Although the number of samples received gives only a rough indication of the amount of work that is being done, the following figures may be of interest: in the 1942-43 period, 59 samples in all were received, which, with exception of one sample, were purely routine work. During the 1944–45 period the number of samples had increased to 110, of which 17 required investigational work.

Special work over the period varied considerably in its nature. Owing to the shortage of imported bituminous materials, the demand for gasworks tar for road purposes became greater and many of the smaller gasworks throughout New Zealand submitted samples to this Laboratory for analysis and advice.

Work was also done on the design of bituminous mastic material for the expansion joints in the Karapiro Dam project.

As already mentioned, the restriction on overseas bituminous materials, especially various types of American cutbacks, caused the road engineers to consider the best methods of using the bituminous stocks at present in the country. This Laboratory was able to give considerable help in the preparation of large numbers of experimental cut-backs and the selection of those which best fit the local conditions. The work is still proceeding, but is considerably handicapped by lack of space and staff.

Unless further facilities are provided, it appears probable that only a bare minimum of urgent routine work can be handled.

Coal Survey

The Coal Survey Committee comprises representatives from the Mines Department, the Geological Survey, and the Dominion Laboratory.

The Mines Department is represented by the Under-Secretary, the Superintendent of State Mines, and the Chief Inspector of Coal-mines, the Geological Survey by the Director and the geologist in charge of field work; and the Dominion Laboratory by the Director (Chairman of the Committee), the Assistant Director (Secretary), and the chemist in charge of laboratory investigations.

The Committee met on six occasions during the year and issued sixteen coal-survey reports and five information circulars.

As a result of information supplied to the Organization for National Development, Cabinet approved a number of recommendations for extending the work of the Survey and for undertaking work on fuel technology.

The field staff appointed by the Geological Survey, working in conjunction with Mines Department officers, prospected coal-bearing areas in various parts of the Dominion, notably in the bituminous coalfields of the west coast of the South Island.

A valuable new field at Garvey Creek, in the Reefton district, was shown to contain a considerable reserve of coal. Geologists were active in various fields recommending sites for boreholes and analysing the results of boring. Samples from bores, outcrops, and mines were forwarded to the Laboratory in Wellington for analysis, and in all 218 samples were analysed during the year, the greater proportion coming from the West Coast, Ohai, and Mataura.

An examination was also made of the opencast areas of Huntly and Waitewhena and of a series of outcrops at Mangatangi. Recommendations were made for the storage and examination of bore-cores in the main coal areas, and it is hoped that the scheme will be applicable to bores put down for other purposes. Not only did the Laboratory analyse field samples in connection with the survey, but members of the staff also carried out briquetting experiments on New Zealand coals and commenced an investigation into the efficiency of various fuels on the domestic open fire. Assistance was also given to the Chemical Engineering Section of the Dominion Laboratory in some preliminary boiler-efficiency trials.

Interest was also shown in the total gasification of low-grade coals, and special inquiries were made regarding the Broadhead process in Australia. It was decided to survey the Mataura field in greater detail and to send a shipment of opencast lignite to Australia to investigate its suitability for briquetting.

It was also decided that the senior Fuel Chemist should proceed to Australia to witness the briquetting trials and to investigate methods of complete gasification of low-grade coals.