

Mr. James MacKenzie (Chief Surveyor for Taranaki) was especially active and attentive in carrying out instructions. He visited all the surveyors, and examined their work, some of them several times; made fourteen technical inspections of their surveys, and forwarded forty-eight sheets of diagrams; and it is pleasing to state that the results, except in four instances, were most satisfactory and creditable to the surveyors. The Wellington District Inspector (Mr. J. D. Climie) made twenty-one inspections, noting the practical work in the field, and his reports, illustrated by sixteen diagrams, show that with few exceptions the surveys were up to requirements. This officer also did excellent service, and materially aided the Department by examining the location of roads and directing and assisting the field officers in their arduous duties. Mr. C. W. Adams (Chief Surveyor) supervised the Marlborough surveys, and made thirteen inspections of staff and licensed surveyors' work, and reports favourably upon the professional and mechanical methods employed. The inspections in the Nelson District are reported to have been confined to surveys in the Nelson suburbs. One technical inspection made in Westland gave evidence of good work. Six satisfactory tests were applied by the Land Transfer draughtsman in Canterbury.

The details of inspections in several of the land districts are not yet to hand. It is anticipated that this important duty will be systematically and thoroughly attended to in the future.

MAGNETIC SURVEY.

In Appendix VII. will be found Dr. Farr's very interesting report for the year upon work carried out in the Magnetic Observatory, Hagley Park, Christchurch; and also the report of his assistant, Mr. H. F. Skey, regarding the magnetic observations effected at various stations in the North Island. During Mr. Skey's absence in the field, Dr. Farr had for the time to attend to the numerous and continuous duties connected with the Observatory, and it is very satisfactory to learn that he accomplished this without any interruption or break in the operations according to the scheme agreed to be carried out in all magnetic observatories throughout the world. Dr. Farr gives evidence of the coincidence of magnetic storms and disturbances, with displays of aurora australis, and the disastrous volcanic outbursts at Mount Pelée in the island of Martinique, in the West Indies, on the 8th May, 1902, and draws attention to several matters connected therewith.

It will be noted with satisfaction that the New Zealand Observatory is fulfilling the duty intrusted to it of working in conjunction and accord with the arctic and antarctic expeditions, and especially with the exploring ship "Discovery" now near the South Pole.

The establishment of electric trams in Christchurch will, according to Dr. Farr, necessitate the removal of the Observatory to a more distant site.

Extraordinary and unusual indications by the seismographs, and the determination thereby of localities in different parts of the world where earthquakes occurred, are commented upon. Ingenious experiments are still being conducted at the Observatory, and the work already accomplished is highly commended by the chief scientific societies at Home and abroad, and they also express admiration of the public spirit and appreciation of scientific work manifested by the New Zealand Government, as displayed in the construction, maintenance, and equipment of the Observatory.

The field survey comprised observations for the determination of the magnetic elements—namely, inclination, horizontal force, and declination—at sixty new stations in the North Island; and their redetermination at seven original stations which were established in 1901. The results of the survey so far have been communicated to the Marine Department for notification to mariners. It is anticipated that the field survey of the colony will be completed in July, 1904. Instructive and illustrative diagrams will be found with the report.

ADMIRALTY CHARTS AND COAST-LINE OF COLONY.

The Marine Department having applied for charts of portions of the coast as defined by recent official surveys, attention was given to the delineation from such surveys of the whole of the coast-line of the three principal Islands which constitute the colony. The surveys of the Lands and Survey Department are referred to Mount Cook (Te Aro, Wellington) as the initial point; and, as indicated in last year's report, the longitude of this initial station having been altered by fifty-one seconds of arc, it became necessary, in the first instance, to ascertain whether the longitude of the latest Admiralty charts of New Zealand are based upon the old or the new value of longitude recently adopted. It was found