

observations and investigations, including those in connection with the Antarctic Expedition, to the date of his retirement. Mr. H. F. Skey, B.Sc., has had charge of the Observatory since Dr. Farr retired, and has furnished a very complete and interesting report for the year 1903-4 (see Appendix), setting forth the work of the Magnetic Branch and the chief results obtained, the principal features of which are that the Observatory has attained a high position in the world of science, and has from time to time supplied valuable data to scientists elsewhere. The magnetic and other work and the standardisation of the instruments were duly attended to throughout the year; the principal magnetic storms are discussed by Mr. Skey. Some interesting notes are given as to the joint work carried on by the Hagley Park Observatory and the Antarctic Expedition officers, who returned at the close of the financial year, after what is admitted to have been one of the most successful and ably conducted expeditions to the Antarctic regions. The seismograph was kept in continuous operation, and eight photographs of the most marked seismograms are appended. The magnetic survey was continued by Mr. Skey from September, 1903, to February, 1904, in the northern part of the South Island, but, unfortunately, had to be abandoned upon Dr. Farr's retirement. The work should be resumed as soon as possible. It would only take one officer three months to do this, and thus would bring to a conclusion the splendid magnetic survey of the colony, the elements and results of which would then be available and be of immense value to navigators and scientists.

ROAD AND RAILWAY SURVEYS.

The output under this head is 411 miles, at a cost of £6,480, while equals £15 15s. per mile: 224 miles, which is more than half the total, is credited to the Auckland surveyors; 52 miles to Wellington; over 30 miles to Taranaki, Marlborough, and Nelson respectively; and 26 miles to Westland. The greater part of the work was done in connection with the survey of new roads through Crown and Native lands. The previous year's work of this class was only 301 miles, and the cost was slightly less.

OTHER WORK.

This comprises duties which are undertaken by the staff in connection with inspections and reports, explorations, estimates, and valuations for various purposes, small surveys, unfinished work carried forward to the following year, and services too numerous to particularise of a very very useful and necessary character which are rendered to other Departments and local bodies. The total cost amounted to £14,057, as against £13,518 in the year 1902-3.

INSPECTION OF SURVEYS.

One of the cardinal principles of the New Zealand survey system, as inaugurated by the late Mr. J. T. Thomson, is the co-operation of the Chief Surveyors and their staffs in carrying out the various classes of surveys. That able administrator and his successors in office directed that the staff and licensed surveyors should be visited at frequent intervals, in order that all surveys, plans, field-books, and mathematical reductions might be examined, tested, and reported upon. Regulations and instructions have from the first been issued, and the requirements are distinctly specified and known. Since assuming office I have reminded the Chief Surveyors of the necessity of attending to this important subject; but they have with much reason represented the difficulties which interfere with a thorough performance of the duty, especially the demands upon their attention connected with the multifarious Land Board and other matters to be attended to. The following is a summary of the action taken by the Chief Surveyors, who are required to submit for the confirmation of the Surveyor-General detailed reports, with diagrams, &c., as to the result of inspections effected to insure that each surveyor is thoroughly well equipped with field and office instruments, tents, tools, horses, conveyance, &c.; that he is conducting his operations efficiently and satisfactorily at a minimum of cost, and with due expedition; that in settlement surveys the roads are well laid out; that the scheme of subdivision, valuations, and descriptions, &c., are suitable and sufficient; that the area under survey is dealt with so as to conserve the Government's interests in respect to the selection and reservation of town-sites and of all areas required for public purposes, and that the subdivisions are the best possible for future settlement; and that the survey-work proper is executed correctly and thoroughly. The Inspector is expected to confer with, advise, and assist the field officers in every possible manner. Such a practice is of infinite advantage to the Crown and public, and is much appreciated by the profession.

Auckland: Five satisfactory reports were received at the Head Office relating to the surveys of four surveyors. Owing to the unfortunate death of the excellent officer who acted as Inspector in this district, it was decided that the inspections were to be carried out by five District Surveyors