

examination and accurate description of those which fell under his observation, instead of rushing into print with a crude classification of rocks founded on imperfect data, and an ambitious Cosmical theory, the ideas of which are culled from the works of other geologists, not often referred to, with which the remainder of his memoir is filled. No doubt the earlier manifestations of volcanic energy along the entire north-west coast-range of the two Americas would amply repay an accurate and close examination, undertaken on separate points by competent geologists.

Mr. Darwin,¹ long since reported, as the result of his examination of a section across the South American Continent, that the geographical area east of the Andes, must have once consisted of metamorphic schists, clay-slates, and plutonic rocks, forming the floor of the ocean, which were then covered by vast streams of lava (trachytic, and greenstone porphyries), together with alternating piles of angular fragments of similar rocks—all ejected from *submarine volcanos*, and apparently, from the compactness of the rocks, so formed in deep water. This volcanic formation was subsequently covered by gypseous deposits of the age of our Chalk, mingled with the products of contemporaneous *volcanic eruptions*. And in some points, especially in Chili, these beds were again loaded, in the latter Tertiary period, with a vast pile of volcanic submarine tuffs and lavas, previous to the final elevation of the continent above the water level, or the opening of the great sub-aërial volcanic range of the existing Cordilleras.

Surely this is a far more intelligible account of the relations between the several hypogene and sedimentary rocks of America than can be gathered from the confused and inconsistent statements of MM. Humboldt, Dollfus, or Richthofen. Let us hope that some painstaking geologist like Mr. Darwin, with a judgment unwarped by prepossessions in favour of the absurd elevation-crater theory, will, before long, extend his observations to other portions of the great western Continent, and communicate to the public his detailed description of these interesting relations.²

G. P. SCROPE.

II.—REVUE DE GÉOLOGIE, POUR LES ANNÉES 1866 ET 1867. PAR MM. DELESSE ET DE LAPPARENT. Paris, 1869.

WITH each succeeding year the progress of Geology, like other sciences, naturally accumulates so many new facts and observations, and these are distributed through so many periodicals, and in different languages, that it is very difficult for the student to keep himself fully acquainted with the increased knowledge or continued additions to the science. A useful *resumé*, like the work before us, is

¹ Darwin's *S. America*, p. 237.

² Such a description will probably be in part found (by those who have the opportunity of consulting it) in the report of Dr. J. S. Newberry to Congress, published 1861, of his geological observations while employed on the expedition for exploration of the Rio Colorado, in 1857-8, of which I find a notice in page xlii. of Mr. Bell's "New Tracks in North America," just published by Messrs. Chapman and Hall.

therefore very acceptable, especially when the materials are carefully collated and judiciously arranged. The "*Revue de Géologie*," under the able editorship of MM. Delesse et De Lapparent, which now extends to six volumes, must always be a valuable addition to the library of the geologist, inasmuch as it not only gives abstracts of the more important papers, but also references to the periodicals in which they appear. The present volume comprises the report of the principal works which have been published for the years 1866-67, besides which it contains some unpublished papers which have been communicated directly to the Editors, as well as an account of the mineral substances in the French Exposition of 1867, capable of being usefully employed. The subjects are treated in a similar manner to that adopted in the preceding volume, under four heads—Preliminary Observations, Rocks, Strata, Terrans, and Geological Descriptions. The first part includes notices of the general works on geology, the agencies at present in operation, as atmospheric, glacial, lacustrine, and marine, followed by articles on subterranean and mineral waters, oscillation of coasts and volcanic phenomena, and the connection between mineral springs and the deposits of petroleum with the dislocations of strata. The most productive oil region of eastern Virginia is comprised in a zone of elevation which extends from the burning springs to the Ohio, a distance of nearly sixty kilometres. The second part treats of lithology, including the general properties, and the classification of rocks, followed by special notices on the composition of the rocks themselves. This part occupies more than one hundred pages of the volume, including the Carbonaceous, Calcareous, Siliceous, Argillaceous, Magnesian, Felspathic, and Metalliferous rocks of different countries; together with the formation of minerals, rocks, and stony cements, and also the modifications which rocks have undergone by special and general metamorphism. Among these articles we notice the analysis of the principal marbles of the Jura, by C. Méne, the most remarkable of which is that of Crans, distinguished by its fine yellow colour, interspersed with parallel veins and knots resembling ash wood. Other remarkable marbles, briefly alluded to here, but more fully treated of in M. Delesse's interesting work on the materials for construction in the Universal Exposition of 1867, are those of Italy, Greece, Livonia, Portugal, Silesia, Westphalia, Spain, Austria, Canada, and the United States. The third part contains the classification of the stratified rocks and their fossils of different countries, arranged in chronological order. This includes references to a series of memoirs of great use to the geologist, followed as it is by references to some special palæontological papers. The last part comprises geological descriptions of different countries, either containing notices of special local geology, or memoirs on general geology, amongst which may be mentioned the studies of MM. Boisse and Vène on the geology of the departments of Aveyron and the Ande, as well as some notes by M. de Mortillet on Italian geology, by M. Dewalque on Belgium, by M. L. Ville on Algeria, and M. Garnier on New Caledonia; besides which, as in preceding years, the principal sinkings or borings

are described in detail which have been communicated by MM. Dru, Laurent, and Degoussé. Containing, as this volume does, so much valuable information and useful references, we cannot doubt that it will be an acceptable work to all who take an interest in the progress of geology, and by whom we hope it will be favourably received and consulted, as an encouragement to the authors to continue their laborious researches. J. M.

III.—NOTES ON THE GEOLOGY OF NORTH SHROPSHIRE. By CHARLOTTE EYTON. London. 12mo. pp. 88. Robert Hardwicke, 1869.

MISS EYTON has produced a small, but very nice little book, on the Geology of that part of her native county with which she is most intimate, namely the neighbourhood of the Wrekin, and part of the plain of North Shropshire.

The district embraces Igneous and Metamorphic rocks of various ages, the Cambrian rocks, the Silurian—both Upper and Lower—the Carboniferous series, the Bunter Sandstone, the Trias, and, scattered here and there, Glacial Drifts and other superficial deposits.

"The change," writes Miss Eyton, "from the Silurian scenery on the south bank of the Severn to that of the New Red Sandstone on the north, is very remarkable and characteristic. The ever-varying outlines, the peaks and ridges, the ravines and glens of the former, stand in striking contrast to the level plain, rarely diversified by an outbreak of Igneous rock, which marks the extent of the latter. And yet it is the same influence, acting upon a different surface, that has produced both. The denuding agent (supposing it to act evenly over the whole extent) which, working upon alternate beds of hard and soft rock, forms corresponding alternations of ridge and furrow, will, when moving over an uniform surface, presenting no weak points and everywhere equally susceptible to its influence, produce the effect of a perfectly level plain, removing the same proportion of substance in every part, and smoothing and rounding all inequalities that may previously have existed. The only agent which we know of that does act thus evenly is the sea. The effect of atmospheric denudation is generally to cause uneven depressions and furrows. Some of these exist in the plain now under consideration, but they are not of sufficient importance to break the general effect of the outline above described." (p. 11.)

In referring to the Coal Plants Miss Eyton laments that we do not possess any good work on the subject since Lindley and Hutton. She will be glad to learn that Mr. Carruthers, who has already so much increased our knowledge of fossil plants, contemplates the publication of a complete British Fossil Flora. In speaking of Mr. Binney's discovery of the connection between *Stigmaria* (the roots) and *Sigillaria* (the stems) found in the Coal-measures (p. 41, line 9 from foot of page), Miss Eyton has inadvertently spoken of the *former* as being found *upright*, instead of horizontal, in the underclay.

We do not think the theory of "an island, comprehending the