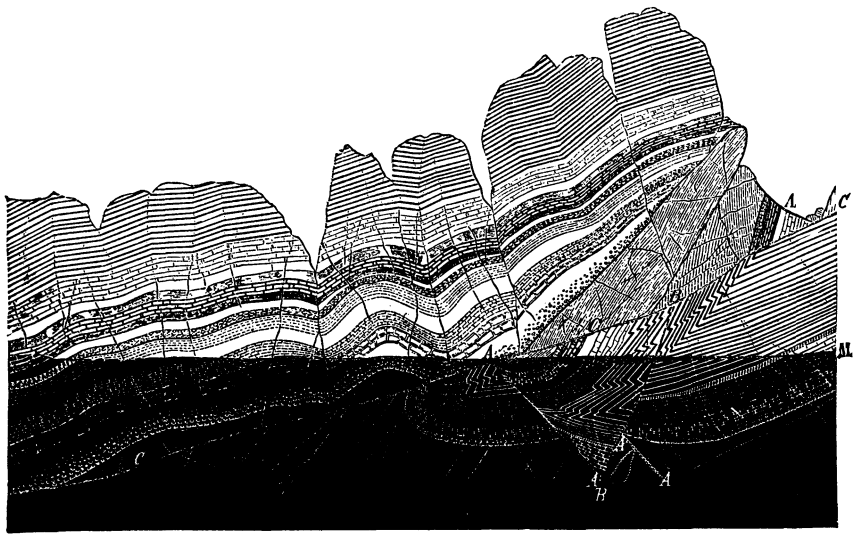
mountain ranges. Under the former heading there is an extended essay on the deluge, which has been printed apart, and briefer chapters on earthquakes, dislocations, and volcanoes. The second heading includes, thus far, only the Alpine system.

The work shows a broad acquaintance with the subject; and, in spite of its title, it is not a 'popular' book. Yet its style is much more attractive and readable than one usually expects in a geological essay. Among the more novel topics, there may be mentioned the brief account of Fischer's and Hann's studies of the deformation of the ocean's surface by continental attraction; a summary of the evidence



RESTORATION OF A DISTURBED REGION OF PALEOZOIC ROCKS IN BELGIUM.

contradicting the often quoted elevation of the Chilian coast in the earthquakes of 1822, 1835, and 1837; the series of forms developed in an eruptive region by deeper and deeper denudation; and the relations of the curved trends of the Alpine system to the generally northward tangential thrust that produced it.

A moderate number of well-executed cuts, and several long lists of authorities, add to the value of the work. The first of the illustrations here copied shows an overturned fold on the Mamrang pass, in the north-western Himalaya: the second is a restoration, by Cornet and Briart, of a greatly disturbed region of paleozoic rocks in Belgium, over part of which cretaceous strata are laid unconformably. Of the three great faults, *AA* is the oldest, and *CC* the youngest.

A POPULAR WORK ON AMERICAN NATURAL HISTORY.

Tenants of an old farm, leaves from the note-book of a naturalist. By HENRY C. MCCOOK, D.D. New York, *Fords, Howard, and Hulbert*, 1885. 456+4 p., illustr. 8°.

SCIENTIFIC men are accustomed to consider themselves an exclusive body. They collect bits of knowledge, which they seem to look upon as their private property, and, either wisely or unwisely, spend their time making observations, and rigidly describing them for scientific ears, with no attempt to put the material within reach of the ordinary mind. The result is, that the popular books of science, from which the general reader must get his information, are usually compiled by persons who have never seen what they are describing, but have obtained their information entirely from others. A book like the one before us is therefore of special value, for we have in it a popular account of scientific subjects by one who has himself observed every thing he describes. The scientific statements of the author are not only reliable, but, coming directly from nature, they still retain evidence of direct contact with life, which is so sure to disappear with too many repetitions; and when, further, these statements are put in a form to appeal to the general reader, we may be sure of an addition, perhaps not to science, but to the knowledge of the reading public.

The author informs us, that under the persuasions of friends, and rather against his own inclination, the plan of the book is colloquial in form. What the book might otherwise have been cannot be said, but the persuasion of friends seems here to have had a happy effect. The desirable quality of a popular scientific book is to obtain as many readers as possible, and thus spread the knowledge widely. However interesting facts of natural history

may be in themselves, it yet remains true that man is more interested in man than in any thing else; and scientific information given in the form of conversations, as in this book, is not only more interesting, and sure to obtain more readers, but makes a much more lasting impression.

The plan of the book is this: a city merchant who was formerly a naturalist is ordered by the doctor to take a year's rest in the country. He obeys the order, and occupies his time, while regaining health, in resuming his old acquaintance with the insect world. Various persons are introduced, who become interested in the oddities found, and weekly conversations to the household upon insects are the result. The author, assuming the character of the naturalist, details to his listeners a great many interesting and valuable bits of information upon their natural history: their life-history and habits, the damage which they do, with occasionally the method for its prevention, are discussed. A classical student introduces the mythology and classical lore relating to the subject; two farm-hands are thoroughly acquainted with the various superstitions connected with insects; the peculiar habits give opportunity for occasional moral lessons; while a 'school-ma'am' enlivens the party with her wit. The classical student, being a clergyman, serves to introduce the relation of evolution to religion, and is made to say, "As a method of creation simply, I am willing to leave it in the hands of the naturalist and philosopher," — a conclusion which, happily, is being reached by all thinking men. In short, these conversations, and the experiences detailed, give to the non-scientific reader a pleasant and accurate account of many of the animals which he is sure to meet in his walks in the country. The work is not a scientific one. It is true that there are a few new observations given; but they are so absorbed in the general character of the book that their value disappears, for no naturalist would be apt to go to a book of this nature for scientific information.

The illustrations form not the least attractive feature. These are very numerous, — about a hundred and fifty in all, — all new, and drawn especially for this work. Of themselves, they will insure many a purchaser. It is somewhat to be regretted that so many of them are simply humorous in nature. The whimsical oddities of Mr. Beard are certainly unique and excellent, but seem somewhat out of place, giving to the pages the appearance of humorous selections. While they do somewhat enliven the book, the reader cannot help wishing that their place were filled with more of the sketches from nature from the author's sketch-book, whose excellence is verified by the many examples given.

NOTES AND NEWS.

GEN. F. A. WALKER, of the Massachusetts institute of technology, has published a brief paper on industrial education, which he read before the American social science association in Saratoga last September. This interesting paper bears upon the questions which are under discussion in Glasgow. Gen. Walker offers the following classification of schools devoted to industrial education: —

1. Schools of applied science and technology, such as the school over which he presides, the Sheffield scientific school, the Stevens institution, the Rensselaer polytechnic institute, and the like.

2. Trade-schools, in which a particular art, or branch of industry, is taught; as, for example, watch-making in Switzerland.

3. Schools in which manual and mechanical education is introduced as a part of the general education of the scholar with reference to the fuller development of all his powers, not to make an engineer on the one hand, nor a trained operative on the other.

Gen. Walker advocates with clearness and vigor the gradual introduction of manual training in the public schools, and sketches what he calls 'a fairly conservative programme,' which would involve only a slight disturbance of the structure of the existing schools, but would call for a surrender of a considerable portion of time to the new studies. Gen. Walker seems at a loss for a phrase or term with which to indicate the training he desires to give. We suggest 'handicraft.' Let handicraft be taught in every school for girls or boys, in the kindergarten, and in the scientific laboratory. 'Handicraft' will make a good rallying word for all who favor this new phase of popular education.

— We would call the attention of our readers to the following remarks by Sir William Thomson during an address at Philadelphia last summer: "You in this country are subjected to the British insularity in weights and measures: you use the foot and inch and yard. I am obliged to use that system; but I apologize to you for doing so, because it is so inconvenient; and I hope all Americans will do every thing in their power to introduce the French metrical system. I hope the evil action performed by an English minister whose name I need not mention, because I do not wish to throw obloquy on any one, may be remedied. He abrogated a useful rule, which for a short time was followed, and which I hope will soon be again enjoined, that the French metrical system be taught in all our national schools. I do not know how it is in America. The school system seems to be very admirable; and I hope the teaching of the metrical system will not be let slip in the American schools any more than the use of the globes. I say this seriously. I do not think any one knows how