



THE MAGNETIC OBSERVATIONS

NOTE

To The instruments lent by the Kew Committee were brought to
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the Colony by the Director, under whom, owing, however, to
various circumstances, it was impossible to carry out
observational work with them until February 1924. It was
decided first to ascertain a suitable site for the magnetic
observatory and then with the observatory as a base district

R E P O R T

ON THE USE MADE OF THE MAGNETIC INSTRUMENTS LENT BY THE KEW
OBSERVATORY COMMITTEE TO THE NEW ZEALAND GOVERNMENT.

This kind should be By C. Coleridge Farr B. Sc. &c.

disturbed by the presence of magnetic rocks, and it was also
desired that the observatory should be as far from such dis-

tractions as possible. Guided by these considerations an examination was

made of the districts surrounding Invercargill, Dunedin,

Christchurch and Nelson, while observations were also made

at intervals of about 20 miles between these places, and in

the West of Invercargill to Otago. These observations re-

vealed the presence of extensive magnetic disturbances in

the neighbourhood of Invercargill, Dunedin and Nelson, while

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THE MAGNETIC OBSERVATORY

SITE

The instruments lent by the Kew Committee were brought into the Colony by myself in November 1898. Owing, however, to various circumstances, it was impossible to commence actual observational work with them until February 1899. It was decided first to ascertain a suitable site for the magnetic observatory and then with the observatory as a base station to carry out as complete a magnetic survey of the Colony as possible. From a magnetic point of view an observatory of this kind should be placed in a position where conditions are not disturbed by the presence of magnetic rocks, and it was also desired that the observatory should be as far South as possible. Guided by these considerations an examination was made of the districts surrounding Invercargill, Dunedin, Christchurch and Nelson, while observations were also made at intervals of about 20 miles between these places, and to the West of Invercargill to Orepuki. These observations revealed the presence of extensive magnetic disturbances in the neighbourhood of Invercargill, Dunedin and Nelson, while to the South of Christchurch, although the surface formation which has been penetrated by artesian wells to a depth of over

300 feet, is of almost, if not quite, non-magnetic alluvial material, yet a marked magnetic irregularity, which further examination may show to be of a defined character, manifests itself. At Christchurch the conditions are normal though it is true that the effect of the volcanic hills which forms Banks Peninsula is felt as one approaches more nearly to them.

It thus appeared that of the places examined, Christchurch and the district North of it alone fulfilled the necessary conditions, and I therefore decided to examine in greater detail a site in the Christchurch Botanic Gardens which seemed suitable for the purposes I had in view. With this object, I selected spots which seemed suitable for the Variation house and Absolute house and also another forming with these a rough equilateral triangle whose side is about fifty yards. At each of these three days' complete observations were taken and also a set of quasi-simultaneous observations of the Declination and the Horizontal force. The results are set out in full below.