

went up at a fair pace without resting. Arrived on the top, without a moment's pause, the men took their spades and shovels and began digging. They asserted that they did only about a third less work in the day than in the valley; and that they suffered no inconvenience from a prolonged stay in the Bosses hut; slept well, and ate largely. Their work was to excavate a tunnel in the summit ridge about thirty feet below the top. The object of this tunnel was to reach rock, in which a shelter-cave might be excavated.

Mountain-sickness is a term which has been used during the nineteenth century to designate the ailments which come to men and beasts on reaching high elevations on mountains. Some supposed that the uncomfortable symptoms were the result of local causes, and did not depend solely on reduced atmospheric pressures, as is the opinion of Mr. Whymper.

It was largely with a view to settle various questions in regard to mountain-sickness that the journey to the Andes was undertaken. Mr. Whymper wished to learn: (1) at what pressure the symptoms would first appear; (2) what form the sickness would take; (3) whether one could become habituated to low pressures.

To the first question the answer came at a pressure of 16.5 inches. Most of the party were simultaneously incapacitated for work and found themselves preoccupied by the paramount necessity of obtaining air. Precautions had been taken not to introduce complications in the way of physical exhaustion, Mr. Whymper maintaining "that our 'incapacity' was due neither to exhaustion nor to deficiency of bodily strength, nor to weakness from want of food, but was caused by the whole of our attention being taken up in efforts to get air." This gasping for air was accompanied with intense headache and an indescribable feeling of illness, pervading the whole body. The attack was sudden, but the recovery gradual; and even at the best it was only while at rest that sufficient air could be secured through the nostrils; on exerting themselves it was necessary to breathe through the mouth as well, and the capacity for work was low.

In reviewing the whole of their experiences, two different sets of effects could be distinguished: those which were transitory, and those which remained so long as the party was exposed to low pressures. The transitory effects were acceleration of the circulation, and increase in temperature. The permanent ones were more rapid respiration, indisposition to take food, and lessening of muscular power.

In the opinion of Mr. Whymper, the mountain-sickness is due to diminished atmospheric pressure, which operates in two ways: by lessening the value of the air inhaled, and by allowing the gases within the body to expand and seek partial escape.

But aside from the value of the book as a record of investigation on mountain-sickness, which is, by the way, made by no means prominent, we have in "Travels amongst the Great Andes of the Equator" a most valuable record of travel, well written.

A "Supplementary Appendix," to which some fifteen prominent naturalists contribute, is devoted to the collections made in the Andes, a very considerable part being on the coleoptera. The ample number of plates and illustrations make the whole work one of special value as a scientific record, and the account of the journey is most entertaining.

Order in the Physical World and its First Cause According to Modern Science. From the French. New York, James Pott & Co. 12°. \$1.

Natural Law in the Spiritual World. By HENRY DRUMMOND. New York, James Pott & Co. 12°. 75 cts.

THESE two works are eminently characteristic of the present time. The relations between science and religion have been the constant theme of comment and controversy for the past thirty years, and still excite extraordinary interest in certain classes of minds. Persons of an atheistical turn point to certain discoveries and theories of science as negating the very idea of religion; defenders of Christianity repel the charge; while a third class of writers endeavor to reconcile the two conflicting systems of thought by finding some rational ground of agreement. The two works now before us belong to this last category. The first, which is translated from an anonymous French writer, is an adaptation of

the design argument to the present state of scientific knowledge; the discoveries of science themselves furnishing the basis on which the argument rests. It is not a profound work nor in any way original; and it will not satisfy minds thoroughly imbued with the skepticism so characteristic of the present time. But for those who think the design argument a convincing one the book will have an interest. Unfortunately the English of the translation is imperfect and sometimes ungrammatical, especially in the earlier pages, and typographical blunders, such as "sideral" for sidereal, "Emmerson" for Emerson, etc., are altogether too frequent.

The second volume before us is of a different character, and somewhat curious. The author, Mr. Drummond, as he tells us in his preface, had been employed for some years in teaching the natural sciences on week days and lecturing upon religious themes on Sundays. Naturally, and almost necessarily, he was led to a study of the relations between the two subjects and to seek some basis of agreement between them. The result appears in this book, in which he endeavors to show that the laws of biology, which are manifest in organic life, are no less manifest in religious, or, as he calls it, spiritual life. Analogies between organic life and the mental and moral life of man have often been pointed out before; but Mr. Drummond maintains there is something more than analogy in the case, that the very same laws operate in these widely different spheres. We cannot think, however, that he proves his thesis, the resemblances that he points out between the natural and the spiritual world being, in spite of his disclaimer, nothing but mere analogies, and often remote and fanciful analogies. For instance, he speaks of the law of biogenesis, that life can only come from antecedent life, and argues that this is the same as the Christian doctrine that a man must "be born of water and of the spirit" in order to enter the Kingdom of God. He even speaks of "spiritual protoplasm," and declares that the difference between a Christian and a good man who is not a Christian is the difference between the living and the dead. As poetic analogies between natural and spiritual things, some of the resemblances that Mr. Drummond dilates upon have a certain interest, and serve well to illustrate moral and religious truth; but as the basis of scientific doctrine and as proving the reign of law in the spiritual world, they are of little value.

AMONG THE PUBLISHERS.

THE exclusive authorization to issue an English translation of the "Memoirs of the Baron de Marbot," which have created unusual interest in Paris, has been acquired from the Baron's representatives by Longmans, Green, & Co. They will publish the work immediately, both in New York and London.

— P. Blakiston, Son, & Co. have brought out a second edition of Blair's "The Organic Analysis of Potable Waters." Considering that the first edition was published but little over a year ago, this shows that the book has proved a good one.

— Messrs. Eason & Son, Dublin, will issue in April the first number of the *Irish Naturalist*, a monthly journal of general Irish natural history, and the official organ of all the natural history Societies in Ireland. The editors will be Mr. George H. Carpenter and Mr. R. Lloyd Praeger.

— A new *Physical Review* has been started by the publisher, J. Engelhorn, of Stuttgart. The editor is L. Graetz. The object of this periodical will be to make German readers acquainted with the work being done by physicists in other countries. It is intended that it shall serve as a sort of supplement to the well-known *Annalen der Physik und Chemie*.

— W. B. Saunders, 913 Walnut Street, Philadelphia, has published, as No. 22 of Saunders's Question Compend, "Essentials of Physics," by Fred. J. Brockway, M.D. The book is arranged in the form of questions and answers prepared especially for students of medicine. The author is assistant demonstrator of anatomy at the College of Physicians and Surgeons, New York. The reasons assigned for the existence of the book are that Ganot is too large for the purposes of medical students and that some of the other text-books do not contain enough.