

During part of April he was engaged in an examination of the Blue Mountains, on the Northern side of the Shag Valley, with the special object of determining the position of the Blue Mountain limestone. These he has shewn are interstratified with slate and sandstone of lower carboniferous age, which form the first range north of the Shag River, and are separated from the Te Anau series of Upper Devonian age, which form the next range by a large fault which traverses the country in a N. 65° W. magnetic direction, and has a downthrow to the S.E.

He has also made special reports on the Woodstock Goldfield and the Ross and Humphrey's Gully mining claims on the West Coast, and has examined the lignite deposits at Norsewood, which he reports to be of an inferior character.

During the latter part of November, and part of December, Mr McKay was engaged in collecting moa bones at Motanau, and examining the country between Motanau and the Cheviot Hills. During this work the principal result arrived at, from an economic point of view, was the discovery of an outcrop of hematite, about 6 feet wide, associated with the Triassic rocks of the coast range near Motanau. An analysis shows that this ore is specially adapted for the manufacture of hematite paint. After this he was engaged in Museum work during the month of January, and during February and the early part of March, he examined the antimony deposits of the Carrick Ranges in Otago, and collected fossils from the coal strata of the Bannockburn. He reports that there are three lodes which are apparently convergent, the thickest of these being two feet at its widest part, and outcrop of antimony can be traced at places on the surface from Alexandra at the Manuherikia Junction, to the hills west of the Nevis Bluff on Kawarau River, a distance of over 12 miles. During April and May he was engaged at the request of the Hon. the Minister of Mines in making a typical collection of the rocks of the Reefton District in duplicate. One of these collections being deposited at Reefton as the nucleus of a museum. While thus engaged he made a detailed examination of the relations of the various beds, and confirmed the views previously held concerning them. He also gained important information concerning the extent of the coal-bearing areas, proving their probable continuance, as a basin, across the Inangahua Vally, comparatively near the surface about Reefton, but at much deeper levels towards the junction of the Inangahua, and Buller Rivers. He also made a special report on an antimony lode at Reefton, showing that an outcrop had been found which was about 18 inches thick, and the reef had been driven on for 150 feet from that point without antimony being found. Heavy lodes of antimony are, however, found in several of the auriferous claims from Rainy Creek to Boatman's which, in all cases containing gold, are treated in the ordinary way for the extraction of this alone, all the antimony and probably much of the gold being thus sluiced away. An examination of the auriferous cements at the head of Lankey's Gully, showed that tinstone undoubtedly occurred associated with these in small quantities, but bad weather prevented any attempt being made to trace this back to its parent rock. He visited Langdon's Reef near Greymouth, and reports that the thickness of the reef at present being worked, is about 2 feet 9 inches, which being less than it was at the outcrop, shows the lode to be of a bunchy character.

The outcrops of coal in Coal Creek, Greymouth, were also examined, and he reports that two seams of coal 6 feet and 10 feet in thickness respectively, occur in the lease, in which a considerable quantity can be worked level free. In the month of June Mr. McKay paid a visit to the Terawhiti Reefs, and reports that the Albion claim possesses a reef of an average thickness of from 18 inches to 2 feet, which has been followed along its strike for a distance of 6 chains, and for a depth of 130 feet. Some assays of quartz from this claim have yielded over 3 oz. gold per ton, but the specimen brought by Mr. McKay gave nothing but traces of the precious metal.

PUBLICATIONS.

The following publications have been issued during the year: (1.) Sixteenth Annual Report of the Colonial Museum and Laboratory, together with list of additions, &c., and an Abstract of the Results of Analyses. 64 pp. 8vo. (2.) Manual of the Birds of New Zealand, illustrated with 39 lithographs and 22 woodcuts. 106 pp. 8vo. The Fifteenth Progress Report of the Geological Survey of New Zealand for 1880-81. By Dr. Hector. With maps and sections. Including Special Reports on the Chrome Deposits of New Zealand (Hector; Cox); on the Aniseed Valley Copper Mine (Cox); on the Richmond Hill Silver Mine (Cox); on the Wallsend Colliery, Collingwood (Cox); on the North Auckland District, including Thames and Coromandel Gold Fields, Island of Kawau, and Drury Coal Field (Cox); on the Aorere and Takaka Districts, Nelson (Cox); on the Waitaki Valley, Lindis, and Wanaka Lake District (McKay); on the Coal-bearing Deposits near Shakespeare Bay, Picton (McKay); on the Caswell Sound Marble (McKay); Index to the Localities where Fossils have been collected in New Zealand, with their Stratigraphical Position, is in course of publication, and will shortly be followed by the Sixteenth Progress Report.

The Handbook of New Zealand, prepared by Dr. Hector for the Melbourne Exhibition, is now out of print, so that a third edition is in preparation.

Progress is being made with the preparation of several important works bearing on the Natural History, Mineralogy and Geology of the Colony.

LIBRARIES.

The Libraries in connection with the Museum have increased rapidly during the past year, and it was thought necessary that a Librarian should be appointed. Mr. T. W. Kirk has been placed in charge of the Patent and Public Libraries, the work being performed out of official hours.

New Zealand Institute Library.—The additions to this Library comprise about 255 volumes received in exchange for the transactions from the various Societies and Institutions whose names appear in List III.

Patent Library.—This collection remains as hitherto in the Lecture Room, and appears to be greatly appreciated, especially by those engaged in mechanical pursuits. Thirty two volumes have been added during the year.

Public Library.—It was stated in last Report that very many of the works belonging to this Library were missing when it was removed to the Museum. Private enquiry by the Librarian resulted in the recovery of sixteen volumes, and it has now been decided to advertise in the local newspapers and the