

is of far more importance than this recent and smaller one. It is one of four which are making a simultaneous and combined attack on the interesting and important problems of the extreme south, and is probably the best-equipped British expedition that ever sailed. The officers have with them a very beautiful set of Eschenhagen magnetographs, and the German expedition, in the "Gauss," has a similar set. These instruments, while quite as sensitive as the Kew pattern magnetographs, which we have here, are very much more portable, and in the short time which elapsed between the completion of their design and his lamented death, Eschenhagen made a very important discovery with them. They are indeed beautiful instruments, and I think will gradually supersede the Kew pattern. They were not set up at this Observatory, as we had no available dark-room, but it was not necessary. The chief work of the members of the expedition was the comparison of their Fox circles and Lloyd Creak circles (a new instrument designed for sea-work) with our standard instruments, and a comparison of the expedition absolute instrument with those here. Besides this the expedition pendulums were swung in the "absolute house" of the Observatory. The result of these comparisons were sent to the authorities of the expedition in England. For the time these expeditions are away temporary observatories have been erected on Kerguelen Island and Staaten Island, the former by the German Government and the latter by the Argentine Government; so that with the observatories at Melbourne and Christchurch there will be a very satisfactory distribution in the temperate regions surrounding the pole. At the completion of her voyage the "Discovery" will return to Lyttelton and again compare her instrument with ours, and thus all the records obtained in both places will be comparable. In the meantime we shall have to send off the "Morning" on her mission of relief, and she no doubt will bring back news of how it goes with these men who are risking their lives in the cause of scientific advancement.

The magnetic survey of the colony has been in abeyance during the year, from quite unavoidable causes. A lengthy report, chiefly consisting of the facts of the work, was drawn up in the winter and spring of last year, and has since been transmitted to Dr. Glazebrook, the Director of the newly established National Physical Laboratory at Bushy House, near London. The committee of the Royal Society, which controls the National Physical Laboratory, has taken over the property of the old Kew Observatory Committee, to which we are indebted for the loan of the set of absolute instruments with which the survey has so far been carried on. The report contains full information as to the methods which have been adopted in connection with the work, but in its present uncompleted state I drew no inference from the results. The necessity there was for getting the Observatory ready for the arrival of the expedition prevented a resumption of the survey last spring, and since the beginning of this year until quite recently there has only been one set of absolute magnetic instruments in the colony—those lent by Kew—and these could not be spared from the Observatory until the arrival of the others to replace them. It is desirable, however, now that the new instruments have arrived, and have been compared with the old, that the work should be resumed with as little delay as possible. Similar work being in progress in the south by the "Discovery" and the "Gauss" will very much enhance the value of the observations made here.

The Observatory is equipped with meteorological instruments. The principal use made of these is that observations are made at 11.30 p.m. each night in accordance with the request made by the International Meteorological Co-operation through the Secretary of State for the Colonies. Since the inception of atmospheric-electricity observations certain meteorological data are recorded every two hours. Embracing thus as it does magnetic work, seismological records, and observations of atmospheric electricity, the Observatory partakes of the nature of a geophysical rather than simply a magnetic institution.

I am indebted to my assistant, Mr. H. F. Skey, for much help during the year.

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