

In the Trelissic basin large collections were made from the volcanic tufas which are interbedded between the Mount Brown and Weka Pass limestones, and between the latter and the chalk-marls which represent the Amuri limestone. The younger Tertiary rocks were also collected from.

From the Cairn Range a good collection of fossil ferns was obtained from strata which are of the same age as at Clent Hills fern-beds, and, there is some reason to believe, are also the equivalents of the Matura sandstones, which are, as already stated, of Upper Oolite age. From beds which belong to the Otapiri series, on the north-west side of the Mount Thomas Range, a fossil *Trigonia*, which also occurs at Nugget Point; in the Hokanui Hills, and at the Wairoa Gorge, was obtained. This fossil passes downwards into the Wairoa series, but is not found in younger beds.

The diabases, cherts, and limestones of the Malvern Hills were traced through a great extent of country, both in Canterbury and Nelson, and the calcareous portion was found to be richly fossiliferous in the hills lying between the Upper Okuku and Waipara Rivers. The character of the rocks leaves no doubt as to their identity with the same rocks in the Malvern Hills, while the fossils obtained are equally decisive as to their age; *Monotis salinaria* and *Mytilus problematicus* being everywhere in New Zealand confined to the Middle Trias or Wairoa formation.

In the beds which overlie the coal in the Matura basin saurian remains occur. *Mauisaurus haasti* and *Plesiosaurus crassicostratus* have been identified as present in these boulders; and another species also occurs, which may be *Plesiosaurus australis*, but this is less certain.

Remains of saurians in the shape of teeth of *Plesiosaurus* were also found in the younger rocks which occur at the Twelve-mile Creek on Lake Wakatipu, and are of interest as confirming my previous determination of the age of these beds as being of the Mesozoic and not Tertiary period. Resting on them unconformably, Mr. McKay has shown, however, that beds belonging to the Miocene Tertiary (Pareora series) also occur in the same district.

PUBLICATIONS.

The following works have been issued by the department during the year:—

1. Fourteenth Annual Report of the Colonial Museum and Laboratory, with an Abstract of the Results of Analyses. 54 pp. 8vo.
2. Thirteenth Progress Report of the Geological Survey of New Zealand, for the Season 1878–79 with maps and sections. 135 pp. 8vo.
3. The Indigenous Grasses of New Zealand (concluding parts); with 64 plates. By John Buchanan, F.L.S. 192 pp. folio.
4. Manual of the New Zealand Mollusca. By Professor Hutton, C.M.Z.S. (This work embodies and replaces the following prior publications, all of which are now out of print: *Marine Mollusca of New Zealand*; *Land Mollusca of New Zealand*; and *Critical List of New Zealand Mollusca contained in European Collections.*) 224 pp. 8vo.
5. Manual of the New Zealand Grasses; with 64 plates. 174 pp. 8vo.
6. Manual of the New Zealand Coleoptera. By Captain Thomas Brown. 700 pp. 8vo.
7. Handbook of New Zealand; giving an Account of the History, Industrial Progress, and Natural Resources of the Colony. Prepared for the Sydney International Exhibition, with maps and diagrams by Dr. Hector. 110 pp. 8vo. Also a second and revised edition of the same work.
8. Catalogue of the Collections illustrating the Geology and Natural History of New Zealand, as exhibited in the Sydney International Exhibition. 67 pp. 8vo.

The following works have been partly prepared for publication:—

1. Manual of the Fishes of New Zealand, with Information regarding the Edible Species. By Dr. Hector. Illustrated with woodcuts.
2. Manual of the New Zealand Birds. By Dr. Buller, F.R.S. Illustrated with lithographs and woodcuts.
3. Manual of New Zealand Mineralogy and Mining, with Digest of all Analyses made in the Colonial Laboratory since 1865. By Dr. Hector.
4. Contributions to New Zealand Palæontology—(1) *Belemnitidæ* and (2) *Brachiopoda*, by Dr. Hector; (3) *Fossil Flora*, by Dr. Hector; (4), *Fossil Corals*, by Rev. J. E. Tenison Woods.
5. Catalogues of New Zealand Insects belonging to the following Orders: *Diptera*, *Hymenoptera*, and *Orthoptera*. By Professor Hutton.

METEOROLOGY.

No change has been made in this branch during the year; the number and equipment of the observing stations being the same as formerly, viz.: Mongonui, Auckland, New Plymouth, Napier, Wanganui, Wellington, Nelson, Cape Campbell, Christchurch, Bealey, Hokitika, Dunedin, Queenstown, Wallacetown, Waitangi (Chatham Islands).

Each station is furnished with the following instruments: Barometer, with attached thermometer; wind-gauge (Robinson's); rain-gauge; set of self-registering thermometers—maximum and minimum dry, and maximum and minimum wet; solar-radiation thermometer and terrestrial-radiation thermometer.

The observations are made at 9.30 a.m., and posted into the monthly forms, which are then forwarded at the end of each month to the head office at Wellington, where they are reduced and published.

The following returns have been published or sent in for publication during the year:—

1. The results of the observations taken at all the stations in the colony during 1879, for the yearly statistics.
2. Monthly abstracts of observations from all stations, with averages for previous years, and remarks, for *Gazette*, up to June, 1880.
3. Returns of daily readings taken at Wellington, with averages and remarks, up to June, 1880.