

These operations have enabled Mr. Baker to base all the triangulation and sectional surveys, now in progress in Canterbury, on the true meridian.

The chain distance of 66 feet has been laid down by Mr. Adams, at Christchurch, Ashburton, and Timaru, by brass scale and beam compass, to a temperature of 62° Fah. The extremities are marked on brass plates, let into stone blocks, sunk flush with the ground. On these the surveyors can test their chains.

A considerable extension of standard bearing is still required in Canterbury, more especially up the valleys to some back country, which has lately been applied for. Mr. Kelleher is at this work, and in the course of next month Mr. Adams will also engage in it. There is also the Mackenzie, Ohau, and Makarora country, which can easily be overtaken by extensions from the Lindis Peak meridian.

*Westland* has been divided into three (3) circuits—Hokitika, Okarita, and Jackson's Bay. Mr. Adams has determined the true meridian in each, and observed to the surrounding stations, which were selected and prepared under Mr. Mueller's direction. Mr. Adams also laid down chain-standards at Hokitika, Okarita, and Jackson's Bay.

Mr. Roberts is to extend the standard bearings through the Hokitika circuit. He has for three months, under the direction of Mr. Mueller, been engaged in selecting and preparing stations. Several of these are so high and difficult of access, that it could not be expected that the settlement surveyors would willingly resort to them for connection. Care is therefore being taken that there will be numerous reference stations on low and easily accessible positions. As minor triangulation would be unsuitable in this wooded, mountainous country, the high stations referred to will become the points of a major triangulation, whose lines will be above all obstructions. The *Westland* provincial district, on account of its dense forest and numerous rapid rivers, is the most difficult country in the colony to make survey progress.

*Otago and Southland* Provincial Districts have true meridians and standard bearings established for all their areas, excepting the Western Sounds, where as yet there have not been any permanent settlements.

*General Summary.*—All the meridians which, it is proposed, to establish in the colony, have now been astronomically observed, with the two exceptions, of Amuri and Collingwood, in the Nelson Provincial District.

Put in a tabulated form, the true meridians which have been adopted, those observed since November, 1876, those still to observe, and the number in each Provincial District will appear thus:—

| Provincial Districts. | Adopted. | Observed since November, 1876. | Still to observe. | Total. |
|-----------------------|----------|--------------------------------|-------------------|--------|
| Auckland .. ..        | 3        | 0                              | 0                 | 3      |
| Hawke's Bay .. ..     | 1        | 0                              | 0                 | 1      |
| Taranaki .. ..        | 1        | 0                              | 0                 | 1      |
| Wellington .. ..      | 1        | 3                              | 0                 | 4      |
| Nelson .. ..          | 0        | 4                              | 2                 | 6      |
| Marlborough .. ..     | 0        | 1                              | 0                 | 1      |
| Canterbury .. ..      | 0        | 3                              | 0                 | 3      |
| Westland .. ..        | 0        | 3                              | 0                 | 3      |
| Otago .. ..           | 5        | 0                              | 0                 | 5      |
| Southland .. ..       | 1        | 0                              | 0                 | 1      |
| Totals .. ..          | 12       | 14                             | 2                 | 28     |

Eight survey parties are now engaged in the standard work. Should this number be kept in the field for the next twelve months, the extension of standard bearing throughout the colony ought to be about completed, in so far as is necessary for many years.

I have, &c.,

JAMES MCKERROW,

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