

*Invertebrata*.—The additions to this section have been somewhat extensive, the most noticeable being (1) specimens of *Glaucus atlanticus* and *G. pacificus*, presented by Captain Renault; (2) a very large specimen of the common eight-armed cuttlefish (*Octopus maorum*); (3) a fine collection, comprising 183 species of the marine invertebrata of North America, presented by the United States Fish Commission.

#### ETHNOLOGICAL.

Very few additions have been made under this head, but the extensive collections sent to the Sydney and Melbourne Exhibitions have been replaced in the cases, as far as space will allow; but here, as in all other parts of the Museum, the accommodation is sadly deficient.

A large collection of Indian articles, consisting of mats, baskets, earthenware, &c., has been presented by the Executive Commissioner for India at the Melbourne Exhibition.

#### MELBOURNE EXHIBITION

A series of physical and geological maps of the colony were exhibited, together with sections and plans illustrative of the gold and coal mines and other mineral resources. As evidence in support of these was a collection of rocks, minerals and fossils, numbering nearly 3,000 specimens, with catalogues, reports, and monographs, on the various branches of the subject. The collections were very carefully studied by a jury of scientific men, and their report will appear in the official records of the Exhibition. The collection was awarded a first-class certificate and a silver medal. The preparation of these exhibits required the expenditure of much time and labour, but this was warranted by the opportunity which it afforded of bringing prominently before the public the results of the scientific investigations which have been made of the resources of the colony.

#### HERBARIUM.

During the past summer the Alpine ranges west of the Wanaka Lake, which afforded so many new species of plants when first botanically explored by Dr. Hector and Mr. Buchanan, in 1862, have again been visited by the latter collector, assisted by Mr. A. McKay, who was at work on the geological survey of the same district, and the result has been the addition to the colonial Herbarium of 25,000 specimens, some of which are wholly new species, and nearly all rare and valuable for purposes of exchange. Unfortunately the arrangement in the Museum for the preservation of the Herbarium will not be satisfactory until there has been a considerable expenditure in providing proper insect-proof cabinets. Owing to the want of cabinets, the valuable collection of 28,000 specimens of plants presented by the Trustees of the British Museum, in 1876, still remains in the original packing-cases, and is not accessible for reference and study.

#### PALEONTOLOGY.

During the year upwards of 7,000 specimens of fossils, collected in the course of the Geological Survey, have been placed in the Museum, and a large amount of work has been done towards the critical examination of the whole collections, preparatory to their publication. The collection of foreign fossils have received extensive additions, particularly nine cases presented by the Trustees of the British Museum, which are not yet unpacked.

#### GEOLOGICAL SURVEY BRANCH.

During the year the following extensions of the survey have been made, the special reports on which are printed in the annual progress report of this department (Fifteenth Annual Report, 1880-1):—

*On the Chrome Deposits in the vicinity of Nelson*.—The discovery of several new applications of chrome salts in the arts, and notably the proposal to use it for tanning leather, having revived an interest in this ore, various lodes, some of which have recently been discovered, were carefully examined with a view of determining if they could supply the market successfully at the present prices. The result shows that there are lodes of chromic iron ore in ten different localities, containing from 36 to 64 per cent. of chromic oxide, but that many of them are in such inaccessible positions that they would not pay the expense of carriage. As to this must be added the freight to London, which is 15s. per ton, Mr. Cox is of opinion that, instead of shipping the crude ore, works should be established for the local production of the bichromate of potash. Mr. Cox also examined the further exploratory works that have been made for opening up the copper lodes in Aniseed Valley, and reports that, as a mining venture, its prospects are still somewhat speculative, as for want of capital the exploration of the lodes has not been carried on in a sufficiently satisfactory manner.

*The Richmond Hill Silver Mine* was also re-examined as far as possible, considering that the main shaft is full of water. It is pointed out that an expenditure of £100 should be sufficient to repair the water-race, and that the present water-wheel would be then sufficient to pump the mine, and afterwards to compress air for working rock-drills, the past failure of the mine being evidently due to the use of hand-drilling alone, which is not suitable for following patchy ore shoots in such hard ground. As besides silver varying from 21 to 179 oz. per ton, the ore contains lead, copper, antimony, bismuth, nickel, and zinc, it is certainly worth following up, but it is considered that it would not be advisable to commence with a less paid-up capital than £10,000.

*The Collingwood Coal Mine* was examined with the view of advising on the most judicious manner of extending the workings.

Mr. Cox spent three months in continuing the survey of the North Auckland District, and in examining certain mineral deposits at Kawau, Coromandel, and the Thames; also Drury and Waikato Coal Fields, and obtained valuable results that are detailed in his reports. Two months were next occupied by Mr. Cox in the examination of the geology of the mountains lying between the Takaka and Aorere Valleys in the north-west part of Nelson District, and, in his report, he points out the importance of the mineral deposits which occur in the Lower Devonian rocks.

From September to April, Mr. McKay was engaged in geologically mapping a section between the east coast at the mouth of the Waitaki River, and the main watershed lying west of the Wanaka Lake. In the course of this survey, he examined in detail the structure of a strip of country about 10 miles