

These conditions, brought about by action during the glacial period, are among those which, in Dr. Dawson's opinion, have most tended heretofore to retard the development of metalliferous mining in British Columbia. Other circumstances which have operated in the same direction are, the densely wooded character of a great part of the country; the fact that the rivers are suited for navigation only in detached reaches; the remoteness from the coast of the richest and best-known placer-mining districts; and the cost of labor, supplies, and machinery, which may be regarded as in part concomitants, in part direct results, of these. Owing to the inaccessibility of the country, it has, till very recently, been prospected and exploited by the placer-miner alone, who has been deterred by no difficulty from reaching the most remote spots in which rumor, or reasoning of his own, lead him to expect the existence of the precious metal. Little knowledge or effort was expended in the search for metalliferous veins. Many such deposits supposed to be of value, were, it is true, located, and time and money which could ill be spared often uselessly spent upon them, leading only to discouragement. Even where the indications met with were altogether favorable, the original discoverer generally found that the capital and knowledge required for their development were not at his command, and it was difficult to interest those capable of dealing with such mines in a region which they could not easily visit and become familiar with at first-hand. With regard at least to the whole southern portion of the province, however, all this is now happily changed.

While speaking of causes which have hitherto stood in the way of vein-mining, it must also be mentioned that not the least important of these has been, and still is, the fictitious or exaggerated value too frequently placed upon entirely undeveloped discoveries. While it is manifestly right that the discoverer should be properly remunerated, it should be remembered that a mere surface showing, however promising, generally requires the expenditure of a large sum before its true value can even be ascertained, and that till thus developed it is unreasonable to expect a large payment for any mining claim.

In preceding paragraphs particular attention has been drawn to certain notable differences between the better-known and more fully developed regions of the southern part of the Pacific slope and those of the province of British Columbia, chiefly as a note of caution against the rash assumption of complete uniformity in conditions too often made without due investigation. The salient fact of the general identity of the structural features of the Cordillera region south and north, however, remain, and is such, that from this alone, even without taking into consideration the numerous and important discoveries already made, we should be justified in predicting an eventual great development of metalliferous mining in the province. It has already been stated that British Columbia includes a length of over 800 miles of the most important metalliferous belt of the continent; and, adding to this the northern extension of the same belt beyond the 60th parallel, we find that within the boundaries of Canada its entire length is between 1,200 and 1,300 miles. This, as has elsewhere been noted, is almost precisely equal to the whole length of the same region included by the United States from the southern line of Canada to the northern boundary of Mexico; and Dr. Dawson, after having enjoyed exceptional opportunities of investigation, feels no hesitation in recording his belief that the northern moiety of the Cordillera will ultimately prove to be susceptible of a development corresponding in importance to that which has already been attained in the southern.

British Columbia first rose from the position of a fur country to the rank of a colony, on the discovery of gold upon the Lower Fraser in 1858. Its subsequent history for a number of years is substantially that of the sudden rise and subsequent slow decline in importance of placer gold-mining. Coal-mining has, however, concurrently advanced, slowly but steadily, till it has obtained its present pre-eminent position. Such historical facts as appear to be important to the appreciation of these industries are touched on later in connection with them. With respect to vein-mining proper, we have as yet to chronicle merely the first steps; but in the southern part of the province the completion of the Canadian Pacific Railway has at length afforded the necessary impetus in this direction, and it is very gratifying to find, as an immediate

consequence, that this part of the country is rapidly beginning to prove its valuable character, and to justify the confidence which those best able to form an opinion on the subject have always felt and frequently expressed. Every thing which has been ascertained of the geological character of the province as a whole, tends to the belief, that, so soon as similar means of travel and transport shall be extended to what are still more inaccessible districts, these also will be discovered to be equally rich in minerals, particularly in the precious metals, gold and silver. In the southern district, for which information is most complete, praiseworthy efforts are now in progress, at a number of widely separated localities, toward the exploitation of ores, which, in many cases, have already been proved to be of an exceptionally valuable character. Here, at least, there is every reason to believe that we are on the point of witnessing the inauguration of an era of mining activity of the most important kind.

AMONG THE PUBLISHERS.

THE *Journal of Morphology* for June, being the first number of Vol. III. (Boston, Ginn), contains the following articles, besides eight lithographic plates: "The Actiniaria of the Bahamas," by Playfair McMurrich; "Contributions to the Osteology of the North American Passeres," "Notes on the Anatomy of Speotyto," by R. W. Shufeldt; "Variation of the Spinal Nerves in the Caudal Region of the Domestic Pigeon," by James I. Peck. The second number, that for August, will contain "The Mechanical Origin of the Structures of the Hard Parts of the Mammalia," by E. D. Cope; "The Embryology of Blatta and Doryphora," by William M. Wheeler; besides numerous cuts and seven lithographic plates. For the third number, the "Embryology of Linnbricus," by E. B. Wilson, is promised, and a paper by William Patten, dealing with the general embryology, including the segmental sense-organs, of arthropods. This number will probably be issued in October. A fourth number will probably be given with this volume, but its contents cannot be definitely stated. The subscription price is nine dollars for the volume, whether including three numbers or four.

—We have just received the first part of Vol. I. of the new "Century Dictionary," published by The Century Company, New York. This number appears in a unique and attractive binding, embracing the letters from A to Appet, and will be a welcome addition to the library. The work will be completed in six volumes of four parts each.

LETTERS TO THE EDITOR.

Fog.

A GREAT deal of discussion has recently taken place on the properties of fog and its causes. One writer attributes the celebrated London fog to the cooling of the air by radiation from hill-sides near the city, which air, flowing down, envelops the city. It has also been suggested that a cool northerly wind on the west side of a storm flows into the saturated air on the south side, and condenses fog. Again, over Newfoundland it is thought that a saturated current flows from the southward to cooler waters, often having ice floating in them, and thus produces fog. The objection to the first theory is, that the cause assigned could not develop a fog 500 or 1,000 feet thick. In the second case it seems plain that the cool north wind is always dry, and would quickly render the air unsaturated. In the last case, while the cause assigned might produce a fog just at sea-level, yet this would hardly be extensive enough, and it is probable that a calm is essential in fog-production.

Fog, it is admitted, is simply cloud composed of water-dust or solid minute spheres of water from $\frac{1}{100000}$ to $\frac{1}{1000000}$ of an inch in diameter. It is supposed by some that a dust-particle must be a nucleus for each sphere. When we consider the billions of such spheres in a cubic inch of fog, we may well halt, and demand that the moisture in a few cubic feet of fog be evaporated, and the trillions of dust-particles massed under a microscope, where they certainly ought to be visible. The laboratory experiments advanced to prove this theory seem entirely inadequate, when we consider the extreme improbability of such an hypothesis.