruru to Lichfield the line was constructed by the General Government, but abandoned when the Rotorua Railway was constructed. The formation is now occupied by the company's private railway, the distance being about 5 miles. The route then follows the private line to the 46½-miles peg, where it diverges to Oruanui, thence passing through Wairakei to Taupo. From Lichfield to Kopoko, at 23 miles, the private railway can be easily and cheaply improved to Government railway standard, but thence to 46 miles the greater part would require entirely reconstruction on improved location.

From 46½ miles to Taupo at 67 miles, a distance of 20½ miles, a survey of a line has been made by the Taupo Totara Timber Company along a practicable route with a minimum radius curvature of 5 chains, and maximum grades, 1 in 38 and 40 on straights. Both the curves and grades are worse than the Government standards—viz., 7½ chains and 1 in 50; there is nothing, however, in the configuration of the country preventing the adoption of the better location, at the cost, however, of greater length, but not necessarily much increase in cost per mile. The Taupo Totara Timber Company's line has curves of a minimum radius of 1½ chains, and maximum grades of 1 in 47. The width of formation is about 13 ft.; the sides of the cuttings are generally nearly vertical, which is the best form in pumice ground. The rails weigh 30 lb. per yard; the gauge is 3 ft. 6 in., Government standard.

The line is ballasted with pumice, and on this account the sleepers are placed closer together than is usual on Government standard construction, where heavier rails and superior ballast are used. The light rails and sharp curves would prevent Government locomotives travelling on this line, while the steep grades and sharp curves would prevent any but a very slow train service being run.

For dealing with the traffic at present arising from the class of country between Putaruru and Taupo the company's line is no doubt suitable, but as a through passenger line to Taupo it is not suitable; and it can be taken for granted that, if it were adopted as part of the Govern-