NEW ZEALAND'S GREAT ENGINEERING WORK:

Arthur's Pass Tunnel.

The history of this railway project, for connecting the east and west coasts of the South Island, goes back as far as that of any New Zealand railway. Like the others, in fact. this project goes back to the original list of the Public Works Scheme of 1870 In those days imagination was boundless, and it



MR. NEIL MCLEAN (OF THE FIRM OF MCLEAN BROS)

was not thought extravagant to plan a trunk line along the west and east coasts of both islands, with cross lines between. The cross line joining the two coasts of the South Island was especially in favour. It was the fashion to speak of the riches of eastern agriculture and the wealth of the mines and forests of the west interchanged to the mutual advantage of the populations; neither was it deemed



MR, LESLIE REYNOLDS, A.M.INST.C.E. (ENGINEER FOR THE CONTRACTORS).

unlikely that a ferry from Nelson to Wanganui would carry the passenger traffic of the south comfortably and rapidly on its way to Auckland

These things were dreamed when men had not thought out the problem of railway construction. They were cherished before a department of construction had been organised. They were on paper in the usual perfunctory manner when there were few engineers in the country who understood railway construction.

When the department of construction was organised and the plans of engineers, the works of contractors, and the immigration of labourers took the place of hopeful comment and facile dreams, the more difficult of the railway works took second place, and the lines offering the chief engineering difficulties dropped out of the running altogether. In this last category came the great trunk lines of the east and west of the South Island and the great cross line for connecting them together. The precipices, the glaciers, the torrents of the great "Divide" frowned on the once easily accepted cross line, and with them frowned the politicians made wary by responsibility of the loaned millions. That was the second stage of the cross line for connecting east and west in the Island of Te Wai Pounamu.

But the men of the east and west, the men of North Canterbury and the men of Westland and the men of Nelson, frowned back at the precipices and the politicians, and, being practical men withal, they very soon organised themselves into leagues. The leagues collected statistics, raised moneys, hurled deputations at Governments, built the fires of political agitation, and a lively energetic stubborn press fanned the flames.

To tell the story of the long fight which ensued would be as wearisome as the conflict itself. It would, moreover, be a waste of space which is required for the story of the great tunnel through the big "Divide." It is enough to say that the agitation, after overthrowing more than one Government, succeeded in getting the cross line taken up by a private company, with the assistance of grants of the public lands on the line or in its vicinity; that the company, after constructing most of the western portion of the line, found itself unable to go



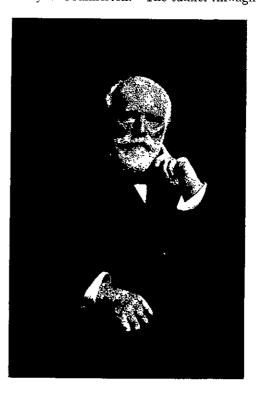
THE LATE MR. P. S. HAY, M.A., M.INST.C.E. (LATE ENGINEER-IN-CHIEF OF PUBLIC WORKS DEPARTMENT.)

on; that the Government took possession and prosecuted the work: that the company and debenture holders were dealt with justly, even with liberality; and that ultimately, after an interval of the wry face and the loud protest, echoes of which even penetrated to the Stock Exchange, they recognised the fact.



MR. MURDOCH MCLEAN (OF THE $\mathbf{F}^{\mathbf{I}}\mathbf{R}\mathbf{H}$) of MCLEAN BROS.)

The line is made on the east side to Broken river. connecting that place with the town of Springfield, the outside station of the Canterbury section of the southern railway system. On the west the line is in working order from Reefton to the Otira, with a branch connecting with the old government railway at Brunnerton. The tunnel through



THE HON. L. RICHARDSON, C.M.G., ENGINEER OF THE LYTTELTON TUNNEL. FATHER OF THE PUBLIC WORKS SYSTEM OF N.Z.